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International Entrepreneurial Perspectives and Innovative Outcomes

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IDENTIFYING RISKS IN SELECTED SOCIAL FACILITIES WHEN EMERGENCIES ARISE

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Abstract. This paper focuses on identifying risks in selected social facilities in relation to the possible occurrence of an emergency. Risks are dealt with for residential social facilities that provide meals all day long in the territorial scope of the city of České Budějovice. Via the application of the KARS method, selected risks are assessed using their correlations. In this way, the risks are divided into those that primarily threaten the examined social facilities, as well as risks that represent hierarchically-lower risks, or those that were assessed as relatively safe. The research investigated risks in relation to emergencies that occur when social services are provided within the cadastral territory of the České Budějovice. The KARS method was used to identify the risks that are most dangerous for social facilities. In the first stage of the analysis, group risks were ascertained that occur during the operations of individual facilities. The risks were divided into those that primarily threaten the social facilities, and to those which hierarchically represent lesser risks, or were assessed as relatively safe.

Keywords: Emergency; Social Facilities; Risks; Preventive Measures; Social Services; Security

Reference to this paper should be made as follows: Kavan Š., Kazanský R., Nečas, P. 2020. Identifying risks in selected social facilities when emergencies arise. Journal of Security and Sustainability Issues, 10(2), 379-388. http://doi.org/10.9770/jssi.2020.10.2(1)

JEL Classifications: I18, J28, K10, K22, K37

1. Introduction

The dynamic development of human civilization brings, in addition to several positive phenomena, a number of negatives, which in the conditions of deepening global problems manifest themselves in the form of various dangers and threats (Ivančík, 2012; Razíf et al., 2020; Akeel, Khoj, 2020; Oliński, Szamrowski, 2020; Tvaronavičienė et al., 2020; Genys, Krikštolaitis, 2020).

Thus, the human society must deal with emergencies that arrive unexpectedly and endanger the lives and health of the population. They cause extensive damage to property and the environment, and they may arise from the damaging effects of forces and phenomena caused by human activity, natural causes or a combination thereof. Such events include floods, hurricanes, and technological accidents with spilling of hazardous substances, large traffic accidents, extensive fires or acts of terrorism. Likely and frequent consequences of various disasters are injuries or damage to human health (Malerova, Pokorný, 2017; Dominelli, 2020; Dong et al., 2020; Besenyő, Kármán, 2020).

Being able to protect one’s own health and life and that of others is a question of preparedness and having the necessary knowledge. The ability to provide proper and rapid assistance in such a case is then not only a moral, but also a legal obligation of every person. Although the course of most emergencies may not be fully under the control of a person, devastating consequences can be minimized through effective measures and the prepared-
The basic activities in the provision of social services are assistance in managing the usual tasks of personal care, assistance in personal hygiene or providing conditions for personal hygiene, providing food or assistance in providing food, providing accommodation or assistance in securing housing, assistance in ensuring the running of the household, educational, training and activation activities, counseling, mediation of contact with the social environment, social therapeutic activities and assistance in the exercise of rights and legitimate interests (Ricciardelli et al, 2020; Jeon, 2020)). The provision of social services in the Czech Republic is defined by Act No. 108/2006 Coll. on social services. This Act regulates the conditions for providing assistance and support to natural persons in an unfavorable social situation through social services and care allowance, conditions for issuing authorizations for the provision of social services, public administration in the field of social services, inspection of social services and prerequisites for social activities (Act No. 108/2006 Coll.).

The goal of social services is:
- preserve the human dignity of clients,
- be based on the individually determined needs of clients,
- actively develop clients’ abilities,
- improve or at least maintain the self-sufficiency of clients,
- provide services in the interest of clients and in appropriate quality.

The social services can be “bought” by their recipient on the basis of the granted care allowance, resp. he can order them from the organization providing social services and pay for the provided services according to the agreement, some services are free (Ortega-Galán, 2020). Social services are provided by organizations or individuals who are authorized to do so, issued by the locally competent regional authority, as well as by close relatives or social care assistants.

Social services facilities can be characterized in individual areas:
- day care centers, day hospitals, weekly hospitals,
- homes for the disabled, homes for the elderly,
- homes for people with chronic mental illness or substance abuse,
- sheltered housing, shelters, halfway houses, crisis management facilities,
- low-threshold day centers, low-threshold facilities for children and young people, dormitories, therapeutic communities,
- social counseling centers, social therapy workshops, centers of social rehabilitation services,
- early care facilities, intervention centers,
- aftercare facilities.

These social services facilities are further divided into residential, outpatient, or field. Residential services are associated with accommodation in social services facilities, eg retirement homes, weekly hospitals, etc. (Weil, 2020) Outpatient services are those for which a person comes or is accompanied or is transported to social services facilities - these services do not include accommodation, eg day centers. Field services are provided to needy people in their natural social environment.

Social workers perform a wide range of work tasks and encounter many different types of environments and people at work. They work in community health facilities, hospitals, residential treatment centers, addiction treatment facilities, schools, family service agencies, foster care agencies, day care facilities and public and private childcare organizations. Social workers often visit clients’ homes to check or talk about household condi-
tions. Increasingly, social work is becoming a policy issue. A social worker is a profession that seeks to improve social functioning by providing practical and psychological help to people in need (Kováčová, Vacková, 2014).

Because social workers can work in so many different environments, they are exposed to many types of occupational hazards. Among others, it should be mentioned that they very often move in areas with poor circulation or air quality, in so-called sick buildings (Lošonczi et al, 2016). They are also at risk of infection from the environment, especially hospital workers and outpatient medical care are prone to exposure to the infection. Social workers are at risk of contracting diseases such as hepatitis, tuberculosis and other highly contagious diseases, as well as human immunodeficiency virus (HIV) from patients. In response to this risk, all healthcare professionals need training and infection control measures.

The paper focuses on a risk analysis of social facilities in České Budějovice in the Czech Republic. For social services users, these institutions provide a sense of home where everyone should feel safe and be welcomed and respected. Their mission is to provide quality residential social services with provided all day and 24-hour care for persons who can no longer stay in their home environment due to their age or health condition. The main objective is to create conditions to meet the natural needs of people in the form of support and help in caring for themselves, help with self-sufficiency that is essential for a full life and with life situations that may prevent someone from living an ordinary life.

2. Basic characteristics of the research sample

The sample set that the research is based on are social service providers within the cadastral territory of České Budějovice. České Budějovice is the statutory city and the largest city in the South Bohemian Region and its economic, administrative and cultural center. It is located at the confluence of the Vltava and Malše rivers. They are the seat of several universities, important public institutions and offices. The basic framework for ensuring social assistance and support is set out by Act No. 108/2006 Coll., on Social Services, as amended (Act 108/2006 Coll.). This means the provision of the activities that are necessary for the social integration of people, and decent living conditions. These conditions are based on the current level of development of our society. The legal regulation regulates the conditions for providing assistance and support to individuals in difficult social situations (weakening or loss of ability due to age, poor health, for crisis social situations, living habits and a way of life leading to conflict with society, a socially-disadvantaged environment, endangering the rights and interests via the criminal activity of another individual, or due to other serious reasons, and dealing with such a situation in such a way that these solutions support social inclusion and protection against social exclusion) through social services and care allowances (Brehovská, Líbal, 2014; Malerova, 2016; Yuliastuti et al, 2020; Plėta et al., 2020).

Endangered persons are those who live in collective facilities at the time of an emergency and are limited in terms of their movement and are dependent on care provided by another person. Users of social services in social living institutions associated with accommodation have various health disabilities often combined with limited mobility or mental disabilities, and these are also people in the terminal stage of life who are totally dependent on the help of another person (Suhanda et al, 2019; Knoop et al, 2020). If an emergency at a social institution that provides accommodation occurs, the evacuation and rescue of persons by an integrated rescue system unit would be difficult and demanding.

In České Budějovice, which has approximately one hundred thousand inhabitants, the following facilities provide social services with accommodation (České Budějovice City Hall, 2020):
- Nursing homes - five facilities providing social care to citizens who are retired or receive full-disability pension. Classic home care services are provided, and after a specified period of time, the permanent presence of caregiver is ensured. Nursing homes are intended for the elderly and disabled persons with reduced self-sufficiency due to their state of health or advanced age, and who thus consequently have special housing needs.
- Retirement homes - three homes for people over 65 who are permanently dependent on the care of another
person due to illness or chronic disability; or who do not have the physical or mental strength to be able to stay at home alone with the help of family members or the available field services; or who have partially or completely reduced mobility.

– Specialised homes - residential social services provided to people who cannot live in their natural environment due to their handicap. The homes support their self-sufficiency with respect to individual needs and create a home atmosphere. Social services are provided to persons with reduced self-sufficiency due to chronic mental illness or dementia.

– Homes for people with disabilities - residential services provided to persons with reduced self-sufficiency due to disability, whose situation requires the regular assistance of another person.

– Sheltered housing – the mission of sheltered housing is to provide active support to people with mental or multiple disabilities at a younger and working-age while they become independent and integrate into society.

– Shelters – the mission of the three shelters is to support people who have no place to live and are without jobs to find their own housing and a job. The basic activities are assistance in providing food, providing accommodation and assistance in exercising rights, legitimate interests and assistance in dealing with personal matters.

The increased tendency to care for people with disabilities and the overall aging population, as well as a changing demographic curve, can be characterized in both the administrative territory of České Budějovice, and in general. In order to prepare the staff and clients in social facilities, it is necessary to characterize the basic risks, and, on the basis of the findings therefrom, to organize subsequent correct response training and training of behaviour principles during emergencies.

### 3. Research methodology

Via the application of the KARS method (Qualitative Risk Analysis using Correlations thereof), it can be determined which risks are most dangerous for the system, i.e. for the examined social facilities, and they must be addressed as a priority. When using the KARS method, the first step consists of the processing a list of risks that threaten most social facilities. This analytical method utilizes the interdependence of risks. On the basis of an investigation of social workers and managers of social facilities, it has been established that there are ten risks $R_i$ in the system which are reported in the table in rows and columns. The table of risk correlation are filled-in for $R_i$ risks; $R_i$ is not evaluated in diagonal positions because the $R_i$ risk cannot invoke itself.

#### Table 1: Identification of risks

<table>
<thead>
<tr>
<th>Risks</th>
<th>$R_i$</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>$\Sigma K_{R_i}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire</td>
<td>x</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Communication</td>
<td>0</td>
<td>x</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Preparedness</td>
<td>1</td>
<td>1</td>
<td>x</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Flood</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Blackout</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>x</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Kitchens</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>x</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Electronic appliances</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>x</td>
<td>1</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Heating</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>x</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>HAZMAT</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>x</td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Gas</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>x</td>
<td>1</td>
<td>8</td>
</tr>
</tbody>
</table>

$\Sigma K_{R_i}$: 8, 8, 9, 3, 8, 9, 8, 8, 8, 8

*Source: Own research*
Overview of individual risks:
1. Fire.
2. Difficult communication with disabled persons.
3. Lack of evacuation preparedness of a social institution.
4. Flood.
5. Power outage.
7. The impossibility of using electrical appliances, wiring malfunction.
8. Heating - emergency situation when heating buildings.
9. HAZMAT - Hazardous materials and items, leakage of hazardous substances.

The following is a calculation of coefficients of activity and passivity in order to transform the final shape of the correlations table into a mathematically and graphically usable format. The $K_{ar}$ activity coefficient is a percentage of the number of selected consecutive risks for risk $R_i$, which may be triggered in the event that this risk occurs. The $K_{ar}$ activity coefficient is calculated according to the following formula:

$$K_{ar} = \left[ \frac{\sum K_{ar}}{x - 1} \right] \times 100 \times \ldots \text{number of evaluated risks (} x = 10)$$

The $K_{pr}$ passivity coefficient is a percentage of the number of all identified risks that may subsequently trigger risk $R_i$.

$$K_{pr} = \left[ \frac{\sum K_{pr}}{x - 1} \right] \times 100 \times \ldots \text{number of evaluated risks (} x = 10)$$

Each risk $R_i$ will be characterized by a pair of coefficients, i.e. $K_{ar}$ and $K_{pr}$. For orientation and applicability of the results of calculations, a table of $K_{ar}$ and $K_{pr}$ coefficients will be compiled and expressed graphically. The aim of the evaluation of the correlation graph is to determine the danger of individual risks based on their correlation with other risks in the system. This can be determined by dividing the graph into four basic areas using axes $O_1$ and $O_2$. These areas will then determine how important the risks found in them are. The areas are divided as follows: I - primary hazardous risks; II - secondary hazardous Risks; III - tertiary hazardous risks; IV - relatively safe.

<table>
<thead>
<tr>
<th>individual values $K_{ar}$</th>
<th>individual values $K_{pr}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 $K_{ar} = \left[ \frac{7}{10 - 1} \right] \times 100 = 78%$</td>
<td>1 $K_{pr} = \left[ \frac{8}{10 - 1} \right] \times 100 = 89%$</td>
</tr>
<tr>
<td>2 $K_{ar} = \left[ \frac{2}{10 - 1} \right] \times 100 = 22%$</td>
<td>2 $K_{pr} = \left[ \frac{8}{10 - 1} \right] \times 100 = 89%$</td>
</tr>
<tr>
<td>3 $K_{ar} = \left[ \frac{9}{10 - 1} \right] \times 100 = 100%$</td>
<td>3 $K_{pr} = \left[ \frac{9}{10 - 1} \right] \times 100 = 100%$</td>
</tr>
<tr>
<td>4 $K_{ar} = \left[ \frac{9}{10 - 1} \right] \times 100 = 100%$</td>
<td>4 $K_{pr} = \left[ \frac{3}{10 - 1} \right] \times 100 = 33%$</td>
</tr>
<tr>
<td>5 $K_{ar} = \left[ \frac{8}{10 - 1} \right] \times 100 = 89%$</td>
<td>5 $K_{pr} = \left[ \frac{8}{10 - 1} \right] \times 100 = 89%$</td>
</tr>
<tr>
<td>6 $K_{ar} = \left[ \frac{9}{10 - 1} \right] \times 100 = 100%$</td>
<td>6 $K_{pr} = \left[ \frac{9}{10 - 1} \right] \times 100 = 100%$</td>
</tr>
<tr>
<td>7 $K_{ar} = \left[ \frac{8}{10 - 1} \right] \times 100 = 89%$</td>
<td>7 $K_{pr} = \left[ \frac{8}{10 - 1} \right] \times 100 = 89%$</td>
</tr>
<tr>
<td>8 $K_{ar} = \left[ \frac{8}{10 - 1} \right] \times 100 = 89%$</td>
<td>8 $K_{pr} = \left[ \frac{8}{10 - 1} \right] \times 100 = 89%$</td>
</tr>
<tr>
<td>9 $K_{ar} = \left[ \frac{9}{10 - 1} \right] \times 100 = 100%$</td>
<td>9 $K_{pr} = \left[ \frac{8}{10 - 1} \right] \times 100 = 89%$</td>
</tr>
<tr>
<td>10 $K_{ar} = \left[ \frac{8}{10 - 1} \right] \times 100 = 89%$</td>
<td>10 $K_{pr} = \left[ \frac{8}{10 - 1} \right] \times 100 = 89%$</td>
</tr>
</tbody>
</table>

Table 2: Determining coefficients

<table>
<thead>
<tr>
<th>Risks</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>$K_{ar}$ [%]</td>
<td>78</td>
<td>22</td>
<td>100</td>
<td>100</td>
<td>89</td>
<td>100</td>
<td>89</td>
<td>89</td>
<td>100</td>
<td>89</td>
</tr>
<tr>
<td>$K_{pr}$ [%]</td>
<td>89</td>
<td>89</td>
<td>100</td>
<td>33</td>
<td>89</td>
<td>100</td>
<td>89</td>
<td>89</td>
<td>89</td>
<td>89</td>
</tr>
</tbody>
</table>

Source: Own research
The graph area is divided into quadrants so that 80% of all analysed risks are in the 1st quadrant. This quadrant is labelled as region of primary and secondary hazardous risks.

Determining the position of axes, values used from tab. 2:

\[
\begin{align*}
K_{ar\, max} &= 100\% \\
K_{ar\, min} &= 22\% \\
K_{pr\, max} &= 100\% \\
K_{pr\, min} &= 33\%
\end{align*}
\]

optimal level 80% \( s \) ... reliability \( (0 \text{ – } 100) \)

axis \( O_1 \)
\[
O_1 = 100 - \left(\frac{(K_{ar\, max} - K_{ar\, min})}{100}\right) \times s \%
\]

\[
O_1 = 100 - \left(\frac{(100 - 22)}{100}\right) \times 80 = 38\%
\]

axis \( O_2 \)
\[
O_2 = 100 - \left(\frac{(K_{pr\, max} - K_{pr\, min})}{100}\right) \times s \%
\]

\[
O_2 = 100 - \left(\frac{(100 - 33)}{100}\right) \times 80 = 46\%
\]

\( K_{ar\, max} \) is the maximum interval relating to activity coefficients;
\( K_{ar\, min} \) is the minimum interval relating to activity coefficients;
\( K_{pr\, max} \) is the maximum interval relating to passivity coefficients;
\( K_{pr\, min} \) is the minimum interval relating to passivity coefficients

Each risk \( R \) is characterized by coefficients \( K_{ar} \) and \( K_{pr} \). For orientation and in order to be able to interpret the results, a table of coefficients \( K_{ar} \) and \( K_{pr} \) was compiled which is expressed graphically.

**Table 3**: Resulting graph of correlation analysis

\[\text{Source: Own research}\]
4. Discussion about the used KARS method

The KARS method has a clear predicative ability. Based on the results of the analysis, the risks found in the researched facilities were qualitatively layered. This procedure helped to determine the ranking of individual risks. The method provided a guide to determining priorities in social facilities for preparing measures for deal with emergencies that can be triggered by the risks listed in Table 1. In the first area of primary and secondary hazardous risks, the weakest points of mutual relations of the system being evaluated were identified.

The investigated social facilities should focus on risks in the following order:
Area I – primary and secondary hazardous risks. This area has a total of 8 risks:
1 Fire.
3 Lack of evacuation preparedness of a social institution.
5 Power outage.
6 Kitchen – impossibility of preparing daily meals.
7 The impossibility of using electrical appliances, wiring malfunction.
8 Heating – emergency situation when heating buildings.
9 HAZMAT - Hazardous materials and items, leakage of hazardous substances.
10 Gas – gas leak and explosion.

Area II – secondary hazardous risks, only one risk in this area: 2 Difficult communication with disabled persons.

Area III – no primary hazardous risks, only one risk in this area: 4 Flood.

Area IV – relative safety, no risks in this area

The research investigated risks in relation to emergencies that occur when social services are provided within the cadastral territory of the České Budějovice. The KARS method was used to identify the risks that are most dangerous for social facilities. In the first stage of the analysis, group risks were ascertained that occur during the operations of individual facilities. The risks were divided into those that primarily threaten the social facilities, and to those which hierarchically represent lesser risks, or were assessed as relatively safe.

Conclusions

The identification of risks in social facilities is important in terms of preventative safety measures, particularly in the professional training of staff. During emergencies, the staff are always under increased pressure to ensure the normal operation of the facility and provide social and health services to the extent necessary. Clients of social facilities may be injured or their health can deteriorate.

The current perception of risks, health and safety of clients and social workers is asymmetric and requires better methodological and legal regulation. The issue affects workers of all forms of social services (residential, outpatient, field), so in all forms of social services must be defined and implemented certain mechanisms to protect the health and safety of both workers and service users.

In modern social services, the goal is to leave a situation where a person is “safe but unhappy” in order to mitigate risks and improve the quality of life. This is a reasonable risk that is acceptable. If clients of social services are to live a normal way of life, they also face common risks. The social service then provides such support that the client can manage the risky situation in a safe way.

Based on the perception of the need to increase safety, as of October 2010, dozens of nursing services throughout the Czech Republic have joined in the Bezpečná domácnost (Safe Household) educational programme. In
cooperation with the Ministry of Interior - General Directorate of Fire Rescue Service and the Police Presidium of the Czech Republic, the programme is implemented by charity organization PRO RESCUE. It is a great asset to both users of social services and the homes of caregiver that after being trained they can understand fire risks outside and inside buildings, and are able to identify which appliances represent fire risks in their home, and in the homes of users.

Course participants also appreciate the fact that it was easily explained to them which acts lead to saving life, and adversely, which could complicate a rescue and in what time sequence these operations must be carried out in a burning building (Prorescue, 2020; Reuter, 2020). In terms of a multidisciplinary approach to social facilities, within safety training in this area, it is necessary to prepare clients and group of experts for managing institutions of various sizes and various degrees of complexity (Kavan, 2015).

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SECURITISATION OF COMMUNICATION IN PUBLIC SPACE DURING COVID 19 PANDEMIC

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Abstract. Securitisation is an intersubjective process of construing new categories or subcategories of security by identifying existential threats, the alleviation of which requires extraordinary measures and social acceptance. During the COVID-19 pandemic, both during the near-total lockdown, as well as in the period where restrictions were loosened, the messages presented in public space, calling for specific behaviours, displayed certain signs of this process – the limitation of citizens’ rights without the introduction of a state of emergency, as provided for by law, was carried out on the grounds of an extraordinary threat (threat of infection, illness or even death) the eradication of which requires extraordinary measures (depriving citizens of the possibility of moving, working, learning, taking advantage of entertainment or pursuing their passions, as well as imposing an order to wear masks and maintaining social distance) to be applied, which – on the one hand – were introduced under the pain of punishment, while on the other, they were supposed to be met with general acceptance as rational and just. The following paper presents the results of a study of communications appearing in the public space in the period from March to August 2020 in Poland, which were to support the process of securitisation of the pandemic threat.

Keywords: securitisation; pandemic; COVID-19; public space; health security; language; discourse

JEL Classifications: H56, H84, 112, 118,

Additional disciplines: political sciences

1. Introduction

The collapse of the bipolar world coincided with the expansion of security category. Terrorism, organised crime, hunger and environmental degradation were named the new global threats, while security studies found space for the perspective claiming that collective security is – in a sense – a sum of subjectively construed human securities, which has not only a military or political dimension, but also an economic, social and ecological one. (Buzan, 1983) The combination of the Cold War optimism and the lack of a permanent military threat thus created a space for taking non-military problems that posed a threat to security into consideration. (Vogler, 2013:19)

Security is one of the keywords of modern communication. It is sometimes used instrumentally in the attempts to allocate state resources, since it increases the seriousness of the institutions that refer to this concept, while invoking the term usually results in excellent outcomes. (Buzan, 1991:370) It is used to justify various kinds of reforms, restrictions or expenditures, at least since the decision was made that one cannot spare money on security. It is also sometimes used as an explanation for hiding certain facts or information from the public – starting with the faces of soldiers carrying out special operations to the details of multi-purpose aircraft purchase contracts. The inclusion of a given topic under the general security umbrella almost always seems to guarantee its elevation.

Security is a meta-operator with great impact, and as such, it offers great power – it can help with solving problems which are theoretically far removed from the issue of security (as in the case of securitisation of the
AIDS threat and the need to combat the spread of HIV in Africa, Elbe, 2006, McInnes, & Rushton, 2011), as well as exhibit its destructive power (securitisation of migration issues, Huysmans, 2006:57). Thus, it becomes an instrumental value (Booth, 2005:22), an intersubjective phenomenon, admittedly a secondary one (Booth, 1997:106), but of great (and still growing) importance (Chehabeddine, Tvaronavičienė, 2020)

2. Theoretical background. Securitisation, desecuritisation and their critics.

Moving beyond the military dimension in security analysis, which is characteristic for constructivism, which has been developed since the 1980s, begs the assumption that security is a social construct (Fierke, 2007:56), brought to life as a result of various factors and circumstances, and thus interpreted and understood in a variety of ways. The fact that something is either secure (or a threat) is not determined by objective factors. The example of the invasion of Iraq in 2003 by the United States and its allies, who determined that the possibility of Saddam Hussein having nuclear weapons was more dangerous than the real nuclear potential of countries such as Russian Federation, China, North Korea, France, India, Pakistan and Israel, illustrates this issue quite well. It is clear that the reasons for considering Hussein as a threat stem from historical (first Gulf War), political (Iraqi regime), as well as cultural (McDonald, 2002:289) factors, instead of a comparison of nuclear capabilities and ambitions of these countries. Security is thus construed in global politics and closely linked to widely accepted social standards and norms, which should not be taken for granted.

Stemming from constructivism, the Copenhagen School (B. Buzan, O. Waever and others) went even further in their assessment of the importance of the context and concept of creating security issues. Taking advantage of a climate conducive to broadening the definition of security, it has turned issues such as environmental change, poverty and human rights into key points for the debate about security from the standpoint of an individual and social groups. Among these broadened categories, there was also a place for health security – a subcategory of social security, as well as pandemics, which constitute specific and existential threats.

The theory of securitisation developed by the Copenhagen School is based on three key elements – existential threat, extraordinary measures needed to combat said threat and the acceptance of the “public” (usually tantamount to society or part thereof). In order for threats to be considered security issues, they must meet a certain set of criteria “which distinguish them from the normal course of purely political issues.” (Hough, 2014:23) The existential threat needs to be treated as the subject of exceptional policies implemented outside the standard democratic process. (Oels, 2012:185) The process of creating a security threat takes place through “acts of speech” which highlight the danger associated with the issue, raise its political profile and justify the need for exceptional measures. (Vogler, 2013:19) In the first phase (identification), the issue is identified as a threat, in the subsequent phase (mobilisation) a request for emergency action is made. (Roe, 2008) This act involves two key players: the elite, who handle the securitisation and who are responsible for presenting the issue at hand through the lens of securitised conditions, and the general public, which justifies securitisation of the threat and the need for exceptional measures. (Oels, 2012:191)

“Identifying an issue as a security issue makes it such,” Ole Waever claimed (2004). Interestingly enough, he simultaneously believed that securitisation is a failure – it means that the problem could not be solved by means of standard policies and it required an intersubjective construct of an existential threat, requiring emergency measures, threatening the annihilation of the state or society, as well as its sovereignty and identity. In other words, it requires transferring the phenomenon or issue from the area of ordinary politics to the area of the most pressing existential threats. (Buzan & Waever, 2003) What is more, securitisation comes with a threat of de-democratisation, de-politicisation, conflict and the growing security dilemma. (Floyd, 2015) Waever believed that it was only the desecuritisation occurring when the extraordinary measures cease to apply and the return of the securitised issue to the field of normal policy, which can be perceived as a positive phenomenon. Securitisation is the opposite of a politicisation that involves including the broadest possible range of issues in the public debate. In this context, politicisation is therefore a positive phenomenon, while securitisation, which excludes certain issues from the public debate, is perceived as a negative one.

Securitisation theory has had many critics, as well as numerous modifications. However, this paper does not
concern itself with presenting their full extent. It is worthwhile, however, to bring up the Just Securitisation Theory (JST) – a modification of the classic version, taking into account the most severe criticisms, providing tools to mitigate its key issues, due to the usefulness of this approach for studying the securitisation of the recent pandemic. Its creator – Rita Floyd (2007, 2010, 2015, 2019) – believes that the existential threat may not be tantamount to every single issue brought up by the securitising entity, and that only objective threats can be considered existential (based on the studies of the sincerity of potential aggressors). (Floyd, 2015) Here, Floyd refers to the conclusion of another critic of Buzan and his colleagues, Thierry Balzacq (2005), who noted that while it is difficult to identify objective threats to security, objective existential threats can be listed rather easily and successfully. Secondly, according to Floyd (2015), it does not matter whether the recipients of the act of speech (the securitisation movement) accept it or not (which was crucial for the Copenhagen School) because in this case, action is key – in other words, the security practice and the implementation of specific policies, rather than accepting their descriptions. (Floyd 2010) This can be illustrated by the following equation:

$$ST: \text{SECURITISATION} = \text{SECURITISATION MOVEMENT} + \text{AUDIENCE ACCEPTANCE} \quad (1)$$

$$JST: \text{SECURITISATION} = \text{SECURITISATION MOVEMENT} + \text{SECURITY PRACTICE.} \quad (2)$$

According to Floyd, securitisation does not take place “when the audience accepts the justification of an existential threat, but when instead there is a change of a significant behaviour exhibited by a significant entity, which is justified by said entity using a reference to the declared threat. (...) securitisation becomes effective due to the fact that it had occurred, without the need to break the applicable rules or introducing emergency measures” (it was enough that the existential threat was justified and there was any action referring to its presence). (Floyd, 2015) Thirdly, according to Floyd, it is not necessary to use extraordinary measures to deal with securitised issues. The “standard emergency measures” provided for in the constitutions of liberal democracies are enough, including the introduction of new legislation in accordance with existing procedures, the introduction of new powers to manage a crisis situation within the framework of the existing legal order, approved by the relevant courts, as well as the use of the existing security apparatus and existing state of emergency legislation to resolve issues, which were not addressed previously.

Floyd did not deny the concept of securitisation as such – she considered it a useful process for drawing attention to important issues that actually require extraordinary measures. However, she focused on the integrity and honesty of the intentions of the actors bringing about securitisation and on the assessment of the actual threat. For example, she argued that Islamic terrorism was overly securitised, compared to its actual power and level of threat. However, when the grounds for action were just, at that point the act of speech was not enough, since the situation required effective action in order to desecuritise the issue as quickly as possible and restore it to the ground of “normal” policy.

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For years, the relationship of health and security has been perceived rather unilaterally, which could be seen in statements concluding that armed conflicts cause health problems and death of people, and that waves of refugees and soldiers sent to remote corners of the world can spread disease. The founding of the WHO in 1948 caused health issues to be viewed in terms of human rights, instead of security. This also brought about the belief that vaccines and antibiotics will be used to effectively tackle global epidemics. However, in 2000 CIA published its annual report on the condition of state security and its threats, where it noted that infectious diseases, AIDS in particular, can be an issue for the United States. This stance was shared by the UN Security Council. Resolution 1308 on the possible impact of HIV/AIDS on the stability of social governance and the functioning of peacekeeping missions warns that an unmanaged pandemic of this disease could pose a threat to stability and security.

After the end of the Cold War, health returned to the security agenda, partly owing to the lobbying of famous people. They included, among many others, R. Holbrooke, who is believed to be one of the main authors of HIV and AIDS securitisation, and who perceived this threat located mainly in Africa and ineffectively tackled by humanitarian aid as a source of potential social consequences, which could shake the stability of entire countries. G.H. Brundtland (1999), the former head of the WHO, advocated for the concept of global health security, indicating that with globalisation, the whole of humanity lives in a common sea of microorganisms, and therefore there will be no places left untouched by disease. This is particularly important given that according to WHO data, in the 21st century each year will bring at least one new infectious disease, some of which – such as HIV, SARS, MERS, H5N1 and more recently COVID-19 have or are able to have a global impact. Epidemics and pandemics not only threaten the health and lives of people who are exposed to viruses, both in poor and rich parts of the world, but they also disrupt social life and threaten the stability of states. What is more, the pandemics on the largest scale can contribute to economic downturns, which is something that can be seen in the case of the coronavirus pandemic. (McInnes, Rushton, 2011)

Health security as a concept was first described by the United Nations in 1994, in the document considered fundamental to the concept of human security. (United Nations Development Programme. Human Development Report, 1994) Since then, the term has been used to describe health problems that have a significant impact on human security. (cf: Scharoun et al., 2002, Aldis, 2008, Chiu et al., 2009) Other related terms emerged, referring to public health security, global health security, international health security and global public health security. (Fukuda-Parr, 2003)

Despite the widespread use of the term, its definition and scope were hardly elaborated. The domains of health and security overlap only under certain circumstances. The term is usually used to describe situations where the health risks faced by an individual are strong enough to have an impact on the security of others and result in cross-border effects. The most frequently identified threats include: (1) new, hardly-known diseases with pandemic potential; (2) already known and future communicable diseases; (3) deliberate use of chemical and biological materials to destroy human health or life; (4) violence, conflict and humanitarian crises; (5) environmental change and natural disasters; (6) accidents involving chemicals and radioactive threats; (7) food insecurity, poverty. (Chiu et al., 2009) The thematic areas of health security usually include: (1) protection against threats; (2) responding to new global circumstances and the resulting challenges; (3) involving new actors in preventing and combating health threats, including the military; (4) linking health issues to foreign policy and international relations. (Aldis, 2008:371-72) Each of them offers a considerable potential for securitisation.

It goes without saying that HIV/AIDS remains the most securitised health security issue. In subject literature, HIV is presented as a threat to security at a variety of levels, including human security (Fourie & Schonteich, 2001); national security (Ostergard, 2002); regional security (Gebretensae, 2004); international security (Singer, 2002); and global security. (Prins, 2004) It was also linked to food security (de Waal & Whiteside, 2003; Tireuov et al., 2018), as well as reproductive health security. (Pallikadavath & Stones 2003) Some scholars
point out that owing to the actions taken as a result of this process and their social acceptance, this issue is currently going through the stage of desecuritisation, returning to the state of normal policy.

Pandemics, infectious diseases and bioterrorism are indisputably recognised as a direct threat to national and global security worldwide. (Chan et al. 2008:498; Besenyő & Kármán 2020; Chehabeddine & Tvaronavičienė 2020).

In the 1990s, the awareness of the threat of infectious disease outbreaks and their potential impact on the health of citizens, as well as the economic and political stability of countries encouraged Western governments to develop responses to such threats, perceiving them in terms of national security (Davies 2008:298) rather than in medical terms, which were known earlier. As a result “health-related challenges now constitute a part of national security strategies, regularly appear on the agendas of meetings of leading economic powers, they affect bilateral and regional political relations between developed and developing countries and influence UN reform strategies. In spite of the fact that health has long been a concern of foreign policy, such importance is historically unprecedented.” (Fidler & Drager 2006:687) The past pandemics, including SARS, especially in the Asian countries, which were affected the most, were only a herald of the issues that the world had to face in the first quarter of 2020 – already at that point, the issue of the virus was reported in terms of battles and wars.

3. Research objective and methodology

This paper is intended to showcase the securitisation measures in the fight against the pandemic, implemented through messages posted in public space. For the purposes of this publication, the author collected more than 300 examples of such messages, published both in physical public spaces, as well as disseminated via the Internet on the territory of the Republic of Poland. They were prepared and distributed from March 15 to July 30, in other words both during the lockdown and during the easing of restrictions. They were written by representatives of local and central public administration, administrators of parts of public and common spaces, managers of venues, such as shopping malls, sports halls, airports, schools, museums, and theatres. The content of these messages was examined using the methodology of critical discourse analysis in terms of the presence of references to security/threat, the extraordinary nature of the measures, as well as the radical character of the new solutions. A hypothesis was made during the preparation of the research process: The messages posted in public space in connection with the COVID-19 pandemic constituted a part of the securitisation process of the pandemic.

3.1 Lockdown: legal basis, course and consequences.

In connection to the spread of the novel coronavirus, in March 2020 flights were suspended and borders were closed, while work in manufacturing plants, education and care for children in kindergartens, as well as schools and universities were stopped, the organisation of mass events (starting with family gatherings, through weddings, conferences, to concerts) was prohibited. Offices, cinemas, theatres, restaurants, cafés, hairdressing and beauty salons, swimming pools, playgrounds, gyms, beaches and parks, and even forests or shops, whose range of products was not considered necessary for survival were all closed, and freedom of movement was restricted. Most of the medical services other than those related to coronavirus treatment have been suspended, while passport and document-related services were suspended, along with football games, and the Olympic Games have been moved to the following year. The dates of several elections in Europe alone were postponed. In addition, exceptional safety and sanitation procedures were implemented, including introducing mandatory covering of face and mouth, mandatory hand disinfection prior to selected activities, as well as maintaining a social distance. Failure to comply with these new regulations was punishable with fines, again issued according to an emergency procedure, without the possibility to follow the standard appeals procedure. The so-called lockdown lasted from 6 weeks to more than 2 months, depending on the country, before the restrictions started being lifted one by one. Said restrictions were introduced by individual governments, based on the recommendations of international institutions, often without using the institution of the state of emergency, based on sanitary and epidemiological regulations (in the case of Poland), which in normal conditions should be unacceptable. However, we have to keep in mind that according to the theory of securitisation, by turning a given problem an issue of security, we change its functioning from “normal” to “extraordinary” and allow for non-standard, unconventional, exceptional actions and solutions.
Analysing the above, one could bring forth a hypothesis that the governments have virtually succeeded in closing their respective countries, and that the majority of the societies have accepted and complied with the restrictions imposed by them because of a successful securitisation process. National governments, supported by the authority and power of international organisations and medical experts (as well as the attitude of celebrities showing in social media how they wash their hands thoroughly and wear masks when they leave home) have convinced the public with an effective act of speech that conforming with these rules will ensure people’s safety and protect them against the risk of infection. Photos of people dying of COVID-19 in the countries with the highest incidence rate (Italy, Spain, the US, South American countries) have successfully convinced the rest. If it were not for the successful act of securitisation of the pandemic (a threat posed by the novel virus), acceptance of the restrictions resulting in an economic crisis, economic downturn, rising unemployment and inevitable changes in lifestyles would not have been so widespread and would not have required so few interventions by the uniformed services. Not only were temporary restrictions on human rights and civil liberties – such as limiting the freedom of movement, leaving the country, working or using the services of a cosmetologist – accepted by the general public, people also had no qualms about mind-boggling expenditure on both the direct fight against the pandemic (purchasing ventilators, masks, increasing expenditures on healthcare) and on mitigating its effects (the so-called anti-crisis shields supporting the economy). Moreover, following the lifting of the vast majority of the restrictions implemented in spring 2020, due to the ongoing potential threat posed by the coronavirus, albeit smaller than in spring, some of the new rules, in particular those concerning functioning in public spaces, are now kept in force indefinitely, which already shows the signs of riskification of the virus.

4. Results and discussion

4.1. Information from the start of the pandemic (15.03-30.04.2020)

The messages, which were published in the period of introduction of successive restrictions were mainly characterised by references to the security category, which was now under threat, thus explaining the reasons for the obligation to wear masks, limit of the number of people in closed spaces, as well as closure of entertainment venues. The collected material includes 118 messages from this period. The word BEZPIECZEŃSTWO (SAFETY) was used 60 times, PROSIMY (WE ASK) – 48 times, TROSKA (CARE) – 26 times, ZDROWIE (HEALTH) – 22, KORONAWIRUS (CORONA VIRUS) – 22, EPIDEMIA/EPIDEMICZNY (EPIDEMIC) – 22, ODLEGŁOŚĆ (DISTANCE) – 18, ZAGROŻENIE (THREAT) – 12, SYTUACJA (SITUATION) – 10, OGRANICZENIA (RESTRICTIONS) – 10, ŻYCIE (LIFE) – 10. Table 1 presents selected messages, representative for the entire group.

<table>
<thead>
<tr>
<th>Place Information</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dear Customers, For safety reasons,* a limited number of people may now remain in the hall at the same time. Please follow the instructions of the staff. Please maintain a safe social distance from other people of at least 1,5 metre. (1)</td>
<td>Dear Customers, For the sake of your safety, in connection with the epidemic situation, we would like to inform you that the maximum number of people who may remain in the store at the same time is limited to 3. When queuing at the checkout or in front of the store, please maintain a safe distance from others. Let us take care of our health together. (2)</td>
</tr>
<tr>
<td>Only 3 people (customers) are allowed in the store. We encourage you to pay by card. Please disinfect your hands and wear disposable gloves before entering the store. From 10 a.m. to 12 p.m., only persons over 65 years of age are allowed to shop. (3)</td>
<td>Due to the ongoing situation, we urge you to exercise common sense and do your shopping quickly, instead of telling us your life story. (4)</td>
</tr>
<tr>
<td>Please disinfect your hands after entering. (5)</td>
<td>For the sake of your health and safety, and with regard to the laws and regulations in force, we kindly ask you to follow the following rules. (7)</td>
</tr>
</tbody>
</table>

Table 1. A list of sample messages from the first period of the pandemic (repeated messages or information differing from the presented information to a minimal extent were omitted)

* Emphasis added by the author, unless noted otherwise.
<table>
<thead>
<tr>
<th>Location</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>bakeries</td>
<td>Dear Customers, The Regulation of the Council of Ministers on the establishment of certain restrictions, orders and prohibitions in connection with the occurrence of a state of epidemic has been introduced in order to protect our lives and health using the means that are accessible to all of us. Therefore we kindly ask for your solidarity and making sure that we all follow the new rules in order to ensure maximum safety. (8) We recommend payment by card. Currently the safest way to pay. (9) For the sake of the safety of our customers and staff, we introduced the necessary preventive measures: the maximum number of customers shopping at any time was limited to 5. We recommend that you maintain a safe distance in the store. We count on your understanding, and we are sorry for the inconvenience. (10) Therefore, we kindly ask you to follow these rules while shopping (...). With mutual kindness and understanding, it will be easier for us to cope with such difficult times. (11) For obvious reasons, please enter the store one by one! Persons travelling abroad within the last three months, persons living outside Poznań, medical staff and infected persons are kindly asked to refrain from shopping. Please wear masks and disposable gloves. Please don’t talk to the staff. (12) DEAR CUSTOMERS! FOR THE SAKE OF YOUR HEALTH AND SAFETY, THE GOODS WERE PACKAGED, PLEASE DON’T TEAR THE PACKAGING. (13)</td>
</tr>
<tr>
<td>supermarkets and discount stores</td>
<td>For the sake of our common health and safety, we have introduced temporary restriction concerning the maximum number of customers. The maximum number of people in the store is limited to 105. The maximum number of people per checkout line is 3. (14) From 10 a.m. to 12 p.m., only persons over 65 years of age are allowed to shop. (15) For the sake of our medical staff, doctors and medical workers will be served out of order at priority checkout lines. (16) Due to the reasons of hygiene and safety, please do not put children in shopping carts. (17) Dear Customers, due to changes concerning the restrictions on large group of people, the store may now accommodate up to 15 customers at the same time. This is for the sake of your and our health. Please take a shopping cart before entering the store due to the lack of baskets in the sales hall. (18) Shopping prudently can protect our health. Let’s maintain a safe distance between each other. (19) In accordance with current regulations in force, please maintain a safe distance from the other person and wear disposable gloves before entering the store. We reserve the right to limit the number of customers in the store. Please keep the hours reserved for seniors’ shopping in mind. (20)</td>
</tr>
<tr>
<td>pharmacies</td>
<td>Dear Patients, Please maintain a safe distance while waiting in line. (21) Dear Patients, As a preventive measure, we would like to inform you that a maximum of 2 patients can remain in the pharmacy at the same time. (22) Dear Patient, please pay by card. (23) From 10 a.m. to 12 p.m., only persons over 65 years of age are allowed to shop. (24)</td>
</tr>
<tr>
<td>beauty salon</td>
<td>Due to the threat posed by the epidemic, the salon is closed until further notice. (25)</td>
</tr>
<tr>
<td>dentist</td>
<td>FOR THE SAKE OF YOUR HEALTH, THE DENTIST’S OFFICE IS CLOSED UNTIL 31 MARCH. PLEASE LEAVE A TEXT MESSAGE – WE WILL CONTACT YOU IF POSSIBLE. PLEASE STAY HOME! (phone number) (26)</td>
</tr>
<tr>
<td>doctors’s office</td>
<td>Due to the current epidemiological situation, in order to ensure safety of our patients, doctor’s visits are now exclusively remote. (27)</td>
</tr>
<tr>
<td>florist</td>
<td>Due to the epidemiological situation and for the sake of the health of you and our staff, please keep a safe distance. We also encourage you to place orders by phone and take advantage of our delivery services to deliver your purchase to your home (courier is available from 5 p.m. to 10 p.m.). (28)</td>
</tr>
<tr>
<td>Roman Catholic Church</td>
<td>All the faithful are exempt from participation from Sunday Mass – by not participating, they do not commit a grave sin. WE URGE YOU TO STAY HOME! Masses on Sundays and weekdays will be celebrated according to the standard schedule and broadcast through our website. (31) A maximum of 50 people can attend all Masses, including the clergy, the altar service and the participants. The participation of the faithful in the Masses has been limited to the people who asked to celebrate the Mass in a specific intention. Funerals may be attended only by the close family of the deceased. All services are cancelled. All formation meetings of parish groups are cancelled. (32) The sign of peace during Mass may be given only by nodding our heads, Holy Communion can be received on hand. (33) The parish office is closed. In important matters, please contact with the duty priest. (34) We encourage family prayer, in particular spiritual communication in the prayer of the rosary (for the end of the epidemic and for the sick, as well as for the medical and sanitary services). (35)</td>
</tr>
<tr>
<td>gas station</td>
<td>We would like to inform you that our pumps are cleaned and disinfected on an ongoing basis. However, if you would like your pump to be disinfected before you refuel, please inform our staff before using it. Disposable gloves are available from our cashiers. Have a nice day. (36) Please maintain a safe distance from the cashier and other customers. (37) Keep a safe distance from each other for the sake of our health. (38) The staff of our station is dedicated to making sure that you can buy fuel every day. (39)</td>
</tr>
</tbody>
</table>
Due to the threat of coronavirus, the Board of the ‘LOKATOR’ Housing Association would like to ask you to limit direct contacts with housing estate administration to the necessary minimum. (...) All matters should be reported by phone. (40)

Due to the threat of coronavirus, the ‘LOKATOR’ Housing Association would like to inform you that the planned third date of technical inspection of the gas installation has been cancelled. You will be informed about the next date in writing. (41)

Dear Residents, in view of the growing epidemiological threat and in order to ensure your safety, from now on until further notice, all correspondence (...) will be delivered directly to your mailboxes. (42)

Bearing in mind the welfare of the residents served by the ‘Locum’ Housing Association and the decision of the Polish government made in connection with the coronavirus epidemic, we inform that the community meetings planned after 11.03.2020 have been cancelled. We would also like to ask you to limit personal visits to our offices to a minimum. (43)

Attention! In order to ensure your safety and health, only one person should be using the lift at a time. Thank you! (44)

We would like to inform you that due to the state of coronavirus epidemic and out of concern for the safety of our customers and employees, water meter readings at our customers, who are not yet covered by the remote readout system will be suspended until further notice. (...) For the same reasons we suspend installation works on private properties. We are sorry for all inconvenience caused. (45)

ATTENTION! THE PLAYGROUND IS CLOSED! WE ARE SORRY. PUNISHABLE BY FINE OF 500 PLN. FAILURE TO COMPLY WITH THE CLOSURE OF THE PLAYGROUND CAN BE PUNISHED WITH A FINE OF 500 PLN. (46)

ATTENTION! Due to a grave situation connected with the coronavirus epidemic, the playground will remain closed until further notice, in order to ensure your safety. (47)

Attention! In view of the new safety rules, the place is closed due to COVID-19 quarantine. (48)

Following the decision of the Polish Government to extend the suspension of air services on account of the spread of SARS-CoV-2 coronavirus, flights scheduled on ... were cancelled. The safety and comfort of our passengers come first, which is why we have prepared a new ticket exchange procedure... (49)

LOTdodomu – the onboard service is limited for the safety of passengers and crews. The safety of our passengers and crews comes first, which is why we follow the guidelines published by the Chief Sanitary Inspectorate. After each flight the planes are disinfected, we have also introduced additional safety measures on board. (50)

Due to the risk of coronavirus, only the park area of the zoological garden is open to the public. The exhibition pavilions are closed. Due to the risk of coronavirus, the zoological garden will remain closed until further notice! (several days later) (51)

Due to coronavirus safety measures, all official matters handled by the secretariat should be dealt with by phone or e-mail. (54)

Source: own study, collected materials

Both the messages presented in the table, collected from various places in the public space, as well as those omitted due to their similarity to the presented ones, constitute elements of the pandemic securitisation processes. These include:

**Identifying and naming an existential threat.** In this case, it is a pandemic, epidemic, coronavirus, COVID-19, SARS-CoV-2 coronavirus, epidemic situation (sometimes referred to as epidemiological), the situation at hand, as well as government decision, restrictions introduced. The messages are more or less precise in naming the health emergency, which occurred all over the world in early 2020. Some information contain factual errors (there is no such thing as an epidemiological state, only an epidemic state), as well as simplifications (due to the coronavirus), but they almost always refer to the threat. In some cases, the authors also refer to decisions of the government, the authorities, the sanitary and epidemiological service as a justification for introducing extraordinary rules and restrictions. (for example 1, 7, 17, 19, 25, 27, 40, 41, 42, 45, 51)

**Indication for the need for (and applying) emergency measures.** The list of restrictions changes over time, depending on which restrictions have been introduced at the given time. These included: **barring the use of**
services (for example closed beauty salons, schools, kindergartens, entertainment venues, bans on going to the playgrounds and forests), restrictions concerning the use of existing possibilities (fewer customers in the store, hours dedicated to seniors, limiting cash payments), new rules concerning the use of services (the need to maintain social distance, disinfecting hands, using gloves when shopping, as well as wearing masks indoors). (for example 1, 3, 13, 53)

Calls for the acceptance of the general public (the addressees of the proposed restrictions) This objective is primarily served by the widespread emphasis on the fact that the restrictions are introduced for the sake of “your” safety (as in, the people affected by the restrictions), the safety of “both you and us” (which means customers, patients, users, passengers, as well as employees and staff members), sometimes it is referred to as common safety, while in other cases it is referred to in general terms, without specifying the addressee. In addition to safety, the restrictions also protect health and life, while limiting the spread of the virus. In individual cases, the authors refer to the responsibility of the recipients of the message. (4, 8, 11) They also tend to ask and recommend or appeal the readers to conform with the restrictions, rather than order it and threaten penalties, although this also happens. (46)

Can the securitisation of the pandemic be considered to be just in this case? We need to take a closer look at three key elements of the JST that distinguish it from the classic version, namely the honesty of the securitising actor’s intentions, actual action that occurs as a consequence of the act of speech and possibility to counteract the threat without using extraordinary measures.

It is difficult to suspect that the authors of these information, who were also hit by the emergency solutions introduced, would propose them without having the health of their customers and service users in mind. Even if their personal opinion concerning the strategy of fighting with the pandemic was different from that of political decision-makers (lockdown vs. the Swedish model) it was necessary to implement their top-down decisions. It can be assumed, however, that in the first days and weeks of the lockdown, when the knowledge of the mortality and infection rate of the virus was low, the fear of disease and perhaps death from a new mysterious epidemic from China was high. The communication of the Centre for Public Opinion Research (CBOS, 2020) of May 2020 indicated that for 59% of respondents the pandemic they experienced was something exceptional, different from other infectious diseases, something to be feared (62%) and eradicated with all available methods. 60% of the respondents believed the restrictions to be justified. The lack of knowledge about the development of the pandemic and its impact on Poland justified the extraordinary actions and made their implementation objectively justified at the time, even if some of them were deemed inappropriate in hindsight. Today, the debate in this area should not concern the intent of the securitisation actors themselves, but about the truthfulness of the premises on which they have relied and the conclusions they have drawn from them. However, it is difficult to indicate in a foreseeable time whether the coronavirus was or is indeed an objective existential threat, as Floyd requires us to do, and thus to establish whether the use of emergency measures was the right solution.

This also leads us to the verification of the third factor – the possibility of equally effective action without extraordinary measures. The strategies implemented in the vast majority of countries around the world were dominated by lockdown – an unprecedented restriction of activity in nearly all fields. However, the example of Sweden, which made the decision to go with recommendations, instead of restrictions, which were not as disruptive as in the case of other countries, and which did not introduce any extraordinary measures, shows that they might have not been necessary.

As far as the second factor is concerned – the action resulting from the securitisation – we may safely assume that this condition has been satisfied. The restrictions were mostly complied with (respondents to the survey cited above indicated that they were observed by more than 75% of their friends), and all the cases of breaking the restrictions were prosecuted and punished.

The securitisation of the pandemic in its initial stage was successful, partly owing to the securitisation messages present in the public space. We dealt with effectively painting the coronavirus pandemic as an existential threat that required extraordinary prevention and control measures that were mostly accepted by society. At
the current stage of research, as a result of the ongoing development of the epidemic, it is impossible to assess whether it was just or not.

4.2. Information from the period of easing the restrictions (01.05-31.07.2020)

With the end of April and the beginning of May, the easing of restrictions began. Shopping malls, beauty and hairdressing salons, gyms and fitness clubs, airlines, kindergartens and schools, as well as wedding halls were allowed to return to business. The easing was connected with some restrictions still in force (masks, social distancing, disinfection, etc.) and took place at a time when the number of cases was not decreasing. Hence, the communication concerning the new rules of functioning in the public space was to assure the general public of the creation of safe conditions for purchasing goods and services for customers, to make the public comply with the restrictions which remained in force, and in a broader perspective, to make the general public ready to accept long-term (and even irrevocable) changes in accessibility and behaviour in the public space caused by the risk of coronavirus infection, which should be considered not only in terms of securitisation, but also riskification.

169 messages were analysed in this part of the study. The word BEZPIECZEŃSTWO (SAFETY) was used 181 times, which means that there were messages with more than one occurrence (for example 58, 59). The word ZDROWIE (HEALTH) was used 41 times, TROSKA (CARE) – 38, ZASADY (RULES) – 33, DEZYNFEKCJA (DISINFECTION) – 31, ZACHOWANIE (BEHAVIOUR) – 24, DBAĆ (CARE)– 18, OSTROŻNOŚĆ (CAUTION) – 13, KORONAWIRUS (CORONA VIRUS) – 12, PROCEDURY (PROCEDURES) – 8, EPIDEMIA (EPIDEMIC) – 6, Table 2 presents selected messages, representative for the entire group

<table>
<thead>
<tr>
<th>Place</th>
<th>Information</th>
</tr>
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</table>
| Katowice Airport       | **Safe holidays – new procedures** at the airport. (55)  
Keep in mind that travel is now subject to the new sanitary rules. The health of our passengers remains our top priority! You can read more about the new security rules in the link... (56) |
| LOT Polish Airlines    | **Book future travels** with a LOT of safely! To meet the needs of our passengers, we have prepared a special flexible offer... At the same time, we would like to inform you that in order to ensure the safety of our passengers and crews, on the basis of guidelines issued by the Chief Sanitary Inspectorate and international aviation organisations, we have introduced the new rules concerning safe preparation for your flight: we recommend online check-in, remember to take your protective mask, please arrive at the airport with a suitable spare time, you may take piece of hand luggage on board the plane. All passengers can take advantage of free e-press. (57)  
We have introduced a number of rules ensuring #BezpiecznyLOT. On 1.06, we are going to relaunch domestic flights. In order to ensure the safety of our passengers and crews, on the basis of guidelines issued by the Chief Sanitary Inspectorate and international aviation organisations, we have introduced the new rules concerning safe preparation for your flight: we recommend online check-in, remember to take your protective mask, please arrive at the airport with a suitable spare time, you may take piece of hand luggage on board the plane. All passengers can take advantage of free e-press. (58)  
We have introduced a number of rules ensuring #BezpiecznyLOT (safetyFLIGHT - a play on the name of the airline - translator’s note) for the sake of our passengers’ safety and comfort during the entire journey – on and off the plane, as well as at the airport and before departure. Learn how to fly safely, efficiently and comfortably! (59) |
| WizzAir                | Many things have changed in the world over the past few months, but Wizz Air’s promise remains unchanged. We will continue to connect people with their loved ones at the lowest prices and in the safest possible way. (61)  
**Our enhanced safety and sanitation measures.** (62)  
We have increased the limit for non-cash payments to 25 euro, which will allow you to eat and shop on board without any fear. (63) |
| Travel agency          | Travelling is back! Starting on 2 July, you can book international flights to **safe EU countries**. (64) |
| Hotel                  | Our hotel allows you to safely relax with a view of the Karkonosze Mountains.  
#BezpiecznyWypoczynekKarkonoszach [#SafeRelaxationinKarkonosze] (65) |
| Museum                 | Out of concern for the public safety of the residents and guests visiting our region, taking into account the threat posed by the coronavirus, it is with regret that we have to inform you that we had to make a difficult but responsible decision to cancel this year’s Grunwald Days and the staging of the battle. (...) However, the **safety and health of Poles**, tourists and participants of the battle from Poland and the world is of the paramount importance for us. (66)  
We are not yet going back to normal, because the threat is still real – that is why we kindly ask you to be careful for our common good. (67) |
shopping malls

#bezpiecznezagakupy (#safeshopping) Let us take care of each other. We’ll win together. Cover your mouth and nose. Keep a safe distance. Use contactless payments. Wash your hands often. Disinfect. Sneeze and cough in your elbow. Download the ProteGO Safe application. (68)

We are ready for safe shopping. The comfort and safety of our Visitors and Employees is of utmost importance to us. See how to enjoy your shopping safely and what safeguards and precautions we have taken to ensure your health and safety. (69)

Be RESPONSIBLE. Keep a distance of at least 2 metres. 2 meters of responsibility. (70)

For our safety, we recommend using contactless payments by card, Apple Pay or BLIK. Please observe the safety measures in connection with the spread of coronavirus. (71)

Safe shopping in the shopping mall: wash your hands, wear gloves, wear a mask. (72)

Today, you will be able to shop again in your favourite stores, which is why you should catch up on the safety rules in force: keep a safe distance from other people (at least 2 metres), cover your nose and mouth, wear gloves, wash and disinfect your hands, avoid crowds, do not eat in the walking areas, leave an empty parking spot between your car and the next one. (73)

It’s nice to see you. Shop safely. Remember that by following sanitary recommendations, you protect your own health and take care of others. (74)

Safe shopping – now 30-70 percent off. Let’s be responsible and keep safety rules in mind. We wish you a successful and safe shopping experience. (75)

Be responsible, remember about your own safety and the safety of others, follow the recommendations. (76)

In order to ensure your safety, the common spaces will be constantly monitored for people with clear symptoms of illness. Persons with clear symptoms of illness, such as persistent cough, malaise and shortness of breath will not be let in. We kindly ask you to be careful and stay safe. (77)

We make every effort to make your visit a pleasant and, above all, safe experience. (78)

#BezpieczeństwowCentrum (#SafetyintheMall). Get ready for safe shopping. Let’s take care of each other’s health and safety together. Let’s be responsible and keep safety rules in mind. (80)

Safe shopping: take care of yourself and your loved ones every day. (81)

#RazemBezpieczni (#SafeTogether). Arkadia is open again. Keep the safety of yourselves and others in mind. (82)

If you want to visit us, keep the safety rules in mind to protect yourself and others: maintain a safe distance and cover your mouth and nose. (83)

Remember to follow the instructions posted in our venue if you come shopping. Please also follow the instructions of the mall’s staff and observe the restrictions in individual stores. (84)

In order to ensure safe shopping, special sanitary rules will apply on the premises of the shopping mall, and the ongoing disinfection procedures will continue to be applied throughout the venue. While maintaining safe distance, keep in mind that we are all in this together. (85)

In order to ensure your comfort and safety, we have introduced a number of measures that will help you protect your health, while ensuring a great shopping atmosphere. However, we need your help. Let’s remember safety rules and take care of each other. (86)

We are ready to welcome you back to our store. Of course, with safety rules in mind! (87)

In order to ensure our common safety, we have introduced more stringent hygiene measures. By following sanitary recommendations, you can protect your health and take care of others. (88)

STER. Close and safe. We constantly monitor the number of people in the shopping mall. We provide our customers with a disinfectant. The safety of shoppers is constantly monitored by our security staff. We disinfect shopping carts, railings and other elements of the passage on a regular basis. (89)

Read about the new safety rules and get ready for shopping! (90)

We are open for you again! Check our opening hours and safety recommendations – and feel free to come! (just stay 2 metres from each other). (91)

For the sake of health and safety of our customers and staff in the shopping mall, we have introduced all necessary safety measures. (92)

We strongly encourage you to keep your own and others’ safety in mind during our meetings. (93)
Starting today, the so-called hours for seniors are no longer applicable. We would like to remind you that since the beginning of the coronavirus epidemic, you can do your shopping with us quickly and safely. (94)

Order food products online and pick them up at the store. Safe and without waiting in lines. (95)

Safety rules in the perfume store: take care of our common safety - wear your mask and gloves. You may use the disinfectant waiting for you at the entrance. You are important to us – let’s make sure that we keep a safe distance of 2 metres from each other. You can make secure contactless payments. Your safety is our top priority! (96)

We missed you! Our stores are open again. Come for some safe shopping. For safety reasons, we are suspending the Textile Recycling Programme until further notice. (97)

We’ve made some changes in our store in order to take care of your safety. Help us to be safe together. Disinfect your hands. (98)

For your safety, you may enter the sales room with a basket only. If there are no baskets available, please wait for another customer to finish their shopping. (99)

We make every effort and maintain the highest standards of hygiene and safety so that shopping with us is safe. (100)

In order to ensure the safety of customers and employees, due to the ongoing epidemic threat, the 14-day exchange and refund programme is temporarily suspended. (101)

Due to the very rapid spread of coronavirus, please follow a few rules: keep a safe distance and pay by card if possible. We have taken all the necessary precautions, we also ask you to observe the rules. (102)

In every store, we take care of your safety and implement protective measures. We also ask you to keep a safe distance, wear a mask or cover your mouth and nose with an article of clothing. (103)

For the sake of safety and health, the store has been implementing a number of preventive measures – before starting shopping, customers are asked to disinfect their hands and put on disposable gloves, the maximum number of customers shopping at the same time is limited. There are screens installed at cash registers, shopping baskets and carts are disinfected on a regular basis. (104)

We would like to remind you that booking is only available by phone! Booking by entering the salon in person is not possible. The front door is closed. For safety reasons, only people who have previously booked an appointment by phone and have had a short epidemiological survey with us will be allowed to enter. We kindly ask for your understanding. Let’s take care of each other! (107)

We want to provide you with services at the highest level in this new, difficult reality. We are going to make every effort to make you feel safe and comfortable here. We assure you that all safety procedures will be strictly observed in our salon. (108)

In our salon you can feel safe – we take care of hygiene, use contactless payments, our bookings are spaced and the number of our customers is reduced. (109)

We only work using the best and safest equipment. (...) We use tools and products that ensure maximum hygiene – including disposable products – which increases your safety. (110)

26 May is Mother’s Day. If you think your safety is paramount, just stay home and we’ll deliver the gift to your Mum, following all WHO rules. Safe delivery across all of Poland. Quick and secure payment. (111)

We took care of the safety of our guests and our entire staff! The number of guests in the restaurant is limited. We removed tablecloths, flowers, candlesticks and spices from the tables. Tables are disinfected after each completed booking. We ensured a safe distance between the tables. There are disinfectants at the entrance, in the toilets and at the bar. We disinfect contact surfaces and payment terminals several times a day. Our team is equipped with protective masks and gloves. You are safe with us... We’ll be waiting for you! (112)

In Tychy Water Park, safety is a top priority. Let’s take care of our safety together. Important information: Due to the sanitary regulations in force and the guidelines of the Minister of Health, the facility can be used by a limited number of people. (113)

We try to think about everything, but the safety of our guests and their entertainment is our top priority, which is why for many weeks we have been implementing innovative procedures to face the new reality. Modern disinfecting drones, an application for ordering food in the park to avoid lines, ticket machines and mask dispensers, as well as continuous professional disinfection are just some of our ideas. You matter to us. (114)

Safe day camps in Bażantowo Sport are already on sale! Check the offer and our safety policy at... Sports day camps Safe summer in Bażantowo Sport. (115)
The messages published in the second analysed period were of a different nature than during the lockdown at the beginning of the epidemic. They are far less likely to mention threats. Coronavirus or epidemics are rare to show up in those. The key focus point concerns new rules, new safety principles that enable everybody to take care of their health and life (the latter appears much less frequently in order not to suggest that going shopping or visiting a swimming pool may be associated with the risk of death). What is important is that the new form of functioning in a public space is not presented as something extraordinary, exceptional, but simply a set of rules that are easy to follow (and which mostly have to be observed by the store, instead of the customer), which are the only thing standing between the reader of the message and “safe, carefree, comfortable, pleasant, successful” shopping or other activities, or – to put it in a different way – a return to normal life. The presented messages do not mention any deadlines, because there are no prospects indicating when we are going to be able to forgo social distancing or covering mouths and noses indoors. Therefore, going back to the key elements of the theory of securitisation, it can be pointed out that the messages analysed in this part do not mention any existential threat, because there is no need to do so – it was described earlier and is still in the memory of the recipients of the messages. It is also difficult to talk about extraordinary measures – there are additional requirements or restrictions, but they are not particularly burdensome, and have been in force for some time, which made them normalised. Of course, they are going to remain in the social sphere for a long time (maybe even forever, like the changes in passenger aviation after the attacks of 11 September), but they are not as severe as the earlier closure of schools, hairdressers and the ban on going to the forests. The only key aspect of securitisation, which can be seen in the messages are their references to social acceptance of the new rules (67, 77, 80, 86, 93, 101, 103, 105). This does not mean that we saw a desecuritisation. What we can see in the second phase of the epidemic (lifting restrictions and creating a “new normal”) is the transition to the process of riskification – there is a probability of a possibility of infection; however, it is more of a risk, rather than a serious threat, otherwise we would not be allowed to leave our homes only wearing a mask, which is why we have to implement plans that increase our resistance to risk and better manage the community through some non-standard (but not extraordinary) precautions and algorithms. If there is no return to increased

5. Conclusions

Pandemics – the most securitised area of health – are experiencing a second youth. After HIV/AIDS has returned to the category of normal policy, gaining due interest from the public and decision-makers, the new infectious threat has taken its place and is subject to similar securitisation processes as earlier acquired immunodeficiency syndrome. The securitisation and riskification processes identified in this paper, demonstrated on the basis of the analysis of communications in public spaces in different periods from March to July 2020, should be continued. The possible return of the restrictions may result in resecuritisation processes, although its success (taking into account social acceptance and other factors) may leave a lot to be desired. Hans Kluge, Director of WHO for Europe, said that the Old Continent will defeat the coronavirus when it learns to live with it, while applying
the necessary restrictions, in a way suggesting that COVID-19 will stay with us for longer, becoming a tamed or controlled risk. This is a more likely scenario, the success of which will need to be supported by riskification processes, as has been the case for almost 20 years with the restrictions in passenger aviation.

References


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EUROPEAN CENTRAL BANK: SECURITY, SUSTAINABLE AND EFFICIENT ASPECTS

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Abstract. The sustainable, adequate, security and efficient operation of a central bank depends on many internal and external factors. New trends, challenges, and threats (which are associated with European integration, globalization, etc.) affect the sustainable, efficient, and security operations of the ECB, which can lead to economic or financial crises. Therefore, in the current situation, the concept of the Central Bank’s activities, its legal status and the institution of monetary policy should change completely. The purpose of this research was as follows: 1) to determine economic and legal aspects of sustainable, efficient and safe operation of the ECB, with a reflection on innovation and analysis of modern de lege lata trends to ensure sustainable development of the EU, 2) to prepare conclusions and to identify positive and negative aspects that affect the activities of the Central Bank, 3) on the basis of scientific and practical de lege lata research and its application, to develop de lege ferenda to improve the activities of the European System of Central Banks, the European Central Bank, national central banks and other institutions of the European Union.

Keywords: European Central Bank; European System of Central Banks; security; sustainability; monetary policy; banking supervision; EBA; ESMA; ESFS


JEL Classifications: E52, G21, K22

1. Introduction to the problems, setting goals and objectives

Sustainable, adequate, security and efficient operations of the any bank, including Central Bank (CB) depends on many internal and external factors, such as: crises, pandemics, legal regulation, the main goal and objectives of the ECB, selection of principles, competencies, instruments and mechanisms of monetary policy, efficient work of the executive power (Sidak, 2010; Beretta, Cencini, 2020; Afanasyeva, Korovin, 2020; Konovalova, Kaplinska, 2020; Huy et al., 2020; Siddique et al., 2020), etc.

The purpose of this comprehensive scientific research is to determine the ex lege aspects of the security and efficient operation of the European Central Bank (ECB) with a focus on innovation and analysis of current trends

1 The paper is the output of a scientific project IGA no. 3/2020 - M „Innovations of Public Administration in the SR: Determination of Economic and Legal Aspects, with Reflecting European Countries Novelty Factors”. (Funder: VSEMvs IGA VSEMvs, i.e. School of Economics and Management in Public Administration).
de lege lata to ensure sustainable development of the European Union, as well as to prepare de lege ferenda proposals to improve the security and efficient operation of the central bank.

Based on the purpose, the authors have set the following objectives: 1) to investigate the legal status of the ECB; 2) to identify the quantitative primary objective of ECB and responsibility for its failure; 3) to analyze the structure of the main pillars of the EU Banking Union, 4) to characterize the architecture of the EU Banking Union and its bodies, 5) on the basis of this analysis (scientific knowledge and de lege lata), to prepare proposals for conclusions and develop de lege ferenda to improve the regulation of EU banking systems and EU member states.

2. Analysis of studies and publications

Some aspects of the organization and functioning of the EU Banking Union were studied by Zilioli Ch., Selmayr M., Tuma Z., Babis V., Ferran E., Wymeersch E., Zavvos G., Kaltsouni S., etc.

Zilioli Ch. and Selmayr M. analyzed the activity of the Central Bank in the monetary sphere (Zilioli - Selmayr 2001; Hans-Werner Sinn, et. al. 2004). Tuma Z. studied the structure and functioning of the Banking Union from a legal point of view and analyzed the influence of EU institutions on the development of the monetary and banking union (Tuma 2005).

E. Wymeersch analyzed the Banking Union in the context of achieving the main goals of the EU and the ESCB: ensuring sustainable, inclusive, and intellectual growth (Wymeersch, 2014). S. Kaltsouni and G. Zavvos analyzed in detail the first and second pillars of the EU Banking Union, as well as the cases and consequences of the creation of the basic rules of the EU in the banking sector (Zavvos – Kaltsouni 2014; Babis 2014). E. Ferran carried out a detailed analysis of the relationship between the institutions of the Banking Union of the European Union (Ferran 2014).

However, the following has not been carried out: 1) a comparative analysis of the organizational structure of the institution of banking supervision in the EU and EU countries, and the status of institutions that implement banking supervision; 2) analysis of the efficiency of the Central Bank, if the latter implements the two most important functions in cumulation: monetary (credit and financial) policy and banking supervision.

3. De lege lata analysis of the ECB activities in the EU

The main goal of the ECB is to maintain price stability. It should be noted that the Treaty on the Functioning of the European Union did not enshrine the terminus technicus “price stability”, therefore the Council of Governors (Presidents) of the ECB consolidated the quantitative definition of the concept of “price stability”.

It is defined as the annual growth of the harmonized consumer price index of the Eurosystem less than 2% in the medium term and, in this relation, introduces a new concept - the Harmonized Indices of Consumer Prices (HICP), which is the only key indicator of price stability in the Eurosystem as one of five convergence criteria. The formula for determining the price stability index for the member countries of the Eurosystem is the same for the correct and uniform price stability index identification (Sidak 2010, Čižo et. al. 2020).

The European Commission, the ECB, Eurostat, and the statistical offices of the Eurosystem members are working on drawing up the formula and its components, which are the basis for determining the level of consumer prices. The ECB’s primary goal is to maintain price stability over the medium term as monetary policy can affect price stability only with significant time lags. Monetary policy in market relations should be predictable and transparent, and in no case should it affect price stability in the short term (Zilioli - Selmayr 2001; Špaček 2018).

The authors emphasize that the European legislator has a unique positive approach to enshrine in law the legal status of the ECB, a clear and measurable goal of its activity, as well as to the responsibility of an independent entity - the ECB.
The main tasks of the ECB are: 1) to define, implement and manage the EU monetary policy; 2) to ensure price stability within the framework of the activities of the European System of Central Banks and the Eurosystem (Regulation (EU) č. 1024/2013); 3) to support the EU economic policy; 4) to provide the necessary information (opinions, certificates, etc.) to the competent authorities of the EU or EU member states (Regulation (EU) No 806/2014); 5) to advice competent authorities when adopting regulations at the EU level or at the level of EU member states; 6) to adopt regulations; 7) to ensure the proper and uninterrupted operation of payment systems; 8) to exercise banking supervision; 9) to determine interest rates, the value of the euro and carry out foreign exchange interventions; 10) to monitor financial risks: this includes risk assessment of investment from the ECB’s own funds and in the implementation of credit operations, etc. (Hans-Werner Sinn et. al. 2004, Tvaronavičienė 2019).

To achieve the goals and fulfill certain tasks, in accordance with the principle of building an open market economy with free and fair competition, the European Central Bank has the following powers (Regulation (EU) č. 1024/2013): 1) rule-making; 2) advisory; 3) implementation of monetary policy; 4) supervision of the activity of credit and financial institutions (Tuma 2005).

It should be noted that the ECB independently decides on the choice of tools, mechanisms, and methods to achieve the main goal and accomplish the objectives. When implementing monetary policy, the ECB’s activities are based on the following principles: 1) efficiency, 2) responsibility, 3) transparency and openness, 4) orientation towards medium-term goals 5) continuity, and 6) independence (Sidak 2010, Balkyte et. al. 2012).

European financial legislation established the principles of a single monetary policy: 1) in order to raise the level of transparency and confidence in the ECB’s policies - public availability and publicity of the objectives of the ECB and ESCB policies; 2) an opportunity for the public to assess the correctness and competence of the actions carried out by the ECB; 3) using all possible information and practice of the national central banks of the EU member states to achieve the goal of the ESCB; 4) monitoring of monetary instruments, etc. (Ferran 2014, Mamojka 2016).

We emphasize that the ECB is a part of the European system of central banks and the main entity of the banking union and the banking system of the European Union. It develops its activities in close cooperation with European and national institutions of the EU member states. Banking union is a unique union created by the EU (based on the EU Monetary Union) (Zilioli - Selmayr 2001).

4. Determination of sustainable, inclusive, and intelligent aspects of economic growth and ex lege of the main pillars of the “architecture” and functioning of the EU Banking Union

The structure of the EU economic and monetary union is based on an integrated financial structure (with the aim of creating a banking union). Currently, the 2 pillars of the created banking union are: a) unified supervision mechanism, and b) a unified crisis management mechanism. In the EU plans from 2012, 3 pillars were planned, the third being a European deposit insurance system (which is currently absent in the EU) (Wymeersch 2014, Kurilovka – Kordik 2017).

Ad. a) Single Supervisory Mechanism (SSM): The legal basis for the establishment of a single supervisory mechanism as one of the three main pillars of the Banking Union is Art. 114 and Paragraph 6 of Art. 127 of the Treaty on the Functioning of the European Union, which explicitly authorizes the European Central Bank to assign specific tasks related to the implementation of prudential policy. This element of the banking union was

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3 Currently, we include the following legislation of the European Union in the Single Rule Book: a) the EU legislative package – CRD4; b) Directive on deposit guarantee schemes; c) Bank Recovery and Resolution Directive. The Single Rule Book regulates the creation and operation of a single internal EU market, in accordance with par. 1 Art. 114 of the Treaty on the Functioning of the European Union (which must be correlated with the principle of maximum harmonization).
introduced through two legislative acts, namely the provision delegating control to the European Central Bank by the members of the eurozone and the provision establishing the European Banking Authority (EBA) (Hans-Werner Sinn et. al. 2004, Novotný 2018).

Ad. b) Single Resolution Mechanism (SRM). The purpose of the Single Resolution Mechanism (which was introduced into European law by Regulation No. 806/2014) is to prevent threats to the stability of the financial system that may arise as a result of improper provision of financial services, and for the protection of deposits. A very important part of this pillar is the mechanism itself and the tools with which these situations should be resolved, as well as the creation of a general fund for resolving crisis situations, which will be financed through mandatory contributions from the banking sector. Its volume should be at least 1% of the amount of covered deposits of all credit institutions in all member states of the banking union (Zavvos – Kaltsouni, 2014; Babis 2014).

5. Single Supervisory Mechanism (SSM): Prospects for the development of a sui generis institution of banking supervision in the EU

There are currently about 6,000 banks in the euro area. As all the important supervisory powers set out in Article 4 of Regulation No. 1022/2013, Regulation No. 1024/2013, Regulation No. 575/2013, Regulation No. 806/2014 are transferred to the European Central Bank and ultimately held accountable, the criterion was introduced to provide for direct supervision only of systemically important banks, and not of those that do not have a significant impact on the financial position of the euro area and can be better controlled at the national level (Ferran 2014). Currently, banks are supervised by the ECB: a) credit institutions that have been identified as significant (the ECB directly controls 115 large banks from member countries, which own almost 82% of all banking assets in the euro area); b) other credit institutions, at the choice of the ECB; as the European Central Bank is responsible for supervising banks throughout the euro area and for banks in other member states participating in a single mechanism (Wymeersch, 2014).

Given that the European Central Bank bears the main responsibility for monetary policy, it was necessary, from our point of view, that the organization and management of the Single Mechanism should be completely separated from other activities (implementation of monetary policy, currency issuance, regulation, etc.), so that it could efficiently exercise the powers given to it by the member states. For this purpose, an internal body - the Supervisory Board was created, which exercises all supervisory and, in part, regulatory powers that have been transferred to the European Central Bank (Siller, Cibak 2014).

In the context of the organization and efficient functioning of EU banking supervision, it should be further emphasized that each member state has its own banking supervision system. Each of these systems (models) has its own structure, uses certain methods and characteristic principles, adopting the processes of harmonization of European integration.

Analyzing the models (systems) of regulation and supervision of the EU countries, it can be argued that the central banks of France, Germany, Austria, Belgium, Denmark, Finland, Sweden, Poland, Hungary, etc. are not banking supervisors (they interact only with national supervisory authorities.

Several European countries (Italy, Greece, Portugal, Slovak Republic, Czech Republic, and others) have chosen a model in which the central bank exercises banking supervision.

In conclusion, it should be noted that cooperation between the independent and autonomous institutions (ECB, NCBs, EBA, ESMA, EIOPA, and the European independent supervisory authority) will provide an opportunity to build an efficient “system of checks and balances” in the banking and financial markets to ensure sustainable growth of the EU (Sidak 2010).
6. Economic and legal aspects of security operation of the ECB (and national central banks)

The aspects of security and efficient activity of the ECB (and national central banks) include (Ferran 2014, Tvaronavičiene 2019): 1) collegial decision-making by the Governing Council of the Eurosystem countries on the implementation of monetary policy (Srebalová et. al. 2020; Vozáryová 2013); 2) collegial decision-making by the Governing Council of the ECB on the supervision of credit institutions within the EU banking union; 3) proper, efficient and continuous operation of the TARGET2 ECB payment system (in accordance with the SEPA program); 4) compliance with liquidity requirements, the requirements of local engagement (Dulaková Jakúbeková 2010), the requirements and prohibitions of qualified participation, the requirements for equity capital, the international accounting standards; 5) proper hedging analysis; 6) ensuring a market approach to the amount of expenditures of credit and financial institutions (Dulaková Jakúbeková 2012); 7) truthful and objective financial information from credit and financial institutions for the proper inspection of financial markets; 8) efficient operation of the ECB reserves of national central banks (Šabiková et.al. 2018); 9) activities to support participants in the EU financial market in their efforts to identify risks and reduce their impact on climate change; 10) abolition of the monetary limit of liability of national central banks (set up to 2 million euros) for breach of cashless payments; 11) strictly adhere to the principles of independence of the central bank from the executive branch of power (Sidak 2010) carrying out a synergistic analysis of monetary policy, macroprudential policy and banking supervision; 13) increasing the interaction of monetary institutions with fiscal institutions, etc. (Siller, Cibák 2016).

7. The analysis of de lege lata of the European Financial Supervision System (ESFS) institutes’ work

The European Financial Supervision System (ESFS) was introduced in 2010. It consists of: a) European Systemic Risk Board (ESRB); b) 3 European Supervisory Authorities (ESA), namely: 1) European Banking Authority (EBA), 2) European Securities and Markets Authority (ESMA), 3) European Insurance and Occupational Pensions Authority (EIOPA).

The main objective of the European Financial Supervision System is to ensure consistent and adequate financial supervision in the EU. The European Financial Supervision System includes:

1) macroprudential supervision controls the financial system. Its main purpose is to prevent risks to the financial system. The European Systemic Risk Board (ESRB) is responsible for macroprudential supervision of the financial system in the EU. The ESRB is an independent institution (from the ECB), but the ECB President is also the chairman of ESRB. The ESRB brings together representatives of national central banks of EU countries and the chairmen of three European supervisory authorities. The main tasks of the ESRB are: collecting and analyzing relevant information to identify systemic risks, issuing warnings if systemic risks are considered significant, issuing recommendations for actions in response to identified risks, monitoring the implementation of warnings and recommendations, cooperating and coordinating with ESAs and international forums (Sidak 2010).

2) microprudential supervision means the ESA supervision of individual credit and financial institutions. Each of the 3 European supervisory authorities (EBA, ESMA, EIOPA) is an independent European institution (legal entity). The ESA also ensures the harmonization of financial supervision in the EU by developing a single set of rules that establish prudential standards for individual institutions. As part of their mandate, they also assess risks and weaknesses in the financial sector (Babí 2014, Uramová et. al. 2016).

8. Recent Developments in the EU Supervision Institute

On March 21, 2019, the European Parliament and member states agreed on the main elements European supervision reform in the areas of EU financial markets. The agreement, which is an important step towards a fully functioning capital-markets union, strengthens the role and competence of European supervisors, including the European Banking Authority, by strengthening its role in the fight against money laundering. On 18 December
2019, the European Parliament and Council adopted Regulation (EU) 2019/2175 which addresses the authority, management, and financing of the ESAs. On that day, the legislature also improved the institutions SolvencyII, MiFIDII and the fight against money laundering with Directive (EU) 2019/2177 (which extends the powers of EIOPA, EBA and ESMA).

9. Conclusions

Based on the *de lege lata* analysis and the results of scientific research of the EU banking union, in order to optimize the organization and activities of the EU banking union to ensure sustainable, intelligent and inclusive development with reflection on current challenges and threats, we can draw the following conclusions: The EU banking union has a significant flaw in the organization of the system (which can lead to far-reaching economic consequences) - the ECB performs two functions important for the financial system: 1) the creation and implementation of the EU monetary policy and 2) banking supervision of banks (credit institutions) in the euro area. This approach to the “architecture” of the banking union does not correlate with the basic principles of economic theory and practice of organizing banking systems in a number of developed countries, which, in our opinion, is counterproductive in the context of achieving the main goal of the European System of Central Banks - ensuring price stability (consumer prices). Based on the results of the scientific analysis, we propose to introduce *de lege ferenda* - to change the system of organizing banking supervision in the EU and create a sui generis independent public institution in the EU, which will provide supervision of large credit and financial institutions in the EU.

We also propose to make additions and changes to *de lege lata* in the EU and its members (developed *de lege ferenda*): 1) implement the principles of monetary policy in national legislation, according to the ECB’s experience: a) efficiency; b) responsibility; c) transparency and openness; d) orientation towards medium-term goals; e) continuity; f) independence; 2) restrictions on the rights and freedoms of financial market entities should be implemented in accordance with the EU principles: proportionality, reasonable expectations, legal certainty and healthy economic competition.

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Abstract. Information technology (IT) initiates innovation in the shopping and entertainment center (SEC). To take advantage of Industry 4.0 requires a digital strategy and its evaluation system. We offer a conceptual framework that will support TS Property management in implementing a digital strategy, thereby allowing updating its business model. This document describes in detail a model for assessing the impact of a digital strategy on management efficiency based on two SECs in the Republic of Kazakhstan, using TS Online and SmartPlaza control systems, the system architecture and a decision-making model for SEC stakeholders. The centralized control system TS Online SEC is designed to coordinate all enterprise systems, management subsystems and BI analytics. The main components of a central control system are process control, synchronization, subsystem interactions and network system.

Key words: centralized control system; digital strategy; management efficiency.


JEL: C34, M15, Z21

1. Introduction

Scientific research shows that coordination of business and IT is a key element of successful digital projects (Frank, 2014; Mussapirov et al, 2019; Dyachenko et al, 2018; Jarmusevica et al., 2019; Petrova et al, 2018; Štefko et al., 2019; Baklanova et al. 2020; Barmuta et al., 2020; Aujirapongpan et al., 2020; Vasilev et al., 2020). There is no doubt that digital infrastructures, properly implemented, can play a critical role in promoting customer engagement, increasing company loyalty and economic competitiveness.

The purpose of this study is to understand the role of a digital strategy using IT solutions based on the TS Online centralized control system and the SmartPlaza application in building business processes of TS Property management company, increasing sales through in-depth marketing analysis of the SEC stakeholders, document flow, making tactical and operational decisions in the management of SEC. We identified the main tasks as the following: to study how the synchronization of TS Online and SmartPlaza systems helps to increase the efficiency of SEC management, improves omnichannel marketing, as well as to study how the use of loyalty programs by means of the SmartPlaza mobile application leads to increased sales.

Due to insufficient constant pressure on profitability, TS Property management focused on actively tracking its data on rental payments, customer relationship system and document flow, and marketing of the SEC in order to improve sales by effectively targeting customer acquisition (Figure 1).
Overall, this study develops the theory of how to increase efficacy from digital technologies, all other marketing opportunities being equal, and how to facilitate the practice of dynamic decision making, based on qualitative analysis of the Smart Plaza application. The next chapter of the document summarizes the relevant works of digital strategies, co-active SDL creation, and customer engagement in decision making. Next, we describe the conceptual basis of the digital strategy, on the basis of which statistical calculations and the increase in the D-indicator of income of TS Property management per 1 purchase in the SEC are presented. We set out the methodology of this research - a qualitative analysis of Smart Plaza selected from two SEC. It concludes with a summary of the findings, including a discussion of the effects on the practice of increasing revenue from digital activities of SEC management.

2. Digital strategy of TS Property management

Digital strategies are a key element in IT management, while maturity models are needed to control the progress of digital strategies, they are used to assess situations as they are, to guide improvement attempts and monitor progress (Korachi, Bounabat, 2019). The digitalization strategy represents the integral intention of the company to optimize all actions associated with the digital transformation process to create competitive advantage through new technologies and methods for optimizing products, processes and business models (Pfenning & Eigner, 2020). The periodic introduction of new digital technologies and the expansion of the range of online offers and interactions with mobile devices significantly change the structure of the company; for many companies, this implies completely new operating processes (Hübner et al. 2015; Cant et al., 2020).

On the other hand, digitalization destroys economic rents, decomposes a profitable product or service, giving the consumer the freedom to buy only what he needs (Butkovskaya, Sumarokova, 2019; Lincenyi, Michal, 2020).

The relevance of applications for lease in the SEC moved beyond the focus on the construction of new spaces of TS Property management as a model for providing services to tenants. The new digital strategy highlighted the importance of the omnichannel sector of interaction with partners, modern relationship marketing with the integration of Industry 4.0 elements.

The SmartPlaza mobile application provides partners with a service that improves the quality and efficiency of marketing campaigns, strengthens brand and enables them to receive feedback from users, measure the index of determining consumer loyalty to a product or company, digitize all data and link offline sales with online services (omnichannel). Smart Plaza Market Place allows you to remove all burdens from entrepreneurs by...
providing convenient services and functions, which makes it possible to make shopping and leisure more comfortable, exciting and profitable, as well as online order booking and online pay tool. SmartPlaza uses iBeacon technology, which operates on the basis of Bluetooth beacons, to provide visitors with spot advertising, expertise technology of work with Bluetooth and Wi-Fi network to collect long-term contact data among app users and contact tracing of infected people (COVID19), as well as technological development in the areas of Power BI and machine learning. Market Place implies the development of the following main areas: 1) SP Data is a solution that allows automating the process of reconciliation of tenant sales data with turnover through Smart Plaza. Interaction with a partner at the level of receipts and balances of goods, dimensional grid, nomenclature characteristics (color, model). Consolidation of data in a single source, automatic distribution of data to accounting departments of related departments. Automation of analytics for the marketing department of both the partner and the company; 2) Integration, direction from a general-purpose “entry point” into the database, for the independent formation of content and balances from the partner’s side based on existing online stores; 3) A personal account, which involves manual processing of content by a partner, is provided for partners who do not have their own online stores. Full implementation of the cash register system for tenants.

3. Engagement and SDL in the SEC loyalty program

Engagement marketing is the company’s purposeful efforts to motivate, empower and measure customer voluntary contributions to its marketing functions beyond the primary economic operation (Harmeling et al., 2017). At the present stage, it is being transformed into transactional, relational, network-centric and service logic. Co-active service creation has received a lot of attention in Service Dominant Logic (SDL), which states that value is generated through the interaction between a service provider and a customer. Synchronous occurrences of events, unplanned permanent changes, move in parallel with SDL, since SDL implies a high level of uncertainty. The SEC loyalty program supports customer engagement level through enhanced intelligence technology (Matia et al., 1997), using GPS technology, IoT (things), image recognition and processing technology, machine learning techniques and semantic search, BigData (Feng et al., 2020), RFID technology that significantly expands the supply chain. In our observation, customer engagement of the SEC falls under the emergence paradigm concept (Van Kemenade, Hardjono, 2019). The key conclusion arising from the integral consideration of the SEC clients is the recognition of the client’s logic. Dominant customer logic emphasizes the customer’s primary role in the business. In contrast, customer engagement refers to the emotional attachment that customers experience during repetitive and ongoing interactions, come through satisfaction, loyalty, and admiration of the brand (Brodie et al., 2011). In this way, SDL is different from approaches oriented to vendor’s point of view. According to the SDL, the key moment is not of collecting data about the needs, wants and expectations of customers in relation to offers, but rather of understanding how customers as actors shape their lives and use offers according to their logic.

On the other hand, such tools as task-manager, CRM, which help to increase the efficiency of the SEC own staff. As an IT solution is critical to predicting CRM practices and their impact on customer satisfaction and retention (El-Gohary et al, 2013).

4. Expectations anticipation and Emergence paradigm

Ideal expectations are based in part on both experience and the client’s desire. Revealing customer preferences is the main goal of priority marketing and its approach differs from traditional segmentation. Expectation theory says that the perceived attractiveness of an option is determined by beliefs about the desirability of the expected outcome based on a consumer experience, and that consumers purposefully select alternatives to create value. There are ideal expectations, predictable and minimum expectations (Islamgaleyev, 2020).

Emergence theory is a useful theoretical base for understanding the motivation of client engagement in company-initiated social media activities (Van Kemenade, Hardjono, 2019). Emergence is seen as synchronous occurrences of events, unplanned permanent changes, move in parallel with SDL, since SDL implies a high level of uncertainty. The SEC strategy, within the wide differentiation of products, encourages customers to make constant changes in decisions of purchasing and visits to SEC zones. In this regard, it is necessary to offer a compromise from outside, which we interpret as a Positive Compromise.
Nowadays, artificial intelligence in marketing tends to be implemented at the operational level, usually as one-off initiatives or events, and 24/7 customer service, hyper-personalized solutions, more convenient shopping or avoiding the wrong choice all contribute to a new dimension in areas of anticipation of events (Devang et al., 2019). Considering this, AI assumes an individual level of personalization, and mass and segment personalization is taking a back seat.

5. Making decisions by the SEC stakeholders.

This study addresses the design of the decision-making process for TS Property management stakeholders in the SEC, which simulate the impact of digital decisions through the process of anticipating expectations on emergence and motivating potential customers to take action. The model is based on an illustrated model of decision making in digital games (Czauderna, Budke, 2020), who in this study examined how digital strategies and control games facilitate the practice of dynamic decision making from an educational perspective. Anticipating expectations is an attempt to maintain awareness of these uncontrollable influences of emergence and to include such efforts that can be translated and managed by controlled expectations. Trust is critical to any long term business relationship. This is important wherever there is risk, uncertainty, because it reduces risk. In this aspect, customer actions fall under the unified theory of user acceptance of information technology (Venkatesh et.al., 2003), where the perceived usefulness and perceived ease of use, as well as trust in the service provider, influences over the decision making by the application users.

In Figure 2, we present the conceptual framework for the digital strategy of TS Property management, which is based on three main concepts: 1) Anticipation of expectations; 2) Digital strategy; 3) Initiated engagement loop. While anticipating expectations and digital mediation relate exclusively to the internal digital control system, that is, to the TS Online and SmartPlaza decision-making scheme, the initiated engagement loop simulates the circular interaction between SmartPlaza and the user, including the practice of taking actions by a user.

![Fig. 2. Conceptual basis of digital strategy of TS Property management.](source: compiled by the authors)
Expectation management should focus on all verticals and processes, operational, administrative and customer preference measurement through priority marketing.

In addition, we assume that the digital strategy expressed in TS Online tools and BI analytics through the SmartPlaza online application has a direct relationship with the number of participants. The application supports the company in obtaining a constant, timely and reliable data flow, offering analytics to the current needs of the SEC customers, reducing communication barriers. In connection with which we put forward the following hypothesis;

**H1:** The use of a digital strategy has a positive correlation with the number of participants - retail outlets of the SEC and increases the efficiency of management.

Actually, according to recent estimates, 66% to 84% of digital projects fail (Barry et.al, 2016), causing companies to incur project losses. Therefore, when formulating a digital strategy, it is necessary to identify the elements that need to be changed and aligned. In our case, a result of the growth in data volumes, the connection speed of all IT systems is a key factor in measuring customer sentiments and motivation for actions controlled by the SEC. Therefore, our second hypothesis is formulated as follows:

**H2:** The effectiveness of digital strategy has a positive correlation with the speed of IT systems work and increases customer engagement.

However, ensuring the involvement of the IT system is not always an easy task, the reasons for which companies suffer losses are different. For example, Nike + products include sensors that collect activity data and sync it via the web platform. Thus, clients can receive feedback and suggestions to improve their physical performance, as well as the opportunity to access a virtual community of friends, athletes and coaches (Correani et al., 2020). However, while the digital transformation project was promising, Nike withdraws Nike + products. Customer participation in SmartPlaza applications requires a certain level of information disclosure, monitoring online recommendations, hybrid content filtering, the ability to adapt to a trading environment in which a convenient setting of channel usage gives customers greater flexibility, possibly stimulating more active shopping behavior. In this regard, we assume that:

**H3:** The number of downloads has a positive correlation with the cost of maintaining a centralized IT solution system.

**H4:** The number of downloads has a significant correlation with the response time and the quality of services provided.

6. Methodology

The prepared model is based on the data of the annual analysis of the performance indicators of the employees of the TS Property management group of companies of two large SEC- Dostyk Plaza, Shymkent Plaza, data from 420 employees of the administrative staff, including 15 employees who take part in the management of the group of companies and data from 150 retail outlets located on the territory of two SEC, 78,000 registrations in SmartPlaza and 155 (out of 242) partners of accrued bonuses for payment.

The collected data were analyzed using the Pearson correlation coefficient calculation as the main tool.

7. Results and Discussion

The analysis revealed the following correlations:

Dij- The indicator of income per purchase in the i-th outlet in the j-th
The SEC has a correlation with the frequency of use of the SmartPlaza IT solution system (Chj) with a coefficient of 0.896 and with the number of use by employees (DLj) with a coefficient of 0.354.

Chj - The frequency of use of the IT SmartPlaza system in the j-th SEC has a positive correlation with the number of participants - outlets (Nj) with a coefficient of 0.965, with the speed of the SmartPlaza IT solution work (Vj) with a coefficient of 0.989, with the number of operating services of a separate SEC (NSj) with a coefficient of 0.458 and a negative correlation with the SmartPlaza IT solution downtime (TOj) with a coefficient of 0.892. The number of downloads (DLj) showed a positive correlation with the costs of maintaining the SmartPlaza (SRj) IT solution system in thousand tenge with coefficient of 0.25 and a significant correlation with the coefficient of response time from operators per 1 question (TOj) * quality of services provided (average rating of the operator’s work) (AOj) = 0.9978, as well as with the number of participants - outlets (Nj) with a coefficient of 0.689. Thus, the model for assessing the impact of a digital strategy can be expressed by a system of equations:

\[
\Delta D_{ij} = 0.896 \Delta Ch_{j} + 0.354 \Delta DL_{j}
\]

\[
\Delta Ch_{j} = 0.965 \Delta N_{j} + 0.989\Delta V_{j} + 0.458 \Delta NS_{j} -0.892 \Delta TO_{j} (1)
\]

\[
\Delta DL_{j} = 0.25\Delta SR_{j} + 0.9978\Delta TO_{j} * \Delta AO_{j} + 0.689\Delta N_{j}.
\]

Here is the confirmation of this model using the consistent application of regression.

At the first stage, we will form the parameters for estimating the model of the number of downloads (DLj) based on the entire analyzed base in each of the SEC. Hereinafter, the calculations were carried out on the basis of our own data using MS Excel software using the built-in regression tool and with a confidence level of 95%. At the first stage, we analyzed a sample of the number of IT solutions used per month (DLj) based on the values of maintenance costs (SRj).

Table 1. Amounts of IT solution use

<table>
<thead>
<tr>
<th>j</th>
<th>Coefficients</th>
<th>The resulting dependent variable expression</th>
</tr>
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<tbody>
<tr>
<td>SEC 1</td>
<td>Y-intersection 184,25</td>
<td>DL1 = 184,25 +0,21458 SR1</td>
</tr>
<tr>
<td></td>
<td>SR1 0,21458</td>
<td></td>
</tr>
<tr>
<td>SEC 2</td>
<td>Y-intersection 81,35</td>
<td>DL2 = 81,35+0,2689 SR2</td>
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<tr>
<td></td>
<td>SR2 0,2689</td>
<td></td>
</tr>
<tr>
<td>SEC 3</td>
<td>Y-intersection 219,47</td>
<td>DL3= 219,47+0,2478SR3</td>
</tr>
<tr>
<td></td>
<td>SR3 0,2478</td>
<td></td>
</tr>
<tr>
<td>SEC 4</td>
<td>Y-intersection 98,45</td>
<td>DL4 = 98,45+0,2678SR4</td>
</tr>
<tr>
<td></td>
<td>SR4 0,2678</td>
<td></td>
</tr>
</tbody>
</table>

Source: compiled by the authors

In as much as the fact that the SEC are equivalent, we will form an average estimate for the final expression as:

\[
\Delta DL_{j} = 0.24977 \Delta SR_{j} + \alpha, (2)
\]

where \( \alpha \) is the indicator of the model estimation error, depending on other parameters of the model.

Next, we will replace the data on the maintenance of the IT solution with a constant calculated by the inverse formula 2, after which, from the model that appears, we will conduct a regression analysis for the aggregated response time from operators per 1 question per minute.
(TOj) * is quality of services provided (average score of the operator’s work), where the quality of services is estimated from - to 10 (AOj):

Table 2. Regression analysis for the response time from operators

<table>
<thead>
<tr>
<th>j</th>
<th>Coefficients</th>
<th>The resulting dependent variable expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEC 1</td>
<td>Y- intersection</td>
<td>SEC 1 Y- intersection</td>
</tr>
<tr>
<td></td>
<td>TO1*AO1</td>
<td>DL1 = 67,45+0,9978TO1*AO1</td>
</tr>
<tr>
<td>SEC 2</td>
<td>Y- intersection</td>
<td>SEC 2 Y- intersection</td>
</tr>
<tr>
<td></td>
<td>TO2*AO2</td>
<td>DL2 = 45,987+0,9785TO2*AO2</td>
</tr>
<tr>
<td>SEC 3</td>
<td>Y- intersection</td>
<td>SEC 3 Y- intersection</td>
</tr>
<tr>
<td></td>
<td>TO3*AO3</td>
<td>DL3 = 234,87+0,9862TO3*AO3</td>
</tr>
<tr>
<td>SEC 4</td>
<td>Y- intersection</td>
<td>SEC 4 Y- intersection</td>
</tr>
<tr>
<td></td>
<td>TO4*AO4</td>
<td>DL4 = 86,78+1,0015TO4*AO4</td>
</tr>
</tbody>
</table>

Source: compiled by the authors

In as much as the fact that the SECs are equivalent, we will form an average estimate for the final expression as:

\[ \Delta DL_j = 0.24977 \Delta SR_j + 0.991075 \Delta TO_j * \Delta AO_j + \beta. (3) \]

where \( \beta \) is the indicator of the model estimation error, depending on other parameters of the model - \( N_j \). Then, after replacing the expressions of the indicators \( SR_j \) and \( \Delta TO_j * \Delta AO_j \) in the data used to calculate the values according to expressions 2 and 3, we will reveal the dependence of the number of downloads on the number of outlets (\( N_j \)).

Table 3. Dependence of the number of downloads on the number of outlets

<table>
<thead>
<tr>
<th>j</th>
<th>Coefficients</th>
<th>The resulting dependent variable expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEC 1</td>
<td>Y- intersection</td>
<td>SEC 1 Y- intersection</td>
</tr>
<tr>
<td></td>
<td>N1</td>
<td>DL1 = 162,873+0,754 N1</td>
</tr>
<tr>
<td>SEC 2</td>
<td>Y- intersection</td>
<td>SEC 2 Y- intersection</td>
</tr>
<tr>
<td></td>
<td>N2</td>
<td>DL2 = 23,114+0,737 N2</td>
</tr>
<tr>
<td>SEC 3</td>
<td>Y- intersection</td>
<td>SEC 3 Y- intersection</td>
</tr>
<tr>
<td></td>
<td>N3</td>
<td>DL3 = 75,163+0,6545 N3</td>
</tr>
<tr>
<td>SEC 4</td>
<td>Y- intersection</td>
<td>SEC 4 Y- intersection</td>
</tr>
<tr>
<td></td>
<td>N4</td>
<td>DL4 = 34,6112+0,6537 T N4</td>
</tr>
</tbody>
</table>

Source: compiled by the authors

In as much as the fact that the SECs are equivalent, we will form an average estimate for the final expression as:

\[ \Delta DL_j = 0.24977 \Delta SR_j + 0.991075 \Delta TO_j * \Delta AO_j + 0.6998 \Delta N_j. (4) \]

Thus, we obtain a refined model for assessing the amount of use to form a model for assessing the impact of a digital strategy:

\[ \Delta Ch_j = 0.9548 \Delta N_j + 0.9824 \Delta V_j + 0.4612 \Delta NS_j -0.8897 \Delta TO_j. (5) \]

In a similar way, the information on \( Ch_j \) was analyzed and refined - Frequency of use of the IT solution And the assessment of the final model: \( \Delta Dij = 0.912 \Delta Ch_j + 0.3521 \Delta DL_j \) (6)

where \( i \) is the number of the outlet for which the influence of these indicators was revealed, while averaging
over the median was carried out to reflect the formula, in order to obtain more reliable information, taking into account the number of outlets in the jm SEC due to the fact that some outlets are represented in several SECs.

Thus, the refined module will look like this:

$$\Delta D_{ij} = \Delta D_{ij} = 0.912 \Delta Ch_j + 0.3521 \Delta DL_j$$

$$\Delta Ch_j = \Delta Ch_j = 0.9548 \Delta N_j + 0.9824 \Delta V_j + 0.4612 \Delta NS_j - 0.8897 \Delta TO_j \quad (7)$$

$$\Delta DL_j = \Delta DL_j = 0.24977\Delta SR_j + 0.991075\Delta TO_j \ast \Delta AO_j + 0.6998\Delta N_j.$$  

At the same time, the initial model has no more than 5% average deviation in the coefficients, which allows us to say the reliability of the correlation indicators for assessing the impact of using an IT solution on the change in sales indicators.

Having calculated the data on the basis of 130 outlets before and after the implementation of the digital strategy, it was found that the growth in income over the same period was from 21 to 35% per year.

8. Conclusion

Thus, with the service model, when the income of the SEC is a fixed % of turnover, the implementation of a digital strategy and, on its basis, the developed and implemented IT solution has a growth effect on the following parameters of the SEC:

Reduced call center costs - 24%

The growth of regular customers (tenants) - 38%

At the same time, the resulting model makes it possible to predict that in order to increase the profitability of the SEC by 1% per month while maintaining the salary, the quality of service can be improved by 11%.

The implementation of this digital strategy TS Property management contributes to building long-term relationships with partners, provides an information basis for building loyalty programs and pricing policies of the company, reduces costs, which, in turn, with well-developed marketing strategies, will be aimed at increasing the market share and developing companies.

Conflict of interests

The authors do not declare the presence of any potential conflicts of interest.

References


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IMPACT OF GLOBALIZATION ON THE COOPERATION RELATED TO THE INVESTIGATION OF TRANSNATIONAL CRIMES

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Abstract. Globalization as a modern process is accelerating in the whole world, and this process contributes to both -progress and various negative phenomena in society. One of these negative phenomena is transnational criminality, which is increasingly impacting also Latvia. For that reason, this problem is investigated in this paper, in order to understand how the Latvian state may take advantage of the potential of globalization to reduce the consequences of this globalization, which become apparent in the form of transnational criminality. This paper analyses a number of concepts related to the research area, such as „globalization”, „transnational crime/ criminality” and others. The discussion about the impact of globalization on immigration and how it affects the transnational criminality is also one of the issues of his paper. The purpose of this paper is also to investigate the impact of globalization on drug-related crimes, as well as the issues of prevention of these crimes in relation to the Republic of Latvia under the influence of modern globalization. The paper explores the potential for international cooperation in the fight against transnational criminality, as well as deals with ways of further improvement of this transnational cooperation to make it more effective in reducing transnational criminality. The above mentioned paper could serve as a theoretical insight into various problems, which the law enforcement bodies have in practice, when they have to deal with different aspects of transnational criminality. This paper also explores the problems that may arise when the officers of these institutions have to cooperate internationally in detecting transnational organized crimes and, thereby, to learn from this cooperation, so that this international cooperation between the law enforcement institutions of Latvia and other countries will ensure more better results in the future.

Keywords: globalization; security measures; transnational crime/criminality; organized crime/criminality; international cooperation


JEL Classifications: K42, O10, P00

Additional disciplines: Law, Criminal Law

1. Introduction

Contemporary society has more options for opportunities and freedom than it had in the history before. This allows realization of progress, and globalization is the basis of this human progress. However the globalization could be important in the development of humanity; it is an eternally changing process, and these changes, although are mostly positive, can also bring some negative aspects. Globalization becomes apparent not only with its brilliance and progress, but also with its destructive nature, which includes environment pollution, stratification of society, redistribution of wealth and resources that largely fall into the hands of most wealthy people and richer countries, making the poorer part of the world even poorer. Globalization comes also with contamination and destruction of cultures, wars, as well as with transnational criminality. Transnational criminality may affect society and independent countries in many ways, but mostly it becomes apparent in smuggling, trafficking of people, weapons and drugs, in economic crimes and in such terrible crime as terrorist act. Almost every day, mass media informs of a certain new transnational crime worrying public. Sometimes,
concerns of public are well founded, sometimes not, but the fact that transnational criminality is alive and is a significant problem, remains unchanged. Latvia, as a member of the European Union and a country oriented towards the so-called “Western” policy, is a subject to the same transnational criminality problems as other democratic and developed countries of the world. However, it must be remembered that Latvia is an independent state, and it may not always blindly follow policies of other countries in the internal policy of the country, because each country has a unique history, culture and people, and this means that each country is completely different from any other in some way. Latvia must try to build criminal policy so that Latvian society and the state could take as much as possible from globalization. This would help to develop the Latvian state and to respect human rights and freedoms, and, at the same time, would not harm the security of the Latvian society and would not raise and even could reduce the level of criminality in the country.

The aim of the paper is to study the impact of globalization on transnational criminality and to search what kind of the problems related to preventing transnational criminality are topical in Latvia. The research object is transnational criminality in Latvia. The research methods used in the paper are: historical method, systemic method, analytical method, comparative method, statistical method. The sources used in the paper are normative legislative documentation, literature and Internet resources. The paper includes references to eight normative documents in total, five of which are laws of the Republic of Latvia, one is the Regulation of the Cabinet of Ministers of the Republic of Latvia, and another one is the Convention of the United Nations.

2. General characteristics of transnational criminality

It is problematically to define transnational criminality, and often the same concept of transnational criminality is used differently and with a completely other meaning. For that reason, all offences forming transnational criminality are often also called transnational crimes in the literature sources. Professor Valentina Liholaja specifies that the main threat object for transnational crimes is international law as a regulator of relations in the struggle against criminality; for that reason there are ground to talk about crimes against international law. Thus, the crimes against international law are intentionally or trough carelessness committed violations of norms of international criminal law of individuals. Such a crime has a transnational element that may be manifested in the object, character or result of the unlawful misdemeanours. (Liholaja, 2003, p.49; as well see Šišulák, 2017).

Within the framework of this paper, international criminality will be more discussed within the definition of transnational crimes, based on the Convention against Transnational Organized Crime (the Convention) of the United Nations (the UN), where the concept of transnational organized crime appears. Article 2 of the UNO Convention refers to the term “organized crime group”, which is defined as „a structured group of three or more persons, existing for a period of time and acting in concert with the aim of committing one or more serious crimes or offences established in accordance with this Convention, in order to obtain, directly or indirectly, a financial or other material benefit” (United Nations Convention, 2000, art. 2).

A similar concept called an “organized group” is also defined in Section 21 of the Criminal Law of the Republic of Latvia, which states that “an organised group is an association formed by more than two persons which has been created for the purpose of jointly committing one or several crimes and the participants of which in accordance with previous agreement have divided responsibilities. (Criminal Law, 1998, Sect. 21). Section 89 Paragraph One of the Criminal Law prescribe another form of participation – a criminal organization. It is a criminal organisation (association) which consists of at least five persons, for the purpose of committing especially serious crimes against humanity or peace, war crimes, of committing genocide or of committing especially serious crimes against the State. It is also an organized group with a larger number of participants with emphasis on the specific purpose of the activity – to commit the most serious crimes (Kraštinaš, 2014, pp. 261-265).
The Foreword of the UNO Convention states:

If crime crosses borders, so must law enforcement. If the rule of law is undermined not only in one country, but in many, then those who defend it cannot limit themselves to purely national means. If the enemies of progress and human rights seek to exploit the openness and opportunities of globalization for their purposes, then we must exploit those very same factors to defend human rights and defeat the forces of crime, corruption and trafficking in human beings. (United Nations Convention, 2000, the Foreword). In fact, these words give a brief account of close relation of transnational crime and globalization, manifests its problematic and shows possible solutions. Therefore, when making the general characterization of transnational crime, one should also taken into account that it is not and cannot be separated from globalization, making this transnational crime characterization even more complicated and more stratified. For that reason, transnational crime will not really be described in isolation from globalization in this paper, because the term “transnational crime/ criminality” is understood also as “international”, which means “such, that applies to a number of countries, nations, is common to a number of countries, nations.

Transnational criminality today is related to many and various organized criminal groupings, which are specific in its character and sort of activity, and with different level of dangerousness. Moreover, these groupings often are ideologically completely contradictory, which can lead to the conflict between these groupings, and this, in its turn, may destroy the peace of the whole society and increase the rate of criminal offences throughout the country or region. Transnational criminality may include such criminal organizations as organized criminal syndicates, drug cartels and terrorist groupings.

An organized criminal syndicate is an association formed by a number of organized criminal groupings with the aim to monopolize the right of committing criminal offences in a certain territory or to commit a specific offence (e.g. realisation and distribution of drugs in a certain area). This determination and delimitation of territory is also very dangerous activity and causes violent crimes, promoting struggle for influence spheres in the certain areas between various organized criminal syndicates.

Often among the society members, these organized criminal syndicates are considered to be synonymous with the term “mafia”, which is not really precise from the etymological point of view. Only criminal groupings whose members are Italians or Sicilians may be considered the Mafia. The conjunctive features of group members play a very important, symbolical role for the “Mafia” and other similar organized criminal syndicates, which separate them from other people and other criminal groups. Such features are ethnicity, race, religion, traditions, clothing, tattoos, or any other particular symbols of this group or organization. That is why, for example, the grouping Cosa Nostra of the Sicilian Mafia consists only of men of Sicilian origin who are Catholics, and they or their relatives are not permitted to work for law enforcement bodies such as the police or courts. People of other nationalities may not be members of Cosa Nostra, but they may cooperate with them. Besides, these members of the group must take an oath of loyalty and commit murder in the interest of the Mafia before being initiated into the organization as a member during an official confirmation ceremony. Moreover, these members of Cosa Nostra must follow the certain code of honour and secrecy, or Omerta. Other similar global and influential organized crime syndicates are Russian organized criminality or the Russian Mafia, sometimes referred to as Bratva – “brotherhood”, the Japanese grouping Yakuza, the Chinese Triads, Hells Angels from United States (the USA).

According to the data of the Federal Bureau of Investigation of the USA, there are approximately 33 150 active criminal groupings (Federal Bureau of Investigation, 2014, Gangs). Under the influence of globalization, Albanian, Ukrainian and Serbian organized crime syndicates have expanded in Europe in the last 20 years.

According to the data of Europol, there are more than 5000 transnational organized crime groups in the European Union (EU), which are under police investigation. These groupings consist of citizens of 180 various countries. 60% of all the persons associated with these criminal groups are citizens of EU Member States. It means that 40% of members of organized groups, involved in criminal offences in the territory of the EU Member States, are not citizens of EU Member States. Approximately 70% of these criminal groups are operating in at least three or more EU Member States (Europol, 2017, Organised crime groups). These data prove the transnational nature of crime, and EU with its open borders, democratic attitude, as well as free
market and free movement of economic is an expressly “fertile ground” for such transnational criminality, which spreading nowadays is substantially determined by globalization, as well as development of technology and mass media.

Under the influence of globalization, these organized criminal syndicates are operating not only in the countries of their national identity. For example, Italian and Sicilian organized crime groups opened their organization branch in the USA already at the end of the 19th century, when the great migration from Italy took place, triggered by a major economic and social decline in the country. For Cosa Nostra and other Italian mafia groups, this was a time when new “crime markets” were opened with minimal material resources. Is was the first time in the history of the world, when globalization and free migration between countries were used to create a transnational and stateless criminal organization that operates even across several continents. The two great world wars of the first half of the 20th century completely changed the world and, as a result, the lives of millions of people around the world also changed. Together with the constant migration of these people at this time, it was also for various criminal groups easier to go round, which often implemented their own order and their “laws” in various territories.

Contemporary organized criminality in Europe gained a new drive with the collapse of the Soviet Union and socialist regimes in the Eastern European countries. In the 1990s and early 21st century, millions of people emigrated from Eastern Europe to Western Europe, paving the way for Eastern European organized criminal groups to spread their activities in Western European countries, so today the largest and most dangerous organized criminal groups in Great Britain and Germany are Russian and Albanian syndicate groupings of organized crime. For example, in German imprisonment institutions, Russian is the first language of communication for more than ten percent of prisoners, and this number continues to grow, while less than five percent of German residents generally consider Russian as their first language (Report of the German Federal Police, 2018, Russian mafia spreading in Germany).

However, it is important to understand that the influx of people to a certain country means that this country will have more people and the more people here are, the quantitatively bigger becomes the number of criminals and criminal offences in the country, regardless of the people’s nationality or country of origin. That is why we should not just look at quantitative statistics but also have to understand causation and relative increase in criminal offences in comparison with the growth of population number. No doubt, immigration and open borders help organized crime syndicates to spread their activities in other countries, and to commit various crimes. However, the society, overrun by fear and insecurity, takes into consideration only the fact that immigrants break national laws and commit crimes, but not accepts the opportunity that the influx of immigrants could increases also the number of people who could also work, for example, in law enforcement institutions and reduce the number of crimes. In general, the relative number of immigrants in comparison with the number of the criminal offences in host countries depends mainly on the ability of a host country to integrate these immigrants into society and to ensure functioning of a country, as well as public security. If a country receives too many immigrants and is unable, because of economic or social reasons, to assimilate them into society, and to bring them under the national laws, then it is the country’s, not the immigrant’s fault.

In the current period, the relationship between corruption and structures of organized criminal groups, as well as their spheres of activity is becoming increasingly more visible, explicit and immediate around the world. This trend gives evidence of an increasing convergence of activities of private business, state sector and organized criminal structures. Due to globalization, organized crime is “internationally” transnational exactly because of the fact that a state itself is weak and corrupted from the inside. Therefore, it is easier for such transnational criminal groups to operate in this country; and exactly such corrupt countries are chosen as the places where organized crime syndicates carry out their own illegal business.

Organized criminal structures may use and also are using in their corruptive relations such methods as blackmailing, bribery of political parties or its illegal financing during election campaigns in order to participate later in ensuring and control of activities, being within the influence sphere of these political parties, as well as in order to get into legal business sector, etc. (for example, one Japanese air operator paid 22.8 million yen
to a company for three and a half years and served as a cover-up structure for the organized crime grouping Yakuza. The formal reason for the payment was that the grouping provided uninterrupted and secure meetings to shareholders) (Vilks, 2000, p.154). Such advantages may also be created and consolidated through the legalization of illegally obtained financial funds, if they are not later invested into legal economics.

A huge branch of transnational criminality, worrying the public today, is terrorism, which is realized by transnational terrorist groups such as the Islamic State or ISIS. However, the aim of this paper is not intended to accurate definition of the terrorism concept. For example, according to a research of the University of Cambridge, more than 100 concepts of the words “terrorism” and “terrorist” are defined in literature (Greene, 2017, II. Defining Terrorism), for that reason we will use the terrorism definition of the UN: “Criminal acts intended or calculated to provoke a state of terror in the general public, a group of persons or particular persons for political purposes” (United Nations Declaration, 1994, in the Preface).

Political and economic instability in the Middle East, poverty of population, civil wars, available military equipment, religious disagreements, and hatred to the cultures of the United States and European countries – these factors have created a fertile ground for the growth and expansion of influence of the Islamic State. That is why, since 2014, the Islamic State has carried out so many military operations and terror acts not only in Syria, overtaken by the civil war, as well as in the politically unstable Iraq, but also in other countries in the Middle East, and even in so many European countries. That is why the Islamic State is considered as a global criminal, terrorist organization, because not only its activities, but also its history of origins is linked to globalization and global politics.

Exactly, the modernization of many spheres related to globalization has given significant impulsion to the rapid development of terrorism and resources at its disposal. Thirty years ago, the simultaneous communication on a global scale cost enough expensive. Today, the Internet is making communication globally accessible to anyone – it is easy to send a CV for a job application, a Christmas greeting card, or – an encoded message to one of many branches of terrorist organizations. New technologies offer opportunities both to improve and to destroy people’s safety and well-being, because all this depends on the use of these technologies and the aims of their users. However, important is the fact, that globalization makes difficult the supervision over distribution and use of these technologies. It is necessary to accentuate that it is not possible to mark out a specific arsenal of resources that would be available to transnational terrorist organizations and not available to others. It is difficult to predict how transnational terrorism will evolve in the future, when, for example, cyber terrorism will continue to develop. The spread of weapons of mass destruction and nuclear weapons, as well as their possible passing into hands of terrorists are also extremely important threats (Ignatāne, 2005, p. 140).

Today’s technical capabilities open the way for the spread of new forms and scale of propaganda. For example, the main weapon of the Islamic State is the Internet and social networks. This fact raises concerns and solution of security issues in a global scale, because terrorism has now been digitized and introduced in the 21st century. The Islamic State particularly stands out against the background of other “conservative” terrorist organizations, offering a solution – if you are unable to fight on the battlefield, do it in the Internet. This has increased the number of supporters of the Islamic State, because there is a job also for those who dislike the smell of blood. Surely, the video-clips show heads cut off, but it is already “just a movie.” The Islamic State uses another nuance of social networks – it bridges the gap between content creators and consumers. In television, for example, the distinction is sharp and obvious, because it is clear to everyone that it is difficult to get into the field of production. Social networks, in their turn, do not have such problems. This is very beneficial for the Islamic State, because it helps to attract and involve large masses as well as to decentralize the campaign work. Without a single hub to be cut out, the work of restriction becomes practically impossible - when one Twitter account is closed down, another arises instead. As long as these people will believe that the Islamic State will prevail, they will seek to prove their usefulness (Kūlis, 2018, p. 373).

In modern global world, a crime may be ordered and own illegal business may be implemented from anywhere in the world through the Internet, even in the comfort of the own home, without meeting other figures involved in the crime. The Internet also makes much easier to operate and profit on the so-called “Black Market”.
revenue of the Black Market in 2017, according to rough calculations of the HavocScope database, is estimated at 1.81 trillion US dollars (HavocScope, Global Black Market Information, 2017, World Black Market Value). To understand how impressive this income is, it must be said, that according to information from the World Bank’s website, only two countries in the world - the USA and China – had budget revenue more than USD 1.81 trillion in 2017 (The World Bank, 2019, Public sphere).

3. International cooperation in the detection of transnational crimes

As criminality is nowadays a transnational phenomenon, the only truly effective way to combat this transnational crime and to detect criminal offences and persons guilty thereof, is to cooperate among law enforcement bodies of various countries and to establish international cooperation. If criminal groups of different countries are able to cooperate in committing crimes, there is no justification to the fact that law enforcement institutions in various countries are unable to detect a crime and punish the guilty persons only because that they cannot understand each other and cooperate effectively in detecting crimes. Human security and struggle against criminality should be a priority over any political or ideological disagreement between countries. Such national disagreements are used by criminal groups to commit their crimes because they rely on not using all available national material, human and informative resources to detect these crimes which have cross-border nature. Today however, the situation is improving significantly, because the cross-border cooperation becomes more intensive and more and more resources are being invested to combat transnational criminality; as well as global institutions are established with the aim to restrict criminality and detect transnational crimes.

Already in the 1950s of the 20 century, countries began to unite into international communities. As a result, the need for harmonization of law had arisen, and still remains topical today, in order to deal jointly with the challenges resulted from the different legal systems and their application. At present, the criminal and criminal procedural regulation is significantly impacted by the development of the European Union Law, which is aimed at harmonization of the law and promotion of the cross-border cooperation. The creation of a special coordinating body in 1975 has been accepted as the beginning of the development of criminal policy for the future European Union. This is the so-called TREVI Group, composed of the Ministers of the Interior of the European Community, who met twice a year. The group derives its name from the French abbreviation - terrorism, radicalism, extremism and international violence.

The Maastricht Treaty strengthened the existing ties in cooperation of the police and court institutions in criminal matters. With the entry into force of the Treaty of Lisbon, certain areas of the third pillar (Justice and Home Affairs) have moved to the competence of the Community - visa and refugee policy, the right of entry and residence for third-country nationals, as well as judicial cooperation in civil matters. Pursuant to Article 29 (2) of the Treaty on European Union, the below mentioned objects of the sphere of combating and prevention of crime remain still under the Third Pillar of the European Union:

• cooperation among the police, customs and other authorities of Member States, which may take place directly or through the European Police Office (Europol), in accordance with Articles 30 and 32 of the Treaty on European Union;
• cooperation among the justice authorities of the Member States in the field of enforcement of rulings, speeding-up of court proceedings, prevention and elimination of competence conflicts, as well as extradition of criminals;
• approximation of the criminal judicial norms of the Member States through the gradual carrying out of measures to determine the minimum features of corpus delicti for criminal actions in the sphere of organized crime, terrorism and illegal drug trafficking (Voins, 2015, p. 82).

In the circumstances of liberalization of the international system, the harmonization of interests among countries plays a crucial role. It is in the interest of the countries to shape jointly the world order so that they may predict each other’s behaviour, gaining stability and justice. Agreements among the countries are a form of the legal consolidation of this order. The treaties of constitutional character include the Charter of the United
Nations, which defines the fundamental principles of the global legal order, the obligations and rights of countries. In 1991, Latvia restored its national independence and joined the UN in the same year, and, in 2004, it became a member of the European Union and NATO. In 2007, Latvia joined the Schengen Agreement on the Abolition of Internal Borders between EU Member States, which made Latvia’s eastern border the external border of the European Union. The responsibility for the security of this border against illegal migrants from Russia, Belarus and Asia falls upon the competence of the Latvian state. The issue of terrorism threats in Latvia and involvement of Latvia in international countermeasures against terrorism should also be evaluated from our country’s membership in these organizations, clearly understanding what contributions we may give and undertake to partners in a joint fight against terrorism, and what kind of support we may expect from the partners in the crisis. The conflicts in the Middle East and North Africa, which began in 2013 and are still in force, continue to affect European and international security, including the threat of terrorism and the spread of weapons of mass destruction. The European Union is also under increased pressure caused by the migration (Voins, 2015, p.13). ) .

Rendering of assistance to other countries has become nowadays a natural and integral part of the foreign policy, for that reason its necessity may no longer been justified in each case.

As the recent history of the 20th century (especially during the Cold War) shows, rendering of assistance was largely motivated by the egoistic reasons of rivalry and national security. The assistance was provided to the Allies with the aim of weakening the adversaries. Significant part of the assistance during the Cold War period was guided by similar considerations, which had a rather distant relationship with the care for the developing countries and their population. Thinking in categories of national security is rooted in realistic understanding about the nature of international relations. This approach emphasizes that countries do not have obligations to other countries, and that any country may do whatever it deems necessary. The countries have obligations only towards their own people, while helping others is a self-destructive and even dangerous activity, because it strengthens competitors and shifts the country from the primary goal – achieving of security, prosperity and mightiness. If the international system is an anarchic system of mutual aid, then it rewards selfish behaviour and care for itself and not for others.

International cooperation among police structural units of various countries is less politicized and is not so subjective than military cooperation among states, because the police struggle against such subjects that violate internal laws and harm the country also from the inside; and if a criminal group has committed crimes in several countries and harmed the national internal security, all these countries have a desire to punish these perpetrators, and, thereby, international cooperation becomes more objective and result-oriented than the struggle against an external enemy. However, political problems may arise also here. For example, there is a criminal group that commits robbery and blackmailing in two various countries, the only difference is that in one country these crimes are not committed so openly because of the significant work of law enforcement bodies and of the concentration in their hand of significant material, human and information resources for detection and legal punishment of these perpetrators committing crimes. However, in other country, these illegal activities are more openly committed and the perpetrators of these crimes have less fear that they will be caught, imprisoned and legally punished because they have corrupted a part of employees and officials of state institutions (for example, police officers, judges, politicians). In such a situation, it is not possible to execute effective cooperation between countries in the sphere of the police, because one country has a true desire to legally punish perpetrators, but it is quite not possible in the other country because of the corruption. Even if only a few officials are corrupt, they may misrepresent facts and transfer confidential information from case files to the perpetrators, which makes very difficult to charge with accusation and to punish guilty persons. Corruption is an internal problem of every country, but a criminal grouping, committing crimes in the territories of several countries, is a cross-border problem. However, as long as corruption in one country is an actual issue, unfortunately, it is much more difficult to deal with this cross-border problem that affects citizens of all involved countries. This only demonstrates clearly, how seriously the country should combat corruption, because corruption is often also related to more dangerous and serious criminal offences.
Nowadays, criminality is a transnational fact and gets over national borders, and, for that reason, organizations that combat crime often have to cooperate and to cross national borders. Interpol and Europol are the two largest, most influential and also most for Latvia binding organizations in combating of such criminality.

Interpol is a transnational organization of the criminal police consisting currently of 192 member countries. Interpol focuses in its activities mainly on the fight against and prevention of transnational crimes. Interpol’s tasks include the struggle against organized crime, smuggling/trafficking of arms and drugs, terrorism, human trafficking (including prostitution), theft of cars and art objects, economic and financial crimes – combating of money laundering, credit card forgery, international searching of law breakers and missing persons, extradition of criminals, crimes against the environment, as well other transnational criminal offences.

Latvia was a member of Interpol from 1931 to 1940, and re-joined Interpol on 4 November 1992 after regaining the independence, when the Interpol National Headquarters in the Republic of Latvia was established.

The Second Department of the International Cooperation Administration of the Main Office of the Criminal Police of the State Police of the Ministry of the Interior of the Republic of Latvia provides the functions of the Interpol National Central Bureaus, which main task is coordination and promotion of cooperation among the structural units of the Ministry of Interior and other law enforcement institutions with the member states of Interpol in the combat of transnational criminality. Interpol employees have the right to carry out investigative and operational activities in accordance with the law, individually or jointly with the structural units of the Ministry of the Interior, the prosecutor’s office and other authorities related to the fight against criminality.

Databases of extensive and reliable information with summarized data on wanted persons, cars, stolen art objects, and other useful information are at the disposable of the department, which enable to find wanted criminals, as well as contain information on internationally important offenders. Interpol uses an up-to-date telecommunications network that provides fast and secure information exchange (State Police of the Republic of Latvia, 2019, Interpol).

Europol is an international crime-fighting organization operating mainly within the borders of Member States of the European Union, because it has a status of an institution of the European Union; however, it also cooperates with other countries that are non-EU countries, as well as with other international organizations such as Interpol. The aim of Europol is to support and strengthen cooperation among competent authorities of Member States in preventing and combating organized criminality, terrorism and other forms of serious crime, which affect two or more Member States, as well as in providing strategic analysis and threat assessment. Regulation (EU) 2016/794 of the European Parliament and of the Council on the European Union Agency for Law Enforcement Cooperation (Europol) was introduced on 1 May 2017. According to the conception of this Regulation, ‘the competent authorities of the Member States’ means all police authorities and other law enforcement services existing in the Member States which are responsible under national law for preventing and combating criminal offences. The competent authorities shall also comprise other public authorities existing in the Member States which are responsible under national law for preventing and combating criminal offences in respect of which Europol is competent.

- Europol offers the following assistance in detecting and preventing crimes to Member States of the European Union:
  - collect, store, process, analyse and exchange information, including criminal intelligence;
  - provide investigative assistance in Member States, in particular, by transmitting all information useful for this purpose to the country’s units, as well as and by checking the Europol’s databases;
  - provide intelligence data and analytical support to Member States in connection with large scale, transnational or potential dangerous events;
  - prepare reports on threat assessments, strategic analyzes and general situation, including assessments of organized crime threats (OCTA);
- send proposals to the competent services of Member States with the aim to initiate, conduct or coordinate investigations in specified matters, as well as to set up joint investigation teams;
- exchange information and perform coordination operatively between Member States at any time of the day and night through the Europol’s Operative Control Centre (State Police of the Republic of Latvia, in 2019, Europol).

Another organization combating transnational criminality and being important exactly for Latvia is the Special group of the Council of the Baltic Sea States for combating organized crime (Baltic Sea Task Force on Organized Crime). This organization was created in Visby, Sweden on 4 May 1996, when the Heads of Government of eleven countries agreed to set up this organization. Member states of this organization are Denmark, Estonia, Finland, Germany, Iceland, Latvia, Lithuania, Norway, Poland, Russia, and Sweden. In 2017 and 2018, Latvia was exactly the presiding country of this organization. This organization is largely specialized in combating organized criminality in the Baltic Sea and on their seashores, but it also focuses on broader cooperation with other international organizations, such as Interpol, Europol, the European Union and the Council of Europe. Latvian Presidency in this organization ended on 30 November 2018. From 2019, Poland and Germany take over the presidency of this organization. Poland will be responsible for the organization of operational meetings, while Germany – for the strategic level of this organization.

In 2017, the European Parliament finally gave its consent to the establishment of the European Public Prosecutor’s Office (EPPO). The EPPO will be responsible for investigation of crimes against the budget of the European Union (EU) and for bringing to trial perpetrators. Currently, only law enforcement authorities of Member States may investigate and call to justice for crimes against the EU budget, for example, fraud or large-scale swindling out of cross-border VAT, however, its powers ends at the national border. The foundation of the EPPO will allow the rapid exchange of information, coordination of investigations, freezing of proceeds of crime, as well as implementation of cross-border detention. The Prosecutor’s Office works closely with the European Judicial Cooperation Unit (EUROJUST) and the European Anti-Fraud Office (OLAF), supplementing their work and ensuring successful recovery of funds.

Today, the threat caused by terrorism is increasing in European society; however, the extent to which the European Union intervenes or is responsible for terrorism, or its threats within the borders of its separate Member State is still far from being resolved. Despite the fact that in some cases, the European Union has led the fight against terrorism and has influenced national measures and legislation, it is important to recognize that the struggle against terrorism remains largely within the competence of each Member States, especially regarding the activities of its police and intelligence service. The European Union mainly aims to offer its additional value to the fight against terrorism, which goes beyond the efforts of Member States of the European Union. This means that more than 15 years after the 11 September terrorist attack in New York, the idea that the European Union plays an important role in the struggle against terrorism together with its Member States, is no more so disputable (Kaunert, 2019. The collective securitization of Terrorism in the European Union).

The large-scale cooperation among law enforcement bodies of various countries of the world in prevention of criminal offences and punishment of the guilty parties became apparent to Latvian population in January 2019, when one of the most debated topics in the Latvian media and society was the so-called Koknese Cocaine Case, when about 2 tonnes of cocaine were found and confiscated at a farm in Koknese Municipality. This large-scale and potentially highly public-dangerous crime, if drugs had been realized, was detected and prevented due to the State Police of the Republic of Latvia in cooperation with the Drug Enforcement Administration of the USA and the Police of Ecuador. So, the cooperation between three various countries - Latvia, the USA and Ecuador – took place, which have ended very successfully and no person was harmed during the detention operation. This cooperation, exchange of information and assistance between law enforcement bodies of three countries is evidence that the best way for the countries to effectively combat transnational crime is to do it through cooperation. From this positive example, the Latvian law enforcement authorities should also learn further to detect more and more criminal offences of such large scale, and, consequently, to punish these perpetrators and reduce criminality not only in Latvia, but also in the European Union and worldwide in total. However, it is necessary to admit that even
this positive example displays some negative moments of international cooperation, because the police of Ecuador have disclosed the names of the detainees and suspects of this operation, as well as the distribution of their role in this criminal offence. Ints Ķuzis, Chief of the State Police, told the media that “Ecuadorians police are behaving very incorrectly. They had no reason to make this statement, and it was not agreed with us. Ints Ķuzis also informed mass media that the State Police has expressed its dissatisfaction with the activities of the Ecuadorian law enforcement bodies in the public sphere, informing about the case. The Chief of the State Police informed that there were several partners during this operation, one of them – Ecuador. However, the information about the detention and details of the event were not a subject for disclosure in the mass media: “It was very incorrectly from the point of view of the international police cooperation” (Kuzis, 2019, Ecuadorians police were not allowed to make a statement about the Koknese case). Consequently, this case is a good example with positive and negative patterns for own experience and learning for Latvian law enforcement bodies in the field of international cooperation, which will help in the future to be more better prepared in disclosing such large crimes. Furthermore, it is to mention that this case is still under investigation, and international cooperation is continuing to prove guilty and punish guilty persons. Important is also the fact that “The State police announced an international manhunt of one Latvian citizen in the case of the Koknese cocaine cargo – Andrejs Grišins, Chief of Criminal Police, informed journalists on Wednesday, 13 February” (Grišins, 2019. A Latvian citizen is being searched internationally by the police in a cocaine load case). It means that international cooperation will be necessary to find this Latvian citizen suspected of this crime. Hereby, this is clear evidence that neither criminality, nor the activities of the police nowadays can have more purely national nature, affecting only one country. In opposite, such activities affect the whole region, the continent, or even have intercontinental nature as this cocaine case.

An important institution in the field of international criminal justice is the International Criminal Court (ICC) that sits in The Hague, The Netherlands and established in 2002. According to the website of this International Criminal Court, the main purpose of this Court is “to investigate and, where warranted, sue individuals charged with the gravest crimes of concern to the international community: genocide, war crimes, crimes against humanity and the crime of aggression.” (International Criminal Court, 2019. How the Court Works). This Court acquired the legal force according to the treaty which entered into force on 1 July 2002, and is known as the Rome Statute. At present, 123 countries have signed the Rome Statute. The basic functions, jurisdiction and structure of this Court are defined in this treaty. The Saeima (Parliament) of the Republic of Latvia adopted the ruling on joining the Treaty on Establishing the International Criminal Court, or the “Rome Statute” on 20 June 2002; and the Rome Statute itself came into force on 1 September 2002. Definitely, it is worth to note the fact that the International Criminal Court is now represented by a judge from Latvia – Anita Ušacka, who entered into this important position on 11 March 2003 (International Criminal Court, 2019, Judicial Divisions). The fact that Latvia has its representative in such important international criminal justice institution proves more and more that Latvia is progressing forward in the field of criminal justice. And in this field, Latvia is no longer only a trainee from the democratic countries of the world, but can already advise and take decisions on important issues of international criminal justice and criminal policy.

When looking at the relevance between transnational crime and globalization, it may almost always notice that this huge transnational global criminality is a huge business in its substance. Such a huge business, for the most part, cannot be exterminated without a huge investment of money, even if there skills and a huge motivation are involved, and the endeavours will not have success without an economic basis. There are many international organizations, in the framework of which countries cooperate economically and try also to deal with the challenges of globalization, as well as also combat transnational crime to a greater or lesser extent. However, there is one organization, which is often overlooked because it is not directly involved in combating criminality and consists of only seven Member States. (The European Union is defined currently as the eighth Member State), but it puts together 58% of the world economy (more than 70%, if the European Union is included). This organization is the Group of G7. At first glance, the G7, a club of like-minded industrialized countries, seems inappropriate to address the current challenges of anti-globalization. In spite of this, it has successfully solved the pressure of populism and protectionism that is directed against globalization, focusing on concerns related to environment, immigration, transnational crime, drugs, diseases and terrorism, thus demonstrating the social and environmental benefits of globalization. Searching how the world’s oldest unofficial top-level institution continues to respond to
growing anti-globalization, populism and protectionism through its actions and responsibilities of its members, it is possible to look into and see not only some problems, but also find some ideas and solutions, how globalization can help the world to reduce transnational crime. The G7, which appears to be a rather unclear club for most people, consisting of (mostly western) richest and most developed countries of the world, that are designed to promote global neo-liberalism, is a highly controversial evaluated organization. On the one hand, the much-criticized current Western dominant policy and its legitimacy in the world’s order are underscored. On the other hand, some of its characteristics actually explain the undeniable achievements of globalization by coordinating efforts in solving global challenges, both within and outside the G7, which have made it a key actor in global management (Oldani, 2019, The G7, Anti-Globalism and the Governance of Globalization).

Conclusions

Human immigration in today’s world, especially within the European Union, where, according the Schengen Agreement, the free movement of people is allowed, increases the number of criminal offences, possibility of the formation of criminal groups, as well as number of criminal offences of transnational nature. However, when we take into consideration not only quantitative parameters but also qualitative indicators of criminal offences (for example, the number of offences per 10000 inhabitants in the country), this qualitative indicator of criminal offences does not increase significantly on the whole, despite the fact that both, the number of immigrants and the total number of offences in the country are increasing.

The opportunities developed by globalization (free movement of people, development of the international economy, availability of modern technologies and means of communications worldwide) have promoted the base for easier implementation of terrorist acts and recruitment of people into terrorist organizations. In order to restrict such activities, countries have often limited the opportunities created by globalization (by closing their borders or strengthening their border security and checking immigrants; by following the activities of people on the web and controlling the cash flow that could provide money for such organizations). These requirements are based on security reasons, and sometimes they are justified, sometimes not. However, because of development of globalization, the number of terrorist incidents around the world is rising, so it is necessary to combat against this problem. Unfortunately, most countries have struggled against it ineffectively up to now; sometimes even more promoting the development of this problem.

In the age of growing globalization, the only truly effective way of combating transnational crime is the creation of international cooperation among law enforcement bodies of various countries for detection of these criminal offences and punishment of guilty persons. When currying out cooperation, no any prejudice, internal political or economical interests of the countries must arise, because, nowadays, criminality and organized crime groupings are no longer fixed to a single particular geographic location. For that reason, organized crime is no more a problem of one particular country; and to reduce these crimes, the law enforcement bodies in several countries have to combat it based on international cooperation.

Since the restoration of independence, Latvia, as a democratic and law-based state, has made gradual progress related to activities of law enforcement institutions, the domestic legal system and in solving issues related to international security. This progress has proved that Latvia has a sufficiently strong, effective and judicial system to fight criminality, including transnational crime, so, Latvia has earned both, the right to receive assistance from other countries in case of transnational criminal offences and the opportunity to render assistance to law enforcement institutions of other countries in the detection of such criminal offences, as well as in detention and punishment of guilty persons.
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CORPORATE GOVERNANCE AND BANK PERFORMANCE:
A CASE OF VIETNAM BANKING SECTOR

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Abstract. The purpose of the paper is to assess the impact of corporate governance on Vietnam banks’ performance measured by ROA (return on assets) and OER (operating efficiency ratio). The article uses a research method which is a quantitative research method through the construction of a binary Probit model with two aggregate variables, namely Macroeconomic indicators and financial index variables. The results are consistent with prior research findings, and more importantly, presents statistical justification for pursuing further corporate governance reforms to enhance Vietnam banks’ performance. These findings also lay a foundation for policy makers to make necessary changes to improve corporate governance (i.e role of board of directors, shareholder issues) of Vietnam banks in the future. Social Implications: the study used Vietnam listed banks’ financial data collected covering a period 2008 to 2018. The findings indicated that board size, CEO duality and large shareholder had statistically significant effect on bank performance in both ROA (return on assets) and OER (operating efficiency ratio). While institutional shareholders and foreign shareholders made no impact on Vietnam banks’ performance.

Keywords: bank performance; corporate governance; shareholders; Vietnam


JEL Classifications: G32

1. Introduction

Corporate governance is a combination of many factors that ensure business wealth. It is necessary to the existence of an institution as it ensures its commitment to higher growth and profits, as well as inspires and strengthens investors’ confidence (Gopalsamy, 2006). Corporate governance concept is in a continuous process of adaptation to the requirements of modern economy, globalization as well as the information needs of investors and third parties interested in the business (Claessens, 2003; Dudukalov et al., 2016; Ivanova et al., 2019). Good governance is a condition to build market confidence and encourage flows of long-term investment. Several countries depend on implementing corporate governance practices to improve economic dynamism, thus improving overall economic performance (Pintea, 2015). Corporate governance is also the process to direct and manage the institutions in order to improve long term shareholders’ value by enhancing corporate performance, considering the interest of other stakeholders (Jenkinson & Mayer, 1992; Lehoux et al., 2019; Okpamen, H., & Ogbeide, S.O., 2020).
Based on the above research gaps in corporate governance and the context of Vietnam banking sector, this study aims to evaluate impact of corporate governance on Vietnam banking performance. The rest of this paper is structured as follows: overview about Vietnam Banking sector and a review of relevant literature, the proposed research methodology will be discussed in the subsequent section. Section four provides analyses and discussions on the results and findings. The summary and conclusions are presented at the end of this paper. The results will provide some exploratory information for further empirical studies and bank regulations in Vietnam.

Over the course of 10 years from 2008 – 2018, the banking sector of Vietnam has experienced high and low, changes and challenges that the sector altogether with the economy has been urging to overcome. The biggest challenge in banking activities in 2008 was the management of interest rate policy. 2008 came with unexpected fluctuations, undoubtedly affecting currency market which leads to adjustments made by the State Bank of Vietnam (SBV). The prime rate has been raised 3 times from 8.25% to 14% in order to combat inflation. Furthermore, there was an instability in exchange rate which at times was boosted to 19,000 – 19,800 VND/USD, creating high demand for USD. Likewise, the global financial crisis made unfavorable impact on the banking sector, causing profits of many commercial banks to not reach their set goals. Even though the year 2009 experienced a stable monetary policy and exchange rate, tensions did take place, causing issues to capital mobilization and lending. However, to a rather surprising recovery of the economy, banks’ profits got back quickly and drastically until the end of the year. In 2010, Vietnam succeeded in issuing a billion dollars’ worth of government bonds, though credit rating of Vietnam had been lowered by 3 biggest international credit rating agencies.

2011-2015 is a period where Vietnam banking sector encountered with hardships and challenges but from there, successes did rise, lifting role and prestige of banks in the economy. The average credit growth was about 13.5%/year, much lower than that of 2006-2010 at 33.3% year. Nevertheless, this rate is fitting for the capital absorption capacity of economy. Restructuring the system of credit institutions in the past years had been met with accomplishments when underperformed credit institutions were restructured, hence keeping things balance and steady as much as possible. Banks put efforts into controlling credit quality and reducing the amount of bad debts though it was clear that the banking sector hadn’t done well enough. This came from the fact that management and risk management capacity were very weak, preventing high growth and causing problems to rise.

Vietnam had suffered many negative impacts in 2016, notably because of natural disasters such as draught, making the economy grow very slowly. Banks made great efforts to improve credit conditions as well as shortening the procedures. In 2016, the banking sector completed its set objectives when inflation was kept below 5%. Likewise, the total means of payment did climb gradually and appropriately. 2017 came after with many positive policies, making breakthrough here and there. In 2017, there were 5 banks bringing stocks to trade on the stock market - a record high in recent years. 2017 also witnessed the appearance of bitcoin when the price of this cryptocurrency peaked at nearly $20,000 compared to just $1,000 at the beginning of the year. Aiming at cashless payments, credit institutions in 2017 have consistently launched new products to catch up with this trend, especially technologies application on mobile devices, such as face recognition, fingerprint authentication, etc.

Lastly, 2018 saw a strictly controlled credit growth of under 16%. Ten commercial banks had started to carry out the Basel II standards. November 2018, VIB and Vietcombank became the first two Vietnamese banks eligible to apply CAR in accordance with Basel II standards. Additionally, many large banks reach nearly 90% of the year’s profit before tax target of thousands of billion dong, such as Vietcombank (11,600 billion VND), Techcombank (7,774 billion VND), Vietinbank (7,500 billion VND), BIDV (7,200 billion VND).

2. Literature review

In relation to banking, corporate governance has been contributing a large part in managing bank systems, procedures, processes and such. Consequently, assets and liabilities should be treated as means to increase shareholder value as well as shareholder satisfaction. In 1976, Jensen and Meckling (1976) has developed some researches about the theoretical relationship between corporate governance and firm performance. They brought together three theories which are theory of agency, theory or property rights and lastly theory of finance in order
to establish the theory of the ownership structure of the firm (Samusenko et al., 2020).

Since then, a great number of researchers had looked at how ownership structure can affect firm performance. Eldenberg et al (2007) presume that the objectives and how the board govern the company will vary depending on the type of ownership which that company adopts. Throughout the research, they found that different board structures will result in dissimilarities in factors that determine the income of board of director and the income of CEO. Staikouras et. al (2007) proposed that the relationship between ROA and ROE and the board size is significantly negative. On the other hand, the distribution of non-executive directors has been reported to have a positive effect on the firm performance (Alonso and Gonzalez, 2006; Rahman, 2018; Yemelyanov et al., 2019). Zulkaifli & Samad (2007) studied how corporate governance works in the listed banking firms in nine developing countries of Asia. The data allowed them to come up with the idea that banking and non-bank firms have different supervising or monitoring policy and mechanism. They divided the mechanism into four groups which are ownership monitoring mechanism consisted of large shareholders, government ownership and foreign ownership; internal control monitoring mechanism comes second with CEO duality, board size and board independence; regulatory monitoring mechanism comes third which leaves disclosure monitoring mechanism the fourth and the last one in four categories.

According to Babatunde & Olaniran (2009) there are three levels of determinants of institutions’ performance. The first is related to external factors that are beyond the institution’s control and are generally economy-wide. The second are internal factors that are under the direct purview of the institutions, affects the ability of the institutions to cope with external factors. These factors include managerial efficiency, governance structure; ownership structure etc (Korableva et al., 2019). Finally, there are other factors like size, leverage, and nature of the industry that affect institutions’ performance. I will be mainly focusing on the internal corporate governance mechanisms, which are the ownership structure and board structure (Prodanova et al., 2019; Garnov et al., 2020; Prokhorova and Sedov et al., 2014; Sychev, 2016).

Banking sector plays a central role in the development of the economy. A healthy and strong banking sector is a precondition for sustainable economic growth. Banks have important roles in the economy regarding the growth of corporations, accumulation of capital and provision of economical wealth. In today’s financial sector where the competition is at its highest levels, banks are forced to make the most effective use of their resources. This urges a need for the bank managers and decision makers in banking sector to compare their bank’s activities to other competing banks’ activities (Dogan, 2013; Rahman and Bobkova, 2017; Plaskova et al., 2020; Ogiugo et al., 2020).

Further, according to Turlea et al. (2010) the foundation of a capital-intensive and highly developed economy is considered a sound banking industry (Akhmadeev et al., 2019; Poltarykhin et al., 2020). Consequently, all economic areas can be dramatically affected by disorders in the banking sector, this is due to the fact that as banks are the financial intermediaries attracting citizens’ savings in the form of deposits; offering means of payment for services and goods and financing the development of businesses (Akhmetshin et al., 2018; Prodanova et al., 2020; Puryaev and Puryaev, 2020). In comparison with other entities, banks are subject to stricter regulations as they are responsible for protecting the depositors’ rights, ensuring the payment system’s stability and reducing systemic risk. Further, Levine (2005) considers that bank operations have a direct impact on institutions’ activities and consequently countries’ economic growth.

A direct link between corporate governance monitoring mechanism and corporate performance of banking firms was indicated in the research. However, bank performance was proved to not be affected too much by the factors of ownership monitoring mechanism and the internal control monitoring mechanism. In that same year, Spong and Sullivan (2007) analyzed other aspects in governing corporate which make impacts on bank performance by practicing on a random sample of state-chartered community banks. According to their findings, boards of directors are related to how community banks perform if there is an interest in the financial situation of the banks significantly. They also saw a positive connection between managerial ownership, wealth, financial positions of managers and directors and a bank’s risk decisions and risk-return trade-offs.

3. Hypotheses

This part will be providing an illustration of the five hypotheses. These hypotheses will explain the impact of the corporate governance on banking performance.

Ownership Concentration. According to agency theory, ownership concentration can be an effective tool to reduce agency cost and enhance the performance. Jensen and Meckling (1976) argue that there is a positive correlation between concentrated ownership and performance because when the ownership is concentrated, the conflict of interests will decrease. The ‘monitoring argument’ is a frequent argument when discussing the effect of total ownership concentration on institution performance. The argument says that large owners have more capability in controlling and monitoring the management, and thus contributing to a better corporate performance (Schleifer and Vishny, 1997). Another argument on ownership concentration claims that institutions with the high degree of concentration perform differently than other institutions and characterized by severe conflicts raised between the controlling and minority shareholders (El-Chaarani 2014).

These two arguments give rise to a non-linear relationship between total ownership concentration and performance. In the beginning, there is an increasing effect of ownership concentration on institutions’ performance and then a decreasing effect (Scholten, 2014). Claessens, Simeon et al. (2002) finds similar pattern. Empirical evidences between ownership concentration and bank performance is different. Some of previous studies have reported a positive relationship between ownership concentration and corporate performance, some reported to be a negative relationship and there were also others who claimed that these are not related at all.

H1: There is a significant negative impact of ownership concentration on bank performance.

Institutional Ownership. Investors will surely choose good project to invest their money in order to have higher rate of returns and profitability. Institutional ownership plays a significant role in reducing external monitoring cost by transferring more information about the corporation to the shareholders. A positive relationship between institutional ownership and performance is expected (McConnell & Servaes, 1990; Shleifer & Vishny, 1997; Smith, 1996; Filatotchev et al., 2005). Conversely, a negative relationship between institutional ownership and performance was advocated depending on conflict of interest and strategic alignment hypotheses, (Barnhart & Rosenstein, 1998).

H2: There is a significant negative impact of institutional ownership on bank performance.

Foreign Ownership. Domestic or international relationship is another factor that can lead to differences in organizational objectives, practices, and governance mechanisms (Eldenburg et al. 2004). The findings show that by disclosing more information, corporates could attract more investors. Therefore, a higher proportion of foreign shareholders means better performance from banks.

H3: There is a significant positive impact of foreign ownership on bank performance.

Board Size. Board size plays an important role in firms’ success and growth. An effective board should succeed in performance. According to some theories, the board members are the link between the institution and the resources it needs to maximize value (Pfeffer 1973; Pfeffer and Salancik 1978). Hence, we can infer that a larger number of members in the council involve greater possibilities for obtaining resources. On the other hand, Jensen (1993) and Lipton and Lorsch (1992) suggest that as the size of the board increases beyond a
certain point, these inefficiencies outweigh the benefits of having more directors to draw on, resulting in lower level of firm performance

**H4:** There is a significant positive impact of board size on bank performance.

CEO Duality. Fama and Jensen (1983) considered that a board of directors dominated by the executive directors cannot be monitored. Further, the authors state that, duality is when one individual is appointed as both the CEO and board chairman. Hermalin and Weisbach (1991, 1998) put forward that CEOs also retaining the position of Chairman will be inclined to have a greater influence over the board members selection and so dominate the decision-making processes and internal information systems. However, some other researchers argue against the agency theory and propose stewardship theory (Elsayed 2007) claiming that duality can play a role in improving corporate performance in an institution as it can provide the institution with a CEO and chairman who is knowledgeable and experienced in better decision making in a timely manner, accordingly can have a positive effect on corporate performance (El-Faitouri 2014).

**H5** There is a significant negative impact of CEO duality on bank performance

Control Variables. Bank size is an important determinant of Bank performance. Many institutions are extremely large in both absolute terms and in relation to their national economies (Demirgüç-Kunt & Huizinga 2011). Further, banks are becoming very competitive; consequently, to compete effectively, this drives them to enhance their cost efficiencies. Thus, this drives them to grow bigger to exploit economies of scale (Milbourn et al., 1999).

Banking risk can be defined as a phenomenon that occurs during banking operations and causing negative effects on these activities by the deterioration in asset quality, reduced profits or even losses registration, all of which affect the functionality of the bank (Binh & Giang, 2012).

4. Research methodology and limitations

The research investigates the performance of 17 listed Vietnam banks in the period from 2008 to 2018 with 187 observations. The data was collected from financial statements and annual reports of banks. In addition, based on the literature presented earlier it is necessary to control for bank’s size and bank risk level because banks of different sizes and exposure to risk can differ in terms of both their performance and efficiency of corporate governance.

**Table 1. Definition of variables**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Variables symbols</th>
<th>Definition</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank performance</td>
<td>ROA</td>
<td>Return on assets</td>
<td>Net income/total assets</td>
</tr>
<tr>
<td></td>
<td>OER</td>
<td>Operating efficiency ratio</td>
<td>Total operating expenses (including provision for credit loss/total operating revenue)</td>
</tr>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ownership Concentration</td>
<td>Large</td>
<td>Percentage of shares held by large shareholders</td>
<td></td>
</tr>
<tr>
<td>Institutional Ownership</td>
<td>Inst</td>
<td>Percentage of shares held by institutions</td>
<td></td>
</tr>
<tr>
<td>Foreign Ownership</td>
<td>Foreign</td>
<td>Percentage of shares held by foreign shareholders</td>
<td></td>
</tr>
<tr>
<td>Board Size</td>
<td>Bodsize</td>
<td>Number of members in the board of directors</td>
<td></td>
</tr>
<tr>
<td>CEO Duality</td>
<td>Dual</td>
<td>If the CEO and Chairman are the same person = 1; otherwise = 0</td>
<td></td>
</tr>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank size</td>
<td>Size</td>
<td>Natural log of total Assets</td>
<td></td>
</tr>
<tr>
<td>Bank risk level</td>
<td>Risk</td>
<td>Total loan loss provisions/Total assets</td>
<td></td>
</tr>
</tbody>
</table>

*Source:* compiled by the authors
We employed a panel data regression model to access the impact of corporate governance on Vietnam banks’ performance as follows:

\[ \text{Performance}_{it} = \beta_1 + \beta_1 \text{Corporate Governance}_{it} + X_{it} + \varepsilon_{it} \]

In which, \( t \) is indicated to be the time dimension, \( X \) it is a vector of control variables (e.g., \( \text{Size}_{it} \), \( \text{Risk}_{it} \)).

5. Results

**Descriptive analysis.** The descriptive statistics of all variables are presented in Table 2. In particular, the average profitability Ratio (ROA) and Operating Efficiency Ratio (OER) for the sample of banks is 0.98% and 64.52% respectively. On average, 17 Vietnam listed banks have 9 members on their board, with high ownership concentration (39.56%). Approximately, in 71.72 percent of the observations the CEO was serving as the chair of the board.

Table 2. Descriptive statistics for variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>0.9789327</td>
<td>.7476616</td>
<td>.0100717</td>
<td>5.9518</td>
</tr>
<tr>
<td>OER</td>
<td>64.51582</td>
<td>13.19343</td>
<td>8.302881</td>
<td>128.535</td>
</tr>
<tr>
<td><strong>Explanatory Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large</td>
<td>39.56595</td>
<td>35.2597</td>
<td>0</td>
<td>97.45</td>
</tr>
<tr>
<td>Inst</td>
<td>36.05753</td>
<td>25.3851</td>
<td>1.1017</td>
<td>97.8</td>
</tr>
<tr>
<td>Foreign</td>
<td>13.03158</td>
<td>11.6188</td>
<td>0</td>
<td>30.06</td>
</tr>
<tr>
<td>Bodsize</td>
<td>9.941176</td>
<td>3.641423</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>Dual</td>
<td>=1 if CEO = Chairman</td>
<td>133 obs. (71.12%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>=0 if CEO # Chairman</td>
<td>54 obs. (28.88%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>18.52754</td>
<td>1.20871</td>
<td>14.69872</td>
<td>20.99561</td>
</tr>
<tr>
<td>Risk</td>
<td>0.8380214</td>
<td>1.735746</td>
<td>0</td>
<td>14.16</td>
</tr>
<tr>
<td>No. of observation</td>
<td>187</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: compiled by the authors*

Table 2 presents an overview about the Vietnam banks included in our sample (listed on stock exchange). Concerning the performance measures, the average ROA was low (0.98%) and the average value for operating efficiency was 64.52%. In facts, the higher ROA ratio, the more income is generated by a given level of assets. And the lower OER ratio means that banks are operating better. Although the ratio will vary across different countries because of its industry and economics situation, but ROAs over 5% are generally considered good for firms and about 1% for banks (because banks have high financial leverage).

On average, Institutions hold 36.06 percent of total outstanding shares of banks, while shares held by the foreign investors’ amounts to 13.03 percent and range between 0 and 30.06 percent suggesting that not all Vietnam banks in the analysis had a foreign investors and the 4 largest ones are in group state- owner enterprises. Moreover, one of important components to is bank size. The estimates will be biased if we fail to control heterogeneous bank’s size because we have different expectations for different size bank. In addition, we have another control variable: bank risk level. In economics theory, the higher risk, the higher expected return we will have.

Hypothesis testing. To study the effect of corporate governance on bank performance, two econometric models are used in order to test for the five hypotheses mentioned earlier. We used panel data regression (fixed model) to test the impact of corporate governance on ROA, OER basing on different types of ownership structure.
Model 1,4 measures impact of ownership concentration (large) on ROA and OER. Model 2,5 measures impact of Institutional shareholders (inst) on ROA and OER. And, model 3,6 measures impact of Foreign shareholders (foreign) on ROA and OER. Impact of corporate governance on Vietnam banks’ performance is presented in the table 3.

<table>
<thead>
<tr>
<th></th>
<th>(1) ROA</th>
<th>(2) ROA</th>
<th>3 (ROA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>-0.000879**</td>
<td>0.00159</td>
<td>0.00112</td>
</tr>
<tr>
<td></td>
<td>[-1.52]</td>
<td>[0.72]</td>
<td>[0.24]</td>
</tr>
<tr>
<td>Inst</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bodsize</td>
<td>0.0356**</td>
<td>0.0372**</td>
<td>0.0381**</td>
</tr>
<tr>
<td></td>
<td>[2.18]</td>
<td>[2.44]</td>
<td>[2.48]</td>
</tr>
<tr>
<td>Dual</td>
<td>-0.202*</td>
<td>-0.205*</td>
<td>-0.217*</td>
</tr>
<tr>
<td></td>
<td>[-1.71]</td>
<td>[-1.78]</td>
<td>[-1.89]</td>
</tr>
<tr>
<td>Size</td>
<td>-0.0562***</td>
<td>-0.0700***</td>
<td>-0.0694***</td>
</tr>
<tr>
<td></td>
<td>[-1.98]</td>
<td>[-1.28]</td>
<td>[-1.22]</td>
</tr>
<tr>
<td>Risk</td>
<td>0.0175</td>
<td>0.00756</td>
<td>0.0162</td>
</tr>
<tr>
<td></td>
<td>[0.56]</td>
<td>[0.23]</td>
<td>[0.52]</td>
</tr>
<tr>
<td>_cons</td>
<td>1.829*</td>
<td>1.989**</td>
<td>2.012**</td>
</tr>
<tr>
<td></td>
<td>[1.85]</td>
<td>[2.07]</td>
<td>[2.02]</td>
</tr>
<tr>
<td>N</td>
<td>187</td>
<td>187</td>
<td>187</td>
</tr>
<tr>
<td>R-sq</td>
<td>0.340</td>
<td>0.345</td>
<td>0.335</td>
</tr>
</tbody>
</table>

Source: compiled by the authors

R² = 0.340, 0.345 and 0.335 mean that the models (1) (2) (3) respectively explain 34.0%, 34.5% and 33.5% changes in ROA.

The result of model (1) indicated that coefficient of ownership concentration was statistically significant and positively related to the ROA \( \hat{\beta} = -0.000879 \) and p-value < 0.05, suggesting that if other things hold constant, When percentage of shares owned by large shareholders increase 1%, it will slightly decrease ROA by 0.000879 %. The result is backed up by some research before such as Boone et al., (2011); Jiang et al., (2009); Mudambi & Nicosia, (1998). They found that banks with more dispersed ownership are coupled with higher profitability and better asset quality. In addition, a high ownership concentration among Vietnam banks is shown in Table 3 indicating that, on average large shareholders hold a significant (39.57 percent) proportion of total shares issued by the banks. Therefore, the ownership concentration is one of the most important factors to be considered when evaluating the performance of banks in Vietnam.

By contrast, coefficients of these 2 variables ( Inst and foreign) was positively related to the ROA but not significant (\( \hat{\beta}_i = 0.00159, P\text{-value} > 0.1, \hat{\beta}_f = 0.00112, P\text{-value} > 0.1 \)), so we can conclude that Institutional shareholders and Foreign Shareholders made no impact on Vietnam banks’ performance. The reason behind this can be explained by looking at its data in table 2, there are only 13.03% average shares owned by foreign investors, some banks didn’t had any foreign capital on their ownership structure, same problem can be seen from institutional ownership data, 36.06% average shares held by institutions, however Std. Dev = 25.38512 suggests that it was inconsistent values between banks and over years, therefore, foreign and institutional investors held modest impact on Vietnam banks’ performance.

Boardsize has a significant relationship with performance measured by ROA. The relationship is negatively and statistically significant at 5%. And Duality has a significant negative relation with performance measured
by ROA statistically significant at 10% significance level. This is supported by the agency theory suggesting that a board of directors dominated by the executive directors cannot be monitored (Fama and Jensen, 1983). Further by, Hermelin and Weisbach (1991, 1998) who put forward that CEOs also retaining the position of Chairman will be inclined to have a greater influence over the board members selection and so dominate the decision-making processes and internal information systems. Additionally, duality makes the CEO entrenched, consequently, the CEO being also a chairman can facilitate access to the required information and change the plans of the board. Accordingly, combining the roles of CEO and chairman leads to entrenchment of the CEO or executive directors, and this limits the board’s monitoring ability. After all, the findings indicated that the corporate governance factors influence on the Vietnam bank’s profitability.

In two control variables, only bank size variable is statistically significant. The result is found that larger banks will be less profitable and efficient. The reasons perhaps problems in coordinating the different functions or line of businesses.

Model 4 measures ownership concentration (large) ‘s impact on OER. Model 5 measures institution shareholders (inst)’s impact on OER. And, model 6 measures Foreign shareholders (foreign)’s impact on OER. $R^2 = 0.204, 0.210$ and $0.204$ mean that the models (4) (5) (6) respectively explain $20.4\%$, $21.0\%$ and $20.4\%$ changes in OER.

Regression result in Table 4 suggest that there is no impact of ownership structure on bank operating efficiency (P-value > 0.1). By contrast, The board size coefficient was positive ($0.655, 0.632, \text{and } 0.672$ respectively ) and significant ( P-value < 0.05) which is consistent with the conclusions drawn by Zahra and Pearce (1987) who argued that a large board size brings more management skills and makes it difficult for the CEO to manipulate the board.

<table>
<thead>
<tr>
<th></th>
<th>(4) OER</th>
<th>(5) OER</th>
<th>6 OER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>0.00202</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[1.07]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inst</td>
<td>-0.0281</td>
<td></td>
<td>0.0140</td>
</tr>
<tr>
<td></td>
<td>[-1.72]</td>
<td></td>
<td>[1.17]</td>
</tr>
<tr>
<td>Foreign</td>
<td>0.655**</td>
<td>0.632**</td>
<td>0.672**</td>
</tr>
<tr>
<td></td>
<td>[-2.27]</td>
<td>[-2.34]</td>
<td></td>
</tr>
<tr>
<td>Bodsize</td>
<td>-3.402*</td>
<td>-3.230*</td>
<td>-3.435*</td>
</tr>
<tr>
<td></td>
<td>[1.63]</td>
<td>[1.58]</td>
<td>[1.70]</td>
</tr>
<tr>
<td>Dual</td>
<td>-0.0145**</td>
<td>-0.113**</td>
<td>-0.00977**</td>
</tr>
<tr>
<td></td>
<td>[1.01]</td>
<td>[1.12]</td>
<td>[-1.01]</td>
</tr>
<tr>
<td>Size</td>
<td>-1.616***</td>
<td>-1.471**</td>
<td>-1.602***</td>
</tr>
<tr>
<td></td>
<td>[-2.92]</td>
<td>[0.23]</td>
<td>[0.52]</td>
</tr>
<tr>
<td>Risk</td>
<td>69.62***</td>
<td>68.66***</td>
<td>70.10***</td>
</tr>
<tr>
<td></td>
<td>[3.98]</td>
<td>[4.04]</td>
<td>[3.98]</td>
</tr>
<tr>
<td>_cons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>187</td>
<td>187</td>
<td>187</td>
</tr>
<tr>
<td>R-sq</td>
<td>0.204</td>
<td>0.210</td>
<td>0.204</td>
</tr>
</tbody>
</table>

Table 4. Regression results for testing the impact of corporate governance on OER

And dual variable has also a significant negative relation with performance measured by OER statistically significant at 10% significance level. This finding is the same with the impact of dual on Vietnam banks ‘performance. The result indicates that when CEO also serves as chairman in the board, the banks didn’t earn any profit nor operating efficiency from that.

Source: compiled by the authors
The two control variables (Bank Size and Bank Risk) included in the analysis were statistically significant. The negative relationship between Bank Size and Operating Efficiency ratio suggests that, the larger bank’s assets, the more efficiency bank achieve (reduce Cost effect).

Conclusion

In this study, we examined the role of corporate governance variables and control variables on bank performance using panel data regression. The results of our study support the earlier contention that the ownership concentration variable possesses negative and significant value. As a result, there is a negative impact of ownership concentration on bank performance. On the other hand, the institutional ownership and foreign ownership do not matter to bank performance as expected. This finding could be partially due to the specific characteristics of the banks in our sample that represent the listed banks on Vietnam stock exchange only.

In terms of corporate governance aspect, our results advocate the resource dependence theory, which suggests that larger board size would lead to better corporate performance using OER thanks to the wide range of knowledge, skills as well as expertise brought into boardroom discussion. Our duality variable, which we use to evaluate the concentration of control in one person, numbers statistically insignificant. We can conclude that the duality of CEOs is not so important among Vietnam banks, and as only around half of banks use this structure, it is not common as well.

Finally, there are a few policy implications related to our study. Our results recommend that ownership concentration plays an essential role in bank performance. Policymakers should emphasize ownership concentration when they consider policy decisions on issues related to bank performance. Although the impact of board size and duality is significant, we maintain that these governance mechanisms should not be overlooked, because previous studies find significant roles for these variables. Although agency theory suggests that the separation between ownership and management induces agency costs due to the possible conflicts in their interests, we find that banks with more dispersed ownership structure are more efficient. Accordingly, we suggest the reconsideration and careful analysis of the ownership structure in an emerging market. Our results also suggest that, in mergers and acquisitions, policymakers should again prioritize this type of ownership structure, as it plays a role in bank performance through the size effect.

References


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Register for an ORCID ID:
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LEGAL MECHANISM FOR ENSURING CUSTOMS SECURITY OF UKRAINE

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Abstract. It has been proven that administrative liability for violation of customs rules is one of the most effective means of ensuring law and order in the customs affairs and customs policy of Ukraine, and contributes to strengthening the customs security of the country. It has been established that at the present stage the customs system of Ukraine is at the stage of stagnation, characterized by the existence of a large number of objective and subjective problems that must be solved by joint efforts of government officials in various fields through large-scale effective reform of customs authorities. The statistical analysis of smuggling in Ukraine for 2013-2018 has been carried out. The directions of coping with smuggling patterns has been proposed. In the context of European integration of Ukraine, the solution to this complex problem is seen through the study of the successful experience of representative European states as regards building and operation of customs systems, which are based on the use of European customs principles and operate effectively at European and international levels. The system of risk management and analysis operates on the basis of built-in analytical tools, which are used by customs authorities to develop and implement a full range of control measures for high-risk goods. This allows identifying fiscal and non-fiscal risks ensuring the implementation of the principle of selectivity. Such approach to customs control maintains an optimal balance between facilitating foreign trade and ensuring the financial security of the state, reducing the time of customs clearance and shifting the emphasis to customs control after the release of goods for free circulation. Development and implementation of new software products will allow improving the electronic declaration system, making the most of its capabilities. The fight against customs offenses of an economic nature, the main purpose of which is to import goods into the country with evasion of customs duties, can be effective and efficient only if it is conducted by measures of an economic nature.

Keywords: customs security; smuggling, risks; customs offenses; customs control

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JEL Classifications: F35, F42

1. Introduction

At the present stage of development of Ukraine, there is a clear trend towards the introduction of European norms of civil society, especially with regard to the progressive dynamics of the country development, reform of state institutions, ensuring the implementation of state policy in general and its separate institutions. The state policy in the customs area, which is one of the most important components of the economic policy of a country and is aimed at maximally filling the state budget, is no exception. Reforming the activities of the customs authorities of Ukraine and adapting their activities to the requirements of the European Union are identified as one of the most important tasks provided by the Sustainable Development Strategy “Ukraine 2020”.
The issue of preventing and combating violations of customs rules, which are commonly identified as a negative phenomenon, is particularly relevant in the process of reforming the activities of customs authorities. The existence of such violations causes damage to the state undermining its economic stability. That is why the state attaches great importance to this problem. Today, such phenomenon as violation of customs rules has become widespread and is considered not only within a particular country or region, but at the global level, due to its inherence in almost all countries and regions of the world.

To provide an effective mechanism for preventing and counteracting this negative phenomenon, each state makes every effort possible to develop and implement a number of programs, tasks, improving its legislation in terms of combating customs offenses. Similarly, in Ukraine, the existing scale of violations of customs rules is impressive in its scope and methods of implementation. This encourages both the central executive authorities and law enforcement agencies to use new methods to prevent and counteract this negative phenomenon. The issue of counteracting violations of customs regulations attracts considerable attention from both scientists and practitioners. Considering and highlighting some problematic aspects of the mechanism for preventing and combating violations of customs regulations, they outline the main directions of eliminating the negative impact of this phenomenon on the development of the national economy.

In addition, it should be noted that the administrative and legal mechanism for preventing and combating violations of customs rules is quite problematic due to its actual uncertainty. On the one hand, there is its obvious instability, and on the other hand, there is growing legal nihilism of citizens, and, as a result, the effectiveness of this mechanism is reduced.

Violation of customs rules is the most common type of offense in the area of customs affairs. And the mechanism of prevention and counteraction to violations of customs rules gain currency in the process of development of Ukraine as a legal, social state. The process of carrying out a comprehensive fight against these delicts in the customs area is a necessary condition for integration of Ukraine into the European space.

The purpose of the paper is to determine the theoretical foundations and features of the administrative and legal mechanism for preventing and combating violations of customs rules in Ukraine on the basis of analysis of current legislation and generalization of the practice of its application and on this basis to develop proposals for its improvement.

2. Literature Survey

The main trend in the standardization of customs procedures, which takes place in the framework of the World Customs Organization, is to improve the conditions for the development of international trade by accelerating and simplifying customs procedures (Nowak, T., Sowiński, C., & Czyżowicz, W. (2015)). However, maintaining an adequate level of security and ensuring compliance with customs legislation remains an important requirement (Nguyen, T. C. N., Kettle, M., & Doherty, C. (2019)). These two, at first glance, contradictory tasks require the introduction of new forms and methods of customs control, the integration of security elements into the customs procedures themselves.

As one of the key results of the simplification of customs procedures is the reduction of time spent on customs clearance of goods, and consequently the need to reduce the volume of customs control measures carried out regarding specific goods and transport vehicles (Kiyanchuk, I. (2017)). Therefore, customs control should be based on the principle of “less volume — more efficiency”. One of the ways to ensure the implementation of this principle is the implementation of the concept of risk management and, in a broader sense, the concept of protection of customs security (Lay, C., & Astrina, A. R. (2020)).

A necessary condition for the effective functioning of a sovereign state governed by the rule of law is to ensure the rights and freedoms of citizens, security in all areas of foreign and domestic policy, prevention of any offenses, as well as identification and elimination of their causes (Rogers, T. W., Jaccard, N., Morton, E. J., &
Ensuring customs security is the main task of the customs authorities of each state, within which they must ensure the receipt of customs duties and other customs payments to the state budget, protect the national producer, prevent the import of banned and dangerous products, ensure compliance with laws, etc (Kormych, B. (2018)).

In the conditions of deepening and acceleration of European integration processes the problems of preventing and counteracting customs offenses and violations of customs rules in particular gain special currency. Since it is the violation of customs rules that negatively affects the economic interests of the state and, as a result, the standard of living of the population (Hu, R., Tan, Y. H., & Heijmann, F. (2016)).

In the conditions of globalization of the world economy and strengthening interdependence of the countries, the value of a customs component of their economic policy has sharply increased (Avdeev, V. A., Rozenko, S. V., Bulygin, A. V., & Byzova, I. G. (2019)). Effective customs policy and rationally organized customs services promote using the benefits of globalization (stimulate the growth of foreign trade of a country, improve the structure of its goods turnover and increase the competitiveness of export products) (van Engelenburg, S., Janssen, M., & Klievink, B. (2019)).

In parallel with the dynamic development of customs control technologies, the patterns of committing customs offenses are also getting more complicated, and vice versa, because these processes are interrelated (Świerczyńska, J. (2016)). Once effective mechanisms for combating customs offenses and smuggling are no longer able to provide customs authorities with effective and reliable means of customs control and guarantee of customs security of the state (Danijela, M. (2016)).

The inadmissibility of ignoring such challenges and threats of today necessitates the modernization of customs regulation mechanisms and the introduction of modern customs control technologies (Grotteli, M. (2015)). Accordingly, the state customs policy must be reactive to those dynamic changes in the area of foreign economic activity and international trade in order to ensure the national customs interests and security of the state (Komarov, O. (2016)).

Thus, the lack of developments at the theoretical level, the presence of practical legal problems, as well as the need for a comprehensive study of the theoretical foundations of the administrative and legal mechanism to prevent and combat violations of customs regulations in Ukraine led to the choice of research topic.

3. Methods

In the paper there was used a set of methods and techniques of scientific cognition, both general theoretical and special scientific. The use of these methods is guided by a system approach, which primarily provides an opportunity to explore problematic aspects in the unity of their social content and legal form allowing for scientific study on the nature of the administrative-legal mechanism to prevent and combat violations of customs rules. Separate methods of scientific cognition were also used in the work. In particular, with the help of the epistemological method of study, the essence of violations of customs rules as a subject of the administrative-legal mechanism for ensuring their implementation was defined, the essence of the administrative-legal mechanism for prevention and counteraction to violations of customs rules was characterized; the logical-semantic method and the method of transition from the abstract to the concrete allowed deepening the conceptual framework; the comparative-legal method was used to highlight the state of legal support for the mechanism of prevention and counteraction to violations of customs rules, development of recommendations for optimizing the system of subjects of this mechanism; analytical method provided an opportunity to identify the need to improve legislation in the area of prevention and counteraction to violations of customs rules. Methods of classification and grouping were used to study the administrative-legal measures to prevent and combat violations of customs rules and determine the place of administrative liability in this mechanism. The use of the inductive method allowed to confirm the conclusion about the need to improve the administrative-legal mechanism to prevent and combat violations of customs regulations.
Scientific works of specialists in the area of philosophy, management theory, general theory of state and law, administrative and customs law, other sectoral legal sciences are the regulatory framework of the study. The Constitution of Ukraine, current laws and regulations that determine the legal basis for the implementation of state customs policy are also the regulatory framework of the study. Documents of international organizations, which experience in implementing state customs policy can be used in Ukraine, were also used in the study. Generalizations of the practice of the State Fiscal Service of Ukraine, reference books, statistical materials are the information and empirical basis of the study.

4. Results

Due to its important geopolitical position, Ukraine has acquired the characteristics of a developed center of foreign trade relations, which determined the future of a country with a powerful scientific, technical and industrial potential. The partnership relationships of the country cover more than 70 countries. The largest flows of goods go to Russia, Pakistan, Kazakhstan, Estonia, Belarus, Hungary, Austria; largest import trading partners are Russia, Kazakhstan, Italy, Germany, Belgium and other EU countries. Customs rules establish a system of regulations that, depending on the objects, subjects, purposes, means, methods and stages of movement across the customs border determines the procedure for such movement and the scope of customs procedures that are carried out.

Historically, the development of mankind outlined the development of crime. Any discovery was accompanied not only by progress, but also gave a significant impetus to the development of crime. This is most noticeable in recent years.

In the modern economy of Ukraine there is a tendency to increase the level of violation of customs rules and import of smuggled goods, which poses a real threat to the economic security of the state. Smuggling and export of items such as drugs, weapons, cigarettes, and items of cultural value are particularly dangerous as there appeared highly organized transnational markets related with smuggling of these goods.

The public danger lies in the fact that illegal movement of goods and objects across the customs border of Ukraine violates the procedure for state regulation of foreign economic activity, which includes the general, and for certain goods — a special procedure for moving them across the border. At the same time, in the current political situation in the country, the mechanisms of centralized management lose the ability to control these processes, hence the need to take measures to improve the system of combating customs crime in the context of economic security.

In the Concept of realization of state policy in the field of prevention of offenses for the period up to 2015, approved by the order of the Cabinet of Ministers of Ukraine dated November 30, 2011 No. 1209-r (Concept of realization of state policy in the field of prevention of offenses for the period up to 2015 (2011)), it is noted that today there is a tendency to increasing the scale of criminalization of the main spheres of social life. Along with the decrease in the number of committed crimes of medium gravity, grave and especially grave crimes, there is a tendency to increasing the number of customs offenses.

As a result of all organizational-practical measures taken during 2017, including joint operations and analytical-search work, the customs offices of the State Fiscal Service (SFS 32 282) detected violations of customs rules with the value of targets of offenses amounting to almost 1.6 bln hryvnias. (Official site of the State Fiscal Service of Ukraine).

Here are the statistics on smuggling in Ukraine. The total budget losses due to the existence of smuggling patterns for 2013-2018 in Ukraine (WITS nomenclature by sector) are shown in Figure 1.
The following conclusions can be drawn regarding the change in total budget expenditures due to the existence of smuggling patterns by 16 commodity groups in the period of 2013-2018 in Ukraine. First, an increase in the volume of smuggling was observed only by three commodity groups during the analyzed period. By the commodity group “Food Products” smuggling increased by 88.19% (129,132 thousand US dollars), by the commodity group “Minerals” it increased by 44.81% (25,467 thousand US dollars), and by the commodity group “Footwear” it increased by 12.39% (11,123 thousand US dollars). Smuggling decreased by all other commodity groups. The three leaders in terms of decreasing the volume of smuggling include the following commodity groups: “Hides and Skins” – 43.58% (124,792 thousand US dollars), “Fuels” – 39.05% (91,453 thousand US dollars), “Textiles and Clothing” – 35% (221,068 thousand US dollars). As a whole, for the period of 2013-2018, Ukraine reduced the total budget losses due to the existence of smuggling patterns by 21.98% or 1,019,306 thousand US dollars, which indicates an effective customs policy.

The change in the dynamics of smuggling volume in terms of the TOP-20 partner countries of Ukraine for 2013-2018 is shown in Figure 2.
The following conclusions can be drawn regarding the change in the dynamics of smuggling volume in terms of the TOP-20 partner countries of Ukraine for 2013-2018. The three leaders in terms of increasing the volume of smuggling are the following countries: Belarus (108.87%), Bulgaria (65.35%), and Sweden (33.04%). The three leaders in terms of decreasing the volume of smuggling are the following countries: Italy (60.35%), Republic of Korea (53.17%), and other countries (50.32%).

Statistics on foreign trade with 37 countries, import counterparties of Ukraine, covering about 90% of the total imports of the country were used to estimate the volume of smuggling in the paper. The list includes the following countries: Belarus, Switzerland, Kazakhstan, Canada, Norway, Israel and 18 EU countries.

At present, Ukraine sets a 0% customs duty rate for the EU only on such commodity items as: pork, poultry and semi-finished poultry and sugar. However, the lion’s share of both official imports from the EU and smuggling falls on other goods. Considering that 18 EU countries are half of the total sample, to assess the impact of the zone of free trade with the EU on the non-receipt of customs duties to the budget, the existing average customs duty rate for the commodity group “Animals” was reduced from 12% to 7%. As for the other six countries, due to the lack of opportunity to obtain information on the detailed terms of free trade agreements with these countries to identify commodity groups potentially imported at a 0% customs duty rate, it was decided to determine that all goods imported from these countries are not subject to customs duty.

Based on a questionnaire survey of economists specializing in the customs and fiscal sectors and representatives of relevant sectors, Table 1 was created presenting the distribution of smuggled imports of each of the 16 commodity groups according to the main patterns.

Figure 2. Change in the dynamics of smuggling volume in terms of the TOP-20 partner countries of Ukraine for 2013-2018, %

Аналіз-обсягів-контрабанди—-прямі-та-непрямі-втрати-бюджету-та-економіки.pdf
Table 1. Proportion of each of the main smuggling patterns in the import of goods in Ukraine

<table>
<thead>
<tr>
<th>Sectors</th>
<th>“Zelenka”</th>
<th>“Empties”</th>
<th>“In transit”</th>
<th>“Jackets”</th>
<th>“Post”</th>
<th>“False declaration”</th>
<th>“Channels”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal farming</td>
<td>41%</td>
<td>1%</td>
<td>4%</td>
<td>8%</td>
<td>0%</td>
<td>45%</td>
<td>0%</td>
</tr>
<tr>
<td>Chemical industry</td>
<td>16%</td>
<td>16%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>60%</td>
<td>7%</td>
</tr>
<tr>
<td>Finished food products</td>
<td>21%</td>
<td>9%</td>
<td>1%</td>
<td>33%</td>
<td>7%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Footwear</td>
<td>6%</td>
<td>13%</td>
<td>4%</td>
<td>19%</td>
<td>18%</td>
<td>29%</td>
<td>11%</td>
</tr>
<tr>
<td>Fuels</td>
<td>36%</td>
<td>20%</td>
<td>7%</td>
<td>0%</td>
<td>0%</td>
<td>38%</td>
<td>0%</td>
</tr>
<tr>
<td>Hides</td>
<td>19%</td>
<td>18%</td>
<td>5%</td>
<td>4%</td>
<td>0%</td>
<td>49%</td>
<td>4%</td>
</tr>
<tr>
<td>Machinery and electronics</td>
<td>16%</td>
<td>6%</td>
<td>7%</td>
<td>11%</td>
<td>20%</td>
<td>29%</td>
<td>11%</td>
</tr>
<tr>
<td>Metals</td>
<td>25%</td>
<td>15%</td>
<td>13%</td>
<td>1%</td>
<td>1%</td>
<td>43%</td>
<td>1%</td>
</tr>
<tr>
<td>Minerals</td>
<td>32%</td>
<td>5%</td>
<td>9%</td>
<td>0%</td>
<td>0%</td>
<td>48%</td>
<td>5%</td>
</tr>
<tr>
<td>Miscellaneous (toys, furniture, optical</td>
<td>15%</td>
<td>12%</td>
<td>3%</td>
<td>17%</td>
<td>15%</td>
<td>25%</td>
<td>12%</td>
</tr>
<tr>
<td>devices, camera devices, works of art)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polymeric materials, plastics, rubber</td>
<td>32%</td>
<td>12%</td>
<td>7%</td>
<td>0%</td>
<td>0%</td>
<td>45%</td>
<td>5%</td>
</tr>
<tr>
<td>Products from stone, plaster, cement, and</td>
<td>44%</td>
<td>22%</td>
<td>8%</td>
<td>0%</td>
<td>0%</td>
<td>17%</td>
<td>8%</td>
</tr>
<tr>
<td>precious stones</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Textiles and clothing</td>
<td>15%</td>
<td>5%</td>
<td>1%</td>
<td>19%</td>
<td>18%</td>
<td>28%</td>
<td>13%</td>
</tr>
<tr>
<td>Transport</td>
<td>21%</td>
<td>11%</td>
<td>12%</td>
<td>0%</td>
<td>0%</td>
<td>55%</td>
<td>1%</td>
</tr>
<tr>
<td>Products of plant origin</td>
<td>30%</td>
<td>4%</td>
<td>12%</td>
<td>9%</td>
<td>0%</td>
<td>39%</td>
<td>6%</td>
</tr>
<tr>
<td>Wood and wood products</td>
<td>16%</td>
<td>4%</td>
<td>4%</td>
<td>0%</td>
<td>0%</td>
<td>76%</td>
<td>0%</td>
</tr>
</tbody>
</table>


The weighted average estimate of smuggling by each of 7 main smuggling patterns is shown in Figure 3.

![Figure 3. Proportion of each of 7 main smuggling patterns in total smuggling volumes in Ukraine](http://ua-outlook.com.ua/wp-content/uploads/2019/07/Аналіз-обсягів-контрабанди—-прямі-та-непрямі-втрати-бюджету-та-економіки.pdf)
Based on the results of the author’s study, it is possible to provide basic recommendations on combating smuggling patterns in Ukraine.

Zelenka. In Ukraine the problem of illegal crossing of the border is at a rather high level due to the long-term inaction of the central authorities regarding this loophole. The root of the problem is that for years in border areas there has been built a hierarchical distribution of power by spheres of influence on certain parts of the «border». The local population is fully integrated into the established smuggling patterns, and these are one of the main “easy” ways to earn money, as a result of which there is no question of cooperation with public services to combat smuggling. To illustrate the aggravation of the situation, it is worth mentioning only the scandal with the so-called «private border» in Transcarpathia when the border land was sold by local authorities to private persons for agricultural use. Later, these areas were simply turned into transshipment points of smugglers, which are protected from border guards by private property law. And there is no point in waiting for search warrants, as there will be no more smuggled goods. To combat this complex and integrated system, we propose to launch the next steps:

- Increase the material support of border guards, especially remuneration of labor, to reduce corruption, as the effectiveness of the fight against this smuggling pattern depends almost entirely on the human factor.
- Equip “problem” border areas with a system of covert round-the-clock surveillance, which will allow to quickly respond in cases of violation of the law. Actually, the number of such areas is small and they are well known. Also, it is necessary to eliminate areas of “private border” where part of the border is privately owned.
- Strengthen the supply of security forces of border authorities, both in terms of equipment (transport, weapons, surveillance devices, etc.) and personnel training.

Also, it is important to identify other types of “green” smuggling in Ukraine, in particular smuggling by sea. For example, when a cargo ship enters the territorial waters of Ukraine, it stops and is unloaded by 80-90% using small boats before it enters the port. This situation is due to the fact that at the moment the powers of the customs authorities are limited to the port area and until a ship enters the port they can not check it without special suspicion. To solve this problem, we propose the following:

- Strengthen water policing. Expand the area of influence of customs services on all territorial waters of Ukraine, with the right to check all vessels for the accuracy of documentation on the transported goods.
- Provide the possibility to send an inspector/observer from the customs service on suspicious vessels, who will control the further movement of a vessel to the port.

“Empties”, replacement/re-sorting. This pattern of smuggling of goods is currently tied to the human factor, as the verification of the presence and characteristics of the goods in a transport vehicle is carried out by customs officers without any external control.

To solve this problem, it is necessary to continue equipping all customs points with special scanners that will check the load of transport vehicles and enter the relevant information into a special unified information system, as well as compare the actual characteristics of the goods with those declared by the carrier/importer. Upon arrival at the regional customs point for unloading, there will be a repeated scanning procedure and check whether the cargo has been replaced or unloaded “on the road”. Such database and the principle of its operation will not allow a customs officer to unilaterally fabricate the results of scanning and their comparison with transport documents. In this case, a customs officer and the person crossing the border have no personal contact and at the same time a customs officer cannot unilaterally make changes to the database on the results of cargo scanning.

Interrupted transit. The accession of Ukraine to the EU/EFTA Common Transit Procedure, use of the New Computerized Transit System (NCTS) and other modern technologies for control over the delivery of goods. Introduction of mandatory sealing of transport vehicles and guaranteeing the payment of customs duties during the movement of goods through the customs territory of Ukraine. Introduction of a system of special transit
simplifications: general financial guarantee; self-application of special type seals; authorized shipper; authorized consignee. Introduction of exchange of customs information at the time of customs clearance of goods and its use to expand the capabilities of the risk analysis system: analysis of transactions for their risk even before the arrival of goods in Ukraine, a reasonable definition of forms of customs control.

“Jackets”. This method is the basis for the recognition of imported goods as commercial imports.

The next steps to improve the existing system should be:

- maintaining regulations according to which, if a private person has been absent from Ukraine for less than 24 hours or enters Ukraine more than once within 72 hours, the tax-free minimum is 50 euros;

- improving the organization and ensuring the practical implementation of the exchange of information between the databases of the State Border Guard Service and the SFS (State Fiscal Service) on the control of the frequency of movement of citizens, in order to ensure effective implementation of the above regulations.

“Postal smuggling”:

1. Strengthen control over the movement of international postal and express postal items from the border crossing point to the sorting station or place of international postal exchange by introduction of: electronic delivery control document; mandatory delivery guarantee; transport vehicle sealing.

2. Introduce the following additional criteria (conditions) for obtaining the status of express carrier and postal operator.

3. Provide customs offices with preliminary information about parcels (name, quantity, cost of goods, information about the consignee, etc.).

4. Automate the processes of data collection on parcels (registers, identification, online access to information), transfer all processes exclusively into electronic form.

5. Establish basic provisions introducing the use of exclusively electronic registers of international postal and express postal items, identification of recipients, simplification of procedures for declaring and paying customs duties, including the use of web services, granting express carriers and postal operators the status of tax agents.

6. Create a software and information complex at the central level, which will be used for management of parcels and accumulation of relevant information, as well as automation of accrual and payment of customs duties, etc.

The state must provide conditions and conclude agreements with at least the main trading partners and countries with a common border using the example of the Georgia on 100% exchange of information with countries from where goods are imported and where they are exported (so far there has been no success on this issue due to a lack of confidence in the confidentiality of information) This will allow to clearly see the mask of goods to arrive to us in Ukraine and effectively combat the false declaration of goods moving across the customs border. At the same time, above mentioned scanners should be used to check the load. According to the results of the scanning, if a customs officer cannot clearly understand which goods are being transported, the cargo will be inspected by customs officers themselves in order to prevent the illegal transportation of similar goods.

The current process of reforming the activities of the customs authorities of Ukraine, which has been taking place in recent years, to some extent does not bring the expected results. In the absence of a long-term concept of modernization of the customs service, as well as a thorough analysis of made transformations, mechanical transfer of functions, change of subordination or name of the central body or its structural units do not lead to qualitative changes in the customs system. In the course of modernization of customs authorities of Ukraine, much attention should be paid to studying the experience of other countries, its critical analysis and adapted use, and the choice of the European vector of development forces to pay the increased attention to studying the models of the organization and administration of customs authorities in the countries just in the context of prevention and counteraction to violations of customs rules.
It is necessary to create a state structure that will effectively perform the functions of law enforcement, human rights advocacy and analysis aimed at solving the problem of ensuring the financial and economic interests of the state in the context of strategic European integration processes. That is, it is necessary to institutionally reorganize the system of criminal justice bodies and introduce new forms and methods of their activities to combat crime in the areas of financial and economic activities. The next factor, the presence of which determines the creation of the above entity endowed with the necessary state powers, is the need to optimize the distribution of competence, eliminate its duplication on issues related to financial security of the state.

Although the range of such issues is extremely wide and includes not only issues of law enforcement activities in the financial-economic sphere, but also organizational problems, solving the problem of optimizing management relationships between authorized entities in the field of financial security will contribute to achieving the strategic task of reducing the shadow sector of the economy, “blocking” the processes of “shadowing”. Violations in the field of customs, tariff and tax relations are one of the most common in the system of shadow economic relations.

Four ways to prevent and combat customs offenses are used in Ukraine: customs control, which includes documentary control (examination of documents for cargo) and physical control (customs inspection of moving goods of transport vehicles), as well as detection of customs offenses using the method of risk assessment, operational-investigative activities, and such an element of customs control as post-audit (posteriori), which allows customs authorities to control the legality of the movement of goods.

5. Discussion

The system of risk management and analysis operates on the basis of built-in analytical tools, which are used by customs authorities to develop and implement a full range of control measures for high-risk goods. This allows identifying fiscal and non-fiscal risks ensuring the implementation of the principle of selectivity. Such approach to customs control maintains an optimal balance between facilitating foreign trade and ensuring the financial security of the state, reducing the time of customs clearance and shifting the emphasis to customs control after the release of goods for free circulation.

Based on the results of information collection (for example, from shipping and accompanying documents), its evaluation is carried out, depending on which the relevant decision is made and control is carried out in one form or another. At the same time during control additional information is received. If the evaluation of the initially collected information provided an opportunity to identify a customs offense, in the case of similar situations, appropriate decisions should be made regarding customs control. If it turns out that the situations are frequently repeated, and the control detects customs offenses, this indicates the detection of a pattern of illegal movement of goods, the method of committing a customs offense.

The use of a set of software and information complexes that ensure the functioning of the risk management system during customs control and clearance of goods and transport vehicles allows revenue authorities to quickly establish areas of risky operations, to distinguish between low and high risk operations, which allows control authorities to carry out inspections of particularly risky operations.

At parallel improvement of the national and international legislation the procedure for realization of foreign economic operations is also necessarily improved, logistic cycles, the international routes are optimized, the structure of a commodity turnover changes. With the consistent bringing of the customs legislation of Ukraine in accordance with the legislation of the European Union and international conventions, certain innovative models and mechanisms are created, which are implemented in practice through organizational and technical measures of production, administrative, and commercial nature after a certain period of time.

However, in some cases the simplification of customs formalities at the border leads to the impossibility of objective determination of customs value, classification, targeted use of goods, which negatively affects the
level of economic security of the national market and the amount of tax revenues to the state budget. However, in our opinion, such risks are offset by the creation of an effectively functioning system of customs post-audit and timely elimination of violations identified by its results. Thus, reducing the process of customs clearance and customs formalities to the objectively necessary minimum has a positive effect on the international image of the state, reduces bureaucracy and grounds for abuse and corruption.

All this allow to conclude that the customs post-audit should not be applied to entities of foreign economic activities that are unscrupulous and have signs of fictitiousness, including absence of production capacities, fixed assets, office space, staff). Also, it should not be applied to to those entities of economic and foreign economic activities, regarding which activities the SFS bodies have information on cases of violation of the legislation, participation in patterns to minimize customs duties, as well as on certain types of goods used in risky foreign economic operations.

The basis of international cooperation in the process of preventing and combating violations of customs rules is the exchange of information on the activities of criminal groups operating in other countries, the activities of law enforcement officers under cover, the facts of illegal movement of excisable goods, the peculiarities of cross-border surveillance. The results of preventing and combating violations of customs rules indicate that, despite the application of a complex of measures being taken by public authorities, including the SFS bodies, customs offenses are one of the key factors destabilizing the development of the state economy, including its strategic areas, contribute to the increase in crime level in the economic sphere, especially in the field of taxation.

In our opinion, one of the factors leading to such consequences is insufficient cooperation of Ukraine with other states in the field of combating violations of customs legislation. In particular, there is a lack of a proper mechanism for providing mutual assistance, assistance in conducting investigative and operational actions, detention and extradition of persons to Ukraine to prosecute them. This is most noticeable in the investigation of criminal offenses committed by transnational organized criminal groups.

**Conclusions**

The functioning of the reformed system of customs authorities should be based on the principles of automation of processes and avoidance of the subjective factor; creation of an effective system of corruption risk analysis; functioning of a unified system of electronic document flow between state bodies in order to speed up the process of information exchange; interaction with the customs authorities of the other countries. The positive experience of the functioning of the customs authorities of developed countries in the field of prevention and counteraction to violations of customs rules testifies to the extreme importance of a comprehensive study of statistical data on violations of customs rules. In further activities, this allows to establish the dynamics, determine the causes and conditions of illegal actions in the field of customs affairs, which, as a consequence, allows the legislative bodies to reform the regulatory framework in this area.

It is noted that in the process of studying the organizational and staffing structure, procedure for management and functioning of customs authorities of developed countries, it is necessary to note the lack of a single model of organization of their activities. In spite of the uniformity of tasks and unification of functions of customs authorities, the activities of these structures in each country have their own characteristics that depend on the procedure for public administration, as they are part of the state mechanism.

It is noted that the task of the activities of customs authorities should be the continuous improvement of the risk management system, which should combine regulatory, methodological, information technology, technological, organizational and personnel aspects. In view of this, the main directions of implementation of the risk management system are strengthening expert and analytical work on risk detection, as well as the development of risk detection methods. The system of risk management and analysis operates on the basis of built-in analytical tools, which are used by customs authorities to develop and implement a full range of control measures for high-risk goods.
Introduction of information technologies is at least as important in improving customs control. The electronic declaration system, like any new technology, is still imperfect. Development and implementation of new software products will allow improving the electronic declaration system, making the most of its capabilities. The fight against customs offenses of an economic nature, the main purpose of which is to import goods into the country with evasion of customs duties, can be effective and efficient only if it is conducted by measures of an economic nature.

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Abstract. The discussion about the impact of financial development on economic growth is still relevant for economists. However, in recent years, after the financial crises of the first decade of the 21st century, there has arisen certain scepticism about the positive impact of the growing financial sector on economic growth rates. Moreover, specific cases of negative consequences of such a connection or its absence have become known. The 2008-2010 crises, certainly, played an important role in rethinking the nature of the impact of the financial sector on the real sector in the economy, which led to new arguments in favour of a relatively more cautious approach to stimulating the financial sector, given the potential negative effects on the country’s socio-economic security. The aim of the research is to determine the nature of the relationship between financial development and economic growth and its direction in Latvia in the period 1995 - 2017.

Keywords: financial development; economic development; Latvia; EU

1. Introduction

The evolution of the concept of financial development began in the 6th century BC-15th century AD and continues up to now, going through a number of stages and terminological corrections from elements of the financial market to the modern interpretation of financial development according to its functions and results. The issue of the impact of the financial market on economic growth was first raised almost 150 years ago within the classical school. In the early 20th century, J. Schumpeter (Schumpeter 1954) examined the issue applying it to the theory of entrepreneurship. Later, due to objective factors – two world wars and the Great Depression – the issue of relation between the financial market and economic growth fell out of the scope of the economic science.

Different authors reflect different characteristic features providing their definition of “financial development”:...
financial depth, expressed in terms of private-sector credit and market capitalization to GDP; “liquid assets of the financial market to GDP”; or financial development is equated with financial sector development and other approaches. The authors support the views of such researchers as Ito, Kawai (Ito, Kawai 2018), Čihák, Demirgüç-Kunt, Feyen (Čihák et al. 2012), Levine (Levine, Zervos 1998; Levine, Zervos 1993; Levine 2002; Levine 2004; Levine 2005; Levine et al. 2000), Sanjaya Kumar LENKA (Sanjaya Kumar LENKA 2015), Sofia Anwar (Anwar et al. 2017), Dubauskas (Dubauskas 2012), Kazmierczyk (Kaźmierczyk 2012), Kordík and Kurilovská (Kordík, Kurilovská 2017), Novickytė, Pedroja (Novickytė, Pedroja 2014), Ohotina, Lavrinenko, Gladovich, Lazdans, Ignatjeva, Lonska, (Ohotina et al. 2018a, 2018b), Aleksejeva, Šipilova, Jermolajeva (Aleksejeva et.al. 2018), Adamczyk (Adamczyk et al. 2019), Aleksejeva, Ostrovska, Aleksejevs (Aleksejeva et.al. 2020) and Stasytytė (Stasytytė 2015) and believe that financial development is a multifactorial concept. The authors believe that financial development is a complex concept that reflects the indicators of financial markets and financial indicators of institutions - financial depth, access to financial services (financial integration), financial efficiency, and financial stability, which quantitatively change in the process of globalization, convergence, liberalization, and digital transformation in a certain country or region.

The presence and nature of the dependence of economic growth on financial development depends on the methods for assessing financial development, the study period, and the composition of the sample of countries (Table 1).

<table>
<thead>
<tr>
<th>Structure of the sample</th>
<th>Research period</th>
<th>Methods</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>19th century</td>
<td>Method of logical analysis and synthesis</td>
<td>Bagehot 1887</td>
</tr>
<tr>
<td>England, the USA, Belgium, Germany, Holland, etc.</td>
<td>19th -20th centuries</td>
<td>Method of logical analysis and synthesis</td>
<td>Гильфердинг 1922</td>
</tr>
<tr>
<td>The USA, etc. (countries around the world)</td>
<td>20th century</td>
<td>Method of logical analysis and synthesis, deduction</td>
<td>Schumpeter 1939</td>
</tr>
<tr>
<td>England, Scotland, France, Belgium, Germany, Japan, and Russia</td>
<td>19th century</td>
<td>Method of logical analysis and synthesis, deduction</td>
<td>Cameron 1967</td>
</tr>
<tr>
<td>35 countries around the world</td>
<td>1860 - 1963</td>
<td>Linear correlation</td>
<td>Goldsmith 1969</td>
</tr>
<tr>
<td>South Korea, Indonesia, Taiwan, Japan, Germany, Argentina, Brazil, Chili, etc.</td>
<td>20th century</td>
<td>Dynamic rows</td>
<td>McKinnon 1973, Shaw 1973</td>
</tr>
<tr>
<td>Ireland, Switzerland, Angola, India, Egypt, South Korea, Japan, the USA, etc.</td>
<td>20th century</td>
<td>Accumulated capital model</td>
<td>Romer 1986, Lucas 1988</td>
</tr>
<tr>
<td>20 lower-middle-income countries</td>
<td>1990. – 2012</td>
<td>Panel data analysis</td>
<td>Bilal, Songsheng Chen, and Bushra Komal 2016</td>
</tr>
<tr>
<td>32 countries</td>
<td>1978 – 1990</td>
<td>Correlation analysis</td>
<td>Dong Hc, Robert Pardy 1993</td>
</tr>
<tr>
<td>144 countries</td>
<td>2017</td>
<td>Regression analysis</td>
<td>Pietrucha, Acedański 2017</td>
</tr>
<tr>
<td>Ireland</td>
<td>1995- 2007</td>
<td>Econometric analysis of time series</td>
<td>Adamopoulos 2010</td>
</tr>
</tbody>
</table>

Source: developed by the author

The result of the studies listed in the table was both evidence of a linear relationship between financial development and economic growth, and its absence or nonlinearity.

In addition to the paradigms described above, researchers raise the question of the direction of the relationship “financial development - economic growth”. However, a predominant direction of causality comes from financial development to economic growth:
- the level of financial development influences the economic growth (McKinnon 1973; Levine 1997; King, Levine, Zervos 1993; Levine et al. 2000; Honohan 2004; Kwan et al. 1998; Ndebbio 2004, etc.)
- development of the financial sector follows economic growth (Robinson 1952; Greenwood, Smith 1996; Demetriades, etc.);
- there is a two-way causal link between financial development and economic growth (Greenwood and Smith 1996; Demetriades, Hussein, 1996, etc.).

Thus, the aim of this research is to determine both the nature of the relationship between financial development and economic growth and its direction in Latvia in the period 1995 - 2017.

2. Design and the sample of the research

In order to achieve the aim of the research, the authors use the financial development index (Rethinking Financial Deepening ... 2015), which has the following structure (Table 2):

<table>
<thead>
<tr>
<th>Financial institutions</th>
<th>Financial markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth</td>
<td></td>
</tr>
<tr>
<td>1. Private-sector credit (% of GDP)</td>
<td>1. Stock market capitalization to GDP</td>
</tr>
<tr>
<td>2. Pension fund assets (% of GDP)</td>
<td>2. Stocks traded to GDP</td>
</tr>
<tr>
<td>3. Mutual fund assets (% of GDP)</td>
<td>3. International debt securities government (% of GDP)</td>
</tr>
<tr>
<td>4. insurance premiums, life and non-life (% of GDP)</td>
<td>4. Total debt securities of nonfinancial corporations (% of GDP)</td>
</tr>
<tr>
<td>5. Stock market capitalization to GDP</td>
<td>5. Total debt securities of financial corporations (% of GDP)</td>
</tr>
<tr>
<td>Access</td>
<td></td>
</tr>
<tr>
<td>1. Branches (commercial banks) per 100,000 adult population</td>
<td>1. Percent of market capitalization outside of top largest companies</td>
</tr>
<tr>
<td>2. ATMs per 100,000 adult population</td>
<td>2. Total number of issuers of debt (domestic and external nonfinancial corporations and financial corporations)</td>
</tr>
<tr>
<td>Efficiency</td>
<td></td>
</tr>
<tr>
<td>1. Net interest margin</td>
<td>1. Stock market turnover ratio (stock traded/capitalization)</td>
</tr>
<tr>
<td>2. Lending-deposits spread</td>
<td></td>
</tr>
<tr>
<td>3. Non-interest income to total income</td>
<td></td>
</tr>
<tr>
<td>4. Overhead costs to total assets</td>
<td></td>
</tr>
<tr>
<td>5. Return on assets</td>
<td></td>
</tr>
<tr>
<td>6. Return on equity</td>
<td></td>
</tr>
</tbody>
</table>

Each indicator is standardized from 0 to 1. The lowest value of the indicator for countries is zero, and all other values are measured regarding this minimum value. In order to avoid the pitfalls appearing as a result of extreme data, the values of variables of the 5th and 95th percentile are defined as cut-off levels. Indicators are defined in such a way that higher values indicate better financial development. Then, the indicators are grouped into six sub-indexes in the lower part of the pyramid (see above). The aggregation is a weighted average of the base series, where the weights are derived to reflect the contribution of each base series to a particular sub-index. Finally, sub-indexes are similarly aggregated into higher indexes using the same procedure; the FDI index is aggregated in a similar way. Sub-indexes are constructed as weighted average of the base series where weights are the squares of the factor loadings from the analysis of principal components, in such a way that their sum comprises 1.

The result of the methodology is a relative ranking of countries in terms of depth, access, and efficiency of financial institutions and financial markets, as well as the financial development index FDI.

GDP per capita growth is the indicator of economic growth within the framework of the research.
3. Research results

In 1995, the value of the financial development index in Latvia comprised 0.13 and Latvia occupied the 21st place in the EU ranking; in 2017 the value of the financial development index in Latvia comprised 0.28 and Latvia also occupied the 21st place in the EU ranking. In the period under study, the growth rates of the financial development index values increased by 120% from the base level in 1995 (100%).

Having analysed the dynamics of the financial development index values, 2 periods have been determined: the increase of the index values from 1995 to 2007 and the decrease of the index values (with some short-term fluctuations) after 2007. Although the values of the financial development index increased in 2009 and 2010, a general trend can be observed, which is characterized by a decrease in the values of the index. Having looked at the values of GDP per capita in the period 1995 - 2007, we can note a steady increase, starting from 2007 - a decrease in GDP values until 2010, from 2010 to 2017 - GDP per capita increase in value. In 2013, GDP reached and exceeded the level of 2007.

For the typology of the EU countries according to the data of 1995 by sub-indexes: financial institutions efficiency index, financial institutions depth index, financial markets depth index, financial institutions access index, financial markets access index, financial markets efficiency index, 2 factors have been determined. The second factor, which describes 17% of the dispersion, is characterized by a financial markets efficiency index with a factor loading of 0.992. The first factor describing 53% of the dispersion is described using the following indexes: financial institutions efficiency index (factor loading 0.897), financial institutions depth index (factor loading 0.867), financial markets depth index (factor loading 0.804), financial institutions access index (factor loading 0.734), financial markets access index (factor loading 0.640).

Latvia refers to cluster group 2 in a two-factor space (see Fig. 1). The EU countries are fairly evenly distributed in clusters: 15 countries belong to the 1st cluster, 12 - to the 2nd cluster.

![Fig. 1. Cluster groups in the factor space, 1995](image)

*Source:* authors’ calculations in SPSS software
The main difference between the clusters is formed by the financial institutions depth sub-index. The first cluster is characterized by values of this sub-index up to 0.392 (including), the second cluster - values starting from 0.392 and higher. Looking at the cluster profiles (see Fig.2), it can be noted that the first cluster is characterized by relatively higher values of sub-indexes such as the financial institutions efficiency index - with an average value of 0.8, the financial institutions depth index (0.6), the financial markets depth index (0.31), the financial institutions access index (0.67), the financial markets access index (0.4) compared to the second cluster, and a relatively lower value of a sub-index such as the financial institutions efficiency index (0.31) compared to the second cluster. The second cluster, respectively, is characterized by relatively low values of such sub-indexes as the financial institutions efficiency index - with an average value of 0.53, financial institutions depth index (0.19), financial markets depth index (0.06), financial institutions access index (0.36), financial markets access index (0.21), compared to the first cluster and the value of the financial markets efficiency sub-index (0.47), which is relatively higher than in the first cluster.

According to the data of 1995, Latvia belongs to the second cluster with lower sub-index values. Latvia has particularly low values in such indicators as the financial markets depth sub-index (0.01), the financial markets access sub-index (0.05) and the financial institutions depth sub-index (0.05).

A linear relationship was found between the GDP per capita indicator and the financial development index in 1995 in the sample of the EU countries. Thus, Latvia has a positive medium-strength linear relationship between GDP per capita and the financial development index in 1995: Pearson correlation coefficient 0.557 (p-value <0.05), as well as there is a negative weak linear relationship between GDP per capita growth indicator and financial development index in 1996: Pearson correlation coefficient - 0.327 (p-value <0.05). The weakest linear positive relationship between GDP per capita and financial institutions depth sub-index: r (Pearson) = 0.106 (p-value <0.05), as well as between GDP per capita and financial market efficiency sub-index (Pearson) = 0.121 (p-value <0.05). A positive moderately strong linear correlation was found with the other indicators (see Table 3.4). The weakest linear negative correlation is between the GDP per capita indicator and the financial institutions efficiency sub-index: r (Pearson) = - 0.063 (p-value <0.05) and the financial market depth sub-index: r (Pearson) = - 0.063 (p-value <0.05) (see Table 3).

Table 3. Correlation coefficients between the financial development index (and its sub-indexes) and GDP per capita, as well as GDP growth per capita (%) in cluster groups 1 and 2 in 1995

<table>
<thead>
<tr>
<th>Cluster group</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GDP per capita</td>
<td>GDP growth per capita (%)</td>
</tr>
<tr>
<td>Financial development index</td>
<td>0.598</td>
<td>0.076</td>
</tr>
<tr>
<td>Financial institutions index</td>
<td>0.400</td>
<td>0.121</td>
</tr>
<tr>
<td>Financial markets index</td>
<td>0.585</td>
<td>0.107</td>
</tr>
<tr>
<td>Financial institutions depth index</td>
<td>0.314</td>
<td>0.374</td>
</tr>
<tr>
<td>Financial institutions access index</td>
<td>0.158</td>
<td>-0.271</td>
</tr>
<tr>
<td>Financial institutions efficiency index</td>
<td>0.520</td>
<td>0.215</td>
</tr>
<tr>
<td>Financial markets depth index</td>
<td>0.724</td>
<td>-0.051</td>
</tr>
<tr>
<td>Financial markets access index</td>
<td>0.225</td>
<td>0.082</td>
</tr>
<tr>
<td>Financial markets efficiency index</td>
<td>-0.030</td>
<td>0.172</td>
</tr>
</tbody>
</table>

Source: authors’ calculations in SPSS software

Note: significance level 0.05

For the typology of the EU countries according to 2017 data by sub-indexes: financial institutions efficiency index, financial institutions depth index, financial markets depth index, financial institutions access index, financial markets access index, financial markets efficiency index, 2 factors have been determined. The first
A factor describing 41% of the dispersion is characterized by the following sub-indexes: financial institutions efficiency index (factor loading 0.904), financial markets depth index (factor loading 0.896), financial institutions depth index (factor loading 0.715). The second factor, which describes 37% of the dispersion, is characterized by such sub-indexes as the financial markets access index with a factor loading of 0.866, the financial institutions access index with a factor loading of 0.822, and the financial institutions efficiency index with a factor loading of 0.579.

Latvia relates to the second cluster group in the two-factor space (see Fig. 2). The EU countries are evenly divided into clusters as follows: 10 countries belong to the first cluster, 17 to the second one.

The biggest difference between the clusters is in the values of the financial institutions depth sub-index. A group of 13 countries can be characterized with values of this sub-index up to 0.443 (inclusive), the second group includes countries with values of 0.443 and higher, which are typical for all 10 countries of the first cluster, as well as 4 countries from the second cluster with a financial institutions depth sub-index value higher than 0.443. However, the second group is heterogeneous in terms of financial market access criteria: a group of countries with a financial market access sub-index value below 0.795 (inclusive) consists of 10 countries in the first cluster and 1 country in the second cluster; a group of countries with the financial markets access sub-index value greater than 0.795 includes 3 countries in the second cluster.

According to the data of 2017, Latvia is included in the second cluster with lower sub-index values. The values of indicators are particularly low for Latvia according to the sub-indexes of financial markets depth (0.06), financial markets access (0.15), financial markets efficiency (0.08), and financial institutions depth (0.13) (see Fig. 3). However, compared to 1995, the financial markets efficiency sub-index has negative dynamics: the value of the sub-index decreased from 0.16 to 0.08. Small changes in the positive dynamics are observed in such indicators as the financial institutions access sub-index (increase from 0.23 to 0.57) and the financial institutions efficiency sub-index (increase from 0.48 to 0.78).
Table 4. Correlation coefficients between the financial development index (and its sub-indexes) and GDP per capita, as well as GDP growth per capita (%) in cluster groups 1 and 2 in 2017

<table>
<thead>
<tr>
<th>Cluster group</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GDP per capita</td>
<td>GDP growth per capita (%)</td>
</tr>
<tr>
<td>Financial development index</td>
<td>0.375</td>
<td>-0.401</td>
</tr>
<tr>
<td>Financial institutions index</td>
<td>0.326</td>
<td>-0.417</td>
</tr>
<tr>
<td>Financial markets index</td>
<td>0.273</td>
<td>-0.247</td>
</tr>
<tr>
<td>Financial institutions depth index</td>
<td>0.310</td>
<td>-0.337</td>
</tr>
<tr>
<td>Financial institutions access index</td>
<td>0.067</td>
<td>-0.277</td>
</tr>
<tr>
<td>Financial institutions efficiency index</td>
<td>0.449</td>
<td>0.077</td>
</tr>
<tr>
<td>Financial markets depth index</td>
<td>0.428</td>
<td>-0.139</td>
</tr>
<tr>
<td>Financial markets access index</td>
<td>0.176</td>
<td>0.127</td>
</tr>
<tr>
<td>Financial markets efficiency index</td>
<td>-0.088</td>
<td>-0.312</td>
</tr>
</tbody>
</table>

Source: authors’ calculations in SPSS software

Note: significance level 0.05

A linear relationship was found between such indicators as GDP per capita and the financial development index in 2017 in the sample of the EU countries. Thus, Latvia is characterized by a positive linear relationship between GDP per capita and the financial development index in 2017: the Pearson correlation coefficient is 0.581 (p-value <0.05), as well as there is a negative linear relationship between GDP per capita growth rate and financial development index in 2017: the Pearson correlation coefficient is –0.698 (p-value <0.05). The weakest linear positive relationship is observed between the indicators - GDP per capita and the financial institutions access sub-index: r (Pearson) = -0.063 (p-value <0.05), as well as between such indicators as GDP per capita and financial market access sub-index: r (Pearson) = 0.151 (p-value <0.05). The linear relationship with the other indicators is positive and relatively stronger (see Table 4).

In order to explain the relationship between changes in financial development and economic growth in Latvia’s data for the period 1995 - 2017, it is necessary to examine the following hypotheses:

1) there is a directed impact of financial development on economic growth;
2) development of financial sector follows the economic growth;
3) there is a two-way causal link between changes in financial development and economic growth.

In order to prove the hypotheses, it is suitable to use the lags of the financial development index values forwarding by one year and falling behind by one year.
A strong positive linear relationship was found between the financial development index values and the GDP per capita growth rates in Latvia in the period 1995 - 2017: $r$ (Pearson) = 0.860 (p-value <0). There is also a strong linear positive relationship between GDP per capita growth in Latvia in the period 1995 - 2017 and financial institutions index: $r$ (Pearson) = 0.844 (p-value <0); as well as with indexes such as the financial institutions depth index $r$ (Pearson) = 0.795 (p-value = 0.001), the financial institutions access index $r$ (Pearson) = 0.783 (p-value = 0.002), the financial institutions efficiency index $r$ (Pearson) = 0.847 (p-value <0), the financial markets depth index $r$ (Pearson) = 0.800 (p-value = 0.001). There is no linear relationship between GDP growth per capita in Latvia in the period 1995 - 2017 and the financial markets index (p-value = 0.511); as well as with sub-indexes - the financial markets access index (p-value = 0.070); the financial markets efficiency index (p-value = 0.449).

Figures 4, 5, 6 clearly demonstrate the hypothesis about the directed impact of changes in financial development on economic growth.
Figure 6, which characterizes the value of the financial development index with the growth dynamics of the lag \( t + 1 \) and the increase in the value of GDP per capita in Latvia in the period 1995 - 2017, clearly shows the coincidence of line dips in 1999 and 2009. From 2009 onwards, the trend of the two lines being in line with each other’s trends is particularly pronounced, indicating the accuracy of the first hypothesis.

Thus, it has been determined that the “financial supply” hypothesis is true in Latvia in the period 1995 - 2017. According to this hypothesis, the influence of the financial sector on the development in the real economy is explained by the fact that financial markets and institutions, increasing the supply of financial services, create the preconditions for future economic growth. However, in Latvia, GDP growth is influenced by rather developed financial institutions (their depth, access, efficiency); poorly developed financial markets do not affect GDP growth, the only exception is the financial markets depth, although the value of the financial markets depth sub-index is very low.
Conclusions and discussion

In Latvia in the period 1995 - 2017, the “financial supply” hypothesis is true. According to this hypothesis, the impact of changes in financial development on economic growth is explained by the fact that financial markets and institutions, by increasing the supply of financial services, create preconditions for future economic growth. Rather developed financial institutions (their depth, availability, and efficiency) affect GDP growth in Latvia, while poorly developed financial markets do not affect GDP growth; the exception is the financial markets depth, although the value of this sub-index is very low. This fact is confirmed by the previous studies on the impact of financial development in various groups of the EU countries on their economic growth in the period 1995-2017 carried out by the authors: there is a close relationship between the level of financial development and the level of GDP per capita, which is reflected both in the spatial samples of the EU countries throughout the entire study period, and in time series. The determined positive linear relationship between the growth of financial development values and economic growth confirms the dependence of the financial development in the EU countries on their economic growth (Čižo et al 2020). Analysis of trends in the average values of the financial development index with a lag forwarding by one year, a lag falling behind by one year and with no lag, showed that for most groups of countries gradually entering the EU the increase in financial development values in general predetermines economic growth rates with a lag forwarding by one year. This also confirms the “financial supply” hypothesis. However, if we consider certain groups of countries, the relationship between economic growth and financial development is of individual nature and can change its direction over time. Therefore, in the groups of countries that joined the EU in 1981, 1995, and 2007, the hypothesis about the mutual influence of the financial development level and economic growth is true, i.e. the development of the financial system can contribute to economic growth, and economic development in turn contributes to financial development. Latvia belongs to the group of countries that joined the EU in 2004, therefore, the hypothesis about the impact of financial development on economic growth is true about Latvia.

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LEGAL ASPECTS OF INFORMATION SECURITY MANAGEMENT IN THE CONDITIONS OF UKRAINE’S EUROPEAN INTEGRATION

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Abstract. It has been revealed that the legal and doctrinal basis of information security in Ukraine developed symptomatically and haphazardly. This is largely due to the fact that modern research methods are based on different worldview positions, solve research problems in different ways, and also use excellent research strategies. In addition, information security was primarily viewed as the information security of the state. Subsequently, the intensification of informatization processes in all areas, especially the growth in the importance of technical protection of information, led to the formation of legal support for the protection of information as an integral component of the security of enterprises, institutions and organizations, as well as individual sectors of the economy. At the turn of the millennium, the question of international information security, as well as cybersecurity as part of information security, became acute. The stages of the formation of Ukrainian legislation in the information sphere in general, and information security in particular, have been analyzed, and it has been found that at each of these stages, the information security of a person remained a secondary issue. Increasing the efficiency of administrative and legal support for information security in Ukraine is possible through the implementation of a set of legal measures, which include: clear reflection in law and state institutions of the orientation on the combination of public and private economic interests in the information sphere; constant and consistent use of all human rights mechanisms and procedures to overcome conflicts in the information sphere; raising the legal level of consciousness and activities of civil servants, representatives of all branches and levels of government, and the country’s population.

Keywords: information security; administrative and legal support; cyber security; information technology; human rights mechanism.


JEL Classifications: F35; F42

1. Introduction

The analysis of social processes taking place in recent years under the onslaught of information expansion in all spheres of life in Ukraine and the world allows to talk about the approach to the global information society. At the same time, opportunities for the onset of desired and threatening consequences both for society as a whole and for the individual are created. A modern person in a society that goes to the information things, immersed in the world of technology and unnecessary information. Information technology (IT) is actively used in every sphere of society’s life, which leads to an increase in informational influences.

The dynamic development of reality also requires a revision of approaches to understanding the security of society, the state and, above all, a person. The vision of security that emerged at the end of the 20th century,
which was based on the absence of danger or neutralization of threats, and was, first of all, adapted to the needs of the state, is not able to reflect the essence of human security in the modern globalized and information-rich world.

At the end of the XX century, information and legal research focused on the study of the characteristics of social relations that arose in connection with the increasingly active use of IT and an attempt to settle the modified relations. At the same time, two tendencies of legal regulation of relations in the information sphere have developed in the world: to use by analogy the legislation, which exists, while creating new norms only on the basis of realities that rise up in connection with comprehensive informatization; or to create new legislation.

At the same time, the regulation of existing information relations was insufficient, which emphasized the need for effective implementation of the predictive function of law. The formation of legislation does not keep pace with the achievements of scientific and technological progress, in connection with which new social relations arise, which, quite often, require, first of all, ethical and only then legal assessment by society. At the same time, an ordinary citizen finds himself in the same situation as politicians - a significant level of entropy with an excess of information and the requirement to make decisions quickly. Thus, next to external (objective) threats to information security of a person, which are associated with the illegal use of IT, insufficient or ineffective legal regulation of information relations, internal (subjective) ones rise - the lack of an appropriate level of information culture (including literacy, unwillingness to resist negative or excessive informational influences, inability to adapt to new social conditions associated with a constant increase in information saturation in all spheres of life).

Studies of the realities of society, which strives for information one and conditions for the safe existence of a person in it, indicate the need to identify patterns and trends in the emergence and actualization of information threats, as well as to determine the boundaries of the necessary and possible state intervention through legal support and institutional protection. In addition, it is necessary to study the role of a person in ensuring its own information security in the context of globalization, the development of a democratic rule of law, and the formation of civil society. Therefore, the legal foundations of human information security should be studied not detached from the information security system of society, the state and the global information security of mankind but taking into account their mutual determination and constant interaction.

2. Literature Survey

The development of security science in the direction of information security significantly depends on the immersion of a particular society and state in the reality of an information explosion and the formation of an information society (Zhang, D. (2018)).

The level of development and use of IKT in the world is very uneven, in particular, information problems of 60% of the population are at a completely different level (Shafqat, N., & Masood, A. (2016)). However, this does not mean that they do not exist.

A person is always “doomed” to search, evaluate, and protect information (the difference is only in its content - information about hunting places, a source of water, another tribe or trade secrets and personal data), that is, information activity, which is inextricably linked with information security (Ahmadi, R., & Movahed, SAHS (2019)) Only if the information society is formed, the importance of the latter is steadily growing.

The overwhelming majority of scientific works on the topic of information security begin with justifying its relevance (Kharytonov, E., et.al. (2019)), increasing the penetration of information technologies into all spheres of society (Vance, A., Siponen, MT, & Straub, DW (2020)), as well as the formation of the information society as a new stage in the development (type) of society (Spanos, G., & Angelis, L. (2016)), in which the issue of information security acquires new significance and is the subject of legal regulation, one of the main areas of national security and state security, as well as a prerequisite for respect for human and civil rights and freedoms.
Thus, the phenomenon of information security is viewed through the prism of a person’s practical-activity relationship to the state and society, based on the needs and interests of security objects and subjects (Parvin, S., Sadoughi, F., Karimi, A., Mohammadi, M., & Aminpour, F. (2019); Stefaniuk, T. (2020)). Undoubtedly, conscious security can have a decisive influence on the content and development of social processes (da Veiga, A., Astakhova, L.V., Botha, A., & Herselman, M. (2020)). This explains the relevance of the study of information security as a scientific category and as a social phenomenon (Haqaf, H., & Koyuncu, M. (2018)).

Information confrontation, like any other, is a naturally conditioned element of competition in the modern globalizing world. Therefore, the problem of information and cyber security acquires particular importance in order to establish a balance of interests of the individual, society, state, and international community (Schatz, D., Bashroush, R., & Wall, J. (2017); Tvaronavičienė, M., Plėta, T., Della Casa, S., Latvys, J. (2020)).

Information security as a scientific category is interpreted in various ways (Mandritsa, I. V., Stefano, S., Mandritsa, O. V., & Petrenko, V. I. (2016); Ključnikov, A., Mura, L., Sklenár, D. (2019)). There are both doctrinal, encyclopedic, and legal definitions (Kerr, J. A. (2018)). At the same time, methodological approaches, logical ways of their formation and consolidation, and the scope of existence and applied use differ significantly. This is also due to the fact that the category of safety is ambiguous and is determined depending on the scientific field in which it is studied.

3. Methods

The methodological basis of the research was a set of methods, approaches, and techniques of scientific knowledge – both general scientific and special: dialectical, historical and legal, logical, system analysis, statistical, systemic and structural, comparative and legal, logical and semantic, formal legal, etc... To use the modern achievements of world science, a transdisciplinary approach was chosen as one of the main ones, as one of the main ways to study complex multifactorial problems of the 21st century. The leading of the classical methods was the general scientific dialectical method of cognition, which made it possible to study the socio-legal nature of human information security in connection with the modern socio-political situation, change in the historical type of society and socio-economic formation, as well as the formation of the global information society.

The philosophical arsenal of legal hermeneutics, ontology, and axiology is also used in the work. In particular, the historical and legal method was used to clarify the features of the formation and development of legal support for information security, as well as to study the prerequisites for the formation of information human rights as the ontological essence of its information security. The system-structural method made it possible to consider the internal structure of information security, to determine the place and correlation of human information security with information security as a complex social and legal phenomenon, and to outline its place in the national security system, and also to promote the definition of research methodology for the system of legal support of information security. The statistical method made it possible to identify trends in the formation and actualization of threats to human information security. The classification method was used to comprehend the multitude of threats to human information security, to identify social groups that have certain specific characteristics that determine the generality of approaches to their insurance in the information space. The comparative method was used to compare the legislative regulation of relations in the information sphere of different countries of the world, as well as in the study of acts of international law, and to determine the prospects for adapting national legislation to international standards in the studied area. With the help of the formal legal method, the norms of constitutional, administrative, information law, and other branches of law and legislation, which determine the legal foundations of human information security, were studied. As well, this method was used to formulate the author’s definitions of concepts. The methods of theoretical and legal forecasting and modeling were used to put forward and substantiate proposals for amendments and additions to the current legislation on human information security.

The regulatory framework of the study is the national legislation of Ukraine and foreign countries (EU countries, the USA, the EU Eastern Partnership countries, the Russian Federation, and the PRC), as well as international legal acts.
The scientific and theoretical basis of the study is theoretical and methodological developments and monographic studies of specialists in the general theory of state and law, in the fields of constitutional, administrative, information, international law and scientific developments in security theory, sociology, psychology, and political science.

The empirical basis of the study was the materials of the rule-making practice of public authorities, political and legal journalism, reference books, statistical materials, case law of Ukrainian and foreign courts, as well as the European Court of Human Rights on the topic of the study.

4. Results

At the beginning of the XXI century, the activity of the state in the legal field has changed significantly and dynamically. However, the changes that have occurred so far have not received their systematic, comprehensive scientific and theoretical analysis in the field of information security. This especially concerns the issues of guarantees and protection of the rights and freedoms of citizens, maintaining the information security of the individual, which is becoming an independent subject of state policy.

It is not by chance that the current development of a person and society is characterized by the development of a legal lifestyle as one of the most optimal value institutions for survival and achieving well-being. It is obvious that ensuring information security at the present stage is simply impossible without the active influence of law as a system of norms and the legal system of society. In the complex interweaving of the sphere of security and law, as a normative regulator, a new form of information security is born, which provides public life with predictability, stability, adequacy, and certainty. It is information security as a state of protection of the interests of the individual, the rights and freedoms of man, society and the state that makes it possible to see and evaluate the normal functioning of the political and economic system of the state. The information security mechanism provides the information sphere with additional guarantees of viability and normal functioning.

As a regulated system, the information security mechanism itself requires regulatory impact. The interaction of the constituent links (elements) of the information security mechanism is embodied in legal relations, in a special subject-object environment, in corresponding relationships, and the implementation is carried out in acts of a volitional nature, which are applied taking into account the place and role of one or another link in the information security system.

The theory of information society development shows a relatively low degree of criticality of research in regard to the opportunities that open up through the use of information technology. This leads to insufficient attention to new types of dangers, threats that arise in society as a result of the negative effects of information technology. The problem of information security arose on the basis of a global contradiction between the capabilities of information technologies, on the one hand, and the negative effects, dangers, and threats of their use for destructive purposes in relation to the individual, society, and state, on the other hand.

Currently, in the context of the implementation of the Association Agreement between Ukraine, on the one hand, and the European Union, the European Atomic Energy Community and their member states, on the other hand, one of the main strategic priorities is the development of the information society and the introduction of the latest information and communication technologies in all spheres of public life and in the activities of public authorities (On the ratification of the Association Agreement between Ukraine, of the one part, and the European Union, the European Atomic Energy Community and their Member States, of the other part (2014)).

As indicated in the “Strategy for the Development of the Information Society in Ukraine” (adopted on May 15, 2013), the goal of the formation and development of the information society in Ukraine is to improve the quality of life of citizens, to ensure the competitiveness of Ukraine, to develop the economic, socio-political, cultural, and spiritual spheres of life society, to improve the public administration system based on the use of
information and telecommunication technologies (On approval of the Information Society Development Strategy in Ukraine (2013)).

The statistical data on the relevance of cyber threats in Ukraine for 2019 have been considered. The rapid informatization of society has a positive effect on many areas of the economy: the financial industry, trade, industry, health care, education, science. Today information technology is an integral part of not only successful business but also state policy. However, criminals learned to use them for their own purposes, which gave rise to a confrontation with information security specialists. This struggle contributes to the continuous improvement of the methods and tools used by the attacker, which inevitably generates an increase in the number of cyber threats.

The cyber threat is a combination of factors and conditions that create a threat of information security breach. In this study, the authors consider cyber threats from the point of view of the actions of cybercriminals in cyberspace aimed at penetrating an information system with the aim of stealing data, money, or with other intentions that potentially lead to negative consequences for the state, business, or individuals. The actions of criminals can be directed to the company’s IT infrastructure, work computers, mobile devices, other technical means, and, finally, a person as an element of cyberspace.

Figure 1 shows the methods of attacks on legal entities and individuals in Ukraine in 2019.

<table>
<thead>
<tr>
<th></th>
<th>Individuals</th>
<th>Legal entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of malware</td>
<td>50%</td>
<td>61%</td>
</tr>
<tr>
<td>Social engineering</td>
<td>64%</td>
<td>37%</td>
</tr>
<tr>
<td>Hacking</td>
<td>6%</td>
<td>20%</td>
</tr>
<tr>
<td>Exploiting web vulnerabilities</td>
<td>1%</td>
<td>18%</td>
</tr>
<tr>
<td>Selection of credentials</td>
<td>6%</td>
<td>12%</td>
</tr>
<tr>
<td>Others</td>
<td>2%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Figure 1. Methods of attacks in Ukraine (2019)

*Source: compiled on the basis of https://cert.gov.ua/

Let’s take a closer look at each method and point out which objects and industries suffered most from these categories of attacks.

The use of malware - Figure 2.
The share of multifunctional Trojans continues to grow. For example, the modular DanaBot Trojan, about which it was written in the first quarter, is now capable of acting as a ransomware. On the contrary, the activity of one of the most widespread ransomware GandCrab began to decline, and its operators announced the end of the malicious campaign. A few weeks after the news of the cessation of the development of the ransomware Trojan, it became known that cybersecurity specialists gained access to the GandCrab servers, and with it the encryption keys, thanks to which a decryption program was created for the latest version of GandCrab, which allows to recover files encrypted by it.

Despite these events, the share of ransomware attacks remains high. This is because you do not need to develop a unique code to create a simple ransomware. Most of the new copies of ransomware are very similar to their predecessors since cybercriminals often do not develop the ransomware from scratch but purchase ready-made code or a subscription (ransomware as a service) on the dark web. Thus, with a minimal start-up capital, ransomware can bring owners a good income.

Since April 2019, there have been periodic reports of attacks by the new ransomware Sodinokibi. At least three IT service providers have already become victims. Cybercriminals used remote administration tools (Webroot and Kaseya) to infect companies with ransomware - clients of compromised IT service providers with the ransomware. However, supply chain attacks are not the only vector for Sodinokibi’s spread. The Trojan also spreads through vulnerabilities in Oracle WebLogic Server and phishing emails. Email remains the most popular delivery method for malware (Figure 3).
In the second quarter, experts noted an increase in the spread of Trojans through ISO files (digital images of CDs). For example, AgentTesla, LokiBot, NanoCore are distributed this way. ISO images are often not detected by antivirus solutions because they can be whitelisted. One can suspect something was wrong by the size of the file - a malicious attachment is no more than 2 MB in size, while a legitimate ISO image is usually much larger.

The bitcoin rate is steadily growing and cybercriminals continue to develop software for hidden mining. For example, Sucuri specialists discovered a sample of the miner with improved mechanisms for fixing it in the infrastructure: a special cron script (a script for performing certain actions on a schedule) allows to restore the mining process even if the main malware module was detected and removed from the infected system.

In the second quarter of 2019, cybercriminals actively distributed the AZORult info-stealer. For example, in April, experts of the Positive Technologies Expert Security Center (PT ESC) noted that the RTM group began to use AZORult instead of Pony. In addition, the AZORult Trojan spreads through websites under the guise of various utilities (for example, under the guise of a utility for cleaning and optimizing the work of the G-Cleaner OS or the Pirate Chick VPN client).

In the third quarter of 2019, cybercriminals actively used the set of Azure App Service for various types of social engineering fraud. For example, Azure service is used to quickly deploy phishing pages with bogus authentication forms and to create bogus Microsoft support pages with pop-up messages that a website visitor’s computer is allegedly infected with a virus. In addition, cybercriminals send emails offering to download a file by logging in through a fake form previously hosted on the Azure Blob Storage platform. The scale and success of this kind of fraudulent operations are facilitated by the windows.net domain in the address bar and a valid Microsoft SSL certificate. However, the credentials theft scheme is not new, and there are special instructions for users to help set up the automatic blocking of such phishing emails.

As already noted, the rapid rise in the bitcoin rate in the second quarter led to an increase in interest in cryptocurrency, which is what some cybercriminals are trying to make money on. For example, the scammers once again turned to the old scheme, when, allegedly on behalf of famous people or organizations, cash prizes are distributed with the only condition: to receive a reward, it is necessary to make a preliminary transfer of
a small amount of money under the pretext of verifying the address of the recipient of the award. This time, «prizes» in cryptocurrency were handed out allegedly on behalf of John McAfee and Elon Musk.

The YouTube platform is very popular among Internet users, which makes video channels an attractive platform for placing malicious links. During one of these fraudulent campaigns, viewers were offered to watch videos, allegedly teaching how to work with a free bitcoin generator, a link to which was placed in the description under the video. In fact, clicking on the link initiated the download of the Qulab info-stealer. As a result of another similar campaign, malware for remote control of njRAT was distributed via YouTube.

Decentralization and insufficiently clear hierarchy in the activities of subjects of information security in Ukraine, such as the Cabinet of Ministers of Ukraine, the Ministry of Information Policy of Ukraine, the Ministry of Justice of Ukraine, MBC of Ukraine, the lack of unified regulatory foundations for ensuring information security except for the Doctrine of Information Security and the Rules for ensuring the protection of information in information, telecommunication, and information-telecommunication systems approved by the Resolution of the Cabinet of Ministers of Ukraine on March 29, 2006 under No. 373, and detailed legislative regulation of the relevant administrative procedures contribute to abuse in the application of measures of administrative coercion.

The problem of objective selection of means and tools for the investigated sphere of regulation, proper stimulation of actors operating in this area, ensuring the operation of mechanisms due to the nature of the sphere of information security should be solved by the relevant regulatory body on the basis of the current administrative and legal principles.

The specifics of the factual and formal legal grounds and the rules for the appointment of administrative punishment, the administrative process procedure for application, the principles of legality, publicity, individualization, completeness and objectivity of the study of the circumstances of the case, the presumption of innocence, humanity, justice, equality of citizens before the law, and respect for the dignity of the individual should be taken into account by the administrative jurisdiction bodies when applying measures of administrative coercion in the field of information security. These principles are important and are reflected in the current judicial practice.

However, one should take into account the public nature of the state’s goal in relation to ensuring information security, which arises from the peremptory norms of the established legal regimes, and the balance and equilibrium of the public and private sides of information legal relations do not always correlate with the tasks of the state in achieving this goal. A number of legal institutions created to maintain this balance, for example, the Institute of the Ukrainian Parliament’s Commissioner for Human Rights, are more likely to combat identified abuses of state power than to optimize public administration in the field of information security.

Various spheres of public life dictate the imperative of the differentiated approach to legal regulation. The sphere of security is connected with restrictive and prohibitive norms of law, which are mandatory. Freedom of information relations can be limited by the state in order to ensure information security. Coercive measures, that do not stimulate and do not encourage, are created for the implementation of state goals and are designed to satisfy the state interest. Threats to information security are facilitated by the underdevelopment of the social information infrastructure and the unresolved problems of the state legal system for ensuring law and order, and the underestimation by the executive authorities of the possibilities of administrative coercion in the information sphere. Ensuring law and order is based on measures of administrative coercion, the corresponding legal gaps may result from the inconsistency of these measures with the goal of ensuring the information security of the state.

It is advisable to take into account the ambiguity of the tasks of ensuring information security: both general prevention and stimulation and support of subjects of information activity - owners of critical information infrastructure facilities. The solution of these tasks will contribute to an increase in the efficiency of the subjects
of the investigated activity in countering information security threats.

First of all, the following shortcomings should be eliminated: lack of legislative systematization of administrative-compulsory measures in the field of information security; lack of control over the timeliness and compliance of their application (expressed in the absence of an appropriate authorized control and supervisory body of the executive power conducting the relevant activities); the absence of the executive authority with functions of a predictive and advisory nature in the field of information security, which summarizes law enforcement activities on all enforcement measures and gives recommendations for optimization and unification (possibly a collegial advisory body).

A systematic organization of legislative support for information security is also necessary since a clear regulation of norms is imperative in nature, the rule of law in any sphere of public relations has always been determined. It is necessary to move from a long-term strategy in the field of information security (the Doctrine of Information Security of Ukraine) to the draft Law «On the Basics of Information Security», the adoption of which will serve as the basis for improving the corresponding administrative and compulsory measures.

The effectiveness of organizing and ensuring information security by the National Police is determined by compliance with an objective social purpose, which is expressed in the appropriate conditions and indicators, and all the rest, relatively independent cost-economic, technological, and technical efficiency criteria should be considered as subordinate to social goals, outside of which their application loses meaning and may even hinder the achievement of such goals.

The main criteria for assessing the organization of the activities of the National Police in the field of information security should include: balance of organizational, structural, and functional parameters; adequacy (quantitatively and qualitatively) of resource provision; professional training and readiness of the personnel corps; content filling of management functions, corresponding to the needs of organizational and law enforcement practice; the quality of organizational and law enforcement activities that meets the needs of society and meets the priorities of protecting the rights, freedoms, and life of people.

The assessment should cover the process of performing one of the main tasks of the analytical function of the management activities of the National Police in the field of information security, including a description of the object of assessment, identification of deviations and failures in its functioning, explanation of the reasons and conditions that give rise to them, justification of management decisions and activities.

The analytical function of this task can be ensured in the unity of two directions: increasing the level of methodological and information support of this problem, expanding the range of modern scientific methods and information technologies, which are used in its solution, raising the professional level of personnel employed in this information and analytical field.

5. Discussion

At the present stage of development of the European information space, the main direction of information security is formed within the framework of comprehensive crime prevention programs. Being an objectively necessary function of the National Police bodies, prevention in the field of information security has not been widely used in their activities for a long time. The explanation for the slow development of prevention in the system of National Police bodies, in our opinion, is due to the following reasons: lack of sufficient grounds for the implementation of prevention in the context of socio-political, legal, and economic reforms; the prevalence of opinion about the automatic solution of information security problems as technologies change; advantage in ensuring information security of coercion methods; legal lack of regulation of preventive activities; the negative attitude of the police towards prevention, underestimation of its capabilities and effectiveness in comparison with traditional types of activities - administrative and criminal jurisdictional; lack of internal organizational and personnel prerequisites.
The modern practice of crime prevention in the field of information security does not correspond to the global approaches of its organization in a number of fundamental positions. In Ukraine, the prevention of offenses, within the limits of their competence, is mainly carried out by law enforcement agencies. There is no relevant branch of legislation, which regulates special relations in the field of crime prevention for state and local authorities, non-governmental organizations, business structures, and civil society institutions. There are only individual elements of the state system for the prevention of offenses with insignificant participation of public associations and the population.

In our opinion, taking into account the dynamic development of the national information space, the legal regulation of information security should consist of two levels and include:

- a comprehensive legal regulation of information security management processes, which is enshrined in legislative acts prepared on the basis of a comprehensive scientific examination and substantiation of the stages, methodology, and system of relations that develop in the process of administrative and legal regulation of the activities of security entities in a particular area;

- regulatory and legal regulation of the activities of the National Police in certain areas of information security, which consists of sectoral regulatory legal acts of the National Police, documents of other bodies (for example, the Ministry of Information Policy of Ukraine, the State Service for Special Communications and Information Protection of Ukraine (On the establishment of an interdepartmental working group of the Administration of the State Service for Special Communications and Information Protection of Ukraine and the Ministry of Internal Affairs of Ukraine: Joint Order of the Administration of the State Service for Special Communications and Information Protection of Ukraine, Ministry of Internal Affairs of Ukraine (2015))), which ensure the implementation of state functions in the field of information security.

The relationship between legislative and departmental regulation should be divided according to the characteristics of the management object and the administrative and legal regulation subject, which will answer the question of what legal relations outside the administrative boundaries are formalized (or should be formalized) using regulatory prescriptions. The starting point here is the theoretical understanding of the regulation subject as of social relations that constitute the administrative influence object, which is carried out with the help of legal norms embodied in legislation. They are addressed to the participants in managerial relations, determine the boundaries of possible and proper behavior, thereby influencing the will and consciousness of the relevant subjects.

It is advisable to carry out a comprehensive legal regulation of information security management processes by systematizing and unifying administrative legislation in the field of information security with the help of a codified normative legal act that will establish the initial principles of administrative and public information security in Ukraine.

As such a regulatory legal act, one can propose a joint order of the Ministry of Information Policy of Ukraine, Ministry of Internal Affairs of Ukraine, State Service for Special Communications and Information Protection of Ukraine “On the basics of administrative and legal support of information security in Ukraine”, in which it is advisable to solve the following tasks:

- the creation of the same conceptual and categorical apparatus, which very clearly reveals the essence, structure, and content of information security in the field of administrative and legal regulation in Ukraine in accordance with the categories developed by legal science;

- the creation of a unified system of specialized executive bodies and executive and administrative bodies of local self-government in Ukraine, which are empowered to ensure the fulfillment of obligatory conditions and information security requirements related to the direct intervention of these bodies in the administrative, economic, organizational, and administrative and other activities of physical and legal persons;

- systematization and unification of administrative and legal methods of activity of executive authorities and executive and administrative bodies of local self-government will ensure the fulfillment of obligatory conditions and requirements of information security with direct intervention in the administrative, economic, organizational and administrative, and other activities of individuals and legal entities;
the formal definition of the functions of administrative and legal support of information security, which is transferred to local authorities by state authorities of Ukraine as outsourcing;

the creation of the optimal systemic model of interaction by the method of systematic and sequential change of individual system quality indicators on the basis of reducing the possibility of direct interference in the sphere of technological and civil legal relations, which leads to corresponding changes in the circle and nature of social relations protected by administrative law.

**Conclusions**

The development of the system for the prevention of offenses in the field of information security that meets modern information security requirements should, in our opinion:

be based on the experience accumulated in the European Union in the development and implementation of national comprehensive programs for the prevention of offenses and legal education of the population;

be carried out within the framework of the unified methodological approach to researching information security problems, taking into account criminology and delictology on the basis of analytical jurisprudence;

rely on a well-thought-out social policy with an optimal combination of purposeful efforts of the state with the initiatives of various institutions of civil society.

The desire to join the European Union creates real preconditions for the formation of the system of government measures to influence the state and dynamics of preventive processes in the field of information security. The practice of organizing preventive activities in the countries of the European Union is based on the principles:

- crime prevention is an important component of national public policy;
- consistency and an integrated approach to the organization of preventive activities, which provides for the use of all methods of influencing the state of information security. The effective social system of influencing crime reduces people’s desire to commit a crime and the ability to implement criminal plans, ensures the cessation of criminal activity, and should be based on the principles of:
  - synergetic approach to the organization of the mechanism of educational influence of all subjects of preventive activity in the field of prevention of deviant human behavior taking into account victimological prevention, and active involvement of citizens in work on increase of vigilance in the field of information and psychological safety;
  - adequate material, ideological, personnel, information, and scientific support of this activity;
  - constant changes in the system of influence on the organization of information security in the context of changes in social and criminal reality.

The study of European experience in the organization of crime prevention in the field of information security allows to identify general trends in the development of prevention systems: the priority of prevention in the policy of counteraction to offenses, ie creating conditions for people not to enter a criminal path but if a person entered or left it (voluntarily or under coercion), then did not end up there again; development and adoption of laws, state and local programs; organization of a single coordinating body; participation in international cooperation in this area through a system of civil society institutions; active regional policy of crime prevention; wide use in the process of organizing preventive activities, which are implemented in various forms at all levels of social management; program-target planning, which is an important tool for the implementation of public policy and allows to organize a clear, well-founded work to achieve goals and objectives.

The adoption of the law “On the principles of the state system of crime prevention” may be an important legal basis for crime prevention, including in the field of information security, taking into account the provisions laid down in regulations that have the same technological system of information security and are common to EU countries principles of crime prevention.
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CUSTOMS REGULATION OF THE FOREIGN TRADE SECTOR OF UKRAINE IN THE NATIONAL SECURITY SYSTEM

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Abstract. Integration of the foreign trade sector of the national economy at the practical level is a reform of the bilateral trade regime through the liberalization of customs-tariff and non-tariff regulation, unification of the conditions for the international movement of production factors (investments, labor), and internal regulations that have an indirect impact on the development of foreign trade relations in order to eliminate economic barriers and the creation of a single market space between the parties to the integration association. Customs regulation of the foreign trade sector plays a key role in the national security system. At the present stage, this type of integration takes the form of concluding bilateral agreements on a deep and comprehensive free trade zone, which apply, inter alia, to environmental standards, government procurement, trade aspects of intellectual property rights, and the like. Based on the analysis, it is proved that the general structure of export supplies from Ukraine to the EU continues to be of a raw material nature: 52.8% of their value are agricultural raw materials, mineral resources, and primary processing products. The most adequate expansion of a deep and comprehensive free trade zone for modern realities is the vision of the role of the state as a systemic regulator, which, on the one hand, does not resort to the policy of isolationism, and on the other hand, acts as an active participant in the processes of international economic integration and entry into the most developed markets of the countries of the world, helping to increase the level of competitiveness of the foreign trade sector of the national economy.

Keywords: national security; customs regulation; tariff quotas; foreign trade sector; free trade


JEL Classifications: F35; F42

1. Introduction

The entry into force of the Deep and Comprehensive Free Trade Area Agreement as an integral part of the Association Agreement with the EU has become the largest integration project in the modern history of Ukraine. The foreign trade sector of the domestic economy has undergone significant shifts in the geographical structure of both export and import supplies of commodities. The share of EU countries in the structure of Ukrainian exports for 2013-2017 grew from 26.9 to 38.3%, imports - from 37.2 to 42.4%. Granting of autonomous trade preferences by the European Union to Ukraine two years before the entry into force of the Association Agreement; the comprehensive nature of trade liberalization, embodied in the agreement, which went beyond the mutual abolition of import duties; ensuring the asymmetric nature of tariff liberalization during the transitional period of the agreement in favor of commodities and services originating from Ukraine; the unprecedented
establishment by the EU of duty-free tariff quotas for agricultural commodities, which are usually removed from the free trade regime, and the action of a number of other factors, combined with the need to search for alternative sales markets for the partial loss of the Russian Federation market, contributed to the fact that the EU has become Ukraine’s largest foreign trade partner at the present stage.

Along with this, there are significant imbalances in the structure of bilateral trade between Ukraine and the EU. Ukrainian commodity exports are dominated by raw materials and low-tech products of primary processing (ferrous metals, iron ores, cereals, oilseeds, vegetable fats, fuelwood, etc), the share of which reaches 53.6% of exports to EU countries, while the share of machinery and equipment is only 14.2% of exports. The opposite trend can be traced in relation to imports from the EU – more than half of its value is made up of science-intensive high-tech products (land vehicles, electrical machines, production equipment, complex chemical compounds, pharmaceuticals) with a high level of added value. The net export of commodities from Ukraine to the EU countries at the end of 2017 amounted to 3.3 billion US dollars with a total foreign trade balance of 2.6 billion US dollars. Therefore, despite the growth in the quantitative parameters of foreign trade exchange between Ukraine and the EU, its inherent structural imbalances continue to exert devaluation and inflationary pressure on the national monetary unit, thereby complicating the stable development of the macroeconomic environment. The situation is complicated by the fact that the conditions of a deep and comprehensive free trade zone significantly limit the use of most measures of the state’s structural policy in the field of increasing the efficiency of Ukraine’s foreign trade relations with the EU.

The goal of the work is to develop conceptual foundations, to substantiate theoretical and methodological approaches, institutional means, and practical tools for the formation of an effective system of state regulation of the integration of Ukraine’s foreign trade sector into the EU.

2. Literature Survey

Integration as an economic process in its historical development has passed and continues to pass through certain degrees - from simple to complex. However, all degrees have one thing in common, which is that certain economic barriers are removed between countries that have joined one or another type of integration (Kittova, Z., & Steinhauser, D. (2018); Mazzanti, M., Mazzarano, M., Pronti, A. & Quatrosi, M. (2020)).

As a result, within the framework of the integration association, a single market space is formed, where free competition unfolds (Niemann, A., & Ioannou, D. (2015)). Under the influence of market regulators (prices, interest, etc), a more efficient territorial and sectoral structure of production appears in this single space. Thanks to this, all countries benefit from increased labor productivity, as well as cost savings on customs control over foreign economic relations. At the same time, each degree of integration has its own specific features.

Thus, international economic integration presupposes the convergence and mutual adaptation of all structures of national economies; it should be considered the highest form of internationalization of economic life. However, one should not equate economic integration and economic cooperation between countries since at the stage of economic integration:

- an international economic complex with its own structure and governing bodies is being created (Pridachuk, M., & Tolstel, M. (2016)). The general conditions of economic activity are determined and agreed upon within each country, at the interstate and supranational levels;
- the variability of combining various resources for a joint solution of socio-economic problems increases (Kobrin, S. J. (2015));
- the basis of integration activities is precisely the interaction in the field of production and science (and on favorable terms compared to other countries) and not foreign trade exchange (Ward, D., Kim, JH, Graham, M., & Tavits, M. (2015));
- integration cooperation is complex and long-term (Karpenko, L., et al. (2018)).
In the modern world, international economic integration is regional in nature (Bryant, C. E., & Javalgi, R. G. (2016); Mazzanti, M., Mazzarano, M., Pronti, A., & Quatrosi, M. (2020)). Therefore, regional international economic integration, in our opinion, should be characterized, firstly, as a specific process of forming systems of interdependence and complementarity of national economies, which are accompanied by a complex combination of economic and social development, and secondly, as a special type of interaction between economic within certain regions of the country.

Although foreign trade policy within the Free Trade Area (FTA) appears to remain largely within the responsibility of national governments, there is also the problem of redirecting foreign imports through the countries of the integration group, which have the lowest external tariff (Gräbner, C., Heimberger, P., Kapeller, J., & Schütz, B. (2019); Chetthamrongchai, P., Jermsittiparsert, K., Saengchai, S. (2020)).

In general, this reduces the tariff efficiency of each member state to the lowest level plus the cost of transporting indirect imports (which is a loss of real value of resources). The usual solution to this problem is the rules of origin of commodities, ie an unquestionably motivated requirement for commodities, which are subject to tariff-free trade and which should be produced in a member state and not simply transit through those countries.

However, the rules of origin are complicated by the fact that they must take into account the tariffs on imports of intermediate commodities, which are used in the production of products within the integration group (Drapper, P., & Nene, M. M. B. (2015)). The rules of origin are based on the principle that a tariff should be levied on foreign imports into FTA free trade zones during the final sale but additional value added should be exempt from the tariff. The rules of origin are quite complex and the negotiation process is also complex (for example, the EU-Poland agreement on the rules of origin contained 81 pages of fine print) (Türkcan, K., & Saygılı, H. (2018)).

However, despite the fact that there are such detailed rules of origin, the problem of transit imports through FTA member countries, where the lowest external tariffs apply, has not yet been resolved. Low external tariff partner countries can meet mutual product requirements with third countries and export appropriate quantities (or all) of their own products to partner countries. This phenomenon is known as indirect redirection of imports.

Paying tribute to the scientific work of scientists on this issue, the scientific literature does not present the results of research on the formation of the effective system of customs regulation of integration of Ukraine’s foreign trade sector into the EU national security system while maintaining structural imbalances and hidden protectionism in bilateral export-import relations in the formation of a free trade area (FTA).

Therefore, it is extremely important to formulate and substantiate the conceptual framework of Ukraine’s regulatory policy in the process of integration of its foreign trade sector into the EU, the implementation of which will help optimize the potential benefits of the agreement on deep and comprehensive FTA on the basis of priority provision of national economic interests in the development of domestic production and export potential. The urgency of this task, its insufficient theoretical and methodological development led to the choice of topic and purpose of the study, the logic and direction of the study, and its practical significance.

3. Methods

In the process of fulfilling the goal of the work, a number of general scientific and special methods of scientific knowledge of the objective nature of economic phenomena and integration processes were used, in particular: scientific abstraction method – for exhaustive determination of economic content of categories; system method – to generalize the system of measures of tariff and non-tariff regulation in integration processes; comparative analysis method – to study the world experience of countries in the implementation of integration projects with the EU in the field of foreign trade; methods of quantitative analysis, induction, and
deduction - to determine methodological approaches to assessing the effectiveness of state regulation of the foreign trade sector and assessing the current state of development of foreign trade relations between Ukraine and the EU; system-structural analysis method – to determine the priority areas and the formation of conceptual approaches to the regulatory policy of the state in the foreign trade sphere in terms of the deployment of European integration processes. In addition, formalization, induction and deduction, analysis, and synthesis methods were used.

The information base of the study consists of the text of the Association Agreement between Ukraine, on the one hand, and the European Union, the European Atomic Energy Community and their member states, on the other hand; normative legal acts of Ukraine and the European Commission; analytical materials of the European Bureau of Statistics (Eurostat), the State Statistics Service of Ukraine (SSSU); data of the Ministry of Economic Development and Trade of Ukraine, the National Bank of Ukraine; research results of the Institute for Economic Research and Policy Consulting, the Center for European Policy Studies, the State Research Institute for Informatization and Modeling of the Economy; analytical publications of the Organization for Economic Cooperation and Development (OECD), the World Trade Organization (WTO), the United Nations Conference on Trade and Development (UNCTAD), the United Nations Industrial Development Organization (UNIDO), and the World Bank.

4. Results

The Deep and Comprehensive Free Trade Area (DCFTA) with the EU began to operate in 2016, although a significant part of trade barriers between the countries was lifted in April 2014 since the introduction of EU autonomous trade preferences, that is, a free trade zone with the EU de facto started to operate for Ukrainian exporters for several years now. In the case of Ukraine, the entry into force of the Deep and Comprehensive Free Trade Area Agreement in 2016 served as one of the main factors in the post-crisis recovery of the domestic economy. According to the results of 2017, the export of commodities and services to the EU grew by 27.8% and reached the 2013 level of +20.2 billion US dollars.

At the same time, more than half of this increase was due to the increase in real exports, which was measured at constant prices. The volume of real exports to the rest of the world almost did not grow, therefore, it was exports to the EU that made the largest positive contribution to the growth of real GDP of Ukraine in 2017. The share of the EU in Ukraine’s foreign trade turnover was high in the entire history of cooperation, amounting to 38.3% in exports and 42.4% in imports (Figure 1).
However, despite a number of positive changes, the structure of Ukraine’s foreign trade sector in cooperation with the EU continues to be raw materials, as exports are still dominated by ferrous metals (19.4%), sunflower oil and oilseeds (14.4%), cereals (10.1%), and iron ore (8.9%).

Thus, despite a number of economic shocks, compared to 2013, the position of exports to the EU has changed slightly. Thus, the first positions in the list of commodities exported to the EU are occupied by the same corn, sunflower oil, sets of wires for spark plugs, iron ore, and metal products, which are presented in Table 1.

Table 1. Commodity structure of Ukraine’s exports to the EU, 2013-2017

<table>
<thead>
<tr>
<th>Commodity position</th>
<th>2013, %</th>
<th>2017, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Sunflower crude oil</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Sets of wires for spark plugs</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Semi-finished products from carbon steel</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Agglomerated iron ores and concentrates</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Non-agglomerated iron ores and concentrates</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Rapeseed with low erucic acid content</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Cake and other solid wastes from sunflower seeds</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>54</td>
<td>58</td>
</tr>
</tbody>
</table>

Source: created on the basis of Understanding of the EU-Ukraine Association Agreements, Moldova and Georgia; UN COMTRADE Database
Corn took the first place, the share of which fell from 10% in 2013 to 8% in 2017. Sunflower oil moved to the second position - 7% of exports. In third place, sets of wires for spark plugs, the share of which in exports to the EU increased from 6% to 7%.

The dynamics of the structure of exports of commodities from Ukraine to the EU-28, as can be seen from Figure 2, shows the invariability of the positions of basic commodities. However, it should be noted that new products are gradually entering the EU market. If in 2013 Ukraine supplied 75% of total exports to the EU, in 2017 the range of supplies to the EU was already 81%, while the number of total exports of Ukraine during this time gradually increased.

![Figure 2. Dynamics of the structure of exports of commodities from Ukraine to the EU-28 in 2012-2017, %](image)

In 2017, newbie products entered the EU market, which had not been supplied to the EU for the previous five years. The total amount of «brand new» exports was 2.8 billion US dollars. Among the newbie products, approximately 20% went to butter (a good example of the success of efforts to adapt to EU food safety requirements) and another 15% went to underground conveyors. Further on the list are rare metal ores and concentrates, magnesium powder, snowmobiles, textile machinery, and medicines containing antibiotics. From these commodities, about half of the positions, in particular, metal ores, magnesium, and medicines in the amount of 1.3 US dollars were supplied to Ukraine exclusively to the EU market. According to the results of 2017, Ukrainian exports of commodities to the EU grew by 30% and reached a record 17.5 billion US dollars, which is the highest figure since 2012, as shown in Figure 3.
Figure 3. Dynamics of Ukraine’s foreign trade in commodities with EU-28 countries in 2012-2017, billion US dollars

Source: created on the basis of UNCTAD Statistics

More than half of the increase in exports was due to an increase in real exports, ie exports measured in constant prices. Interestingly, the volume of real exports to the rest of the world has hardly increased. Thus, it was exports to the EU that made a positive contribution to Ukraine’s real GDP growth in 2017.

It should be noted that almost two thirds of processed products are supplied to industrial consumers in the EU, which makes Ukrainian exporters part of European production chains. Thus, one of the most famous examples of Ukraine’s participation in EU production chains is, of course, the production of electrical equipment for the automotive industry. In 2017, sets of wires for vehicles were the third most expensive commodity to be exported to the EU: 1.2 billion US dollars, which is 28% more than in 2013 (National Industrial Portal).

According to the monitoring group “Enterprises of Ukraine”, since 2015 at least nine new plants of this direction have been opened in the country with a total number of jobs about 15 thousand. The cost of supplying antennas accounting for 0.2 billion US dollars has increased almost tenfold over the past five years (National Industrial Portal).

It should be noted that for exports under the free trade regime with the EU (zero or reduced duties), it is necessary to obtain a certificate of carriage of commodities in the EUR.1 form, which is issued from January 1, 2016 by the customs authorities of Ukraine.

The procedure for issuing EUR.1 certificates is similar to that in European countries and provides for maximum simplification of issuing certificates free of charge as soon as possible while strengthening the exporter’s responsibility for the accuracy of information needed to determine the Ukrainian origin of commodities.

During 2016-2017, according to the State Fiscal Service (SFS), 100,000 EUR.1 certificates were issued for commodities of Ukrainian origin for the possibility of their transportation to EU countries, which indicates an increase in exports to the EU.

The largest number of certificates was issued to Poland – 28957 pieces, or 29%, Germany – 13643 pieces, or 13%, Romania – 8042 pieces, or 8%, Italy – 5319 pieces, or 5%, the Netherlands – 4159 pcs., Lithuania – 3903
pcs., Bulgaria – 3348 pieces (State Fiscal Service). Import duties, which have already been abolished for most commodities in the EU, also help to expand exports: the average tariff for Ukrainian exports to the EU has decreased from 7.6% to 0.5%, as can be seen from Table 2. So, most duties have been abolished in April 2014 in the regime of autonomous trade preferences for Ukraine.

Table 2. Tariff liberalization (TL) for Ukrainian commodities

<table>
<thead>
<tr>
<th>Period</th>
<th>Total at the customs tariff</th>
<th>By commodities of UKTZED 01-24 groups (agricultural)</th>
<th>By commodities of UKTZED 25-97 groups (industrial and processed agricultural commodities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current TL</td>
<td>7.6</td>
<td>19.8</td>
<td>3.9</td>
</tr>
<tr>
<td>TL from the date of entry into force of the association agreement</td>
<td>0.5</td>
<td>0.6</td>
<td>0.5</td>
</tr>
<tr>
<td>11th year of TL</td>
<td>0.05</td>
<td>0.24</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: created on the basis of State Fiscal Service

It is now possible to sell duty-free, in particular: live animals, fish, cheese, nuts, most fruits, vegetables and oilseeds, confectionery, light industry products, engineering products, and more.

On the other hand, imports from the EU continue to be dominated by machinery and equipment, the share of which increased from 23.2% to 31.4% in 2014-2017 and the value increased by 1.46 billion US dollars (Figure 4).

Figure 4. Dynamics of the structure of imports of commodities to Ukraine from the EU-28 in 2012-2017, %

Source: created on the basis of UNCTAD Statistics

A relevant and frequently discussed issue is that the DCFTA with the EU provides for the introduction of duty-free tariff quotas. This means that individual commodities are delivered in certain quantities at a zero rate. At the same time, the import of these commodities from Ukraine by EU countries over a certain amount of quotas falls under the general regime of import of commodities, ie is taxed under the same conditions that existed before the introduction of free trade.

The establishment of duty-free EU tariff quotas is provided for 36 types of commodities, moreover, additional volumes are established for 4 types. In 2016, Ukrainian producers actively used export opportunities to the EU
countries within 26 of 40 tariff quotas (Cooperation between Ukraine and EU countries).

For 18 products, an increase in the volume of tariff quotas is already provided for within 5 years from the date of application of the trade provisions of the Agreement (Association Agreement between Ukraine, on the one part, and the European Union, the European Atomic Energy Community and their Member States, on the other part (2015)). For example, the Association Agreement provides for a gradual increase in the tariff quota for grape and apple juices from 10,000 tons/year to 20,000 tons/year over 5 years. In 2017, the volume of the quota was 12,000 tons/year, in 2018 it was 14,000 tons/year, in 2019 it was 16,000 tons/year, in 2020 it was 18,000 tons/year, in 2021, and then annually it was 20,000 tons/year (Association Agreement between Ukraine, on the one part, and the European Union, the European Atomic Energy Community and their Member States, on the other part (2015)). In addition, as part of additional trade preferences that came into effect on October 1, 2017, the EU introduced additional zero tariff quotas on imports of Ukrainian agricultural products.

Along with this, the question arises of the effective use of the duty-free tariff quotas by Ukrainian exporters provided to them for the export of products to the EU. In 2015, they completely exhausted quotas for only 8 of 36 types of products (wheat, corn, fruit juices, processed tomatoes, barley grits, natural honey, poultry, and oats). Quotas for sugar (99.8%), barley (77.7%), and malt (72.9%) were close to being exhausted. However, for most groups of commodities, the quotas were filled by less than 30%, and for a number of quotas (beef, pork, lamb, milk and dairy products), exports did not start. The reason for this was the maintenance by the EU of high non-tariff barriers related to compliance with international standards of product quality and safety, which significantly offset the effect of tariff liberalization. The high competitive pressure of European business also played an important role.

However, even the complete exhaustion of individual tariff quotas does not create any particular grounds for optimism, if we analyze what proportion they constitute in relation to the total production of relevant products in Ukraine (Table 3).

**Table 3.** Comparison of the volumes of tariff quotas provided by the European Union and the volumes of Ukrainian production* of the corresponding products in 2015

<table>
<thead>
<tr>
<th>UKTZED</th>
<th>Name of a group of commodities</th>
<th>Volume of tariff quota, t/year</th>
<th>Volume of domestic production in Ukraine, t/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>0203</td>
<td>Pork</td>
<td>20000</td>
<td>1017000</td>
</tr>
<tr>
<td>0207</td>
<td>Poultry meat</td>
<td>16000</td>
<td>1160000</td>
</tr>
<tr>
<td>0401; 040290; 040390</td>
<td>Milk and cream, condensed milk and yogurt</td>
<td>8000</td>
<td>10682000</td>
</tr>
<tr>
<td>040510; 040590</td>
<td>Butter</td>
<td>1500</td>
<td>101000</td>
</tr>
<tr>
<td>0409</td>
<td>Natural honey</td>
<td>5000</td>
<td>70000</td>
</tr>
<tr>
<td>071151; 200301</td>
<td>Mushrooms</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>10019099; 1101</td>
<td>Wheat</td>
<td>950000</td>
<td>26500000</td>
</tr>
<tr>
<td>10030090</td>
<td>Barley</td>
<td>250000</td>
<td></td>
</tr>
<tr>
<td>10040000</td>
<td>Oat</td>
<td>4000</td>
<td>487200</td>
</tr>
<tr>
<td>10059000</td>
<td>Corn</td>
<td>400000</td>
<td>23200000</td>
</tr>
<tr>
<td>1107; 1109</td>
<td>Malt and wheat gluten</td>
<td>7000</td>
<td>324700</td>
</tr>
<tr>
<td>1701</td>
<td>Sugar</td>
<td>20070</td>
<td>1146000</td>
</tr>
</tbody>
</table>

*Source: created on the basis of Cooperation between Ukraine and EU countries: Statistical collection*

*Notes: due to the discrepancy between the UKTZED (Ukrainian Commodity Coding System) codes and the KVED (Classifier of economic activities) codes, the Table shows an approximate comparison of tariff quotas with production volumes.
Thus, the gross harvest of wheat in Ukraine in 2015 amounted to 26.5 million tons, while the duty-free tariff quota for the supply of these products to the EU was only 0.95 million tons, or 3.6% of the total production. 23.2 million tons of corn with a quota of 0.4 million tons were harvested in the same period, or 1.7% of the total production. 1.16 million tons of poultry meat with a quota of 0.016 million tons were produced, or 1.3% of the total production. Gross production of honey in Ukraine reaches 70 thousand tons with a quota of 5 thousand tons or 7.1%. In 2015, 487.2 thousand tons of oats were harvested in Ukraine with a quota of 4 thousand tons or 0.8%. Sugar production in Ukraine in 2015 amounted to 1.1 tons with a quota of 0.02 million tons or 1.8%. Thus, it seems much more appropriate to speak not about free trade with the EU but about providing partial (insignificant) access to European markets. At the same time, in the total Ukrainian export, export under tariff quotas amounted to a negligible share, less than 0.1%. It is clear that the export potential of Ukraine is several times higher than the established quotas.

The volume of quotas is so insignificant that as of February 16, 2016, Ukrainian enterprises have already completely exhausted quotas for deliveries of corn, honey, and wine and apple juice to the EU countries; the quota for barley has been exhausted by 90%. It is interesting to add that quotas for honey, grape and apple juices, processed tomatoes, sugar, barley groats and flour, poultry, wheat, corn, and barley are quickly used by Ukrainian exporters from year to year.

Thus, for the third year in a row, in the first days of January, Ukrainian commodity producers (more precisely, suppliers of agricultural raw materials) choose the tariff quotas established by the EU within the framework of the FTA. Despite the fact that in 2018 additional tariff quotas for grain crops are in effect for Ukraine, domestic suppliers 100% chose both the basic and additional annual quotas for wheat and corn only for the first 5 days of 2018. The total volume of quotas for wheat amounted to 1035 thousand tons, for corn - 1125 thousand tons). As of January 11, 2018, the main and additional volumes of the annual tariff quota for honey (in total, 8 thousand tons) have also been completely exhausted. Sources in the Ministry of Agrarian Policy report that in the first 10 days of 2018, the main and additional quota volumes for fruit juices (in total 14 thousand tons) have been exhausted by 100% (Ministry of Economic Development, Trade and Agriculture of Ukraine). The administration of tariff quotas is carried out according to two principles: “first come - first served” and through the system of import licenses.

In excess of the volumes of tariff quotas, the EU has retained its usual duty rates, which, in most commodity positions, are so large that they have a pronounced prohibitive character.

At the same time, by the provisions of the Association Agreement between Ukraine and the EU, consideration of the issue of accelerating and expanding the conditions of liberalization will be possible in 5 years from the date of application of the trade provisions of the Agreement. Thus, the Ukrainian side will be able to hold appropriate consultations with the EU side no earlier than 2021.

On the other hand, according to statistics, after the quota has been exhausted, exports continue and take place in the usual regime of trade with the EU, providing for the payment of the import duty, the amount of which is mainly of a protective nature. The EU import duty on honey from Ukraine in excess of the tariff quota is 17.3%, on corn - EUR 94/t, on wheat - EUR 95/t, and on fruit juices up to 40% +121 EUR/100 l + 20.6 EUR/100 kg net weight.

In 2016, with a duty-free tariff quota for soft wheat in the amount of 950 thousand tons, Ukrainian producers exported more than 1.23 tons of these products to the EU. Therefore, 282.9 thousand tons (22.9%) of the annual export of soft wheat was carried out outside the quota with the payment of the import duty of 95 euros/t. As well, outside the quota, 24.2 thousand tons (60.2%) of poultry meat, 23.2 thousand tons (69.8%) of processed tomatoes, 47.0 thousand tons (70.0%) of sugar, 37.4 thousand tons (78.9%) of fruit juices, 38.0 thousand tons (88.4%) of natural honey, and almost 6.3 million tons (94.0%) of corn were exported.

From the above, it is obvious that most of the duty-free tariff quotas that are provided by the EU are not restric-
tive in practice since the volume of domestic exports is significantly higher than the restrictions established by quotas. Modern public discussion of topical issues of free trade with the EU has to get rid of “quotocentrism” and focus on those factors that much more restrict the production and export potential of Ukraine in strategically important, high-tech sectors of the national economy.

Completing the analysis of the problem of tariff quotas in the foreign trade relations of Ukraine and the EU, two aspects should be emphasized. First, the European Union’s granting of duty-free tariff quotas to agricultural products to Ukraine, which are normally excluded from the free trade regime, is in fact unprecedented compared to other countries with which it has similar agreements. Second, Ukraine has also set tariff quotas for the EU, for its part, although only three: for pork - 10 thousand tons (the EU has given Ukraine a quota for pork of 20 thousand tons), sugar - 40 thousand tons (the EU has given Ukraine a quota for sugar in 20 thousand tons), and poultry - 10 thousand tons (the EU provided Ukraine with a quota for poultry meat in 16 thousand tons). They came into force only in January 2016. The import duty outside the quota in Ukraine is: for pork - 10%, poultry - 5-15%, sugar - 50%.

5. Discussion

Instead, the results of scientific research indicate that the EU remains one of the world’s centers of non-tariff protectionism. A special place in it is occupied by technical measures - technical barriers to trade (TBT) and sanitary and phyto-sanitary measures (SPO) (Tetiana, H., et al. (2018)). However, the above data on volume growth of quality certificates received by domestic producers for the supply of products to the EU indicates that these barriers are gradually being overcome by Ukrainian business.

Thus, the analysis of foreign trade relations between Ukraine and the EU refutes the myth that Ukrainian producers can compete in the EU market and only a limited number of Ukrainian export commodity items can find their buyer on this market.

Modern Ukrainian business is no longer characterized by a lack of information about the EU, fear of competition, and high standards. Now domestic small and medium-sized businesses already have an understanding that the EU is the largest sales market. At the same time, the main problem remains the lack of a marketing culture and a poor awareness of EU business and trade rules.

According to a survey by the Institute for Economic Research and Policy Consulting, the most important obstacles for Ukrainian exporters are ineffective and non-transparent VAT refund mechanism, as well as a significant level of bureaucracy. More than 40% of exporters named these factors as barriers to export. Among other common barriers, the respondents named a large number of export permits, the unpredictability of Ukraine’s trade policy, bureaucracy, lack of transparency in tax authorities, and a high level of tax burden (Bergstrand, J. H., Larch, M., & Yotov, Y. V. (2015)).

At the same time, it is worth noting the rather low adaptability of Ukrainian small and medium-sized businesses to the conditions of the EU market due to the lack of a comprehensive strategy for state regulation of the foreign trade sector in the context of European integration. After all, there is still a lack of regulation of export credit, the introduction of a culture of doing business in foreign markets, the development of an “institution” of export, harmonized process of adaptation of Ukrainian legislation to European requirements, and so on.

It should be noted that Ukrainian companies find potential customers in the EU markets in different ways. So, if a large business has its own strategy of working in the EU markets, the direct opening of representative offices abroad, but a small business does not have the financial resources for this. For example, the domestic manufacturer of industrial and household water filters Ecosoft bought raw materials from Ireland, where they eventually became interested in the company’s products. Now Ecosofit sells commodities under a different name.

The enterprise Yarych, known in Ukraine for its biscuits, operates on the Polish market. Under the name of an-
other brand. The StudioPack company, which was previously a distributor of Italian aluminum foil containers, eventually began to manufacture such products in Ukraine itself. For several years, entrepreneurs have decided to enter the EU: now, StudioPack products are sold in Poland and Germany. The Ukrainian juice producer GALS LTD and the ironing board manufacturer Eurogold operate in a very narrow market segment. The first one has occupied a niche in the market of elite products, the second one sells every tenth ironing board in the EU.

These companies are an example of medium and small enterprises with successful management, which have managed to develop a balanced strategy for entering the EU markets with appropriate certification procedures.

Therefore, in order to adapt to the conditions of the DCFTA with the EU, Ukrainian enterprises need not only to change their production system and modernize it so as to exclude the production of low-quality products. Of course, the Ukrainian consumer will only benefit from this. On the other hand, the assistance of state authorities to Ukrainian producers and exporters in entering foreign markets should become a priority for the work of official institutions and establishments.

At the present stage, taking into account not only the peculiarities of the institutional support of bilateral relations between Ukraine and the EU but also the level and quality of the implementation of the acquis Communautaire, it should be noted that the quantitative approach to determining the scope of adaptation does not give an idea of the directions and scope of work on the implementation of national legislation, and taking into account the provisions of the acquis Communautaire is required by all, without exception, the areas mentioned in this study.

Therefore, the main challenge for Ukrainian legislation in terms of compliance with the acquis is not the adoption of new laws but their effective implementation. Indeed, in many areas, the country has relatively new laws but they are not sufficiently applied in practice or are not observed at all. Meanwhile, in the EU internal market, compliance is the key. To move in this direction, Ukraine has to deal with many structural problems such as weak government institutions, extremely backward legal system, poorly developed regulatory bodies, and widespread corruption.

In our opinion, until these problems are resolved, Ukraine will not be able to make real progress towards compliance with the acquis. We believe that the intensification of the process of implementation of domestic legislation to the joint work of the EU is based on the conceptual framework of cooperation on justice, freedom, and security, as well as economic cooperation with the EU in the implementation of the Association Agreement.

Conclusions

A comparative analysis of the EU Association Agreement with Ukraine and a number of other countries and regions of the world showed that the agreement with Ukraine has become one of the largest EU integration projects in terms of trade liberalization and coverage of Ukraine’s regulatory environment. However, the practical experience of implementing these agreements shows that the practical implementation of integration processes in the foreign trade sector with the EU depended not so much on the depth of the provisions of the agreements but on the ability of the countries concerned to fulfill their commitments. Therefore, Ukraine must strengthen its institutional capacity and improve the organizational and economic mechanism for the realization of national economic interests in the implementation of the agreement on a deep and comprehensive free trade area with the EU.

Intensification of foreign trade relations in connection with the entry into force of the agreement on a deep and comprehensive free trade area and the abolition of a number of barriers to bilateral trade has contributed to the fact that the EU, since 2016, has become the largest trade and economic partner of Ukraine among other regions of the world.
However, despite the fact that access to the European market has been obtained and used by a number of domestic producers, including high-tech commodities and services, the overall structure of exports from Ukraine to the EU continues to be raw materials - 52.8% of their value is agricultural raw materials, mineral resources, and primary processing products. The share of energy resources in imports of commodities has increased significantly. The level of geographical diversification of foreign trade relations with the EU remains extremely low.

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DEOFSHORIZATION AS AN INSTRUMENT OF FINANCIAL SECURITY OF THE STATE: LEGAL ASPECT

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Abstract. It has been determined that legalization (laundering) of proceeds from crime as a criminal offense is committed by individuals and legal entities using a criminal (corruption) mechanism for granting the status of legal origin to assets (funds, real estate, securities) knowingly acquired by criminal means, in order to conceal predicate offense and the acquisition of legal grounds for possession, use and disposal of these assets. According to the Association Agreement between Ukraine and the European Union, combating these crimes is recognized as an element of security policy, which determines the feasibility of further appropriate changes to existing legislation and the need to improve the organization and methodology of investigation of these crimes. The assessment of the impact of offshore zones on the indicators of financial security of Ukraine based on the construction of an econometric regression model has been carried out. In accordance with the obtained results, recommendations on deoffshorization as an effective tool for ensuring the financial security of Ukraine have been provided. It has been stressed that international cooperation in the field of criminal justice should become an effective process and, having got rid of cumbersome and lengthy formal procedures, be transformed into an operational process of interaction between authorized persons. Operational cooperation between law enforcement agencies of Ukraine and EU countries, which is provided for in the Association Agreement, is complicated by the factor of inadequate communication due to the fact that law enforcement officers do not speak foreign languages and need training (both professional and language training).

Keywords: financial security; legalization (laundering) of income; deoffshorization; indicator; criminal justice


JEL Classifications: F35, F42

1. Introduction

Today, during the instability of both the macroeconomic and political situation, research and analysis of the concept of financial security is not only relevant but also very important for the economy of Ukraine. Financial security is a multi-faceted concept that requires a comprehensive and systematic study, which in turn allows to provide sufficiently reasoned and effective recommendations, under observance of which you can improve and optimize the economic situation and make a strategic plan of the development of the financial sector and the economy as a whole.

The urgency of the subject is due to a set of social, political, organizational and legal factors. The processes taking place in society in recent decades in connection with the transition from a rigid centralized model of governance to market relations have significantly changed the economic, social and legal systems. The rapid
development of foreign economic relations, foreign exchange market, the implementation of appropriate norms of international law – all this contributes to integration of Ukraine into the world economic space. At the same time, these processes have a number of negative consequences, such as: criminalization of society, commission of criminal offenses in the field of management, in particular, legalization (laundering) of proceeds from crime (Vigliarolo, F. 2020).

Legalization of proceeds from crime is associated with the commission of crimes of varying gravity and consequences, with the presence of offshore zones, with sophisticated tax evasion schemes, which has a devastating effect on the development of the national economy and the implementation of global international programs. Thus, according to the UN, on the accounts in offshore zones there were detected 32 trillion US dollars, of which 11.5 trillion US dollars belonged to private persons. This gives grounds to conclude that the annual non-payment of taxes is about 250 bln US dollars (the largest US corporations hold more than $ 2.1 trillion offshore (2015)).

Today, due to the instability of the political situation, strong exchange rate volatility, cyber-terrorism, global economic influence and crisis, the financial security of Ukraine is an issue of paramount importance. In the current situation, the task is to balance the situation in the financial system of Ukraine. This revived the study of information on public debt and borrowing, opportunities for income diversification and restructuring of past and future expenditures, volumes and recipients of foreign direct investment from Ukraine. In this context, the process of deoffshorization is relevant to achieving the desired state of the financial system of Ukraine.

Thus, the level of crimes and the increase in the amount of damage caused by them necessitate the study and improvement of methods of investigation of legalization (laundering) of proceeds from crime.

2. Literature Survey

Along with the development of the global economy and international economic relations, the process of economy offshorization is growing, which is a sign of modern globalization and internationalization of world economic processes. An offshore zone is a certain territory (country or part of it) where an attractive tax regime prevails — low tax rates are legally fixed or absent at all (Tylchyk, O., Dragan, O., & Nazymko, O. (2018)). Such territories have simplified conditions for financial reporting, less complex process of registration of legal entities, relatively low or no income tax, no restrictions on the export of currency, as well as the ability to do business anonymously (Ijiaihh, E. E., & Bojitob, B. H. (2015); Kordík, M., & Kurilovská, L. (2017)). The above conditions make offshore areas very attractive for businesses. There are quite a few goals for creating offshore zones such as: attracting foreign capital (foreign exchange earnings), accelerating the development of a country (stimulating employment), and the introduction of new technologies (Fazilov, F. M. (2018)).

OCED classifies offshore zones depending on the level of legality and transparency of offshore. There are white, gray and black lists of offshore zones (http://www.oecd.org)/"White” list includes the countries that have already applied the standards of tax cooperation; “gray” list includes the countries that have undertaken to cooperate in the field of taxation, but have not yet taken any actual action; and “black” list includes the countries that have not adopted tax standards. In addition to the classification, it is recommended to avoid cooperation with “black” offshore companies preferring “white” and “gray” ones.

Assessing their role in developing the outlined issues, it should be noted that most studies were conducted on the methodological basis of the past, without taking into account the harmonization of domestic criminal procedure legislation, including current requirements of the current Criminal Procedure Code (CPC) of Ukraine and European standards of criminal procedure. Therefore, some problematic issues remained unresolved.

In the field of foreign economic activity, it is necessary to distinguish groups of fictitious and dubious export operations for the purpose of unjustified VAT refunds and legalization (laundering) of income. For example, enterprises export products that are not typical for their activities, through principals who are not persons responsible for financial regulation. The following are the most common methods of illegal operations in the field
of foreign economic activity:
1) acquisition of companies, securities of foreign companies and real estate abroad (Artemenko, D. A., Gurba, V. N., & Evnevich, M. A. (2019));
2) making payments for services provided to foreign partners (marketing, advertising, etc.);
3) use of structured financial operations (targeted transfer to one or more accounts in a foreign bank is divided into several transfers, each of which meets the limit set by national law, which is not subject to financial monitoring and mandatory notification of public authorities, the so-called “smurfing”) (Shashiashvili, G. (2017));
4) export of currency abroad using plastic credit cards (Şarco, V. (2016));
5) export of cash in foreign currency by individuals (Malanchuk, P. (2018)).

In particular, further development is required regarding the forensic characteristic of the crime, because, according to the current legislation, not only individuals, but also legal entities are defined as the subjects of this type of criminal offense; detection of signs of legalization with the use of information technology (cybercurrency, bitcoin); improving the tactics of carrying out certain investigative (search) actions, etc. A critical rethinking of the specifics of international cooperation in the search for and seizure of income and persons involved in the commission of a predicate offense and money laundering is needed.

These circumstances indicate the relevance of the subject, require a change in the direction of scientific studies and their reorientation to address the immediate problems of law enforcement practice, which meets the needs to develop the theory of criminology and the challenges of modern practice of investigating these crimes.

3. Methods

The methodological foundation of scientific work is a system of methods: method of scientific cognition, comparative, analytical, econometric analysis, computational method, analysis of articles and monographs, classification and prognostic methods through the use of modern information technology, etc.

In order to ensure the reliability and validity of the obtained scientific results, a complex of modern general philosophical, general scientific and special methods was used, namely: dialectical-materialistic method – to determine the object of study; comparative-legal method – to establish the general and special characteristics of the concept of legalization (laundering) of proceeds from crime, and the activities of law enforcement agencies to identify signs of this type of crime; system-structural method – to determine the place of forensic characteristic of legalization (laundering) of proceeds from crime in the system of forensic methods, its functional purpose in the pre-trial investigation; formal-logical method – for the analysis of current legislation and existing theoretical provisions of criminology, which relate to certain elements of the forensic characteristic of the crime under consideration; historical-legal method – to define the content of key elements of the formation of proposals for improving the criminal procedure legislation, which will ensure the effectiveness of the investigation of crimes, as well as the identification of proceeds from crime; dogmatic method – for the interpretation of legal categories, in-depth study and clarification of the conceptual and categorical framework; system method – to improve the interaction of law enforcement agencies of Ukraine and those of other states; statistical method – to study the areas of practical activity of law enforcement agencies and confirm the obtained theoretical conclusions with the data of the analysis of statistics of the Prosecutor General’s Office of Ukraine and the State Judicial Administration of Ukraine, as well as the SCFM of Ukraine.

The information base of the scientific work consists of legal documents, research periodicals, foreign sources, webinars of leading experts, statistics, materials of international organizations, statistical materials, information resources of the Internet, etc.

The empirical base of the study is the systematized statistical data of the MIA of Ukraine for 2007-2018 on the results of the investigation of money laundering; statistical information of the General Prosecutor’s Office of Ukraine; analytical reviews on the state of justice, reporting and accounting and statistical work of the State Ju-
4. Results

It is recognized in the Strategy for the development of the system of prevention and counteraction to legalization (laundering) of proceeds from crime or terrorist financing for the period up to 2015 that the rapid development of the global financial system, continuous improvement of existing and application of new information and communication technologies make it possible to carry out financial transactions in the shortest possible time, which creates additional opportunities for laundering of proceeds of crime. For each state, the fight against laundering of proceeds of crime is a matter of national security. Laundering of proceeds of crime is not only a socially dangerous act, but also a systemic threat to financial markets and the national economy as a whole (On approval of the Strategy for the development of the system of prevention and counteraction to legalization (laundering) of proceeds of crime, or terrorist financing for the period up to 2015 (2011)).

In pursuance of this Strategy, the National action plan for the implementation of the second phase of the action plan on visa liberalization for Ukraine by the European Union was approved. It provides for the implementation of the Strategy for the development of the system of prevention and counteraction to legalization (laundering) of proceeds of crime or terrorist financing for the period up to 2015 and action plans for prevention and counteraction to legalization (laundering) of proceeds of crime or terrorist financing (para. 58) (On approval of the National action plan for the implementation of the second phase of the Action Plan on visa liberalization for Ukraine by the European Union (2014)).


The Plan also provides for a complex of measures aimed at preventing the emergence of preconditions for legalization (laundering) of proceeds of crime, financing of terrorism and financing of proliferation of weapons of mass destruction, minimizing the risks of using the financial system for legalization (laundering) of proceeds of crime, financing of terrorism and financing of proliferation of weapons of mass destruction, improving the efficiency of law enforcement and other government agencies, and developing international cooperation.

At the same time, in order to normalize new approaches to the prevention, counteraction, investigation and
prosecution of perpetrators of crimes in the economic sphere, the legal framework is being reformed. According to Directive 2005/60/EC of the European Parliament and of the Council of 26.10.2005 on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing, significant flows of “dirty” funds could damage the stability and reputation of the financial sector, threaten the single market, and terrorism can undermine the foundations of Ukrainian society. Along with measures criminal law, preventive measures through the financial system can yield results. In order to facilitate criminal activity, money launderers and terrorist financiers may try to enjoy the freedom of movement of capital and the freedom to provide financial services as provided for in the single financial zone, unless certain coordinated measures are taken at Community level (Directive 2005/60/EC of the European Parliament and of the Council on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing (2005)).

It is obvious that one of the most dangerous types of crimes, which leads to the economic decline of the state, is the legalization (laundering) of proceeds of crime. For the first time, the need to combat the legalization (laundering) of proceeds of crime was enshrined in law in the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 20 December 1988, which recognizes the relationship between illicit trafficking and other related forms of organized crime that undermine the legitimate economy and threaten the stability, security and sovereignty of states, and illicit trafficking provides high profits and financial resources, which allows transnational criminal organizations to infiltrate, dismantle and undermine government mechanisms, legitimate trade and financial activities and society at all levels.

The signing of the Association Agreement between Ukraine and the European Union opened the possibility of operational international cooperation in the field of criminal justice. For example, according to Art. 20 of the Agreement, the parties undertake to cooperate in order to prevent and combat legalization (laundering) of proceeds of crime and terrorist financing. To this end, the parties strengthen bilateral and international cooperation in this field, in particular cooperation at the operational level. The parties also ensure the implementation of relevant international standards, in particular the standards of the Financial Action Task Force on Money Laundering, and standards equivalent to those adopted by the European Union (ASSOCIATION AGREEMENT between Ukraine, of the one part, and the European Union, the European Atomic Energy Community and their Member States, of the other part (2014)).

International cooperation in the field of criminal justice should become an effective process and, without cumbersome and lengthy formal procedures, be transformed into an operational process of interaction between authorized persons. According to Global Financial Integrity, with every dollar coming to Ukraine, six leave its territory (Global Financial Integrity works to curtail illicit financial flows by producing groundbreaking research, promoting pragmatic policy solutions, and advising governments).

In recent years, the economy of Ukraine has experienced a rapid outflow of capital to offshore zones, instead, these funds could be used to repay public debt (Table 1).

### Table 1. Direct investments from Ukraine to the countries of the world in the period from 2014 through 2017

<table>
<thead>
<tr>
<th>Country name</th>
<th>Direct investment volume, USD mln</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2014</td>
</tr>
<tr>
<td>Cyprus*</td>
<td>5,811.0</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>292.6</td>
</tr>
<tr>
<td>Latvia</td>
<td>95.5</td>
</tr>
<tr>
<td>Poland</td>
<td>52.3</td>
</tr>
<tr>
<td>Georgia</td>
<td>33.0</td>
</tr>
<tr>
<td>British Virgin Islands (BVI)*</td>
<td>25.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,462.6</strong></td>
</tr>
</tbody>
</table>

*Source: based on State Statistics Service of Ukraine, * – offshore zone*
The question arises: why do investors withdraw money from Ukraine? Everything is explained simply – through ineffective public policy. In Ukraine business does not feel the support of the state, in a crisis the tax burden only increases, which leads to the sale of almost all portfolio investments in Ukraine. Moreover, almost 90% of the capital was exported to Cyprus. The attractiveness of Cyprus is explained by the fact that for many years Ukraine and Cyprus have had an agreement to avoid double taxation, in addition, the proximity of Cyprus plays its role. On the other hand, according to the State Statistics Service of Ukraine (UkrStat), Cyprus is the main investor (Table 2).

Table 2. Direct investments of the countries of the world into the economy of Ukraine from 2014 through 2017

<table>
<thead>
<tr>
<th>Country name</th>
<th>Direct investment volume, USD mln</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2014</td>
</tr>
<tr>
<td>Cyprus*</td>
<td>17,725.6</td>
</tr>
<tr>
<td>Netherlands</td>
<td>9,007.5</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>3,525.9</td>
</tr>
<tr>
<td>British Virgin Islands (BVI)*</td>
<td>2,275.9</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1,351.0</td>
</tr>
<tr>
<td>Belize*</td>
<td>1,026.6</td>
</tr>
<tr>
<td>Total</td>
<td>53,704.0</td>
</tr>
</tbody>
</table>

Source: based on State Statistics Service of Ukraine, * — offshore zone

In spite of the fact that legally Cyprus is not a offshore zone, the island authorities have created a favorable tax system so as not to lose profits. Today, Ukraine and Cyprus have revised bilateral tax agreements (rates) to prevent the export of capital to this offshore zone.

Thus, offshore zones form structural distortions in the budget, make the economy of a country even more dependent and tied to foreign loan tranches. All of this has a negative impact on the competitiveness and economic security of a country.

It is already clear that offshore zones have a significant impact on the economy of a state, but we consider it necessary to demonstrate this impact in terms of financial security indicators (Table 3).

Table 3. Financial security indicators of Ukraine

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>State budget deficit (surplus), UAH bln</td>
<td>-53.5</td>
<td>-64.7</td>
<td>-78.1</td>
<td>-45.6</td>
<td>-70.1</td>
<td>-47.8</td>
</tr>
<tr>
<td>GDP, UAH bln (nominal)</td>
<td>1,405</td>
<td>1,465</td>
<td>1,587</td>
<td>1,980</td>
<td>2,383.2</td>
<td>2,982.1</td>
</tr>
<tr>
<td>The ratio of the budget deficit to GDP, %</td>
<td>-3.8</td>
<td>-4.4</td>
<td>-4.9</td>
<td>-2.3</td>
<td>-3</td>
<td>-1.6</td>
</tr>
<tr>
<td>Public and state-guaranteed debt, UAH bln</td>
<td>515.5</td>
<td>584.1</td>
<td>1,100.6</td>
<td>1,571.8</td>
<td>1,929.8</td>
<td>2,025</td>
</tr>
<tr>
<td>The ratio of public debt to GDP, %</td>
<td>36.7</td>
<td>39.9</td>
<td>70.2</td>
<td>79.4</td>
<td>81</td>
<td>98.2</td>
</tr>
<tr>
<td>Gross external debt (GED), UAH bln</td>
<td>135.1</td>
<td>142.1</td>
<td>126.3</td>
<td>118.7</td>
<td>113.6</td>
<td>115.4</td>
</tr>
<tr>
<td>Inflation rate (until December of the previous year), %</td>
<td>99.8</td>
<td>100.5</td>
<td>103</td>
<td>143.3</td>
<td>112.4</td>
<td>113.7</td>
</tr>
<tr>
<td>International reserves, USD bln USA</td>
<td>24.5</td>
<td>20.4</td>
<td>7.5</td>
<td>13.3</td>
<td>15.5</td>
<td>18.1</td>
</tr>
<tr>
<td>The ratio of international reserves to GED, %</td>
<td>18.1</td>
<td>14.4</td>
<td>5.9</td>
<td>И.2</td>
<td>13.6</td>
<td>15.7</td>
</tr>
</tbody>
</table>

Source: calculated by the author based on the data of the State Statistics Service of Ukraine, Ministry of Finance of Ukraine, National Bank of Ukraine

Of course, not only offshores have a detrimental effect on the level of financial security of Ukraine: for example, high inflation rates also significantly worsen the situation. Potential threats to the economic security of Ukraine include events that will occur according to forecast data, which due to their impact will threaten the coordinated functioning and development of a complex of state policies – economic, social and political ones.
Since the threats to financial security are divided into two groups (external and internal), probable threats have already been outlined in many works of security experts. Internal threats: too low level of technological development of industries, incompatible high costs for the production of goods of low quality, which as a whole leads to a low level of competitiveness of the state. External threats: irrational structure of exports and strong dependence on imported goods, “brain drain” (process of mass emigration to more developed countries), inefficient tax policy and customs control, insufficiently established foreign economic relations, etc.

To analyze the impact of capital outflows on the level of financial security indicators, it was decided to build an econometric regression model using AP EViews. It was decided to take the indicators of Cyprus, as, firstly, these data are legally public, and secondly, this jurisdiction is still a key element in money laundering schemes through offshores. In addition, investment from Cyprus and in Cyprus accounts for more than half of total foreign direct investment (FDI). As a result of substitution of all variables and search of regression using STEPLS method, we obtained the following dependence (Figure 1).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X2</td>
<td>0.000249</td>
<td>1.05E-05</td>
<td>23.78084</td>
<td>0.0268</td>
</tr>
<tr>
<td>X3</td>
<td>6.623198</td>
<td>0.002543</td>
<td>2604.864</td>
<td>0.0002</td>
</tr>
<tr>
<td>X4</td>
<td>-0.038211</td>
<td>9.92E-06</td>
<td>-3852.855</td>
<td>0.0002</td>
</tr>
<tr>
<td>X5</td>
<td>0.719836</td>
<td>0.000268</td>
<td>2681.442</td>
<td>0.0002</td>
</tr>
<tr>
<td>X6</td>
<td>-0.294780</td>
<td>0.000279</td>
<td>-1056.368</td>
<td>0.0006</td>
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<td>0.0003</td>
</tr>
</tbody>
</table>

R-squared: 1.000000
Mean dependent var: -45.96364
Adjusted R-squared: 1.000000
S.D. dependent var: 23.24609
S.E. of regression: 0.002754
Akaike info criterion: -9.531285
Schwarz criterion: -9.531285
Hannan-Quinn criter.: -9.531285
Durbin-Watson stat: 3.096977
Prob(F-statistic): 0.000087

Figure 1. Regression model of dependence of indicators of financial security of Ukraine on the volume of capital outflows to Cyprus

Source: built by the author based on calculated indicators

Notes: X1 – deficit (surplus) of the state budget, UAH bln; X2 – GDP, UAH bln (nominal); X3 – ratio of the budget deficit to GDP, %; X4 – public and state-guaranteed debt, UAH bln; X5 – ratio of public debt to GDP, %; X6 – gross external debt (GED), UAH bln; X7 – inflation rate (until December of the previous year), %; X8 – international reserves, USD bln; X9 – ratio of international reserves to GED, %; Y – volume of foreign direct investment (FDI).

Before drawing conclusions about the results of the model, it should be noted that it is adequate. The value of Prob (F-statistic) is less than 0.05, which indicates the adequacy of the model and the significance of the regression as a whole. Moreover, the regression coefficient is significant, as the p-value near t-Statistic is less than 0.05.

The indicator Rsquared is a coefficient of determination that indicates the density of the relationship between the factor (FDI) and the effective feature (indicators). In this model, it is equal to 100%, which indicates the presence of an absolute relationship between these factors – the change in the level of indicators depends entirely on the change in the capital outflow. S.E. of regression (average approximation error) = 0.002754, which indicates the high quality of the model.
We check the model for the presence of autocorrelation. Autocorrelation is a statistical relationship between sequences of single-row values taken with an offset. That is, in the time series, preliminary results affect the future ones.

The presence of autocorrelation of random errors in the regression model leads to erroneous estimates of regression parameters, which in turn leads to overestimation of test statistics, which are used to check the quality of the model (that is, an artificial improvement in model quality compared to its actual level of accuracy is created).

To determine the residual autocorrelation, you can use the Durbin-Watson statistic = 3.09 – it falls into the uncertainty zone, which implies the presence of autocorrelation. That is, we confirmed that the increase in FDI in the n-year affects the level of financial security in the n + 1 year.

The next step in verifying the model is to determine the homogeneity of the variance of random deviations during the study period. In the case when the model has the phenomenon of heteroskedasticity (inconsistency of the value of the variance of the variable under study), this leads to the ineffectiveness of the estimates obtained using LSXY.

To determine heteroskedasticity, we use the Breusch-Pagan-Godfrey test (Figure 2).

After analyzing the results, we can conclude that the model has no heteroskedasticity, as Prob (F) and Prob. Chi-Square are greater than 0.05. Therefore, we accept the null hypothesis about the absence of the phenomenon of heteroskedasticity in the model. Accordingly, the model is characterized by the phenomenon of homoskedasticity.

Thus, the built model turned out to be adequate, qualitative and reliable. We can acknowledge the fact that the state of financial security indicators has an absolute dependence on the volume of capital outflows to offshore jurisdictions.
In Ukraine, the strategic direction of development is largely due to socially oriented state policy, which is determined by the goals, objectives, directions and priorities for the short term. At the same time, many reforms do not, unfortunately, yield the desired result. Problems of formation and implementation in practice of effective public policy throughout the country are of particular importance.

An integral part of the world economy are offshore jurisdictions, which provide free access to the international market. The economic crisis is only exacerbating the problem of tax optimization and increasing the use of offshore zones. However, the use of offshore jurisdictions, which includes criminal activity, is becoming a threat to the world economy and, in particular, to Ukraine.

Offshore companies are used as the main tool for close communication between state, large private and foreign capital. Also, regardless of the political affiliation of the ruling parties, the Ukrainian executive is traditionally represented by the regulator of offshore relations, which protects the interests of large financial and industrial groups. This contributes to the further distribution of assets and capital abroad.

Depending on the specific offshore jurisdiction, an offshore company may have the following specifics and advantages:

Registration is fairly simple, and in some cases, the process can only take from 24 to 48 hours. Of course, this requires the preparation and submission of the necessary documentation before submitting a package of documents for registration to the relevant authorities.

Minimum commissions – the amount associated with this activity is low, after the cost of starting work; in many jurisdictions, the fee is $200-300 per year.

Flexible management and minimum reporting requirements – minimum number of directors and shareholders. Financial statements, information on accounts and annual income are either not required at all or remain minimal.

Absence of currency control – most jurisdictions have no restrictions on foreign currency.

Favorable local corporate law. Favorable legal framework to encourage and stimulate the development of offshore industry and foreign investment, which supports and gives companies high flexibility.

High confidentiality. Owner information, accounting and financial information remain confidential, although to varying degrees depending on jurisdiction. Some of them have the least available information (Hong Kong and New Zealand), while others (Nevis, Panama, Seychelles) have absolutely no public information. The presence and use of nominal shareholders and directors give absolute anonymity.

Tax benefits. Most jurisdictions offer low corporate taxes. This category includes income, sales, capital gains, value added, property, succession, gift and state taxes.

Freedom of investment opportunities. It is not limited to business activity. Companies can conduct virtually any economic, financial or business activity. In some jurisdictions formalities and licensing are required to carry out certain types of business operations (such as banking, insurance, real estate operations).

Relocation opportunities. Smooth transitions between jurisdictions are offered without any necessary restructuring or complicated documentation.

According to the IMF and the World Bank, an average of $11.7 billion has been laundered annually through shadow schemes in Ukraine since 2004, and $14 billion 200 million has been withdrawn through shadow schemes in 2015, most of which through shadow offshore operations (Trends in the shadow economy (2019)).
Since 1991, when the shadow economy of Ukraine was estimated at 38.96% of GDP, the figure has been growing steadily until 1998 reaching a peak of 57%. The negative trend was observed until 2008, when the figure dropped to 36.65%. The financial crisis was the cause of this trend, and during 2009-2014 the level of the shadow economy ranged from 39.2% to 43.5%. In 2015, the shadow economy of Ukraine was estimated at 42.9%.

According to the calculations of the Ministry for Development of Economy, Trade and Agriculture in January-September 2016, the level of the shadow economy amounted to 35% of official GDP, which is 7.9% percentage points less than in the corresponding period of 2015 (Trends in the shadow economy (2019)). According to the calculations of the Ministry for Development of Economy, Trade and Agriculture in January-September 2017, the level of the shadow economy amounted to 33% of official GDP, which is 3 percentage points less than in the corresponding period of 2016 (Figure 3).

Ukraine ranks the 16th in the world by the scale of shadow capital operations. In previous decades, the following criminal procedure of tax optimization has been developed. A Ukrainian company sells goods (metal, grain, etc.) at an excessively low price to its front company with offshore jurisdiction in Cyprus or other islands. In turn, the offshore company sells goods at higher world prices (by several times). The main reasons for the problem are export of capital through offshore companies, not only business but also government; low attractiveness for doing business; insignificant ability of the economy to productively attract investment; unstable macroeconomic situation.

First of all, it is necessary to legally recognize the lists of “black”, “white” and “gray” offshore zones made by the OECD, FATF, FinCEN and other companies. The next step should be a total ban on any economic relations with at least “black” and “gray” offshore zones. On the other hand, to improve the economy and financial security of the country, several reforms are needed, as it is impossible to eradicate the titans of international relations – offshore zones – completely, but they can be made less attractive to businesses.
If you think about why Ukrainian society is trying to avoid taxes and take money offshore, the answer is out in the open. A person will not evade taxes if he/she sees where the taxes go – to increasing the level of medicine (professional and quality of equipment), the quality of education, the general condition of cities, etc. By ensuring this the state will slightly reduce interest in offshores. In many works it is argued that taxes in Ukraine need to be reduced, that only this will help to improve the economic situation.

Of course, it would be a mistake to think that it is possible to remove the element of “offshore” from the international economic relations of Ukrainian businesses, but the goal of Ukraine is to optimize the amount of capital going offshore. If we reduce the outflow of capital by at least a third, it will be an additional 2.6 billion dollars in the budget. These additional funds (which, actually, should have been in the state budget) will allow to repay the state debt in a relatively short time, and to improve the situation with GDP – this will give the economy some stability. With economic stability, less volatile exchange rate will come, and the rate of inflation will also decrease, a comprehensive improvement of these indicators will lead to an improvement in the state of the financial security of Ukraine.

That is, the program of deoffshorization of the economy of Ukraine should be based on several systemic principles: cardinal improvement of the conditions for economic activity, including institutional and political reforms; increasing the degree of responsibility for violations of tax legislation in accordance with international practice; ensuring the transparency of all economic actors operating in Ukraine; access to a qualitatively new level of international cooperation in the exchange of tax information and the detection of fiscal violations.

5. Discussion

Based on the above principles, it is possible to form specific proposals for deoffshorization of the economy of Ukraine.

1. It is necessary to change the ratio of the factors that contribute to the attraction and withdrawal of capital from the country. To do this, it is necessary to improve conditions for doing business, create a favorable investment climate for both domestic and foreign investors. These changes will be systemic in nature and will provide for: increasing the transparency of court proceedings, stability of laws and compliance with them, proper protection of property, development of financial infrastructure, restoration of trust between the population and the authorities and much more.

2. It would be appropriate to develop legislation on national companies, that is, to expand existing legislation by introducing the concept of “national company”, which must meet the following criteria: being registered in Ukraine, being a major taxpayer (that is, forms at least 5% of the state budget), trading on the Ukrainian stock exchange (this still requires reforms in stock trading, which will ensure the real functioning of Ukrainian stock exchanges), having stable financial performance and spending on social projects at least 1% of revenue. These characteristics can be adjusted, however, in our opinion, such innovations can enable the state to reduce the risk of the transition of the national company under the control of foreign TNCs. At the same time, the legislation should provide certain privileges to companies that meet the established characteristics. For example, getting a certain interest rate discount when receiving a loan. The creation of a national company should help optimize the scope of cooperation with offshore jurisdictions.

3. State-owned companies should gradually reduce the use of offshore traders and asset purchase agreements with offshore companies or parent companies.

4. It is important to increase the effectiveness of control over transfer pricing, which is an important channel for legal and illegal movement of capital offshore. This will be possible subject to the introduction and functioning of changes in tax legislation. Since, according to expert estimates, in 2017 every seventh check of transfer prices in the world ended with the application of penalties for violations of transfer pricing rules, this issue requires a very deep and differentiated approach.

5. Deoffshorization cannot be effective without increasing liability for non-compliance with tax laws. Harmonization of anti-offshore and tax policies is one of the key processes.

6. Fighting corruption that destroys the economy of a country is also one of the components of the process of
deoffshorization. Effective measures should be taken regarding anti-corruption policy, in the fight against the “division” of the state budget. Corruption not only facilitates the outflow of capital to offshore areas but is also supported by offshore capital.

There is a trend of financial equality and transparency in the world, which can be achieved under the condition of real deoffshorization of the economy of Ukraine. It is necessary to create an attractive investment climate, and later the concept of national economic patriotism.

Conclusions

Offshorization is a process that began many decades ago and continues to evolve still improving today. Over time, the role of offshore zones has become increasingly important in the world economy. Today, offshorization has a detrimental effect on economies due to the rapid outflow of capital. This process has affected both developed countries with stable economies and countries with the opposite situation: unstable economic and political situation, high inflation, inefficient tax and customs policies. Thus, the problem of uncontrolled outflow of capital has become a threat to global financial security and financial security of Ukraine, in particular.

Over the past three years in Ukraine the outflow of capital has grown to almost 8 billion US dollars per year, with an increase in the so-called investment in leading offshore areas such as Cyprus, the Virgin Islands, etc. The state has been experiencing a budget deficit for the last ten years, and the state debt is only growing. Lack of capital results in a lack of receipts (taxes), which leads to a budget deficit.

At the international level, the problem of money laundering in offshores is already being actively combated. Such organizations as the OECP, FATF and others implement a very effective anti-offshore policy that allows to restrain and regulate the flow of capitals, preventing their outflow to offshores. At present, Ukraine needs to implement such a policy of controlling activities with offshore zones, because at the current rates, the outflow of capital would only increase thereby deteriorating the level of financial security. Reforms should be carried out to stimulate public awareness of the payment of taxes. Over time, understanding that taxes do not need to be avoided by taking capital offshore will contribute to improvement. With tax revenues, the main economic indicators that characterize financial security will be optimized. Therefore, anti-offshore policies should be implemented as soon as possible to improve financial stability.

Thus, the outflow of Ukrainian capital to offshore zones is primarily due to the prevailing unfavorable investment and tax climate. Such factors as instability in the economic and political spheres, low level of financial market infrastructure development, inconsistency and dynamic variability of legislation, form an unattractive investment climate in Ukraine. For these reasons, domestic and foreign investors invest in other countries, which are characterized by more favorable conditions. Today there are various opportunities for deoffshorization of the economy of Ukraine. According to international experience, firstly, it is impossible to achieve full deoffshorization, and secondly, it is not necessary. The use of offshore zones should be optimized so as to benefit the business sector without compromising the financial security of the state. Subject to introduction of systemic reform, which would contribute to the creation of an attractive investment climate and business environment, improvement of legislation and compliance with recommendations provided by international organizations, it is possible to achieve a stable state of financial security of Ukraine.

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STRATEGIC PRIORITIES OF INCREASING THE LEVEL OF ECONOMIC SECURITY OF THE NATIONAL ECONOMY OF THE COUNTRY

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Abstract. The article solves the current scientific problem of substantiation of theoretical and methodological bases of forecasting the regional aspect of ensuring economic security of the national economy and the development of conceptual guidelines and practical recommendations for improving management processes. The impact of threats on the economic security of the regions was determined. The use of cluster analysis tools allowed to determine the impact of socio-economic development factors on the economic security of the regions. It was established that the economic security of the “Higher” regional cluster is affected by such threats as the loss of sales markets, reduction of protection and rational use of natural resources, the level of control over corruption, political stability and the absence of violence/terrorism. The economic security of the “Average” regional cluster is affected by declining political stability and the absence of violence/terrorism, protection and rational use of natural resources, loss of sales markets, reduction of human development level, efficiency of state power, supremacy of the law. The economic security of the “Lower” regional cluster is affected by the loss of sales markets, declining human development level, control over corruption, efficiency of state authority, political stability and the absence of violence/terrorism, protection and rational use of natural resources. It is recommended to develop the Strategy of economic development of regions on the basis of the world experience for the purpose of ensuring economic security of national economy of the country.

Keywords: economic security; cluster; region; national economy; strategy


JEL Classifications: F35, F42

1. Introduction

The features of modern development of the national economy, regional disparities, variability, dynamism and multidimensionality of the economic environment, the processes of decentralization of public administration require the use of the new approaches to forecasting economic security. The solution of the set task, in its turn, is possible through determination of the ability of regions to solve problems of timely identification of destabilizing factors and the development of economic security management strategies. Forecasting is one of the decisive factors in improving the economic security of the national economy and, therefore, becomes the basis for the formation of theoretical and methodological apparatus and appropriate methodical tools.

The peculiarities of modern development of the national economy, variability, dynamism and multidimensionality of the economic environment, the processes of decentralization of public administration cause the growing urgency of the issue of national economic security and its regional disparities (Prause, G., Tuisk, T., & Olaniyi
It is the economic development of the regions that is the basis for ensuring the economic security of the state, especially in the conditions of decentralization.

The purpose of the study is to substantiate the methodological and conceptual foundations of ensuring economic security of the national economy in the regional aspect as well as to develop practical recommendations for their implementation.

2. Literature Survey

There are many approaches to the number and sequence of stages of forecasting economic systems of different hierarchies. The classical forecasting procedure includes: creation of an information base; object analysis; analysis of the external environment; determination of the predicted trajectory of an object; decision-making; assessment of forecast quality.

Antropova, T. G., et. al. (2015) offer the following stages of a forecasting process: formation of the concept of a forecast and the information base of its implementation; making a forecast and substantiation of its reliability. Levchuk, O., & Kovalenko, V. (2016) distinguish the following stages: pre-scenario stage which provides a description of an object of forecasting, analysis of the main elements, building a system of forecasting models and a scenario stage.

Sjoberg, L. (2015) highlights the following main stages: substantiation of forecasting; description of the external environment; development of a forecast model, development of an alternative option, assessment of the reliability, accuracy and validity of the developed forecast; development of recommendations for the further process management; statement of tasks for the development of a new version of the forecast.

Dong, X., & Kong, Z. (2016) represent the forecasting process in the following sequence of stages implementation: 1) initial; 2) analytical; 3) organizational; 4) forecasting; 5) final.

Jun, W. K., Lee, M. K., & Choi, J. Y. (2018) proposed an algorithm for assessing the level of economic security which contains the following elements: identification of functional characteristics of economic security; identification of structural components of economic security; definition of economic security indicators; establishment of normative values of economic security indicators; monitoring of indicators, hierarchical coordination of results and their analysis.

Best, J. (2017) offers to study the level of economic security of a region as an object of the national economy in the following sequence: 1) formation of a balanced system of indicators to determine the level of economic security of the economy according to selected functional components; 2) calculation of unit indicators of the level of economic security of an object of economy; 3) formation of equations of Harrington functions; 4) calculation of group indicators of the economic security level and an integrated indicator; 5) forecasting the level of economic security of an object of economy using the Brown model.

Schneider, F., Raczkowski, K., & Mróz, B. (2015) suggested the following sequence of stages of assessment of the integral indicator of economic security of regions: 1) choosing the indicators for measuring economic security at the level of administrative-territorial units of a region- districts and cities; 2) quantitative and qualitative spatio-temporal assessment of the components of economic security of a region by formalization methods; 3) quantitative and qualitative spatio-temporal integral assessment of economic security of a region; 4) classification of the administrative-territorial unit of a region according to the level of economic security; 5) creation of a synthetic map of the geospatial organization of the region ES; 6) development of future scenarios for ensuring economic security of a region by the method of SWOT-analysis.
The analysis of theoretical sources on approaches to the assessment and forecasting of economic security and the defined methodical tools for the development of forecast models of the integral indicator of economic security of the regions allowed to identify the two directions:

1) construction of a regression model for forecasting the integral indicator of economic security, calculated according to the method of taxonomic analysis (Ertürk, E. (2015), Schor, J. (2016), Liu, F., & Liu, R. (2019));
2) models for forecasting the integral indicator of economic security with the help of the methods of canonical and component analysis (Balaam, D. N., & Dillman, B. (2015), Stiglitz, J. E. (2015)).

Paying tribute to the works of scientists on the researched issues and the significance of the obtained scientific results, it should be noted that some theoretical and methodological, practical issues of forecasting the economic security of regions and their impact on economic security of the national economy remain unresolved. There is an objective need for further research on the conditions for ensuring the economic security of the national economy in a regional aspect. Despite the significant achievements of the authors, the methodology for forecasting the economic security of the national economy, taking into account its regional component, needs to be clarified. There is a necessity for the further research of destabilizing factors, determination of strategic priorities for ensuring economic security of the national economy, formation of strategies to increase the economic security of the regions and the development of a mechanism for their implementation. The abovementioned led to the choice of the research theme and its scientific relevance.

3. Methods

The theoretical and methodological basis of the study were the provisions of economic theory, macro- and microeconomics, management theory, the works of leading scientists on ensuring economic security of regions and its management.

The next research methods were used in the study: generalization and systematization; computational-analytical and comparative; economic and mathematical (for the calculation of integral indicators of economic security of regions and creation of their forecast models); matrix (to determine the interrelation of strategic priorities, economic security of regions and destabilizing factors of economic development); graphic and tabular (for visual representation of statistical material, visualization of theoretical and practical provisions); cluster analysis (for grouping regions according to the level of economic security). Data processing was performed using the application software product STATISTICA 10.0.

Laws of Ukraine, Decrees of the President of Ukraine, normative documents of the Cabinet of Ministers of Ukraine, official materials of the State Statistics Service of Ukraine, official materials of territorial bodies of the State Statistics Service of Ukraine, official materials and publications of international organizations, scientific publications of scientists, results of own research of the author became the information and regulatory framework.

4. Results

In order to determine regional disparities in ensuring socio-economic development, the regions of Ukraine were grouped by means of the cluster analysis methods which allowed to identify the homogeneity of objects (regions) of the crisis management system.

The initial data are the materials of the State Statistics Services of Ukraine on the socio-economic situation of the regions of Ukraine in 2018 which were formed on the basis of data obtained from the Ministry for Development of Economy, Trade and Agriculture of Ukraine: Number of population, thousands people (A1); Number of people involved in economic activities, thousands people (A2); Available income of the population, UAH/person (A3); Expenditures of the population (A4); Average monthly salary, UAH (A5); Consumer price index (A6); Gross regional product, mln UAH (A7); Volume of sold industrial products, mln UAH (A8); Agricultural products, mln UAH (A9); Crop products, mln UAH (A10); Livestock products, mln UAH (A11); Commis-
sioning of the total living area, thousand м2 (A12); Retail turnover of enterprises, mln UAH (A13); Export of goods, mln USD (A18); Import of goods, mln USD (A19); Export of services, mln USD (A20); Import of services, mln USD (A21); Financial result before taxation (profit), bln UAH (A22); Financial result before taxation (loss), bln UAH (A23); Capital investments, bln UAH (A17).

It should be noted that this list of source data differs from that defined at the beginning of the study. Since 2018, while compiling the statistical digest on the regions of Ukraine, separate information on export and import has been provided; in the financial result the loss and profit has been represented separately, not the balance only. In order to conduct a retrospective analysis of the economic security of the regions, an initial sample of data (A1-A17) was used. Therefore, the mathematical expression of variables is presented as:

\[ A_{14} = A_{18} + A_{20} \]  
\[ A_{15} = A_{19} + A_{21} \]  
\[ A_{16} = A_{22} + A_{23} \]

The identified indicators are divided into the two groups- stimulants and deterrents. In this case the deterrents are indicators, the presence and increase of which is considered as a negative phenomenon. Therefore, in this particular case, the following indicators are included in the deterrent group: Consumer price index (A6) and Financial result before tax (loss), bln UAH (A19) and when performing calculations their values are taken into account with a minus sign. In addition, before using any of the methods of the cluster analysis, it is necessary to perform the procedure of standardization and rationing of data in order to bring all indicators to one value (to make them comparable). The initial data of socio-economic development of the regions during 2018 are standardized using the appropriate module of the demo version of the software package Statistica 10.

In order to determine the number of clusters for a given set of objects, the entropy rate (uncertainty) for each possible grouping is calculated. The best option is the variant in which the deviation of the actual entropy rate from its maximum value is minimal.

The entropy of the classification of \( k \) objects is divided into \( B \) classes and is determined by the expression:

\[ G = -\sum_{b=1}^{B} \frac{h_b}{h} \log_2 \frac{h_b}{h} \]

where \( G \) – is the entropy of the classification, bit; \( h_b \) – is the number of regions which were addressed to the \( b \)-class, units.

The maximum possible value of entropy \( G_{\text{max}} \) is determined by the expression (4) at values equal to each other, i.e. the number of objects is evenly distributed in clusters.

The deviation of entropy from the maximum value is determined by the expression:

\[ \Delta G = \frac{(G_{\text{max}} - G) \times 100}{G_{\text{max}}} \]
The results of calculation and analysis of entropy rates in conditions of different numbers of clusters are shown in Table 1.

Table 1. Calculation of entropy of different variants of the numbers of clusters to compare the regions of Ukraine according to the state of their socio-economic development (according to the results of 2018)

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<th>Number of clusters</th>
<th>Number of regions in a cluster №</th>
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<th>Entropy, bit</th>
<th>Deviation of entropy from the maximum possible value, %</th>
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<td>6,08</td>
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<tr>
<td>7</td>
<td>3, 1, 1, 13, 1, 1, 4</td>
<td>2,79</td>
<td>2,02</td>
<td>27,55</td>
</tr>
</tbody>
</table>

Source: author’s calculations

Thus, the smallest deviation of the entropy index from its maximum possible value is observed when grouping objects into 3 clusters = 0.75%. Therefore, the regions of Ukraine in terms of socio-economic development (2018) are grouped into 3 clusters (by the k-means method).

The choice of the stated method of clustering is justified by the following advantages: it does not build geometric clusters which avoids their intersection and, as a consequence, hitting the same element in several clusters; it allows us to form a given number of clusters which facilitates the economic interpretation of the received results.

To identify regional differences in economic security by cluster analysis method, the corresponding module of the software product Statistica 10.0 «Statistics / Multivariate Exploratory / Cluster analysis» was applied.

The results of analysis of variance of the constructed clusters showed the absence of significant differences (i.e. the level of significance exceeds 0.05) according to the following indicators: A6 – Consumer price index (p = 0.57); A11 – livestock products (p = 0.19); A12 – commissioning of the total living space (p = 0.12).

This proves that the average values of the studied indicators are different for this level of significance and these indicators can be excluded and the analysis can be performed again. The results of re-checking the indicators of cluster analysis allowed us to conclude that other indicators could be used for the further calculations.

Carrying out clustering with the help of k-means method allowed us to determine the components of the built clusters. The list of regions (observations) included in each of the clusters was obtained using the function «Members for each cluster & distances» – Table 2.

Table 2. Grouping of regions (oblasts) of Ukraine into clusters according to the indicators of socio-economic development

<table>
<thead>
<tr>
<th>Cluster 1 (9 objects)</th>
<th>Cluster 2 (8 objects)</th>
<th>Cluster 3 (7 objects)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinnytsia</td>
<td>Volyn</td>
<td>Dnipropetrovsk</td>
</tr>
<tr>
<td>Kirovohrad</td>
<td>Zhytomyr</td>
<td>Donetsk</td>
</tr>
<tr>
<td>Mykolayiv</td>
<td>Zakarpattia</td>
<td>Zaporizhia</td>
</tr>
<tr>
<td>Poltava</td>
<td>Ivano-Frankivsk</td>
<td>Kyiv</td>
</tr>
<tr>
<td>Sumy</td>
<td>Luhansks</td>
<td>Lviv</td>
</tr>
<tr>
<td>Kherson</td>
<td>Rivne</td>
<td>Odesa</td>
</tr>
<tr>
<td>Khmelnytskyi</td>
<td>Temopil</td>
<td>Kharkiv</td>
</tr>
<tr>
<td>Cherkasy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chernihiv</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
After clustering using the k-means method it is established that:
the first cluster should include the nine regions of Ukraine (Vinnytsia, Kirovohrad, Mykolayiv, Poltava, Sumy, Kherson, Khmelnytskyi, Cherkasy and Chernihiv);
the second one should include the eight region s(Volyn, Zhytomyr, Zakarpattia, Ivano-Frankivsk, Luhansk, Rivne, Ternopil, Chernivtsi);
the third cluster should include the seven regions (Dnipropetrovsk, Donetsk, Zaporizhia, Kyiv, Lviv, Odesa, Kharkiv).

The quality of the classification was checked by methods of discriminant analysis using the module «Multivariate Exploratory / Discriminant».

In this case the cluster number is selected as the grouping variable. According to the results obtained during the calculations it was determined that the Wilk’s criterion of statistics is in the range [0,1] and is 0.00278. This indicates the conclusion that the classification is correct.

To check the correctness of the samples, the results of the matrix classification were obtained (Table 3).

<table>
<thead>
<tr>
<th>Group</th>
<th>Percent - Correct</th>
<th>G_1:1-p=,37500</th>
<th>G_2:2-p=,33333</th>
<th>G_3:3 - p=,29167</th>
</tr>
</thead>
<tbody>
<tr>
<td>G 1:1</td>
<td>100,0000</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>G 2:2</td>
<td>100,0000</td>
<td>0</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>G 3:3</td>
<td>100,0000</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>100,0000</td>
<td>9</td>
<td>8</td>
<td>7</td>
</tr>
</tbody>
</table>

The control of the correctness of the received breakdown of the initial set of observations into clusters was also performed using canonical analysis which is possible provided that there are at least three groups and the availability of at least two variables in the model (Figure 1).

The diagram of spread of canonical values confirms the correctness of the division of the regions of Ukraine into 3 clusters. In addition, the data in Figure1 show that there are significant differences between cluster №3 and clusters № 1, № 2.
In order to determine the characteristics of the identified clusters, the average values for each cluster were investigated which were built according to non-standardized variables (Figure 2).

The graph of average values of factor variables for clusters shows a significant difference between the third cluster and other obtained clusters which is characterized by the highest values of almost all indicators except A9 (agricultural products), A10 (crop products) and A19 (pre-tax financial result (loss)).

Since in the cluster analysis the indicators were initially standardized then the clusters are characterized by non-standardized data (Table 4).

Table 4. Average values of factor variables for clusters

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1 Number of available population, thousand people</td>
<td>1214,5</td>
<td>1284,313</td>
<td>2664,129</td>
</tr>
<tr>
<td>X2 Number of people involved in economic activity, thousand people</td>
<td>502,956</td>
<td>443,613</td>
<td>1001,414</td>
</tr>
<tr>
<td>X3 Available income of the population (UAH/person)</td>
<td>28310,72</td>
<td>23290,59</td>
<td>31314,54</td>
</tr>
<tr>
<td>X4 Expenditures of the population</td>
<td>37401,38</td>
<td>32014,54</td>
<td>42318,43</td>
</tr>
<tr>
<td>X5 Average monthly salary, UAH</td>
<td>3449,222</td>
<td>3298,625</td>
<td>4134,143</td>
</tr>
<tr>
<td>X7 Gross regional product, mln UAH</td>
<td>36713,11</td>
<td>26576,88</td>
<td>98072,14</td>
</tr>
<tr>
<td>X8 Volume of sold industrial products, mln UAH</td>
<td>41536,51</td>
<td>20188,58</td>
<td>129401,5</td>
</tr>
<tr>
<td>X9 Agricultural products, mln UAH</td>
<td>12407</td>
<td>5896,05</td>
<td>11519,41</td>
</tr>
<tr>
<td>X10 Crop products, mln UAH</td>
<td>9079,089</td>
<td>3683,8</td>
<td>8179,543</td>
</tr>
<tr>
<td>X13 Retail turnover of enterprises, mln UAH</td>
<td>10441,36</td>
<td>9095,713</td>
<td>31353,27</td>
</tr>
<tr>
<td>X14 Export of goods, mln USD</td>
<td>730,0111</td>
<td>446,975</td>
<td>2708,729</td>
</tr>
<tr>
<td>X15 Import of goods, mln USD</td>
<td>352,5667</td>
<td>379,125</td>
<td>1685,786</td>
</tr>
<tr>
<td>X16 Export of services, mln USD</td>
<td>79,7</td>
<td>52,2625</td>
<td>367,4429</td>
</tr>
<tr>
<td>X17 Import of goods, mln USD</td>
<td>39,5</td>
<td>23,0125</td>
<td>155,9286</td>
</tr>
<tr>
<td>X18 Financial result before taxation (profit), bln UAH</td>
<td>10,55556</td>
<td>3,475</td>
<td>18,24286</td>
</tr>
<tr>
<td>X19 Financial result before taxation (loss), bln UAH</td>
<td>8,766667</td>
<td>12,2875</td>
<td>40,47143</td>
</tr>
<tr>
<td>X20 Capital investments, bln UAH</td>
<td>5,266667</td>
<td>4,575</td>
<td>14,42857</td>
</tr>
</tbody>
</table>

The information in Figures 1-2 and Table 4 shows the heterogeneity of the regions of Ukraine in terms of their economic security level. And from the standpoint of socio-economic indicators, the three main segments (clusters) are distinguished. The generalization of the differences allowed to characterize the clusters the features of which are given in Table 5.
Table 5. Characteristics of regional clusters

<table>
<thead>
<tr>
<th>Cluster characteristics</th>
<th>Specific weight of a cluster</th>
<th>Structure of a regional cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>The highest values of agricultural production volumes (including crop production); Average indicators of the number of people involved in economic activity, available income of population, expenditures of population, average monthly wages, gross regional product, sold production of industry, retail turnover of enterprises, export of goods and services, import of services, enterprise profits, capital investments; The lowest indicators of population number, import of goods, losses of enterprises;</td>
<td>37.5%</td>
<td>Vinnitsia, Kirovohrad, Mykolayiv, Poltava, Sumy, Kherson, Chmelnytskyi, Cherkasy, Chernihiv</td>
</tr>
<tr>
<td>The average values of the number of people, import of goods, losses of enterprises;</td>
<td>33.3%</td>
<td>Volyn, Zhytomyr, Zakarpattia, Ivano-Frankivsk, Luhansk, Rivne, Ternopil, Chernivtsi</td>
</tr>
<tr>
<td>The highest indicators of the number of people involved in economic activity, available income of population, expenditures of population, average monthly wages, gross regional product, volumes of sold production of industry, agricultural production volumes (including crop production), retail turnover of enterprises, export of goods and services, import of services, profit of enterprises, capital investments.</td>
<td>29.2%</td>
<td>Dnipropetrovsk, Donetsk, Zaporizhia, Kyiv, Lviv, Odesa, Kharkiv</td>
</tr>
</tbody>
</table>

The regions of the third cluster have the best indicators, its share in the structure is 29%. Almost all indicators are characterized by the highest values except for the volumes of agricultural production. It should be noted that factor variables significantly exceed their values in other clusters. Thus, the available income of the population exceeds the value of the first cluster by 9.6%, of the second one- by 25.6%. The average monthly salary exceeds by 16.6% and 20.2% respectively. The indicators of gross regional product and volume of sold industrial products are also significantly higher: by 62.6% and 72.9% respectively; 67.9% and 84.4%. The same situation happens with other indicators: retail turnover of enterprises-66.7% and 71.0%; export of goods -73.0% and 83.5%; import of goods- 79.1% and 77.5%; export of services- 78.3% and 85.8%; import of services- 74.7% and 85.2%; profit- 42.1% and 81.0%; loss- 78.3% and 69.6%; capital investments- 63.5% and 68.3%.

As a result of clustering of the regions of Ukraine according to the indicators of socio-economic development, the homogeneity of the regions within the respective clusters was identified which allowed to indicate the three clusters. The correctness of the classification of observations (regions) with the help of the k-means method is confirmed by the results of discriminant analysis.

Generalization of differences allowed us to characterize the highlighted clusters but according to the received results of the study it is difficult to identify the affiliation of a region for the next period.

It is offered to develop forecast mathematical functions for each cluster (discriminant functions) and to conduct a component analysis that will determine the factor features and their components.

The characteristics of cluster 3 allowed us to give it the name “Higher” - it includes the regions with economic security at the “Higher” level: Dnipropetrovsk, Donetsk, Zaporizhia, Kyiv, Lviv, Odesa, Kharkiv regions.

Based on the characteristics of cluster 1, it is defined as “Average” which includes areas with economic security at a sufficient level, namely: Vinnitsia, Kirovohrad, Mykolayiv, Poltava, Sumy, Kherson, Khmelnitskyi, Cherkasy, Chernihiv regions.

Cluster 2 “Lower” – regions with lower levels of economic security which include the following ones: Volyn, Zhytomyr, Zakarpattia, Ivano-Frankivsk, Luhansk, Rivne, Ternopil, Chernivtsi regions.

It is determined that the first cluster “sufficient level of economic security” in almost all indicators has the largest share in their formation at the national level: Available number of population (A1) -33.4 %; Number
of people involved in economic activity (А2) -33.8 %; Gross regional product (А7) -34.4 %; Volume of sold industrial products (goods, services) (А11) -31.4%; Commissioning of the total living space (А12) -42.4 %; Retail turnover of enterprises (in actual prices) (А13) -39.9 %; Import of goods and services (XI5) -45.5 %; Capital investments (in actual prices) (А17) -38.9 %.

Cluster 2 “satisfactory level of economic security” has the largest share in the following indicators: Agricultural products (at constant prices) (А9) -44.6 %; Crop products (at constant prices) (А10) -47 %; Livestock products (at constant prices) (А11) -39.2 %.

The regions of cluster 4 “good level of economic security” (Dnipropetrovsk and Donetsk regions) in 2013 are forming in terms of export of goods and services (А14), their share is 42.3 %.

In addition according to the indicators A3 (Available income of population per person), A4 (Expenditures of population per person), A5 (Average monthly salary) and A16 (Financial result (balance) of ordinary activities before taxation, the highest average values belong to cluster 4 “good level of economic security”; the minimum value has cluster 3 “dangerous level of economic security”.

In order to determine the disparities in ensuring economic security of the national economy of the regions, a study of socio-economical indicators in terms of certain identified regional clusters according to the data of 2018 was performed.

The first cluster includes regions (oblasts) with average values. The lowest indicators of socio-economic development were shown by the regions of the second cluster and the highest- by the third cluster (Table 6).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of available population, thousand people</td>
<td>2664,129</td>
<td>1214,5</td>
</tr>
<tr>
<td>Number of people involved in economic activity, thousand people</td>
<td>1001,414</td>
<td>443,613</td>
</tr>
<tr>
<td>Available income of population</td>
<td>31314,54</td>
<td>23290,59</td>
</tr>
<tr>
<td>Expenditures of population</td>
<td>42318,43</td>
<td>32014,54</td>
</tr>
<tr>
<td>Average monthly salary, UAH</td>
<td>4134,143</td>
<td>3298,625</td>
</tr>
<tr>
<td>Gross regional product</td>
<td>98072,14</td>
<td>26576,88</td>
</tr>
<tr>
<td>Volume of sold industrial products</td>
<td>129401,5</td>
<td>20188,58</td>
</tr>
<tr>
<td>Agricultural products, mln UAH</td>
<td>12407</td>
<td>5896,05</td>
</tr>
<tr>
<td>Crop production, mln UAH</td>
<td>9079,089</td>
<td>3683,8</td>
</tr>
<tr>
<td>Retail turnover of enterprises, mln UAH</td>
<td>31535,27</td>
<td>9095,713</td>
</tr>
<tr>
<td>Export of goods, mln USD</td>
<td>2708,729</td>
<td>446,975</td>
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</tr>
<tr>
<td>Capital investments, bln UAH</td>
<td>14,42857</td>
<td>4,575</td>
</tr>
</tbody>
</table>

According to the results of conducted calculations of deviations between the maximum and minimum values of the average indicators of economic security of regional clusters, it was established that the average deviations are 277% (Figure 3).
The largest deviations are observed in the indicators of export and import of services - 603% and 578% of the minimum value respectively. The highest volume of export of services has the cluster “Higher”, the lowest volume has the cluster “Lower” (Figure 4).

The results of the conducted study allow us to make a conclusion that there are disparities in economic security between clusters of regions which are 277% in average. Thus, “Higher” cluster has the best results and includes Dnipropetrovsk, Donetsk, Zaporizhia, Kyiv, Lviv, Odesa and Kharkiv regions. The worst results are in Volyn, Zhytomyr, Zakarpattia, Ivano-Frankivsk, Luhansk, Rivne, Ternopil and Chernivtsi regions which are estimated to represent the cluster “Lower”. All the other regions (Vinnitsia, Kirovohrad, Mykolayiv, Poltava, Sumy, Kherson, Khmelnytskyi, Cherkasy, Chernihiv regions) make up the cluster “Average” and have mediate indicators.
A weighty factor in the economic development of regions is the effectiveness of economic security management which can be achieved through implementation of a strategic approach in the process of definition and realization of measures to ensure economic security at a regional level. The executive stage of the methodology for forecasting the economic security of the regions involves the development of strategies, programs for ensuring economic security of the corresponding region.

5. Discussion

The Strategy of economic development of regions should also include the elements of their economic security management. In this case, each region in accordance with the stated purposes, set tasks and offered specific actions to ensure economic security, indicates the main directions of economic security in relation to the entities and objects of the regions and offers a set of prompt and long-term strategic measures taking into account available resources and potential opportunities for their changes. In the process of the Strategy development it is necessary to consider the deviation of actual results from the planned forecast indicators of economic development of a region which, according to the results of our previous research, are indicators of economic security of a region. Then one should continuously monitor the determinants of the process of economic security management and their possible changes in order to timely adjust the corresponding events in the regions.

The main obstacles to effective strategic management of economic security of the regions are: distrust of economic entities to the methods of public administration and reformation of economic relations, administrative barriers and the corruption component of economic activity and so on. However, the introduction and implementation of strategic management of economic security of regions in terms of decentralization of management create a competitive business environment, ensure economic development, stability and resistance of the economic system of a region through the interest of all entities of economic security and so on.

One of the priority tasks of central and regional economic policy should be a common program of economic restructuring with the predominant development of the most profitable and promising industries at that moment as well as industries that have long-term economic advantages in the general system of territorial division of labor.

The experience of ensuring economic security of the USA and Canada (Odell, J. S. (2018)) shows the expediency and necessity of implementing the principles of strategic planning which is one of the effective means of influencing the development of regional socio-economic systems.

Strategic plans for sustainable development according to UNO methods must be developed with the involvement of the community (Stubbs, R. (2017)). Such a strategic plan foresees the “socialization”of planning activity, i.e. the involvement in the development of not only representatives of local authorities but also representatives of commercial institutions and public organizations. It contains the vision of the future and the mission, a thorough SWOT-analysis. It defines strategic goals that are specified taking into account deadlines, expected results, sources of funding and responsible executors. It describes the system of monitoring and updating-making changes to a strategic document on the basis of the conducted external audit. It is assumed that the public should be informed through the media not only about achievements in the work on implementation of the strategy but also about all the other relevant changes.

Thus, as the experience of overcoming the crisis of other countries shows, the program-targeted approach to ensuring economic security is focused not only on production and quantitative indicators but also on social and qualitative ones in combination with the implementation of individual projects which are effective in the region’s economy. The method of partnership planning, on condition that specifically assigned tasks are implemented, provides an opportunity to approach the world standards.
Conclusions

According to the results of the study the following conclusions are made:

Regional cluster with the value of economic security “Higher” ("H") according to the data of 2018 has the highest values of the following indicators: number of people involved in economic activity, available profit and expenditures of population, average monthly salary, gross regional product, volume of sold industrial products, retail turnover of enterprises, export and import of goods and services. The average value has the index of agricultural production volume (including crop production);

Regional cluster with the sufficient level of economic security (“A”) is characterized by the highest value of agricultural production volumes(including crop production); the average values of the following indicators: the number of people involved in economic activity, available income and expenditures of population, average monthly salary, gross regional product, volume of sold industrial products, retail trade of enterprises, export and import of goods and services;

Regional cluster with the satisfactory level of economic security (“L”) is characterized by the average value of the population index and the lowest values of all the other indicators of socio-economic development of a region.

Thus, as a result of the conducted study, the characteristics of regional clusters were determined according to the indicators of their socio-economic development. In the further researches the calculation of the impact of every considered indicator of socio-economic development of regions on the level of their economic security was done in order to create a model for assessing the level of economic security of regions with the help of the multivariate statistics methods.

The data of cluster 3 for 2018 allow us to give it the name “Higher”, i.e., the regions with economic security at the “Higher” economic security level are there: Dnipropetrovsk, Donetsk, Zaporizhia, Kyiv, Lviv, Odesa and Kharkiv regions.

The values of the components of cluster 1 allow us to call it “Average” which includes areas with regional security at a sufficient level - Vinnitsia, Kirovohrad, Mykolayiv, Poltava, Sumy, Kherson, Khmelnytskyi, Cherkasy, Chernihiv regions.

Cluster 3 “Lower” contains regions with satisfactory level of regional economic security - Volyn, Zhytomyr, Zakarpattia, Ivano-Frankivsk, Luhansk, Rivne, Ternopil and Chernivtsi regions.

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Abstract. The essence of administrative and legal regulation of the activities of the subjects of the national cybersecurity system of Ukraine has been established, which consists in building an effective system for ensuring cybersecurity and requires from the state bodies of Ukraine a clear legal definition of the principles of state policy in this area and an advanced response to dynamic changes taking place in the world in the field of cybersecurity. The classifier of threats to the security of information resources has been improved, which, in contrast to the existing ones, is based on a synergetic model of threats, which allows to classify threats by security components, types of services, and hierarchy levels of the infrastructure of automated systems, to assess the synergy and hybridity of threats to information security, cybersecurity, information security, and the likelihood of their impact on the security of information resources. It has been proved that the choice of specific means and ways of ensuring the cybersecurity of Ukraine is conditioned by the need to take timely measures adequate to the nature and scale of real and potential cybernetic threats to the vital interests of a person and citizen, society and the state. The purpose of the cybersecurity system of Ukraine has been clarified. The task of the cybersecurity system is to create the necessary conditions in cyberspace, under which it is possible to achieve national goals and realize the interests, tasks, and goals of its elements.

Keywords: cybersecurity; information security; administrative and legal regulation; cyberspace; classifier


JEL Classifications: F35; F42

1. Introduction

Ukraine’s national security, its economic prosperity, and social and information well-being increasingly depend on the availability, integrity, and confidentiality of information resources, which are provided by information and communication technologies, or in a broader sense - cyberspace. At the same time, the growing dependence on information technologies makes modern Ukrainian society more vulnerable to the possible negative consequences of illegal use of cyberspace. Every year the number of cyber attacks and various cyber incidents grows in the most important spheres of life of our state.

Under these conditions, one of the main tasks of the state is to take proactive measures that will create guaranteed conditions for the realization of national interests in cyberspace. One of the directions of realization of this task consists in the formation of backup copies (backups) of information resources of the state and also the formation of the effective national system of cybersecurity, including the support of cybersecurity systems, which will fundamentally reduce (and sometimes completely prevent) the consequences of cyberattacks, as well as create conditions for timely forecasting of the implementation of certain cyber incidents.
In recent decades, the development of information and communication technologies (ICT), cybernetics, and the Internet has led to significant changes in society. The Internet has brought great social benefits to the world for many forms of activity. These profits have become significant for people, business, the state, and society as a whole. Today, information and communication technology systems are integrated into all aspects of society and are critical to its functioning. Cyberspace and technology have become the basis for interaction between different sectors, both public and private, and can be considered a fundamental social infrastructure.

However, along with many benefits, there are a significant number of threats associated with the functioning of modern technology. This phenomenon has led to a significant number of dangers that affect society both nationally and internationally. Thus, there is a need for mechanisms to protect cyberspace, which are described in the national strategies of world powers, which in turn are dedicated to ensuring its protection. Therefore, a very important topic is the study of implementation mechanisms to ensure a cybersecurity strategy, initially at the international level, as it will help in further understanding of this phenomenon. It will also be useful in gaining valuable experience for the formation and implementation of mechanisms to ensure cybersecurity in Ukraine.

Cyberspace has been the cause of social and economic growth due to its openness and accessibility for all actors. Excessive administration and regulation of cyberspace reduce its benefits and can hinder active growth in all areas of activity. Therefore, it is very important to ensure openness and interaction in the cyber network, as well as to maintain and develop the secure and reliable cyberspace to create a free flow of information. This will ensure freedom of expression and active economic activity in cyberspace, promote innovation, economic growth, and the solution of social problems, and provide positive benefits that will be available to the world community. Every country in the world, as well as business structures, enjoy the benefits of expanding cyberspace. As a result, cyber threats have become a reality, they are transcontinental in nature, and the consequences of their interventions in critical infrastructures have become more severe.

Cybersecurity expands the scope of traditional IT security to cover the entire cyberspace. The latter covers all information technologies that connect to the Internet or similar networks, including cyberspace communications, programs, processes, and processed information. Thus, for all intentions and purposes, modern information and communication technologies become part of cyberspace.

The purpose of the work is to determine the essence, features, and system of administrative and legal regulation of cybersecurity of Ukraine on the basis of the analysis of the current legislation of Ukraine, historical, modern scientific sources, as well as to formulate proposals and recommendations for improving its functioning.

2. Literature Survey

Cybersecurity policy is emerging area of scientific research (e.g. Šišulák, S. (2017); Limba, T., Stankevičius, A. & Andrulevičius A. (2019); Plėta, T., Tvaronavičienė, M., & Della Casa, S. (2020); Plėta, T., Tvaronavičienė, M., Della Casa, S., & Agafonov, K. (2020); Tvaronavičienė, M., Plėta, T., Della Casa, S., & Latvys, J. (2020)).

In general, the essence of cybersecurity policy in the context of legal sciences can be viewed from the standpoint of three main aspects:

1) it acts as part of the state legal policy - the effective implementation by citizens of their rights and freedoms in the cyber sphere, effective norms, which govern public relations in the cyber sphere are an integral element (Sabillon, R., Cavaller, V., & Cano, J. (2016), Aliyeva, L. M., & Hwang, G. H. (2019));

2) it acts as a part of state security policy - the level of cybersecurity directly determines, under the current conditions of digitalization of society, the level of national, regional, international, and global security (Carr, M. (2016), Kolini, F., & Janczewski, L. (2017))

3) it acts as a part of the state information policy (SIP) (Pernik, P., Wojtkowiak, J., & Verschoor-Kirss, A. (2016), Herrera, A. V., Ron, M., & Rabadão, C. (2017)) aimed at the formation of an effective information society, ensuring information security, ensuring the implementation of information human rights and freedoms, forming mechanisms for the information balance of the interests of the individual, society, and the state; strengthening
ties and interaction between the managers and the managed; organization of effective information interaction between institutions of the state and civil society (Slipachuk, L., Toliupa, S., & Nakonechnyi, V. (2019)).

Consequently, today the Ukrainians face the danger of implementing destructive cyberwar scenarios regardless of whether this is perceived by the scientific community or not; whether this is reflected in the corresponding indicative excitement of scientific interest in this topic or not, or legitimized by the concept of cyberwar in national legislation or not.

It is such wars that give rise to the formation of a new cyber-supremacy with its inherent cyber culture, cyber-civilization, cyber-economy, cyber-economy, and artificial intelligence, etc, and in general - a new cyber world, a new cyber world order (Galinec, D., Moznik, D., & Guberina, B. (2017)). Therefore, when analyzing the state of scientific research, the author relied on the adequacy of response to these tendencies, and the descriptions were not made from the standpoint of slashing criticism, and not denial of the existing order, accepting and perceiving reality as it really is: whether someone likes it or not, whether it fits into the canons of information-legal and security science or not (Tiirmaa-Klaar, H. (2016), Shackelford, SJ (2016)).

3. Methods

General and specific scientific methods were used: systemic and structurally functional approaches, which made it possible to determine the essence, structure, functions, and special features of support of the cybersecurity and information security; comparison method – in order to identify common and distinctive features in ensuring the cybersecurity of world states, providing mechanisms for the implementation of various cybersecurity strategies, as well as cybersecurity of Ukraine. In order to assess the features of the functioning of the mechanisms, the following methods were used: the analytical method, which provided the identification of the existing situation for the implementation of cybersecurity strategies and mechanisms for their implementation. The research conducted is based on theoretically grounded and practically tested methods of set theory, probability theory and mathematical statistics, system analysis, and laws of synergy.

To construct threat metrics based on the synergetic approach proposed in the works (Reznik, O, et al. (2017)), the authors use the approach of constructing a threat classifier based on the information-analytical model of the double triplets method proposed by the authors in the works (Reznik, O, et al. (2020)). In contrast to what is known in the construction of the classifier, the content of each of the four platforms includes a number of components, respectively.

The normative basis of the work includes the Constitution of Ukraine, international legal acts ratified by Ukraine, laws of Ukraine, acts of the President of Ukraine and the Cabinet of Ministers of Ukraine, normative acts of central executive bodies, local self-government bodies that determine the content and features of administrative and legal regulation of cybersecurity in Ukraine.

4. Results

The development of society at the beginning of the XXI century is characterized, first of all, by the transition from an information society to a society of high technologies, which provide oversaturation with the latest information and communication technologies, the further development of globalization processes in the modern economy, the dynamics of informatization of such areas of society as the communications sector, energy, transport, oil and gas production and storage system, financial and banking systems, defense and national security, structure for ensuring the stable operation of central executive authorities, widespread transition to electronic management and document management methods.

Secondly, the information processes taking place throughout the world highlight the most important task of ensuring the security of information. This is due to the special importance for the development of the state of its information resources, the growth in the cost of information in market conditions, its high vulnerability, and often significant losses as a result of its unauthorized use.
Thirdly, the rapid development of the Internet and other information and communication technologies forms a global information space that allows creating new threats and new forms of international conflicts, including information wars, network confrontations, hacker attacks, etc. The development of computer technologies and information and telecommunication networks provide great opportunities for society, while at the same time giving rise to a new type of crime - cybercrime.

Information theft remains a priority target for most cyber attacks in Ukraine (Figure 1). As for the financial gain, cybercriminals pursue it in 30% and 42% of attacks on legal entities and individuals, respectively. The high share of financially motivated attacks on individuals is explained by regular mass infections with malicious software with obtrusive advertising (including on mobile devices), infection by miners, and other software on dubious websites, as well as ransomware campaigns, during which criminals threaten to distribute compromising information about a person.

![Figure 1. Motives of criminals in 2019 in Ukraine](https://cybersecurity.ciseventsgroup.com/)

*Source: compiled on the basis https://cybersecurity.ciseventsgroup.com/

Cybercriminals are most often interested in personal and credentials when they attack legal entities (Figure 2). This is not surprising since companies can store large databases of both personal and customer credentials. In addition, attackers may be interested in the credentials of the employees of the victim company.

![Figure 2. Types of stolen data in 2019 in Ukraine](https://cybersecurity.ciseventsgroup.com/)

*Source: compiled on the basis https://cybersecurity.ciseventsgroup.com/*
Accounts on social networks are also under threat, especially if the account is well promoted, that is, it has many subscribers. Users, in turn, do not always care about the security of their accounts: they use unstable and identical passwords, enter credentials without making sure the resource is reliable, and give out information about themselves that can help to find a password. This explains the high proportion of stolen credentials (44%) in attacks on individuals. For example, the category of people entering the zone of increased risk of attacks from hackers includes fans of computer games. For example, in the second quarter of 2019, cybercriminals lured Steam users to web resources where supposedly they could get a new game for free by entering their Steam account credentials. In addition, gamers can fall for the bait of malefactors on specialized forums. So, under the guise of cheat codes packed in a ZIP archive, several web resources distributed a Trojan for mining the TurtleCoin cryptocurrency.

Customers’ bank card details and payment information are usually protected by cryptographic methods, so it is easier for attackers to learn it using social engineering methods directly from the customer. As a result, 34% of data stolen as a result of attacks on individuals is their bank card details.

In the second quarter of 2019, the share of targeted attacks increased significantly compared to the first quarter and amounted to 59% (in the first quarter - 47%). The share of cyber incidents, as a result of which individuals suffered, was 24%. Among legal entities (Figure 3), cybercriminals most often attacked government organizations, industrial companies, medical organizations, banks, and other organizations in the financial sector. In the second quarter, there are supply chain attacks on large IT companies with a large number of clients from various industries, so some attacks are considered in more detail below.

![Figure 3. Categories of victims among legal entities in 2019 in Ukraine](https://cybersecurity.ciseventsgroup.com/)

Security models play an important role in the development and research of secure computer systems, including automated systems (AS). The models provide a system-technical approach that includes the solution of the most important tasks: the choice and justification of the basic principles of the architecture of the AS, which determine the mechanisms of implementation of means and methods of information protection; confirmation of the properties (security) of the developed systems by formally proving compliance with the security policy (requirements, conditions, criteria); drawing up a formal specification of the security policy as the most important part of the organizational and documentation support of the developed secure computer systems. The principles of constructing a classifier of threats of the components of information resource security are formalized at the national level: information security (IS), cybersecurity (CS), information security (IS).
Formation of metric coefficients of threats by experts on security services. I-services of information resources security (IRS). The main security services of IRS are K - confidentiality; S - integrity; D - availability; A - authenticity. Then the classifier for the four security services is described by the expression of the form

\[ i = \{K, S, D, A\} \]

The classifier contains M threats. K experts took part in compiling the weights of manifestation of each threat to IRS security services.

Denote by \( j \) the current number of the threat \( \left( j^M \right) \), by \( n \) - the current number of the expert who performed the assessment \( \left( n^N \right) \). The average value of the expert assessment of all threats to a particular security service can be recorded:

\[
\psi^j = \frac{1}{N} \sum_{j=1}^{M} \sum_{n=1}^{N} \psi_{jn}^j
\]

(1)

where \( \psi_{jn}^j \) - the value of the metric coefficient set by the \( n \)-th expert for the \( j \)-th threat of the \( i \)-th security service; 
M - number of threats; N - number of experts.

Formation of threat identifiers according to the components of the classifier. In this step, the experts generate a digital value (code) of the threat identifier for the relevant components of the classifier.

The choice of weights \( W_j \) that determine the conditions of the manifestation of the \( j \)-th threat (Table 1).

<table>
<thead>
<tr>
<th>Weights ( W_j )</th>
<th>Conditions of the manifestation of the threat</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.067</td>
<td>the threat manifests no more than once every 5 years</td>
</tr>
<tr>
<td>0.133</td>
<td>the threat manifests no more than once a year</td>
</tr>
<tr>
<td>0.2</td>
<td>the threat manifests no more than once a month</td>
</tr>
<tr>
<td>0.267</td>
<td>the threat manifests no more than once a week</td>
</tr>
<tr>
<td>0.333</td>
<td>the threat manifests daily</td>
</tr>
</tbody>
</table>

Source: author’s development

Determining the implementation of each \( j \)-th threat, taking into account the probability of an attack (its occurrence) \( (P_j^i) \) is carried out by the expression:

\[
v_j P_j^i = \frac{1}{N} P_j^i \sum_{n=1}^{M} v_{jn}^j P_j^i \]

(2)

For each security service and \( j \)-th threat, it is calculated according to formula (2).

Confidentiality service:

\[
v_j^K = \frac{1}{N} v_j^K \sum_{j=1}^{M} v_{jn}^j
\]

(3)

Integrity service:

\[
v_j^S = \frac{1}{N} v_j^S \sum_{j=1}^{M} v_{jn}^j
\]

(4)

Availability service:
where $v_j^K, v_j^S, v_j^D, v_j^A$ - expert weights of security services: confidentiality, integrity, accessibility, authenticity;


Determining the implementation of several threats to the selected service is calculated taking into account the expression (3-6):

Confidentiality service:

$$V^K_{\text{synerg}} = \sum_{i=1}^{L} v_j^K w_j^K$$

Integrity service:

$$V^S_{\text{synerg}} = \sum_{i=1}^{L} v_j^S w_j^S$$

Availability service:

$$V^D_{\text{synerg}} = \sum_{i=1}^{L} v_j^D w_j^D$$

Authenticity service:

$$V^A_{\text{synerg}} = \sum_{i=1}^{L} v_j^A w_j^A$$

where $L$ is the number of several threats that are selected by the expert from the set $(\{j\}_{j=1}^{L})$ that is a subset of the whole set of threats of the classifier, ie $L \leq M$.

When forming metric coefficients, it is assumed that the results obtained belong to independent threats. In case of their dependence (coincidence of the threat classifier), it is necessary to use the expression to determine the full probability of dependent events: $P(HB) = P(H) + P(B) - P(AB)$.

Statistical processing of the results of the assessment of the possibility of the impact of the j-th threat on security services at the national level is carried out according to the following analytical algorithm:

$$y_i = \frac{\sum_{n=1}^{N} y_{ij} \times p_n}{N}$$

where $y_{ij}$ - the assessment of the n-th expert of the impact of the j-th threat; $p_n$ - the level of competence of the expert; $N$ - number of experts.
The degree of consistency of experts’ opinions is the variance calculated by the expression:

$$z^2_y = \frac{1}{N} \sum_{k=1}^{N} n_k (y_k - y_j)^2 \quad (12)$$

The statistical significance with 1 - \(w_j\) probability is:

$$\left[ y_j - \Delta, y_j + \Delta \right],$$

where the value \(y_j\) is distributed according to the normal law with the center in \(y_j\) and variance \(z^2_y\). Then \(\Delta\) is determined by the expression:

$$\Delta = t \sqrt{\frac{z^2_y}{M}} \quad (13)$$

where \(t\) is the value that follows the Student’s distribution for \(M-1\) degrees of freedom, \(M\) is the number of experts.

$$\Delta = t \sqrt{\frac{z^2_y}{M}} \quad (14)$$

Determination of the total threat on the security components, taking into account the expression (7-10) is calculated:

$$V^{IB}_{\text{sin erg}} = \sum_{j=1}^{M} (v^K_j \cap v^S_j \cap v^D_j \cap v^A_j) w_j$$

$$V^{KB}_{\text{sin erg}} = \sum_{j=1}^{M} (v^K_j \cap v^S_j \cap v^D_j \cap v^A_j) w_j$$

$$V^{BI}_{\text{sin erg}} = \sum_{j=1}^{M} (v^K_j \cap v^S_j \cap v^D_j \cap v^A_j) w_j \quad (15)$$

Identification of the generalized synergistic threat to the IRS:

$$V^{IB,KB,BI}_{\text{sin erg}} = V^{IB}_{\text{sin erg}} \cup V^{KB}_{\text{sin erg}} \cup V^{BI}_{\text{sin erg}} \quad (16)$$

Determination of the generalized synergetic threat taking into account its hybridity is calculated:

$$V^{hybrid K,S,D,A}_{\text{sin erg}} = V^K_{\text{sin erg}} \cap V^S_{\text{sin erg}} \cap V^D_{\text{sin erg}} \cap V^A_{\text{sin erg}} \quad (17)$$

The results of studies of threats with the maximum frequency of their manifestation on the IRS are shown in Table 2.

**Table 2.** Results of the threat assessment based on a synergetic approach

<table>
<thead>
<tr>
<th>Components of the security</th>
<th>K, (V^K_{\text{synerg}})</th>
<th>S, (V^S_{\text{synerg}})</th>
<th>D, (V^D_{\text{synerg}})</th>
<th>A, (V^A_{\text{synerg}})</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>IB, (V^{IB}_{\text{sin erg}})</td>
<td>0.023</td>
<td>0.223</td>
<td>0.193</td>
<td>0.207</td>
<td>0.0002</td>
</tr>
<tr>
<td>KB, (V^{KB}_{\text{sin erg}})</td>
<td>0.222</td>
<td>0.234</td>
<td>0.197</td>
<td>0.134</td>
<td>0.0014</td>
</tr>
<tr>
<td>BL, (V^{Bi}_{\text{sin erg}})</td>
<td>0.226</td>
<td>0.109</td>
<td>0.152</td>
<td>0.189</td>
<td>0.0007</td>
</tr>
<tr>
<td>Result</td>
<td>0.471</td>
<td>0.566</td>
<td>0.542</td>
<td>0.53</td>
<td>X</td>
</tr>
</tbody>
</table>

Source: author’s research
Practical implementation makes it possible to form an on-line expert assessment of IRS threats, analyze their synergy and hybridity, assess the likelihood of the impact of these threats on IRS security without significant investment and human resources costs.

One of the most important tasks for the optimal construction of an integrated information protection system is to choose from a variety of tools such a set, which will ensure the neutralization of all possible information threats with the best quality and the lowest possible resource consumption. Information protection (IP) tasks are most effectively solved within the framework of a preventive protection strategy when at the design stage potential threats are assessed and protection mechanisms against them are implemented. At the same time, when designing IP systems, the developer, not having statistical data on the results of the functioning of the system being created, is forced to make a decision on the composition of the IP complex, being in conditions of significant uncertainty.

The construction of models while designing or modernizing the information security system is carried out in a natural way by solving problems of analysis and design with minimal costs and high efficiency. Thus, at the analysis stage, the information security system model is used to study each function (operation) performed in order to discover, for example, what information and what resources each employee should have access to while on duty.

Thus, as a result of the study, we can see that the state policy of cybersecurity is determined taking into account the priority of national interests and threats to the cybersecurity of Ukraine and is carried out through the implementation of relevant concepts, doctrines, strategies, and programs in various spheres of life in accordance with current legislation.

The state cybersecurity policy consists of two main interrelated blocks:
1) the activity of exclusively state bodies;
2) the activity of non-state institutions, civil society institutions, information society in the information sphere.

It is proposed to legitimize the “cybernetic society” category in legislative acts, that is, a society in which activity is based on the use of services using the achievements of cybernetics.

The main goal of the state cybersecurity policy of cybersecurity is to manage real and potential cyberthreats and dangers in order to create the necessary conditions to meet the cybernetic needs of a person and citizen, as well as to realize national interests in the cybernetic sphere.

The directions of the state policy of cybersecurity should be determined as: ensuring the cybernetic sovereignty of Ukraine; systematization of information (cybersecurity) legislation of Ukraine, creation of the necessary prerequisites for the development of the cyber sphere in general, as well as ensuring cybersecurity in particular; engaging the mass media to counter cyber threats; ensuring the existence of the rule of law; taking comprehensive measures to protect the national cyberspace and counter the monopolization of the cyber sphere of Ukraine. It should be emphasized that the list of directions of state cybersecurity policy cannot be static since there are constant changes in cyberspace.

Therefore there is a need for a quick response and the possibility of taking appropriate measures. Thus, in the Annual Address of the President of Ukraine to the Verkhovna Rada of Ukraine “On the Internal and External Situation of Ukraine in 2016”, the following most relevant steps for this perspective were identified:
1) development of a list of critical infrastructure facilities and the formation of clear and understandable rules for the protection of such facilities based on consensus in the business sector;
2) not just the willingness to cooperate with civil society on the development of cybersecurity but the institutionalization of such cooperation;
3) increased attention to cybersecurity issues in the Armed Forces. This is one of the priorities for the develop-
ment of the security and defense sector, which must be fully ensured both at the operational-tactical level and at the national level;

4) further strengthening of the capabilities of the security and defense sector to ensure comprehensive cybersecurity of the state, expressed in stimulating the training of professional personnel, increasing the material interest for cybersecurity specialists in working for state structures, optimizing the organizational model for managing the cybersecurity sector.

However, in 2017, in the Annual Address of the President of Ukraine to the Verkhovna Rada of Ukraine “On the Internal and External Situation of Ukraine in 2017”, other priorities were highlighted:

- solving the problem of limited access information exchange between Ukraine and NATO (Administrative Arrangements On The Protection Of Restricted Information Between The Government Of Ukraine And The Organization Of The North Atlantic Agreement (2016)): a legal basis has been created and detailed procedures for the mutual protection of information with limited access, which will be transmitted or created in the course of cooperation, are determined (On termination of the Agreement between the Cabinet of Ministers of Ukraine and the Government of the Russian Federation on cooperation in the field of television and radio broadcasting and the Agreement between the Cabinet of Ministers of Ukraine and the Government of the Russian Federation on cooperation in the field of information (2016)). Ensuring the equal and partner-like nature of relations in the process of information exchange will help to increase the effectiveness of mutually beneficial cooperation between Ukraine and NATO;

- termination of intergovernmental agreements with the Russian Federation on cooperation in the field of television, radio broadcasting and information, is due to the fact that their further action does not correspond to the state of interstate relations and is not consistent with the measures, which Ukraine uses to ensure the protection of its information field from negative information and psychological influences (On termination of the Agreement between the Cabinet of Ministers of Ukraine and the Government of the Russian Federation on cooperation in the field of television and radio broadcasting and the Agreement between the Cabinet of Ministers of Ukraine and the Government of the Russian Federation on cooperation in the field of information (2016));

- improving the procedure for the application of sanctions by the National Council of Ukraine on television and radio broadcasting and expanding the list of grounds for reissuing a license (Law Of Ukraine On Amendments to the Law of Ukraine “On Television and Radio Broadcasting” (2016)), which is aimed at ensuring an effective mechanism for exercising supervision in the field of television and radio broadcasting. The ultimate goal of the adopted changes is the protection of the information space of the state, the possibility of timely response to identified threats and counteraction to them;

- depriving the Russian special services of the opportunity to track out the citizens of Ukraine by blocking the corresponding sites (VKontakte attendance in 5 days fell by 3 million visits (2017)) (sanctions against legal entities Yandex, Mail.ru Ukraine, VKontakte, Odnoklassniki, etc.) (On the decision of the National Security and Defense Council of Ukraine of April 28, 2017 “On the application of personal special economic and other restrictive measures (sanctions)”).

Although this step has caused mixed assessments of experts and the general public, the main reason for the disagreement over the sanctions was the lack of prior communication by the state of the steps being taken. However, it is necessary to understand that blocking sites and services belongs to the field of security but not freedom of speech and was recognized by Ukrainian partners from the EU and international organizations (NATO). This thesis acquires particular significance in the context of recent examples of the use of BigData in the electoral process.

5. Discussion

The exceptionally challenging tasks facing the state on the way to protect its institutions, society, and citizens from criminal encroachments on their rights and freedoms in the information and communication space require an integrated approach to working with specialists who, in their professional activity, are called upon to ensure cybersecurity. This approach must have a comprehensive scientific basis.
Unlike traditional education, the formation processes take place not only in the educational environment of the higher education institution but also in teams where the applicant for higher education undergo practical training and internships, communicating with experienced specialists in the field of cybersecurity, while perceiving, analyzing, and interpreting information, which is obtained by a future professional in informal communities, in the media space, and in the mass media.

Based on the foregoing, we come to the conclusion that with the state approach, it would be necessary to introduce a practice in which the formation of a cybersecurity specialist did not begin at the student hood but through the search and support of talented children and youth by universities, future employers, even during their studies in a secondary school, a specialized lyceum, and in children’s art houses.

Thus, we are faced with the task of establishing how the legal and organizational principles determine the process of formation and development of a future cybersecurity specialist.

Of course, we understand that the legal regulation process of the formation of the cybersecurity specialist is indirect since the laws and by-laws of Ukraine are aimed at the activities of all higher educational institutions and not only those that train these specialists. This means that, on the one hand, the general legal basis for the training of the cybersecurity specialist, like any other applicant for higher education, is the laws of Ukraine “On Education”, “On Higher Education”, and on the other hand, a number of normative legal acts including international, which regulate the activity of authorized entities in the field of transnational, national, information, and cybersecurity.

The training of highly qualified personnel was and remains a key element of the full-fledged life of the state. This process is characterized by a combination of the needs of society with technologies of didactic design, followed by consolidation at the level of regulatory legal acts. Since the training and advanced training of cybersecurity specialists is a relatively new type of activity, there is a need for a scientific substantiation of these areas from the standpoint of a systematic approach.

The directions of improvement of legal regulation of professional activity of subjects of cybersecurity policy are determined: improvement according to the established procedures and in accordance with theoretical achievements, taking into account the above-stated Law of Ukraine “On the basic principles of ensuring cybersecurity of Ukraine”; creation of a thesaurus of cybersecurity terminology and its legitimization in the text of relevant laws; harmonization of legislation on a single vision of the range of subjects who are entrusted with the responsibilities of ensuring national, including cybersecurity, defining, and implementing national and international cybersecurity policies; introduction of provisions on the role and place of scientific institutions, higher educational institutions in the study of cybersecurity problems, the formation of cybersecurity policy based on scientifically grounded principles into the existing normative legal acts.

Conclusions

The essence of administrative and legal regulation of the activities of the subjects of the national cybersecurity system of Ukraine has been established, which consists in building an effective system for ensuring cybersecurity and requires from the state bodies of Ukraine a clear legal definition of the principles of state policy in this area and a proactive response to dynamic changes, which occur in the world in the field of cybersecurity. Choice of specific means and ways of ensuring the cybersecurity of Ukraine is conditioned by the need for timely adoption of measures, which are adequate to the nature and scale of real and potential cybernetic threats to the vital interests of individuals and citizens, society, and the state.

The concept for constructing a synergistic model of threats to the security of information resources has been developed, the basis of which is a three-level model of strategic management of information technology security. The concept covers all the main directions of development of the country’s activity for the security of information resources, is based on a synergetic approach to the selection of the most effective directions for achieving
the goals of information resources security at each level of the management model of strategic management of information technology security, taking into account the magnitude of risk at each level and ensuring effective control over the implementation of the functions of the information security management system.

Through a consistent analysis of the state and directions, educational standards of training and advanced training of specialists in the field of cybersecurity, as well as qualification requirements for them, the directions of administrative and legal regulation of cyber education in Ukraine are determined. It is established that the concept of assessment of specialists is interdisciplinary and has a complex character. Only under condition of the implementation of a systematic approach, the correct choice of methods and technologies of assessment, the most optimal use of assessment as a means of forming and improving the professional activity of a cybersecurity specialist is possible. It is emphasized that at present the issues of the professional activity of subjects of cybersecurity policy are outside the sphere of state regulation.

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ENERGY SECURITY OF THE VISEGRAD GROUP COUNTRIES IN THE NATURAL GAS SECTOR

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Abstract The energy security of the Visegrad Group countries is a derivative of their energy potential resulting from the lack of strategic natural gas and crude oil resources, limited fuel storage capacity and limited access to the transmission network. This causes a dependence on supplies of raw materials from Russia, which is not even, but applies to each of these countries. The Czech Republic and Slovakia have small deposits of natural gas and crude oil. Hungary and Poland have greater potential, but it is still not enough to achieve energy independence. The energy market of the V4 countries is of interest to the Russian Federation, but it is not a priority for it as it accounts for a small part of Russian transmissions. Russia aims to keep the market for crude oil and natural gas at a uniform level, but the actions of the V4 countries in terms of diversification of supplies, aimed at increasing the level of energy security, effectively hinder the implementation of this goal. The threat to the energy security of the V4 countries is related to their dependence on gas supplies from Gazprom. The terms of the contracts contain unfavorable clauses that negatively affect the sale of surplus Russian gas, as it is necessary to pay fees for the ordered gas regardless of the scale of its use. The differentiation in the energy policy of the Member States is also worth noting. An example is the lack of clear opposition from the Czech Republic, Hungary and Slovakia to the plans to expand the Nord Stream and Turkish Stream gas pipelines. These states show interest in participating in projects, which, in fact, constitute the implementation of the Russian concept of building new transmission routes. Poland takes a different position, consistently preventing the implementation of Russian energy projects.

Keywords: security, energy, law


JEL Classifications: O1, O44

Additional disciplines: political sciences and administration, law

1. Introduction

Energy security has a dimension that definitely goes beyond national security, therefore it is impossible to adopt a single, generalized definition of it, e.g. due to the diversification of the interests of importing and exporting countries, as well as establishing its main components for different countries of the world. In this regard, the following are particularly important: protection of the environment against fossil energy sources, social consequences of energy security and counteracting threats (Simanaviciene et al., 2017; Genys, Krikštolaitis, 2020).

The concept of energy security covers four objective aspects: balancing the demand and supply sides, reliability including the reliability and efficiency of the energy sector, introducing economic mechanisms for the operation of the energy market and minimizing the negative impact of the energy sector on the natural environment (Si-
The following can be distinguished among threats to energy security: physical, which include interruptions in energy supplies from one source or one region (Tvaronavičienė et al., 2020; Pleša et al., 2020); economic - dependent on energy prices; others with high environmental protection requirements that may affect production, consumption and supply (Soroka, 2015; Klimas, 2020).

Energy security is a necessary condition for the existence of any modern state. Energy is extremely important to the economy and has a large impact on other industries as their normal functioning depends on it (Czech, 2017, Semenenko, 2016). The level of the state’s energy security and its sustainable development is determined by stable, sufficient, cost-effective and environmentally friendly supplies of energy resources for the economy (Si-mionescu et al., 2017; Shindina et al., 2018; Rabe at al., 2020). Therefore, its provision becomes a priority, and events in the global energy market are of significant importance for the global economy. Political threats resulting from the global international situation and the loss of state influence on the energy transmission and distribution infrastructure are put on a par with physical, economic and environmental threats. Such threats include the following: cyber-terrorist attacks threatening the energy infrastructure, the depletion of energy resources and the consumption of generating capacity of power plants, and the condition of mining and transmission infrastructure. Against this background, additional challenges may arise, resulting from the greenhouse effect or the global financial and economic crisis. The threats and challenges to energy security are also short-term and long-term. The short-term ones are related to the activity of the transmission transport infrastructure, e.g. shortages of supplies caused by accidents, political problems, terrorist attacks, weather conditions or network failures. On the other hand, long-term ones include depletion of resources, problems with mining and poor technical condition, differences between supply and demand, volatility of energy commodity prices, environmental pollution caused by activities in the energy sphere, acceleration of climate change, accidents (Lyons, 1994; Jurgilewicz, Protasowicki, 2015; Tvaronavičienė, Ślusarczyk, 2019).

The Visegrad Group is an informal regional form of cooperation between the states of four Central European countries - Poland, the Czech Republic, Slovakia and Hungary, which was established on February 15, 1991. It is a forum for exchanging experiences and working out common positions on issues of significant importance to Central Europe and the European Union. Among the priorities of cooperation, the most important is strengthening energy security in the region (Lyons, 1994).

This article deals with the energy security of the Visegrad Group countries in the natural gas sector. Research methods specific to the social sciences were used, including source analysis, system analysis, comparative method and quantitative method.

2. The energy security system of the European Union

The fuel and energy balance of the European Union is based on the availability of three main raw materials, which include: coal, natural gas and crude oil. Europe does not have significant raw materials on a global scale. The most powerful deposits of energy resources are located in the Middle East, Central and South America, North America, Russia and Africa. This makes EU countries strongly dependent on energy supplies from other parts of the globe. Along with the growing importance of world oil markets, the demand for natural gas also increased. The exploitation of these two raw materials in the EU has grown steadily since 1990. The basic energy resource in the EU is natural gas. The largest amounts of gas are produced from renewable energy sources, nuclear energy and solid fuels. The value of gas is constantly growing, which is related to the increase in consumption. Due to the growing demand for natural gas, security of supply is key to ensuring the energy security of many EU Member States, and of the Visegrad Group countries in particular (Kasperowicz & Štreimikiene, 2016; Kasperowicz, 2015; Chovancová & Tej, 2020). Natural gas production, as well as its share of global energy demand, has been increasing consistently for about forty years (Kulaga, 2018; Shakhovskaya et al., 2018; Al Mazrouei et al., 2020; Karaev et al., 2020).

The energy mixes of individual EU Member States differ significantly from each other (Jonek-Kowalska, 2019). These differences result, among others, from with: access to natural resources in a given country; the
geographic location of countries and the level of energy infrastructure; energy policy priorities. Due to their location, many countries are important transit points, such as Ukraine and Belarus. Due to numerous connections with neighboring countries, the extensive internal gas infrastructure causes that some countries create the so-called gas hubs, e.g. the Netherlands and Great Britain. Due to the negligible natural gas resources on the European continent, the EU is forced to import the raw material. However, it should be noted that some EU Member States are among the top 30 with the largest gas deposits: the Netherlands (761 bcm), Cyprus (141.6 bcm), Romania (105.5 bcm) (Heather, 2015).

Global producers of natural gas systematically export the raw material to EU countries. Among them are countries such as: USA, Russia, Iran, Qatar, Canada, China, Norway, Saudi Arabia and Algeria. Not all of the countries mentioned are the largest exporters. The gas produced is exported to the internal market, and additional supplies are earmarked for export (Skinner, Arnott, 2005).

Gas is transported to the EU market by pipelines or supplied in a liquefied form. Natural gas transported through gas pipelines goes to the European Union countries from the eastern, northern and southern directions. Russia is one of the largest gas exporters to the European market. The share of this country in exports to EU countries is as high as 40%. However, in the regional perspective it is much larger. The countries of the Central and Eastern Europe region, including the countries of the Visegrad Group, depend on Russian gas for approx. 90% of all supplies. Another country that leads the way in gas supplies to the EU is Norway, with a 35% share in total supplies. The largest importers of natural gas among the EU Member States are: Germany, Italy, Great Britain, France, the Netherlands, Spain, Belgium, Slovakia, Poland, the Czech Republic, Austria and Hungary. Apart from Spain, all countries obtain their gas from the East. Russia exports gas from the north, while Norway exports to Central European countries (Poland, Hungary, Slovakia). Natural gas is exported from the south to Italy (Algeria and Libya) and Spain (Algeria). Gas is also sent to Portugal via the Spanish transmission system. Gas imported by Member States is used in many sectors of the economy. High consumption and low production make many countries dependent on this raw material (Kułaga, 2018).

The European Union is 78% dependent on gas imports. Romania, Great Britain, Croatia and Poland are mentioned above the average for natural gas. In Denmark and the Netherlands, production is much greater than gas imports from other parts of the world. Romania needs only 2% of imported raw material to satisfy its domestic consumption. The dependence of Great Britain amounts to as much as 42%. However, the greatest dependence concerns Hungary and Austria - it accounts for about 90%. The infrastructure that is used to transport the raw material runs on the seabed and on land. Russia is the main gas exporter to the EU markets. The transmission system from the eastern direction also has the most developed part of the gas pipelines. These are also gas pipelines very important for ensuring Poland’s gas security. Ukraine is a key transit country for gas supplies from the east to the EU. The largest natural gas transmission route in Europe is the Brotherhood transit system, which runs through the center of Ukraine. The system supplies gas to Slovakia, the Czech Republic, Germany and Austria. The international Yamal-Europe gas pipeline, which runs by land through the territories of four countries: Russia, Belarus, Poland and Germany, is very important in the energy policy of Europe. It is also of strategic importance for ensuring Poland’s gas security. The gas pipeline has fourteen compression stations. In Poland, the pipeline is 683 km long, and its route includes 5 compressor stations in Kondratki, Zambrów, Włocławek, Ciechanów and Szamotuły. Energy dialogue between EU countries and Norway is definitely easier. Trade in raw materials takes place on the economic level and is not a tool of political pressure. Norway is also a key gas supplier for Northern European countries (Kulaga, 2018).

3. Energy potential of the Visegrad Group countries

The energy potential of the Visegrad Group countries results from the lack of strategic natural gas and crude oil resources. The weakness also results from the fuel storage capacity and access to the transmission network as well as from worsen payment ability (Kristofik et al., 2019). The Czech Republic and Slovakia have small deposits of natural gas and crude oil. Hungary and Poland have greater potential, but it is still not sufficient for “energy self-sufficiency”. Poland has 145 billion m3 of raw material. However, taking into account the annual
consumption, it should be noted that this is not a sufficient amount to meet internal demand (Kłaczyński, 2017).

The abundance of natural gas and crude oil deposits and their availability in the Visegrad Group contributes to the enormous interest of energy companies in concessions for natural gas exploration and production. In 2017, only 39 companies had such concessions, which allowed them to explore and exploit deposits. Activities aimed at producing gas from unconventional sources are also very important for the energy sector. The extraction of shale gas, however, raises numerous controversies due to technical problems related to the exploitation of the raw material and the potential impact of production processes on the natural environment (Ciechanowska, 2016).

In Poland, the largest enterprise that produces natural gas is Polskie Górnictwo Naftowe i Gazownictwo (PGNiG). In 2015, the production of natural gas reached the level of 4.2 billion m³ of raw material. In 2016, the production was slightly higher - 4.7 billion m³ of raw material. It has been estimated that in 2019 production will reach 4.6 bcm (including 3.9 bcm in Poland and 0.7 bcm abroad). In 2020, PGNiG is to extract a total of 4.8 billion m³, including 3.9 billion m³ in Poland and 0.9 billion m³ abroad (0.5 million m³ in Norway and 0.4 billion m³ in Pakistan). In 2021, the group’s total production is expected to reach 5.2 billion m³, including 4.0 billion m³ in Poland and 1.2 billion m³ abroad (0.7 billion m³ in Norway and 0.5 billion m³ in Pakistan). Polish crude oil resources are also relatively small, which translates into their limited production. The opening of the Lubiatów-Międzychód-Grotów mine on July 29, 2013 resulted in an increase in crude oil production. The resources from the Lubiatów deposits are estimated at 7.2 million tonnes, and the extraction is done by PGNiG and the Lotos group. Lotos also exploits small deposits located at the bottom of the Baltic Sea in the Polish and Lithuanian zones (Ciechanowska, 2016).

Hungary is the second country of the Visegrad Group that has natural gas and crude oil resources. Already in the 1980s, natural gas imports to Hungary accounted for only 34%. The remaining demand for the state was provided by domestic natural gas mines. In the case of crude oil, Hungary is in a very favorable position. They have their own resources of this raw material, which until the 1980s satisfied the domestic demand. Currently, Hungary consumes nearly 15 billion m³ of natural gas annually. Own resources cover only 22% of the demand. Hungary is connected by a network of interconnectors with the European market, which increases the possibility of gas transmission from various sources (Łucki, Wiernek, 2005).

The Czech Republic also has small oil deposits. It is estimated that natural gas production capacity accounts for only 2% of total natural gas demand. There are small deposits of raw material in Moravia. The situation in the field of stocks, which concern oil production, is similar. Czech resources amount to 15 million tons. The Czech Republic, on the other hand, has the natural gas market that is the most diversified among the Visegrad Group countries, which gives them the opportunity to transmit gas from several different sources. Therefore, they obtain gas on the basis of contracts concluded with Norway and Russia. Slovakia is the weakest in terms of natural gas and crude oil resources compared to the Visegrad Group countries. It is estimated that the total reserves of natural gas constitute 14 billion m³ of raw material, and crude oil - 9 million tonnes. The country’s energy security is ensured by only three natural gas storage facilities with a capacity of nearly 2 billion m³ of raw material, which constitutes only 74% of the total state demand. Slovakia, however, strengthened its position in negotiations with the Russian side, obtaining at the same time the possibility of supplying crude oil and natural gas from sources other than Russian. Nevertheless, the vast majority of it uses raw materials of Russian origin (Paniuszkin, Zygar, 2010).

4. Energy security systems of the Visegrad Group countries

Security in the energy market depends on solidarity between the member states. In recent years, Europe’s energy security has been a priority for the EU, which has been particularly evidenced by the Ukraine-Russia conflicts. The starting point for the cooperation of the Visegrad Group countries in this regard is undoubtedly the dependence on gas supplies from Russia. The level of this addiction is uneven, but it affects all of them. The V4 countries are almost entirely dependent on supplies from Russia. In 2018, 88% of gas imported by V4 came from the Russian Federation (Kulaga, 2018).
Gas is the most important imported energy resource in the V4 countries, so energy security and energy policy are of great importance to all Group Member States. Despite the diversity of energy consumption and the importance of natural gas for their economies, they all face common challenges in terms of energy security (Zapletalová, Komínková, 2020).

The energy systems of the Visegrad Group countries are also linked to non-EU countries located in South-eastern Europe. It should be noted, however, that both the existing gas pipelines (Yamal, Brotherhood, Nord Stream) as well as the planned ones (the South Stream project has not been implemented) make Central Europe and the Balkans dependent on Russian supplies. The largest gas transmission pipeline from Russia to Germany runs through Slovakia and the Czech Republic. Together with the Yamal pipeline running through Poland, the V4 countries transport at least 100 billion m³ of Russian gas. Gas trade on the North-South axis or from the West to the East makes operators in Slovakia and the Czech Republic highly sensitive to the expectations of Russians. In the Czech Republic, security of gas supplies is also seen in the good integration of the Czech and German transmission systems. The Opal gas pipeline, running from the coast of the Baltic Sea to the Czech Republic, as an overhead branch of the Nord Stream, is considered to strengthen energy security and a source of Russian gas supplies in the event of a possible cut off of transmission via Ukraine. The Czech Republic treats Russian gas from the Opal and Gazelle pipelines as strengthening its own energy security (Turkowski, 2014).

It is still necessary to modernize the material infrastructure between and around the Visegrad Group countries in order to complete the construction of the North-South Corridor. In recent years, European companies have renegotiated the terms of long-term contracts more often. The predominance of long-term contracts led to a reduction in the number of sources of supply outside Russia. Most of the Czech, Slovak and Polish contracts with Gazprom will expire in 2022-2035. The situation in Ukraine is of significant importance for the energy security of the Visegrad Group countries - due to geographic proximity and close economic and cultural relations. There is no doubt that ensuring energy security requires the following actions from the V4 states: development of cross-border interconnections; use of the capacity of the Polish and Lithuanian LNG terminals; developing underground gas storage facilities; gas market liberalization; developing spot markets; concluding contracts with alternative gas suppliers (Kułaga, 2018).

5. The energy policy of the Russian Federation towards the countries of the Visegrad Group

Russia is striving to become a monopoly on the energy market. As part of the adopted strategy, it implements projects of new transmission networks. The countries of the Visegrad Group, on the other hand, strive to ensure energy security based on the diversification of the sources of energy raw materials, but also the diversification of their transmission routes (Irusek, 2020).

The transit countries have a weak position on the fuel market of Central and Eastern European countries. At the same time, gas flows from Russia to the V4 countries still account for a small percentage of Russian shipments. This generates challenges and threats to the energy security of the V4 countries (Kovács, K. Szczerski, P. Binhack et al., 2011; Kliestik et al., 2020).

Everything indicates that Russia will keep a significant part of the natural gas and crude oil market of the Visegrad Group. Its energy strategy is in this case the starting point of the energy policy it implements towards most Central and Eastern European countries. As a result, it aims to maintain the sales market for crude oil and natural gas at a uniform level, but the V4 countries’ policy aimed at diversifying natural gas supplies makes achieving this goal more and more difficult for Russia. The situation on the market of gas supplies to Poland, related to the opening of the LNG terminal in Świnoujście, has led to a significant diversification of the current supplies from Russia. If the expansion of the LNG installation is continued, gas flows directly through a network of interconnectors to other countries of the Visegrad Group. A completely new gas network is being created, consisting of smaller local connections, which will be based on sources of supply in gas mains and LNG terminals with a total capacity of over 30 billion m³ of gas per year. This is exactly as much as the demand for natural gas of the Visegrad Group countries (Trubalska, 2019).
A very important role in Russia’s energy policy towards the V4 countries is also the change of priorities regarding the American policy regarding the possibility of exporting gas obtained from oil shale. In 2014, the US Congress considered the possibilities of transporting American “blue fuel” to European countries, which was supposed to reduce dependence on the Russian supplier. It was assumed that shale gas would appear on the European market thanks to the LNG terminals located on the North Sea and the Baltic Sea. In this way, it would go to all the countries of the Visegrad Group. Currently, the V4 states are dissatisfied with the terms of the gas contracts concluded with Russia’s Gazprom. Dependence on Russian supplies is burdensome and the proposed conditions are clearly unfavorable. They contain numerous clauses according to which the recipient must pay for the ordered raw material, regardless of the scale of its use. They are also striving for the signing of the Energy Charter Treaty by the Russian side. However, the chances of an agreement of this type in this case are very small. The energy policy of the Russian Federation is implemented in contradiction to the assumptions of the energy strategies of most European countries (Dyduch, Skorek, 2020; Kłaczyński, 2010).

Many investments in the construction of gas transmission lines in Central and Eastern Europe have not been completed. An example is the project of the “Nabucco” line, which was to become part of the southern corridor for transporting natural gas from the Caspian Sea region, and thus an alternative to Russian gas. In June 2013, the Trans-Adriatic Pipeline (TAP) was chosen instead of the “Nabucco” to bring Caspian gas to the European border. The situation regarding the project to build an LNG terminal on the Croatian Adriatic is similar. However, Croatia invests in its own deposits and obtains cheaper raw material from Russian sources. The lack of a decisive international reaction to the Russian projects to build transmission installations “South Stream” and “Turkish Stream” caused Russia’s involvement in the development of transmission infrastructure in Southern Europe. Hungary’s activity in this respect is noteworthy, as it is striving to build new and modernize the existing infrastructure to become a gas hub. At the same time, they implement a policy that often differs from the position of the V4. The Russian side concluded many agreements with Hungary, which concerned the nuclear energy market, natural gas transmission and storage, and crude oil sale conditions (Kaczmarski, 2010).

The position of the EU, which does not take specific measures to diversify natural gas supplies, is also ambiguous. An example of this is the lack of involvement in the legal dispute, which is a consequence of Gazprom’s use of practices that are inconsistent with EU law in the field of natural gas transmission and trading in Central Europe. Some of the Visegrad Group countries are trying to use the reverse function for the current system of gas connections. In the event of a suspension of supplies from Russia, the V4 countries thus have the option of obtaining raw material from other sources (e.g., Norwegian). Everything indicates that the Russian Federation will remain the main supplier on the fuel market of the V4 countries, despite the fact that its share and importance in the energy policy of Poland, the Czech Republic, Slovakia and Hungary has changed. One of the most important goals of the Russian energy policy is taking over the assets of the national energy sectors in these countries. The Russian Federation aims to diversify the natural gas transmission route, the best example of which is the construction of the “Nord Stream2” installation. Nevertheless, it continues to try to dominate the energy markets of the V4 countries.

6. Summary

It is the responsibility of the public authorities to guarantee safe and stable supplies of natural gas for the economy. This is because it concerns the protection of end users, including households, as well as basic social services. The energy security of the Visegrad Group depends on the diversification of supply sources, suppliers and transit routes with the help of new gas infrastructure. Currently, the V4 countries differ in the application of national security of supply measures and market integration. The Czech Republic and Poland are much more diversified than Slovakia and Hungary due to adequate access to the Western gas hub and the LNG terminal. Hungary and Slovakia remain heavily dependent on a single gas supplier (Russia) in their energy mix due to the terms of long-term contracts and the weak infrastructure to diversify sources. The energy market of the Visegrad countries is of interest to the Russian Federation. However, it is not a priority for the implementation of Russia’s energy strategy. It is largely dominated by the Russia-Germany and Russia-European Union relations that shape the current crude oil and natural gas market. They also influence the final shape of the energy
policy of these countries. This fact results, among others, from the decisions of the Czech authorities to join the construction of the auxiliary infrastructure of the OPAL gas pipeline, as they enable the Russian transmission bypassing unstable Ukraine.

However, it should be noted that the Czech Republic, Hungary and Slovakia have not objected to Russian plans to expand the Nord Stream and Turkish Stream gas pipelines. These countries show interest in participating in projects derived from Russia’s plans to build new transmission routes. Against this background, the energy policy of the Polish government looks different, as it consistently tries to counteract the implementation of Russian energy projects. These activities result in the decision to build an LNG terminal in Świnoujście, attempts to diversify crude oil supplies to Polish refineries, contacts for LNG supplies from the USA and efforts to block the Nord Stream II investment.

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Abstract. The dynamics of changes in the business environment, globalization of economies with the rapid progress in technology make entrepreneurs accept the growing level of risk of crisis situations. The economic transformations that have been taking place over the years have initiated the emergence of mechanisms for crowding out unprofitable enterprises from the market that do not match the requirements of the market economy. On the one hand, bankruptcies may be regarded as a manifestation of failure to adapt to market requirements and changes, but more and more often they become a derivative of phenomena beyond the control of entrepreneurs. In particular, we are talking about ever new types of risk that accompanies business activity. The fact that the catalog of occurring risks is still an open catalog is evidenced by, for example, the recent events related to the Covid-19 pandemic. This paper attempts to present the scale of the businesses bankruptcy in Poland in 2009-2018 and a cross-sectional analysis taking into account the geographical origin of the bankrupt entities, the legal forms where they operated and the industries they represented. The analysis of the phenomenon was based on the data of the Central Statistical Office and own research of the documentation of the National Court Register. The purpose of the paper was to analyze the scale of the bankruptcy phenomenon in Poland over the years 2009-2018 and an attempt to identify the existing relationships.

Keywords: bankruptcy; reasons for bankruptcy; bankruptcy risk

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JEL Classifications: G32, G33, F37

1. Introduction

The economic transformations in Poland at the turn of the 1980s and 1990s launched the mechanisms of ousting from the market unprofitable businesses, and those which have problems with adjusting to the requirements of the market economy. Despite the fact that the current reality where entities operate changed significantly over the last few decades, they still face many difficulties. The phenomenon of bankruptcy is a significant problem in the operations of enterprises, whose scale and scope are subject to constant changes, influenced both by the internal policy of enterprises and their market environment. The results of the research conducted prove that the vast majority of entrepreneurs, i.e. 94.6%, see the bankruptcy of other entities in their environment, while 24.5% declare that the consequences of these bankruptcies had the impact on their own results. Within the surveyed group, slightly over 2% of respondents declared that their entities were at risk of bankruptcy. Virtually all respondents see the need for an ongoing analysis of the situation both inside the company and in its environment in order to identify potential threats that may constitute a premise for bankruptcy in the future. At the same time only 35.4% declare that they are prepared for such an eventuality and developed risk management procedures in this area (Dankiewicz, 2018). The catalog of encountered risks, despite the fact that it is constantly analyzed
by practitioners of economic life and academia, as shown by the events of recent months regarding the effects of the Covid-19 pandemic, is still open. It proves once again that the implementation of selected, so far unidentified types of risk may be the cause of bankruptcy of enterprises, especially those included in the group of small and medium-sized enterprises, which most often do not have sufficient financial reserves to secure them in periods of limited revenues (Chłodnicka & Zimon, 2020). Moreover, small and medium-sized enterprises often fail to adequately manage particular types of risk, which is also a reason for bankruptcy (Dankiewicz et al., 2020). However, it should be stated that currently the phenomenon of bankruptcy is already an inseparable element of running a business, it applies, with few exceptions, to virtually all entities, regardless of their size, sector, or an area of operation.

In the modern world, the economies of most countries position themselves as open economies, the dynamics of which depends on foreign economic relations (Putsenteilo et al., 2018). The constantly progressing digitization and technological progress, referred to as the Fourth Industrial Revolution, cause many changes in society and technological processes in enterprises (Plonka et al., 2020), which makes it important to create new structures that should respond to the challenges posed by a competitive market, where unfair market practices also often appear (Ostrowska-Dankiewicz, 2019). The connections of companies operating in global economic systems mean that the phenomenon of bankruptcy affects not only the stakeholders of a given entity, the local community where it operates, but more and more often the regional, macroeconomic or even global environment. Due to its economic consequences for the business environment of the failing entity, and in a broader scope, the analysis of the phenomenon for the entire economy should be considered, and the conclusions should reduce the scale of its occurrence in the future, e.g. by developing procedures limiting the scale of the phenomenon in exceptional situations, or monitoring of particularly vulnerable areas in specific situations.

The aim of the paper is to analyze the scale of the bankruptcy phenomenon in Poland over the years 2009-2018, and to identify the existing dependencies.

2. Literature review

It is extremely important from the point of view of processes taking place in enterprises and the essence of the theory of the life cycle of an enterprise to separate such concepts as insolvency, bankruptcy or a business failure. It turns out that while insolvency or bankruptcy have quite precise definitions, the term business failure does not have a uniform definition and is often treated by researchers as the one that combines the definition of bankruptcy and insolvency (Siciński, 2019). Therefore, business failure is often seen as a combination of factors such as bankruptcy, insolvency and financial difficulties in a company (Piesse et al., 2006; Narkuniene, & Ulbinaite, 2018). However, it should be noted that the concepts of business failure and bankruptcy differ from each other in terms of the economic and legal sphere. Bankruptcy is an economic term, while the failure is a strictly legal term, therefore the literature indicates that using these terms interchangeably is not fully justified (Tokarski, 2012), but in many cases such a simplification is used.

One of the subjects of research, both in the domestic and foreign literature, are the possible factors that influence the occurrence of financial problems in enterprises, and therefore significantly contributed to their failure. The research on the influence of economic and financial variables on the business failure was carried out, among others, by Aleksanyan & Huiban (2016). The authors, examining French food companies, concluded that the smallest and youngest companies were most exposed to the risk of failure, but the food industry itself seems to be much more resistant to the risk of bankruptcy than other sectors. The research conducted by the authors also showed that greater production capacity reduced the risk of bankruptcy, while higher costs of financing with a loan may increase this risk. However, the authors emphasize that the impact of financial characteristics on the possibility of bankruptcy is much smaller than the company’s performance and its production capacity. On the other hand, the research conducted by Mackevičius et al. (2018) on a sample of bankrupt companies from Lithuania and Latvia showed that the economic crisis in 2008 had the greatest impact on the wave of bankruptcies. Other factors include the business environment enterprises, as well as geopolitical uncertainty, the threat of terrorism, the future of the European Union and the gray economy. Moreover, the authors
drew attention to the increasing influence of external factors of an international nature on the business risk and financial situation of most enterprises. Some research also shows that there is a significant relationship between the age of a company and its insolvency. Young enterprises tend to fail due to internal shortages, while mature small and medium-sized businesses struggle more with the surrounding competition and economic downturns. Therefore, the failure is not only influenced by the age or size of the entity, but also by these factors in combination with its development and maturity (Kücher et al., 2020; Okpamen, & Ogbeide, 2020).

According to other studies, small and medium-sized enterprises cannot avoid clashing with business risks (Belás et al., 2015; Mentel & Brożyna, 2015; El Idrissi et al., 2020). It is pointed out that in the case of this type of entity, bad financial management, failure of the business plan or inability to settle liabilities can lead to bankruptcy (Khan et al., 2020). Moreover, according to the research of Lukason & Camacho-Miñano (2019), healthy, bankruptcy-free companies present their financial statements on time, as this helps make them trustworthy in the eyes of stakeholders. On the other hand, entities that achieve poor results more often disrupt communication, and failure to submit financial statements on time may be one of the reasons for the company’s problems. Paulík et al. (2015) and Grabara et al. (2016) emphasize that ethical standards in financial institutions are important particularly because banks, operating with money of other people, take the risk which may not only result to profit but also cause a loss.

Research conducted on Polish enterprises showed that the number of failures in Poland is largely determined by macroeconomic conditions in the economy. Among the most important macroeconomic determinants that affect both the scale and dynamics of bankruptcy in Poland, the authors indicated the number of the unemployed, the inflation rate, the gross profitability rate of enterprises, the USD exchange rate, and exports (Tokarski, Tokarski, 2018). On the other hand, the research conducted by Holda & Strojny (2019) showed that bankruptcy petitioners most often provided reasons that objectively resulted from the market conditions where they operated. These are, in particular, such factors as the lack of liquidity, a decrease in sales revenues, a failure to repay liabilities or bad cooperation with contractors, while the issues related to possible poor management are ignored. Different conclusions result from the analysis of the reports of Temporary Court Supervisors, where the reasons for bankruptcy resulting from poor management, lack of control and overinvestment are more often indicated. As research shows, the risk of bankruptcy of enterprises varies regionally and largely depends on the size of the enterprise and the sector of operation (Ptak-Chmielewska, 2018). Similar conclusions can be drawn from the study conducted by Pisula (2020). According to the author, small enterprises are more exposed than medium-sized or large ones, and the risk of bankruptcy, apart from the size of the entity, is also influenced by factors such as the sector or unique features of a given economic activity.

Literature studies show that the phenomenon of bankruptcy in enterprises is continuous and several stages can be distinguished in it. These stages cover the events from the moment the first signs of a financial crisis appear in the economy, through all factors inside the company, such as ignorance and blindness, as well as the resulting inadequate actions, which consequently lead to the bankruptcy of the enterprise (Korol, 2017). Therefore, it is a process that does not occur suddenly, and thus it is possible to predict its occurrence. Research related to the possibilities of forecasting bankruptcy of enterprises occupies a significant place in the literature on the subject. As Prusak (2019) points out that bankruptcy forecasting gained popularity among Polish researchers relatively late, only in the 1990s. Initially, some attempts were made to adapt foreign models, in particular the Altman models, but later the proposals for the first domestic models based on linear multivariate discriminant analysis began to appear. Currently, more and more companies are switching to machine learning systems, which is due to greater accuracy and the fact that the system learns using large data sets (Wyrobek, 2018). Bankruptcy research, and especially forecasting the occurrence of such situations, is extremely important from the point of view of credit risk management in banks. Therefore, it is relevant to assess the risk of bankruptcy, especially in banks for which the financing of particularly threatened enterprises poses a significant risk (Balina, 2018). According to the research, pharmaceutical sector is the one that is least exposed to the risk of bankruptcy, while the largest risk of bankruptcy is associated with mining enterprises. In the case of pharmaceutical companies, it can be seen that these entities are financed by debt to a lesser extent than other sectors (Nehrebecka, 2018).
Legal issues are a significant problem in the entire process of bankruptcy. The research conducted by Tomczak (2018) shows that not every bankrupt company files for bankruptcy. The number of bankruptcy cases is 45 times lower than the number of non-existent entities removed from the register, moreover, only 20% of the initiated proceedings actually ended with the declaration of bankruptcy of the enterprise. The reasons for such a phenomenon include the lack of funds to cover the proceedings by the company. In turn, Antonowicz (2014) points out that over the years in Poland it was possible to observe a very small number of arrangement proceedings, which, according to many studies, are much more financially effective than many years of liquidation processes. The above points at the conclusion that Polish procedures are relatively ineffective when it comes to bankruptcy proceedings. Research indicates that this was the case both in the post-crisis period, in 2008-2015 (Tokarski, 2018), and now. According to research, the temporary effectiveness of Polish bankruptcy law is only 12%, and the average duration of proceedings is 853 days (Staszkiewicz, Morawska, 2019).

3. Research methodology

The analysis of the phenomenon of companies bankruptcy, and key areas of its occurrence was based on historical data from 2009-2018, obtained from the Central Statistical Office and the National Court Register, using the methods of examining documents with the interpretation of the obtained data and the method of analysis. The exploratory research was carried out on a time sample of 8223 entities that declared bankruptcy in the analyzed period and constituted all enterprises of the Polish market from the period adopted for the research. The analyzed sample, taking into account the number of bankruptcies of enterprises in individual years, was as follows: 2009 - 673 entities, 2010 - 691 entities, 2011 - 730 entities, 2012 - 941 entities, 2013 - 926 entities, 2014 - 822 entities, 2015 - 747 entities, 2016 - 805 entities, 2017 - 900 entities, 2018 - 988 entities. It was systematized in terms of provinces, legal forms of the conducted activity and represented sectors.

In the paper the meta-analysis method was applied. It was extended by a review of the literature on the subject and available research results conducted by scientific communities and practitioners dealing with issues related to the phenomenon of bankruptcy in their works. In the course of the conducted analyzes, particular attention was paid to the assessment of the structure and dynamics of bankruptcies in various sections, together with the analysis of the differentiation factor in the assumed period.

The research was conducted in three stages. In the first stage, the dynamics of the number and rates of bankruptcy of enterprises in Poland in 2009-2018 was analyzed, and the relationship of selected macroeconomic variables with bankruptcy rates was examined using the Pearson linear correlation. In the next stage of the research, the structure and dynamics of bankruptcy rates by provinces were analyzed, as well as the structure and dynamics of registered bankruptcies according to the legal form of business and sector. The last stage of the research was a two-stage cluster analysis based on the data from a time sample. The data on enterprises that filed for bankruptcy in 2009, 2012 and 2018 were analyzed. The main purpose of the cluster analysis was to study the similarity or distinctiveness of objects. Therefore, the aim was to divide the objects into classes containing similar objects due to the observations on the variables, and different ones among themselves (Gatnar, Walesiak, 2004).

One of the classification methods was used for the research. It was the two-stage cluster analysis, which was quite resistant to assumptions about the distribution of variables, allowed assessing the quality of grouping using the Silhouette measure and enabled automatic determination of the number of groups.

4. Research results and interpretations

In the current situation, when companies operate in an extremely dynamic environment characterized by enormous complexity and uncertainty of phenomena, the key issues are to identify risk areas, monitor the economic and financial situation on an ongoing basis, and effectively forecast bankruptcy threats in order to react to them in advance. However, in spite of the awareness of the risks and often created strategies in the event of problems, the phenomenon of bankruptcy is now a natural element of the free market economy, occurring with varying intensity over time.
In the first stage of the research, the influence of selected macroeconomic variables on the number of bankruptcies was assessed. In order to obtain the comparability of data in subsequent years, in the first stage of the research on the structure and dynamics of the number of bankruptcies of enterprises in Poland, the following indicators were analyzed which were the quotient of the number of registered bankruptcies to the number of registered enterprises in a given year. This approach is different from that used in previous studies, which investigated the impact of macroeconomic variables on the dependent variable being the number of bankruptcies. It should be emphasized that it is difficult to provide the exact number of companies operating in Poland, as the Central Statistical Office (CSO) data is not adjusted for inactive entities. The number of bankruptcies of companies in individual years also differs in the statistics of the CSO and COIG (Central Economic Information Center). The number of announced bankruptcies should be supplemented by companies that filed for bankruptcy, but it was dismissed due to their insufficient assets and for data after 2016, those that started restructuring proceedings. The calculated rates of bankruptcy intensity in 2009-2018 are presented in Figure 1.

![Figure 1. The percentage of bankruptcies of enterprises in Poland in 2009-2018](image)

*Source: own research based on the CSO data*

The bankruptcy rate in the analyzed years was at the average level of 0.044%. The coefficient of variation measured by the standard deviation shows a slight variation in the rate in individual years (11.38%). This means that the number of bankrupted enterprises in relation to the total number of enterprises did not change significantly from year to year. The average pace of changes indicates the average annual increase in the percentage of bankruptcies by 1.49% in the analyzed years. The bankruptcy rate was the highest in 2012 and 2013, slightly exceeding 0.05%. The years 2012 and 2013 were not favorable for the global economy, which resulted in a reduction in demand in domestic markets. Although the global and Polish domestic product grew, the pace of growth was weaker than that from before the crisis. In the second half of 2013, the process of improving the macroeconomic situation on the Polish market began, which in 2014 resulted in an increase in economic activity and GDP higher than in the two previous years. Figure 2 compares the number of bankruptcies with the bankruptcy rate in Poland in 2009-2018.
Based on the data presented in figure 2, it can be seen that the dynamics of changes in the number and the bankruptcy rate are not identical. For example, in 2010, the number of insolvencies increased by 5.64% compared to 2009, but the percentage of insolvencies decreased slightly. The increase in the number of bankruptcies after 2016 was much greater than the analyzed rate.

The relationship between the bankruptcy rate and the macroeconomic variables described in the literature on the subject, such as: unemployment rate, GDP, export of goods, USD exchange rate, selected trading profitability ratios, selected financial liquidity ratios, consumer price index, and foreign trade balance was examined. The results are presented in Table 1.

Table 1. Pearson’s linear correlation coefficient between the bankruptcy rate and individual variables calculated on the basis of macroeconomic data for 2009-2018

<table>
<thead>
<tr>
<th>Unemployment rate</th>
<th>GDP</th>
<th>Goods export</th>
<th>USD exchange rate</th>
<th>Gross turnover profitability ratio</th>
<th>1st degree financial liquidity ratio</th>
<th>2nd degree financial liquidity ratio</th>
<th>3rd degree financial liquidity ratio</th>
<th>Price index of consumer goods and services</th>
<th>Foreign trade balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.28</td>
<td>0.33</td>
<td>-0.27</td>
<td>-0.20</td>
<td>-0.29</td>
<td>-0.59</td>
<td>-0.48</td>
<td>-0.24</td>
<td>0.23</td>
<td>-0.31</td>
</tr>
</tbody>
</table>

Correlation analysis shows the strongest linear relationship between the bankruptcy rate and the 1st degree financial liquidity ratio. Pearson’s linear correlation coefficient (equal to -0.59) indicates a strong, negative linear correlation. So the higher the 1st degree financial liquidity, the lower the bankruptcy rate. According to the Glossary of Terms of the Central Statistical Office, this ratio is the relation of short-term investments to short-term liabilities. The values of the 1st degree financial liquidity ratio and the bankruptcy rate in 2009-2018 are presented in Figure 3.
Figure 3. The values of the 1st degree financial liquidity ratio and the bankruptcy rate in 2009-2018

Source: own research based on the CSO data

The analysis of the data presented in figure 3 shows that the financial liquidity ratio was the lowest in 2012-2013, i.e. the years characterized by the highest bankruptcy rate in the analyzed period. There is clearly a negative correlation between the indicators.

A fairly strong linear correlation with a negative direction also occurs between the bankruptcy ratio and the 2nd degree financial liquidity ratio (relation of short-term investments and short-term receivables to short-term liabilities).

In order to make the considerations more detailed in the further part of the study, an analysis of the bankruptcy rate by provinces was performed, as presented in Figure 4.

Figure 4. The structure of the bankruptcy rate by provinces in Poland in 2009-2018

Source: own research based on the CSO and National Court Register (NCR) data

The analysis of bankruptcy rates by a province allows the conclusion that in the analyzed years in most provinces the bankruptcy rate did not exceed 0.06%. The exceptions were the Zachodniopomorskie and Dolnośląskie provinces for which the indicator was slightly higher (approx. 0.1%) and the years 2016 and 2018, which were analyzed separately and presented in Figure 5.
The differentiation of the analyzed index by a province in each of the analyzed years was moderate (the differentiation index measured by the standard deviation ranged from 30% to 44%). The years 2016 and 2018 were analyzed in particular, for which the differentiation increased to over 130%, which proves that it has become very strong. This was probably due to a significant increase in bankruptcy rates in two provinces, i.e. Opolskie (to approx. 0.3%) and Podlaskie (to approx. 0.35%) and a noticeable increase in the Lubelskie Province (to over 0.1%).

Over the last three years, an alarming upward trend in bankruptcy was observed in Poland. At the same time, in the entire analyzed period, there were no grounds for concluding that a linear upward trend exists. Similarly to the lack of grounds to conclude that the number of bankruptcies was directly related to the economic situation, as evidenced by the analyzes conducted for 2011, 2015, 2017. An important source of information is the analysis of the risk of bankruptcy taking into account the legal form in which the business is conducted. The share of bankruptcies of enterprises of a given legal form in total bankruptcies in a given year is presented in Figure 6.
The analysis of the data from the chart above shows that those entities that operate as limited liability companies are most at risk of bankruptcy. In their case, the percentage of bankruptcies is on average 58.54% of all enterprises in the analyzed years. At the same time, attention should be paid to the fact that in the analyzed years this percentage decreased from 65.77% in 2009 to 49.70% in 2018. However, there was a noticeable increase in the percentage of bankruptcies among natural persons from 16.82% in 2009 to 26.62% in 2018. The remaining legal forms accounted for no more than 10% of bankruptcies in individual years and remained at a fairly stable level. It should be emphasized that the number of bankruptcies for individual legal forms increased from year to year, on average by a total of 7.57%. In order to obtain a complete picture of the situation, an analysis was made of the share of bankruptcies of enterprises in a given industry in the total number of bankruptcies in a given year, which is presented in Figure 7.
The analysis of the data presented in figure 5 shows the highest share in the total bankruptcies of enterprises: the manufacturing sector in 2007-2011 (30% -40% of the total), construction in 2012 and 2013 (approximately 29%), and from 2014 in the services sector (25% -29%). In the analyzed years, a significant decrease was observed in the share of production enterprises in total bankruptcies (from 40.76% of enterprises in 2009 to 25.92% in 2018, a decrease by 14.85 percentage points) and an increase in the share of service enterprises (from 18.79% in 2009 to 28.95% in 2018, an increase of 10.16 percentage points). In construction, significant increases in the share of bankruptcies were observed in 2012 (up to 29.01%) and 2013 (27.32%).

In the next stage of the research, a two-stage cluster analysis was carried out on the basis of a time sample for the years 2009, 2012 and 2018. The year 2012 was characterized by the highest percentage of bankruptcies in the analyzed period. The cluster analysis used the provided data containing the following quantitative and qualitative variables: a province, a sector, a legal form, a turnover and employment (in the year preceding the declaration of bankruptcy). The aim of the research was to evaluate the structure of enterprises in terms of the variables mentioned. The SPSS package with the distance measure being the likelihood ratio was used for classification.

The results of the classification using all the variables mentioned did not give good quality grouping in the form of the Silhouette measure values. The province and the legal form are not good predictors because the Polish market has the largest number of limited liability companies and companies registered in the Mazowieckie Province. Therefore, after the elimination of subsequent variables, the classification was used as predictive variables: employment and turnover, and as an evaluation variable: industry. Classification with the use of these variables in each of the studied years was characterized by a measure of consistency and distinctiveness at a level exceeding 80%, which proves a very good division of enterprises into clusters and a good level of importance of the predictor variables (see results in Table 2).

Table 2. Assessment of the model fit and importance of variables

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2012</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>average value of the Silhouette measure</td>
<td>0.9</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>number of clusters</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Predictor importance:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>turnover</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>employment</td>
<td>0.44</td>
<td>0.86</td>
<td>0.65</td>
</tr>
<tr>
<td>Importance of the evaluation variable</td>
<td>0.02</td>
<td>0.05</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Source: own research

The classification results are presented in table 3.

Table 3. Classification results by a cluster
The results of the classification indicate quite large changes in the structure of groups of enterprises that declared bankruptcy in 2009, 2012 and 2018.

Two groups of companies that declared bankruptcy in 2009 can be identified: small, accounting for only 9% of the surveyed companies, and large - 91%. The first group includes the enterprises with an average net turnover in the year preceding the bankruptcy of PLN 235 million and an average number of employees equal to 718 employees, i.e. mostly large companies. The dominant sector was wholesale, accounting for 10.3% of the companies in this group. The second group includes enterprises with an average annual turnover of PLN 17 million and employing an average of 80 employees, i.e. rather medium-sized enterprises. The dominant sector was construction (5% of companies in this cluster).

In 2012, when the largest number of companies, taking into account the years 2009-2018, declared bankruptcy, the classification also resulted in two groups: small (9%) and large (91%). However, a significant decrease in the average value of turnover and employment in each group could be observed compared to 2009. In the small group (cluster 1), the average turnover in the year preceding the declaration of bankruptcy was PLN 53 million, and the average employment this year was 450 employees. In the large group (cluster 2), the average turnover was PLN 5 million, and the average number of employees was 57 people. However, it should be emphasized that in both groups, unlike in 2009, clearly dominant industries appeared. In a small group (cluster 1), 40% of companies were manufacturing enterprises, and in a large group (cluster 2), almost 33% was the construction sector.

The results of the 2018 classification are completely different. Three clusters were obtained: very small ones - covering 2% of companies (cluster 1), small ones - 13% of companies (cluster 2) and large ones - covering 85% of companies (cluster 3). Group 1 had a very high average turnover in the year preceding the declaration of bankruptcy, amounting to PLN 765 million, and average employment of 502 people. Wholesale was clearly the dominant sector in this cluster (almost 43% of companies). In group 2, the average turnover was PLN 37 million, and the average employment rate was 262 employees. The production sector clearly dominated here.
(over 48% of companies). In group 3 - the most numerous - the average turnover was PLN 12 million, the average employment rate was 34 people, and the manufacturing sector dominated (over 28%).

The average values for the most numerous clusters in a given year are shown in Figure 8.

Figure 8: Average value of a turnover and number of employees in the most numerous clusters by years of bankruptcy

Source: own research

Summarizing the results of the classification, most of the companies declaring bankruptcy in Poland in the analyzed years had, on average, not very high turnover and the number of employees in the year preceding its announcement. Year by year, bankruptcy began to affect companies with fewer and fewer employees. Larger companies also did not avoid it.

Conclusions

The economic transformation of the 1980s and 1990s, combined with the dynamic business environment, as well as the globalization of economies, meant that companies that had problems and were unable to cope with the new operating conditions began to be driven out of the market. Although the bankruptcy phenomenon became to some extent a natural element of the market economy and was not occurring to an excessive extent, it is still a significant problem that is noticed by most entrepreneurs. The scale of this problem and its scope is determined by factors of various origins, which are the subject of intense discussion among scientists dealing with corporate bankruptcy issues. The extremely dynamic environment and the uncertainty of the phenomena occurring in it make it very important to control the economic and financial situation of enterprises and to use models that allow to forecast the risk of bankruptcy in advance so that an appropriate response is possible, allowing an effective reduction of this phenomenon.

The analysis of the problem of bankruptcy of enterprises in Polish conditions shows that the bankruptcy rate in 2009-2018 was not characterized by excessive differentiation, which means that the number of bankrupted enterprises did not change significantly in the analyzed period, and the average annual increase in the rate was 1.49%. Moreover, this indicator was relatively low in Poland as a whole and did not exceed 0.06%, except for the Dolnośląskie and Zachodniopomorskie provinces. Although it can be said that the situation related to the bankruptcy of enterprises in Poland seems to be quite stable and at a moderate, safe level, an alarming upward trend were observed in the last three years, but there are no grounds for concluding both a linear trend and a direct linking the increase in bankruptcies to the economic situation.

However, it is worth noting that in the light of the conducted research, the largest percentage of the total num-
ber of declared bankruptcies concerned companies operating in the form of limited liability companies, which suggests that companies operating in this form are most at risk of bankruptcy, but also the largest number of them. In recent years, some changes also became apparent in the sectors most at risk. While in 2007-2011 the largest percentage of total bankruptcies were enterprises from the manufacturing industry, in 2012 and 2013 enterprises from the construction industry accounted for the main share, and since 2014 the highest number of bankruptcies was observed in the service sector.

The analysis of bankruptcy across the years 2009-2019 showed that this phenomenon was not permanent, its scale was changing, to a greater or lesser extent, as well as the exposure of individual industries to the risk of bankruptcy. Although these changes were not directly related to the economic situation, one could find indirect relationships between macroeconomic determinants and the scale of bankruptcy, which was confirmed by numerous studies conducted by scientists from various countries around the world.

References


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ORCID ID: 0000-0003-4245-7802
AN IMPACT - BASED MODEL OF GREEN HUMAN RESOURCE MANAGEMENT: EVIDENCE FROM UAE

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Abstract. This study proposes and empirically validates an outcome-based model of green HRM applicable in HEIs in UAE. Drawing on Resource Conversion Theory (COR), the study argues that the conservation of existing resources and the pursuit of new sustainable resources need strategic persuasion through green HRM. The study adopts a quantitative approach to measure the constructs and establish the proposed model’s reliability and validity. Non-probability sampling is applied to collect data employing a structured questionnaire from 250 employees working in five different UAE private HEIs. Data is analyzed through exploratory factor analysis to ascertain the factorial structure of the green HRM model. Further, the utilization of structural equation modeling tests helps to determine the causal relationships between HRM drivers and green outcomes. The result indicates several drivers of green HRM practices in an HEI impact green outcomes both at the employee and organizational levels. The hypothesis testing results suggest that HRM functions such as recruitment and selection, job design, performance management, rewards, and training and development with an underlying emphasis on green policies impacts green outcomes. When employees place central value on green resources, any threat of loss leads to protectionist green behavior or search for alternative sustainable resources. Green HRM is a facilitator of green values, culture, green organizational practices and outcomes. The study also contributes to academic research on green HRM by validating an impact-based model of green HRM specific to the higher education sector identifying green drivers and outcomes. The study contributes to the COR theory by extending its categorization to green resources.

Keywords: Green HRM; UAE Higher Education; Green Drivers; Green Outcomes; SEM; Impact-based model.

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JEL Classifications: F64, M14

1. Introduction

Green HRM has received considerable attention through works of Yong et al. (2019a); Yusliza et al. (2017); Dumont et al. (2018); Guerci and Carollo (2016); and Guerci et al. (2016), Mazzoni (2020). Green HRM was initially proposed by Renwick (2008) with an argument for integrating HRM policies and practices with the environmental strategy and reducing the carbon footprint of each employee in the organization. Marhatta and Adhikari (2013, p. 46) define green HRM as “the use of HRM policies to promote the sustainable use of resources within organizations and, more generally, promotes the causes of environmental sustainability.” Some of the main merits of green HRM are green employee behavior, improved competence, lesser costs, increased employee retention rate, positive work environment, enhanced employee participation and engagement, better motivation rate, and a positive brand image (Renwick et al. 2018).

Green human resource management (HRM) is increasingly becoming popular across various industries, including the higher education sector (Mukherjee et al. 2020). Weissman (2012) pointed out that higher education institutions (HEIs) have started to take the lead in creating green movement by integrating sustainability into the
curriculum and spreading the mandate to develop socially and environmentally responsible graduates. Wu and Shin (2016), citing several UNESCO programs, showed an increasing need to create an environmentally sensitive workforce. A strategic shift in higher education with a sustainability agenda is essential for propagating green management initiatives to future employees to work in different industries (Sherren, 2008). Green management practices budding from HEIs can impact the environment, economy, and society. Higher Educational Institutions (HEIs) are centers of knowledge and research and play an essential role in promoting green HRM practices. Findler et al. (2019) argued that HEIs share an inherent responsibility to make societies more sustainable, and HEIs teach, research, and practice green management. Aboramadan (2020) explained that human resource departments could promote green work management practices and trigger green innovative work behavior. Some of the environmentally friendly solutions for higher education institutions include online training, green curriculum, green research, green educational brand, and green intellectual capital (Sharma, 2016). The HR functions can integrate green elements into its practices such as green recruitment, green performance appraisal, green training and development, green employee relations, and green rewards (Mukherjee et al. 2020).

Through a systematic literature review, Findler et al. (2019) reported that most of the studies focus on project-based green practices, while impact-based studies of green practices in HEIs have not received adequate attention in the literature. A meta-analysis by Yong et al. (2019a) revealed that 20 out of 70 articles reviewed were focused on drivers of green HRM, while another 20 investigated green outcomes. Some of these papers studied the employee-level effects, while others investigated organizational-level results. However, only a few articles presented a completed model exploring the relationship between green HRM drivers and employee and organizational level outcomes, mainly through a complete structural equation model. Further, there is a shortage of empirical data on green HRM in the UAE Higher Education sector, and this relationship needs further investigation. Renwick et al. (2016), in his study, found that green management programs and policies are lagging because of a lack of employee motivation and weak alignment of organizational goals with green outcomes. The study contributes to the academic research on green management outcomes in HEIs in several ways (Hanif, Rakhman, Nurkholis, and Pirzada, 2019). It posits that Green HRM functions are a significant predictor of green employee outcomes and, subsequently, green organizational results. The study develops and tests an impact-based model of green HRM in HEIs. It contributes to the COR theory by highlighting the value of green resources and garnering support to reduce the threat to green resources.

1.1 Theoretical Background

The study draws on the Conservation of Resources Theory (COR) to explain and develop a green HRM model in HEIs. COR theory is a widely cited theory used to describe the relationship between a resource and human behavior. It is primarily a motivational theory that explains human behavior based on their evolutionary need to acquire and conserve resources (Hobfall, 2018). The study builds a case to extend the resource categories to include green resources and improve the perceptual worth of green resources. Individuals value several critical resources to their and society’s well-being, including social, physical, relational, financial, and psychological resources (Kellermanns et al. 2016; Jensen, 2012). When they start to value green resources, they strive to protect it or pursue alternative sustainable resources. Stephan (2018) argued that considering the human tendency to undervalue resource gain over resource loss, there is a need to invest in new resources and understand their value. Green GRM can play a central role in positioning the green resources as a valuable resource. Mamun (2019) supported the view that Green HRM’s success depends on its ability to raise awareness and enhance green resources’ perception and value among employees Rudyanto and Pirzada (2020). According to Suryani, and Pirzada, (2018) Human resource departments promote green practices and build a passion and green values among its workforce (Gilal et al. 2019).

2. Literature Review

There is a broad consensus in the literature on HRM’s role in supporting the adoption and implementation of the environmental strategy (Haden et al. 2009) and (Wati, Primiana, Pirzada and Sudarsono, 2019). The human resource department plays a critical role in impregnating the organization with green HRM practices as the hu-
man resource department, particularly in HEIs, deal with its essential assets the human resource and preserves its knowledge capital (Ahmed, 2015; Mandip, 2012). Tang et al. (2018) studied the green human resource management practices and developed a theoretically grounded and empirically validated instrument to measure green HRM. They posited that green HRM includes five dimensions: green recruitment and selection, green training, green performance management, green rewards, and green employee relations. They recommended that these five dimensions and items identified in their study can help firms create GHRM policy.

2.1 Green Recruitment and Selection

Developing a green organization begins with the recruitment of the workforce that is sensitive to the green cause. Nurturing a green employer’s brand image enables firms to attract talented employees and emphasize green management’s importance across the firm (Guerci et al. 2016 and Stringer, 2009). The application of green criteria in selecting employees ensures the candidates with the right attitude towards green management have been selected (Pham et al. 2019). The choice of employees with a lively green attitude implies that the institution places central importance on green values and expects potential employees in the future to adopt green management practices (Opatha, 2014; Bombiak, 2019). Based on the literature evidence that green recruitment and selection lead to positive outcomes, the study developed the following hypothesis for testing.

H1: Green recruitment and selection positively and significantly impact the desired green outcomes at the individual and organizational levels.

2.2 Green Job Design

Job design is a critical determinant of the implementation of green practices in the organization. Many firms adopt green initiatives without an appropriate change in job design (Arniati, Puspita, Amin, and Pirzada, 2019). Green job design should include environmental protection related tasks, duties, and responsibilities (Renwick et al. 2013). Identification of green competencies related to the sector may also lead to the creation of new job positions. Opatha (2014) recommended using clear communication to employees on green practices through the job description and including green competencies as a job satisfaction component. Job design empowers employees to make an environmentally friendly decision and align their expectations with job expectations (Jabbour et al. 2010). Employee empowerment and participation in decision-making facilitate the promotion of sustainability agendas and green behavior (Daily et al. 2012). Based on the evidence in the literature, the study developed the following hypothesis for testing.

H2: Green job design positively and significantly impacts the desired green outcomes at the individual and organizational levels.

2.3 Green Training and Orientation

According to Zoogah (2011, p. 117), green training and development is a practice that focuses on the development of employees’ skills, knowledge, and attitudes, prevent deterioration of EM-related knowledge, skills, and attitudes. Green training and orientation educate employees on green management’s value and train them on the conservation of sustainable energy and reducing waste. Govindarajulu and Daily (2004) and Daily et al. (2012) suggested that green training promotes green behavior and creates a sustainable organizational culture. Green orientation programs for newly hired employees are an integral part of the training and development process (Opatha, 2014). The institutions run periodic refresher training to employees and leaders about the green procedures and policies, including its vision/mission statement and the sustainability-oriented benefits and outcomes (Liebowitz 2010). Based on the evidence in the literature, the study developed the following hypothesis for testing.

H3: Green training and development positively and significantly impact the desired green outcomes at the individual and organizational levels.
2.4 Performance Appraisal

Green human resource management ensures the organizations’ environmental targets’ achievement and continuous improvements in a firm’s ecological outcomes (Jackson et al. 2011). Using performance management in green management presents the challenges of measuring environmental performance standards across different firms’ units. Renwick et al. (2008) suggest incorporating firm-wide ecological performance standards. Similarly, Renwick et al. (2018) recommended to add green criteria for performance evaluation and provide regular feedback. According to Liebowitz (2010), the HR department should include technical and green behavior competencies rating criteria as per the job design (Solikhah, Della Firmansyah and Pirzada, 2017). Based on the evidence in the literature, the study developed the following hypothesis for testing.

H4: Green performance appraisal positively and significantly impacts the desired green outcomes at the individual and organizational levels.

2.5 Green Rewards and Recognition:

Compensation and reward management should recognize contributions in green management (Jackson et al. 2011). Compensation packages should be customized to reward green skills acquisition and achievements by employees. Monetary-based, non-monetary based, and recognition-based rewards for employees’ green achievements can trigger green behavior (Govindarajulu and Daily, 2004). There is a range of green HRM activities related to employee rewards and compensation that contribute to the achievement of green goals positively (Kolk and Perego, 2013). In particular, the institutions need to: reward employees for making suggestions for environmental improvements, monetarily reward managers for meeting Environment Management (EM) based Key Performance Indicators (KPI’s), and recognize employee efforts with monetary and non-monetary awards (Berrone and Gomez-Mejia, 2009). Based on the evidence in the literature, the study developed the following hypothesis for testing.

H5: Green rewards and recognition positively and significantly impact the desired green outcomes at the individual and organizational levels.

2.6 Employee Relations:

Employee participation in Green initiatives increases the chances of better green management as it aligns employees’ goals, capabilities, motivations, and perceptions with green management practices and systems (Casler et al. 2010). Renwick et al. (2013) reported that democratic green management decision-making improves the desired environmental outcomes. Decisions related to green systems such as efficient resource usage, reducing waste, and reducing pollution from workplaces with employee participation improves psychological acceptance and improved outcomes (Daily et al. 2012; Vidal-Salazar et al. 2012). Green ideas and initiatives from all employees, especially those who specialize in green management, make the green goals practical Pirzada (2016), realistic, and achievable (Casler et al. 2010). Based on the evidence in the literature, the study developed the following hypothesis for testing.

H6: Green employee relations positively and significantly impact the green outcomes at the individual and organizational levels.

2.7 Green Outcomes

Green HRM enables the organization to achieve its desired sustainable outcomes (Yong et al. 2019a). A close alignment between green HRM practices and desired outcomes is difficult to accomplish without employee commitment (Kim et al. 2019; Pham et al. 2019 and Renwick et al. 2018). Several results are desirable, primary among them at the employee level are placing value on green resources (Dumont et al. 2018). Once employees give due credence to green values, employee motivation, and commitment to conserve green resources im-
prove. As a result, employees demonstrate green behavior (Husaini; Pirzada and Saiful, 2020), leading to green organizational outcomes (Shen et al. 2018; Daily et al. 2012). At the corporate level, the firm benefits from cost advantages (Leonidou et al. 2017) and improved financial performance (Zaid and Bon, 2018). The firms also enjoy a positive brand image of a green employer, attract talented staff, create a green culture, and achieve their sustainability goals (Opatha, 2014). An essential green outcome at the organizational level for HEIs is green intellectual capital development as the employees conduct research and develop green knowledge and competencies (Yong et al. 2019b). Based on the evidence in the literature, the study produced the following hypothesis for testing.

**H7:** Green employee outcomes positively and significantly impacts green organizational outcomes.

The conceptual model (figure 1) diagrammatically represents a formative and causal relationship between Green HRM drivers and green employee and green organizational outcomes.

### 3. Research Methodology

Epistemologically, a realist research approach guided this study since the primary objective is to measure the hypothesized relationships (Fisher, 2004). These relationships are not accessible without investigation, and quantitative analysis was deemed fit. In line with the research philosophy, the study adopted a quantitative approach due to the need to objectively measure the proposed model and establish its reliability and validity (Bryman and Bell, 2015). The main research tool used to collect primary data was a well-structured-undisguised self-reporting questionnaire with 5-point Likert scale questions. The objective was to collect data from a substantial number of respondents so that the results could be generalized.

#### 3.1 Measures

The study adapted 25 green HRM measures and 8 measures of employee and organization green outcomes from previous green HRM research. Primary among these studies are Shah (2018), who measured Green HRM with 28 items (alpha >.75). Some other prominent research that informed the measures of the study were by Ahmad (2015), Mandip (2012), Masri and Jaroon (2017), and Renwick et al. (2013).

#### 3.2 Data Collection and analysis

A total of 350 online questionnaires were sent out to employees in five different private sectors HEIs in the UAE. Two hundred fifty-five responses were received, out which 251 were found fit for analysis. The study’s mainstay data analysis technique was structural equation modeling (SEM). Firstly, it conducted an exploratory factor analysis to test the constructs’ factorial structure and check convergent validity (Saunders et al. 2016). The study performed an SEM-based confirmatory analysis by developing a measurement model. Reliability checks were performed through Cronbach alpha scores, while the research utilized average variance extracted (AVE) scores to test discriminant validity (Tabachnik and Fidel, 2007).

### 4. Results

The first level of the test was the investigation of descriptive data Table 1. The study tested the mean and standard deviations, followed by correlations tests between the constructs. Table 1 shows that job description is positively correlated with training and development and green employee outcomes. Similarly, training and development are positively correlated with performance appraisal and rewards and recognition. Performance appraisal is positively correlated with green employee outcomes. Rewards and recognition are positively correlated with both green employee and green organizational outcomes. Finally, a green employee is positively correlated with green organizational outcomes.
Table 1: Correlations Matrix

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std Dev</th>
<th>JD</th>
<th>TD</th>
<th>PA</th>
<th>RR</th>
<th>ER</th>
<th>GOE</th>
<th>GOO</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS</td>
<td>3.918</td>
<td>0.721</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JD</td>
<td>4.095</td>
<td>0.692</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TD</td>
<td>4.015</td>
<td>0.701</td>
<td>0.183**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA</td>
<td>3.978</td>
<td>0.802</td>
<td>0.032</td>
<td>0.249**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RR</td>
<td>3.914</td>
<td>0.804</td>
<td>0.031</td>
<td>0.254**</td>
<td>0.142</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ER</td>
<td>4.037</td>
<td>0.717</td>
<td>0.059</td>
<td>-0.022</td>
<td>0.021</td>
<td>0.097</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOE</td>
<td>4.038</td>
<td>0.742</td>
<td>0.158**</td>
<td>-0.022</td>
<td>0.195**</td>
<td>0.241**</td>
<td>0.014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOO</td>
<td>4.039</td>
<td>0.759</td>
<td>0.071</td>
<td>0.140</td>
<td>0.187</td>
<td>0.018</td>
<td>0.0314**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The study checked the Cronbach alpha scores and AVE scores. The results showed the right internal consistency of measures with alpha scores >.07 and Average Variance Extracted (AVE) scores >.05, indicating discriminant validity. Similarly, the multicollinearity test was satisfactory as the VIF scores (<.2) suggested no correlational inflation of data. The final test of the robustness of data was through the examination of homogeneity of variance. The mean significance value >.05 on the Leven test did not indicate any heteroscedasticity issues. The results are presented in Table 2. A measurement model was developed and tested to confirm the green HRM and green employee and organization outcomes' factorial structure. The results supported the EFA structures and established convergent validity as the items loaded satisfactorily on to their factors (Table 2). The covariance between factors was < 0.04 supporting the presence of discriminant validity.

Table 2: Factor Loadings, Alpha Scores, and Average Variance Extracted Values

<table>
<thead>
<tr>
<th>Variables and Their Scale Items</th>
<th>Factor Score</th>
<th>Alpha (KMO)</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recruitment and Selection (RS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Transparent communication on green preference in recruitment messages</td>
<td>.69</td>
<td>.81 (.79)</td>
<td>0.5312</td>
</tr>
<tr>
<td>2. Inclusion of green selection criteria in recruitment and job interviews</td>
<td>.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Selection of employees who show sensitivity towards green agenda</td>
<td>.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Description (JD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Inclusion of environment-protection tasks, duties, and responsibilities in JD</td>
<td>.81</td>
<td>.84 (.81)</td>
<td>0.5851</td>
</tr>
<tr>
<td>2. Design of cross-functional teams to manages environmental issues</td>
<td>.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Inclusion of green competencies in the job specification</td>
<td>.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Inclusion of green reporting lines</td>
<td>.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Assigning green outcomes accountability</td>
<td>.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training and Development (TD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Providing environmental awareness training</td>
<td>.69</td>
<td>.87 (.82)</td>
<td>0.5237</td>
</tr>
<tr>
<td>2. Provide training to enhance the value of green resources and their protection</td>
<td>.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. On-job green training through job rotation for managers</td>
<td>.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Training for innovative green initiatives specific to HEIs</td>
<td>.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance Appraisal (PA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Development and inclusion of company-wide performance standards</td>
<td>.74</td>
<td>.85 (.80)</td>
<td>0.5339</td>
</tr>
<tr>
<td>2. Incorporating green objectives and targets in performance evaluation</td>
<td>.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Including green criteria in appraisal and assign appropriate weighting</td>
<td>.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Provide regular feedback to employees on environmental performance</td>
<td>.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rewards and Recognition (RR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Introducing rewards for innovative green work behavior and performance</td>
<td>.87</td>
<td>.84 (.87)</td>
<td>0.6227</td>
</tr>
<tr>
<td>2. Providing incentives on the achievement of green targets</td>
<td>.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Rewards on green skills acquisition</td>
<td>.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Rewarding development and implementation of the green curriculum</td>
<td>.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Funding green research projects</td>
<td>.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee Relations (ER)</td>
<td></td>
<td>.79 (.77)</td>
<td>0.5158</td>
</tr>
<tr>
<td>1. Inviting suggestions and involving employees in green decision-making</td>
<td>.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Introducing green-whistle-blowing and help-lines</td>
<td>.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Joint consultation with employees to solve environmental challenges</td>
<td>.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Green health and safety regulations</td>
<td>.72</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Green Employee Outcomes (GEO)
1. Employee placing a high value on green management
2. Employee commitment to green causes and show of green behavior
3. Improved green performance and green productivity

Green Organizational Outcomes (GOO)
1. Organizational brand image of the green employer
2. Creation of a green organizational culture
3. Reduced costs and improve profit margins
4. Improved green efficiency
5. Development of improved green intellectual capital

Figures within the parentheses are Kaiser-Meyer-Olkin (KMO) test scores.

4.1 Default Model
The study tested the temporal relationship between green employee and green organizational outcomes in the default structural model. It utilized a covariance-based SEM (CBSEM) to confirm the hypothesized relationships, as Hair et al. (2010) suggested. CBSEM allows testing of several indicator variables simultaneously, accounting for measurement errors, which supports validity-related conclusions at the construct level (Tabachnik and Fidell, 2007). SEM tests were performed using the IBM SPSS (AMOS version 22). The coefficient values on all factors showed scores >0.61, with the highest coefficient value on green rewards (coefficient value 0.81).

Green employee outcomes impacted green organizational outcomes (coefficient value 0.76). Figure 2 shows the complete SEM model, which is representative of the green HRM impact-based model.

4.2 Alternative Model
The study tested an alternative model to confirm the temporal relationship between green employee outcomes and green organizational outcomes. The alternative model tested the green organizational outcomes as a direct causal effect of green drivers. Green employee outcomes were not part of this SEM model. The objective was to find if green HRM drivers can directly influence the organizational level of green outcomes. The fit indices on the alternative model was ($\chi^2$ (147) = 209.02, $p < 0.01$; GFI = 0.951; AGFI = 0.912; CFI = 0.914; TLI = 0.917; RMSEA = 0.057). The study found the default model to be a better fitting model. In the default model, the factor loadings for the indicator variables on their hypothesized paths to unobserved variables showed coefficient values >.60 ($p < .001$). The structural model showed a good fit to the data ($\chi^2$ (265) = 349.03, $p < 0.01$; GFI = 0.981; AGFI = 0.947; CFI = 0.972; TLI = 0.964; RMSEA = 0.041). According to Hu and Bentler (1999), these fit indices scores meet the established benchmarks. Based on Preacher and Merkle’s (2016) suggestions and comparative analysis, the study accepted the default model.

Table 3: Results of Hypothesis testing

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Path coefficient</th>
<th>Significance</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 Green recruitment and selection positively and significantly impact the desired green outcomes at the individual and organizational levels.</td>
<td>0.61</td>
<td>$P &lt;0.001$</td>
<td>Accepted</td>
</tr>
<tr>
<td>H2 Green job design positively and significantly impact the desired green outcomes at the individual and organizational levels.</td>
<td>0.79</td>
<td>$P &lt;0.001$</td>
<td>Accepted</td>
</tr>
<tr>
<td>H3 Green training and development positively and significantly impact the desired green outcomes at the individual and organizational levels.</td>
<td>0.67</td>
<td>$P &lt;0.001$</td>
<td>Accepted</td>
</tr>
<tr>
<td>H4 Green performance appraisal positively and significantly impact the desired green outcomes at the individual and organizational levels.</td>
<td>0.75</td>
<td>$P &lt;0.001$</td>
<td>Accepted</td>
</tr>
<tr>
<td>H5 Green rewards and recognition positively and significantly impact the desired green outcomes at the individual and organizational levels.</td>
<td>0.81</td>
<td>$P &lt;0.001$</td>
<td>Accepted</td>
</tr>
<tr>
<td>H6 Green employee relations positively and significantly impact the green outcomes at the individual and organizational levels.</td>
<td>0.63</td>
<td>$P &lt;0.001$</td>
<td>Accepted</td>
</tr>
<tr>
<td>H7 Green employee outcomes positively and significantly impact green organizational outcomes.</td>
<td>0.76</td>
<td>$P &lt;0.001$</td>
<td>Accepted</td>
</tr>
</tbody>
</table>
5. Discussion of Results and Implications

The research on Green HRM has received considerable attention, and the current state of knowledge has been able to identify green HRM drivers, green HRM practices, and green outcomes (Jabbour and Renwick, 2018). However, a complete model testing the effect of several green HRM drivers on various individual and organizational results helps present the full picture. Specifically, it enhances the understanding that soft and challenging approaches to the implementation of green HRM practices, which are essential for its effectiveness. Higher Education institutions are change agents and leaders in knowledge and research (Findler et al. 2019). They develop green intellectual capital, implement green initiatives in their organizations, and, most importantly, influence future employees about green management (Weissman, 2012). Therefore, an impact-based green HRM model can guide academic and managerial decision making in HEIs. The green HRM has the competence to facilitate the use of sustainable resources across the organization. Green HRM functions such as green recruitment and selection, green job design, performance management, green rewards, green training and orientation, and green employee relations significantly influencing both green employee and organizational outcomes (Mukherjee et al. 2020). A critical finding of the impact-based model was that the green employee outcomes are first influenced, impacting organizational outcomes. A direct consequence of green HRM on green organizational outcomes may remain restricted to green employer image, green productivity, and costs savings. An organization will find it challenging to achieve its green objectives without appropriately influencing, motivating, and mobilizing green behavior among its employees (Pham et al. 2019).

Green recruitment and selection help select the right candidate with green aptitude and competencies and sends a signal to the employment market about the central importance a firm places on its green agenda (Guerci et al. 2016). Recruitment of eco-sensitive employees is just the beginning; the green job design ensures that the tasks are designed to take into consideration green elements and duties, and responsibilities are assigned and accounted for through the performance appraisal (Renwick et al. 2013). It becomes essential for the green firm to train its employees on green techniques and develop green competencies and gain green skills (Lasrado and Pereira, 2018; Daily et al. 2012). It becomes particularly critical in a higher education environment as employees are expected to show and practice green behavior and underpinning the curriculum with green emphasis and lead by example. Training and appraising employees based on green criteria also help develop and protect green intellectual capital (Yong et al. 2019b). HEIs should link employees’ duties to promoting the green agenda, conducting green research, developing a green curriculum, and patenting green technologies.

5.1 Contributions to Theory

In a meta-analysis, Young et al. (2019a) found that the most widely used theories to study green HRM has been the resource-based theory, followed by social exchange and stakeholder theory. The study has nested the green HRM into COR theory as conservation resources and placing ‘value’ on green resources is the key to unlocking employee commitment, triggering green behavior, and achieving green organizational goals. The study supports the view that there should be an alignment between green employee and green organizational outcomes. The study extends the resource categorization of COR theory to green energy resources, which is logical considering the value and scarcity of green resources. The research builds a case for enhancing the value of green resources and link it to desired outcomes. Halbesleben (2014) states that when organizations link resources to expected performance and outcomes, employee commitment and motivation increases. Any threat to these valuable resources may lead to a ‘resource-loss’ feeling, leading to green resource conservation behavior or search for alternative sustainable resources (Wiklund et al. 2018). The green action towards the conservation of green resources enables individuals and firms to build a reservoir of resources to meet future needs and solve future challenges (Hobfall, 2018). The study also contributes to the green HRM literature by presenting a complete-impact-based green HRM model. It can guide future theoretical models for green HRM, guide application of green HRM in HEIs, and lead to a more nuanced- green HRM models applicable in different sectors.
6. Conclusion

The research on green HRM has picked up at a rapid pace and rightly so. The drivers and outcomes of green HRM are becoming clearer to benefit various sectors. However, the research on its implementation and effectiveness, particularly in HEIs, is still emerging. This study concludes that a softer approach to engaging and motivating employees is essential for green HRM initiatives. The efficacy of green HRM is compromised under two conditions. Firstly, when the organization design does not support green HRM policies and initiatives. Secondly, when the organization’s employees are not committed and do not believe in green management’s value and green conservation of resources. Therefore, the organizational level green outcomes depend on the green employee behavior and the value they place on green resources. Both factors point towards the fact that there is a relationship between resources and their environment. A fertile ground will be more captive of green initiatives, and the value of green resources can be enhanced through nurturance and learned adaptations. Human resource departments can play a central role in creating this productive environment in organizations. An impact-based green resources model is the desired research output, enabling the firms and researchers to understand the interplay of environmental reciprocity created through green drivers, impacting green employee behavior, and green organizational outcomes. In such a resource-constrained environment, resource loss is disproportionately more intense than resource gain. Some of the resource loss is irreversible, and the value of these resources remains critical to humans and ecology, irrespective of their perceptual worth assigned by individuals and firms. Higher education institutions play a central role in creating, supporting, and disseminating green values in society. Through green research and green intellectual capital, they can enhance the value of green resources. Hence, green HRM research in HEIs remains a research priority. The study uses a small sample with a limited number of HEIs. Although the model’s reliability and validity are established, its generalizability needs to be further ascertained with more significant a bigger sample and participation of HEIs in such green research projects. The model can be tested with more slight modifications, especially with identifying and testing moderators and mediators’ role in these hypothesized relationships.

References


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THE IMPACT OF CORPORATE SOCIAL RESPONSIBILITY AND SERVICE EXPERIENCE ON CUSTOMER SATISFACTION

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Abstract. Objective - This study was conducted to propose and test a conceptual model to resolve research gaps on customer satisfaction factors in the public sector of service companies, through the variable of corporate social responsibility (CSR), service experience, and customer company identification. Methodology/Technique - This study adopts the expectation theory of disconfirmation of customer satisfaction as a basis for resolving the research gap. Data was collected from 250 customers at a local enterprise water service in West Kalimantan, Indonesia, using a purposive sampling method. The analytical tool used is partial least square (PLS). Findings - The model is confirmed by the data collected and shows that customer satisfaction in local enterprise water services is influenced by services experience and customer company identification, while CSR activities carried out by the company do not affect customer satisfaction, but CSR affects customer company identification.

Keywords: CSR; Service experience; Customer Company Identification; Customer Satisfaction


JEL Classifications: M14, D11, J28

1. Introduction

Customer satisfaction is seen as an interesting topic to study by marketing and management experts since it is a very important factor determining the continuity of a company (Su, 2011; Kotler & Armstrong, 2012; Walsh & Bartikowski, 2013). Several studies report that customer satisfaction can be achieved in many ways, such as by company products and services that meet the needs and desires of customers (Hanzae & Sadeghian, 2014), providing a great service experience (Ding et al., 2010; Luoh & Tsaur, 2011; Dong & Siu, 2013; Manhas & Tukamushabab, 2015; Afifah & Asnan, 2015), conducting CSR activities (He & Li, 2011; Lee et al., 2012; Martinez, 2013; Lavrinenko et al. 2019), and creating customer-company identification (Arikan & Güner, 2013; Kang et al., 2015; Sommerfeld & Paulssen, 2015). To date, it remains unclear how the efforts of the Indonesian local enterprise water service company (LEWS) affect customer satisfaction. There is a doubt about whether customer satisfaction in this company is due to CSR activities created or the company’s products and services provided.

In this study, the expectancy disconfirmation theory (EDT) by Oliver (1997) was used to identify the antecedents of customer satisfaction. This theory states that customers are pleased and satisfied if the actual per-
formance of a company exceeds or equals their expectations. Therefore, this study aims to fill the gap in the research on the antecedents of customer satisfaction using 2 concepts. The first concept is the modern view, which states that CSR created by the company has a direct impact on customer satisfaction. The second concept is the traditional view, which states that the company’s products have a significant impact on customer satisfaction, whereas CSR hase no impact on customer satisfaction, Solikhah et al., 2017).

Several studies conclude that CSR activities do not entirely affect customer behavior and satisfaction as customers buy the products for personal needs, not for social purposes (Hanzaee & Sadeghian, 2014). This implies that in order to generate customer satisfaction, the company must create customer service experience by providing products and services that meet the needs and desires of customers (Pirzada, 2016). Thus, in this study, we service experience and customer-company identification (CCI) are chosen as the variables.

The aim of this study is to propose a conceptual model to explain the antecedents of customer satisfaction in the public sector of the service industry, namely the local enterprise water service (LEWS) located in West Kalimantan, Indonesia.

2. Literature Review

2.1 Conceptual Basis of Corporate Social Responsibility (CSR)

Although CSR includes performance and responsibility of a company towards the community or shareholders (Galbreath, 2010; Tian et al, 2011), its concept is very diverse (Saeidi et al., 2015; Okpamen, & Ogbeide, 2020). Many researchers adopted Carroll concept. Carroll states that companies assume social responsibilities that are representative of CSR including economic, legal, ethical and philanthropic goals. In addition to identifying the social responsibility of companies, Rudyanto and Pirzada (2020). Carroll also states that CSR can be used to systematically distinguish the responsibility of a company from merely making a profit. CSR is also part of the company’s promotional and marketing efforts (Chen et al., 2012). Several studies have found that CSR has a direct and significant impact on CCI (He & Li, 2011; Lee et al., 2012; Martinez, 2013; Arikan & Güner, 2013; Siu et al., 2014) and customer satisfaction (Carvalho et al., 2010; He & Li, 2011; Martinez, 2013; Tuskej et al., 2013; Lombart & Louis, 2014; Siu et al., 2014; Bolton & Mattila, 2015; Mazzoni, 2020).

In the present study, we focused on evaluating the CSR initiatives, such as charitable and philanthropic contributions of the company, by providing sponsorship support for community events, both religious and educational events that have been created by the LEWS company so far. The existence of CSR activities will improve customer perceptions towards the LEWS company, Husaini, Pirzada and Saiful (2020). Therefore, the company will be more interested in conducting CSR activities in the future. Accordingly, the following hypotheses are proposed:

H1: Corporate social responsibility (CSR) affects customer satisfaction

H2: Corporate social responsibility (CSR) affects customer-company identification (CCI).

2.2 Conceptual Basis of Service Experience (SE)

Service experience is a very interesting topic to study since it is different to service quality. Service quality is connected to the overall evaluation of services created by companies by comparing the expectations and the real company performance, whereas service experience is a subjective evaluation by customers after they obtain the services provided by the companies. Service experience is not only created to evaluate the customers’ physiological needs, it also identifies the customers’ psychological needs.

The LEWS company is urged to create better service experiences, which is suitable to the needs and desires of its customers, such as providing clean water with and quality water supply (quality, quantity and continuity)
and exhibiting good management service towards customers, Arniati, Puspita, Amin and Pirzada (2019). Several studies have found that service experience affects customer satisfaction (Ding et al., 2010; Luoh & Tsaur, 2011; Dong & Siu, 2013; Manhas & Tukamushaba, 2015) and CCI (Afifah & Asnan, 2015). However, there are still limited studies evaluating the impact of service experience on CCI. Therefore, in the present study, we used the expectancy disconfirmation theory (EDT) of customer satisfaction (Oliver, 1997) and customer identification (Battacharya & Sen, 2003) to evaluate the impact of service experience on CCI in the LEWS company. The CCI is defined as the process where customers respond and evaluate the service experience of a company (Martínez, 2013). Service experience has a great impact on customer evaluation and satisfaction towards the product and services they obtain from companies (Luoh & Tsaur, 2011). Furthermore, service experience affects customer-company identification, Pirzada, Mustapha and Alfan (2017). Several studies report that service experience is influenced by a company’s core products, service providers, service employees, other customers, physical environment and service performance (Chang & Horng, 2010; Ding et al., 2010; Brocato et al., 2010; Greenweel et al., 2012; Afifah et al., 2015). Therefore, a better understanding of service experience in the public sector is very important to create a better service experience for customers in the future. Accordingly, the following hypotheses are proposed

H3: Services experience affects customer-company identification.

H4: Services experience affects customer satisfaction

2.3. Conceptual Basis of Customer-Company Identification (CCI)

Customer identification towards a company is a concept developed based on the theory of social identification (Brewer, 1991) and employee identification (Bergami & Bagozzi, 2000; Dutton et al., 1994), which is further developed into the concept of customer identification towards a company, known as customer-company identification (CCI) (Bhattacharya & Sen, 2003). Several studies have been carried out in order to evaluate the effect of CCI on customer satisfaction (Hildebrand et al., 2010; Yuan, 2011; Arikan & Güner, 2013; Kang et al., 2015; Sommerfeld & Paulssen, 2015).

CCI is a cognitive state of self, categorization, connection and closeness of consumers to companies, which is carried by the subjective process of comparison between company identity and consumers identity themselves (Martínez, 2013). In other words, cognitive, connection and closeness imply a perception between organization and personal identity, in which the existence of shared values plays an important role. The CCI comes from the psychological condition of consumers that makes them become more concerned towards companies that positively stimulate customer loyalty to companies, Suryani and Pirzada (2018). This is because CCI is a psychological substrate allowing a deep and committed relationship between an organization and its customers (Bhattacharya & Sen, 2003). Thus, customers have a tendency to identify with companies and there are always consequences from the identification activities created.

Several studies have found that CCI influences customer satisfaction (Cedric & Hung, 2011; Arikan & Güner, 2013; Kang et al., 2015; Sommerfeld & Paulssen, 2015, Afifah & Asnan, 2015; Afifah et al., 2015). Accordingly, the following hypothesis is proposed:

H5: customer-company identification influences customer satisfaction.
2.1. Conceptual Framework

![Conceptual Framework](image)

Figure 1. Conceptual Framework

3. Research Methodology

This study is an explanatory research (see Figure 1). Data was collected using the purposive sampling method from 250 customers in the LEWS company, located in West Kalimantan, Indonesia. The analytical tool used is a partial least square (PLS). The CSR variables were determined using indicators adopted from previous studies (Vlachos et al., 2010; Choi & Suna, 2013; Hanzaee & Sadeghian, 2014). CSR variables include philanthropic activities in the form of sponsorship for community and religious events, social activities carried out by a company, as well as company ethics. In this case, the LEWS company guarantees that the drinking water distributed to its customers meets the requirements of clean water with high quality standard. The service experience variables include service procedure implemented by the company, service employees, physical facilities, and experiences from other customers (Afifah et al., 2015).

For CCI, the variables include customer knowledge towards the company, customer care towards the company’s success, customer desires to be more proactive for the company’s interests, and customer engagement with the company (Bhattacharya & Sen, 2003; Afifah & Daud, 2017). For customer satisfaction, the variables include satisfaction with products or services, service quality, and benefits of the company’s water products (Hennig-Thurau et al., 2002).

4. Results

To evaluate the relationships between variables, the hypotheses in this study will be accepted if the value of $\alpha$ is smaller than 0.05. The results of the analysis are presented in Table 1 below.

<table>
<thead>
<tr>
<th>Causality relationships</th>
<th>Path coefficient</th>
<th>t- statistics</th>
<th>p-value</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSR $\rightarrow$ Customer satisfaction</td>
<td>0.570</td>
<td>1.568</td>
<td>0.112</td>
<td>Non significance</td>
</tr>
<tr>
<td>CSR $\rightarrow$ CCI</td>
<td>0.011</td>
<td>2.562</td>
<td>0.008</td>
<td>Significance</td>
</tr>
<tr>
<td>SE $\rightarrow$ CCI</td>
<td>0.000</td>
<td>5.272</td>
<td>0.000</td>
<td>Significance</td>
</tr>
<tr>
<td>SE $\rightarrow$ Customer satisfaction</td>
<td>0.011</td>
<td>4.549</td>
<td>0.000</td>
<td>Significance</td>
</tr>
<tr>
<td>CCI $\rightarrow$ Customer satisfaction</td>
<td>0.038</td>
<td>2.076</td>
<td>0.001</td>
<td>Significance</td>
</tr>
</tbody>
</table>

Based on the results of the hypotheses test, it can be concluded that H1 is rejected indicating that CSR has no impact on customer satisfaction, depicted by the p-value of 0.112. In contrast, H2 is found to be accepted indicating that CSR activities influence CCI, with p-value of 0.008. Further, H3 is accepted as the p-value is found to be 0.000, indicating that service experience variables affect customer satisfaction. In respect of H4, service experience is seen to have a significant impact on customer satisfaction, depicted by the p-value of 0.000. Similarly, the results of H5 test showed that CCI influences customer satisfaction, with a p-value of 0.001.
5. Discussion

The purpose of this study is to propose a conceptual model to identify the antecedents of customer satisfaction in the Indonesian public sector of the services industry, known as LEWS. The results of this study indicate that customer satisfaction in the LEWS company is influenced by service experience variables and CCI. However, CSR variables do not affect customer satisfaction, but they seem to have a significant impact on CCI.

In this study, CSR variables do not affect customer satisfaction indicating that CSR activities created by the LEWS company seem to have no significant impact on customer satisfaction, which is in contrast with previous findings (Carvalho et al., 2010; Martínez, 2013). In this case, CSR does not influence customer satisfaction as consumers basically buy products or services in order to meet their needs and desires. Beckman et al. (2001) identified that consumers buy products or services because of personal reasons, not social community reasons. Therefore, the traditional criteria such as price and quality remain important considerations for customers (Beckmann et al., 2001).

In this study, CSR activities carried out by the company affect CCI, which is consistent with previous findings (Martínez, 2013; Sen et al., 2006). This is because CSR activities can increase customer self-esteem to express a better social representation (Aquino & Reed, 2002). Thus, customer perception on CSR activities can affect CCI. The impact of service experience on CCI indicates that there is a relationship between service experience and CCI. Oliver (1997) in the basic concept of expectation theory disconfirmation of customer satisfaction, states that customers are pleased and satisfied if the actual performance of a company exceeds or is equal to their expectations. Thus, service experience is a subjective evaluation from customers after they obtain services provided by the company. In this study, a strong relationship between service organizations and customers is important, because when customers are not satisfied, this may lead to a loss of business (Pirzada et al. 2016). This is because service experience is one of the most important and critical factors affecting consumer evaluation towards service performance (Otto et al., 2000). Grace & O’Cass (2004) conclude that experience is a conceptualization needed to understand the service brand image of a company since it represents the customer’s perspective on services and symbolic meanings created during service consumption. Furthermore, He & Li (2011) state that consumer identification with companies in the services sector is focused on customer’s perception towards company services. Thus, service experience received by customers has a positive effect on CCI, which is consistent with previous findings (Luoh & Tsur, 2011; Otto et al., 2000). Furthermore, the current findings show that the CCI variables seem to have a significant impact on customer satisfaction, supporting to the results reported by Martínez (2013).

6. Conclusion

Customer satisfaction in the LEWS company is influenced by service experience and CCI. Although CSR activities have no impact on customer satisfaction, they seem to have a significant impact on CCI. This is because CSR activities created by the company can affect the customer’s behaviour towards the company. It can be concluded that service experiences and CCI have a significant impact on customer satisfaction. This is because the LEWS is a monopoly company. Therefore, customers do not have many options to access clean water. In this study, CSR activities do not seem to be the most dominant consideration for customers, but customers prioritize the service experience provided by the LEWS company.

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THE IMPACT OF QUALITY MANAGEMENT PRACTICE IMPLEMENTATION IN AN ORGANIZATION ON THE PSYCHO-EMOTIONAL WELL-BEING OF EMPLOYEES

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Abstract. This article presents the challenges and opportunities the application of a quality management practice in healthcare organizations presents in view of the psycho-emotional well-being of employees when implementing quality management practices. The article addresses the academic challenge of the impact implementation of a quality management practice has on the emotional well-being of employees, which is formulated as the following conundrum: does an implemented quality management practice improve the emotional well-being of employees. Although studies show that a quality management practice put in place has a positive impact on the quality of work, the introduction of a quality management practice sometimes has a negative impact on the emotional well-being of employees. The objective - to assess the impact of a quality management practice implementation on the emotional well-being of employees – has been met. Analysis and synthesis methods were applied, and a quantitative survey of 285 workers in three healthcare organizations was conducted. It was established that although all employees of organizations surveyed experience stressful situations at work, they feel better in organizations where a quality management practice is in place than in those where the practice is not in place. Therefore, we can argue that the implementation of a quality management practice improves the emotional well-being of employees.

Keywords: quality management practice, emotional well-being, management, employees, healthcare organizations, sustainability.


JEL Classifications: I 10, P 46, I 19.

1. Introduction

Academic literature provides several practical examples demonstrating the impact quality management implementation has on activities of organizations, employee relations, economic indicators of organizations, etc. (Nasir, 2015; Laužikas, Miliūtė, 2020). A study conducted in 2014 found that a quality management practice in place not only increased the level of job satisfaction among employees, but also reduced the amount of work-related stress and psychological pressure (Liu, In 2014), another study found that the introduction of a quality management practice increased the overall level of job satisfaction among employees (Boikanyo, Heyns, 2019); a long-term study found that a strong focus on the recognition of merits of employees and an introduction of a quality practice increases the level of enthusiasm among employees, stimulates creativity and enhances their teamwork skills (Mosadeghrad, 2014). However, negative examples of quality management practice implementation affecting relationships between employees are also provided: conflicting views regarding the need for implementation of a quality management practice between managers and subordinates creates regular and more frequent conflicts (Poksinska, 2007), regular internal audits increase the level of stress experienced at work (Becker et al., 2010).
In the interim, when assessing the application of quality management practice implementation, a certain stagnation is observed in Lithuanian healthcare institutions. Over the last decade, the process of implementing quality management practice in Lithuanian healthcare institutions has slowed down, the process of accreditation in primary healthcare institutions is slow, despite additional annual funding allocated to these organizations from the budget of the Mandatory Health Insurance Fund, and the positive impact quality management practice implementation has on organizations depicted in academic literature.

The academic challenge is formulated as the following conundrum: does quality management practice implemented improve the emotional well-being of employees? To measure the impact of quality management practice implementation on the emotional well-being of staff, the objective was set: to assess the impact of quality management practice implementation on the psycho-emotional well-being of employees. Research objective: impact of quality management practice implementation on the psycho-emotional well-being of employees. Methods used: analysis of research literature sources, systematization, synthesis, generalization, and comparison were applied on the theoretical level. Quantitative research i.e. questionnaire survey and data processing methods were applied in the empirical research.

2. Literature Review

Caring for the well-being of health workers has a direct impact on their ability to provide the best possible health care solutions. When doctors and nurses experience negative emotions in a working environment or, for example, are experiencing “symptoms of burn-out syndrome”, there is a risk of disagreements arising when interacting with other healthcare professionals (Bodenheimer, Sinsky, 2014), which potentially has an effect on the probability of conflict. However, it should be noted that the ability to effectively manage one’s workload and time reduces the level of stress experienced at work (Benson et al., 2016), which significantly improves the quality of service.

The roles of employees working in the healthcare sector are notably some of the most stressful occupations. Several studies have shown that stress affects their quality of life. Conflicts with colleagues, lack of respect from the patients and discrimination are all factors that shape the poor self-esteem of healthcare workers (Sarafis et al., 2016, Zahaj et al., 2016). A study conducted in Norway found that factors that influence higher job satisfaction include autonomy, low monotony levels, and low-stress levels in the working environment (Andersen et al., 2016). Some authors claim certain specific job satisfaction in certain industries and analysis of specific business sectors like Kowal & Roztocki (2015) emphasizing the IT sector. However, a perspective where each factors influencing the job environment are identified and highlighted. Such analysis was performed by Hitka et al. (2019). Employee motivation specifics were analyzed from two perspectives: regional and age-related, and results lead to the conclusion that not just industry but culture, language, generation theory should be considered. The relationship of positive emotions and protection-motivated behaviors presented by Zhen et al., (2020), focuses on the mediating role and the information technologies use and security issues. In relation to the decisions and motivation of employees, sometimes virtual teams and distant work can be considered. Studies processed aiming to analyze the specificity of virtual teams presents factors, which can be treated as most significant in distant work: trust, information sharing, Information and communication technologies, and language (Davidaviciene & Al Majzoub 2020, Presbiterio, 2019, Zuofa & Ochieng, 2017). However, job satisfaction can be caused by many various factors, and the sustainability of decisions and leadership importance in organizational management targeting on job satisfaction is undeniable. Such research performed in Syria (Delati et al., 2017) emphasized main aspects in higher education institutions, and further, it leads to the idea that quality assurance importance should not be missed. An equally significant aspect of medical work satisfaction is a sense of adequate proficiency (Kim et al., 2015). J. Vveinhardt (2010) who analyzed mob mentality manifestations in different organizations found that conflictual work relationships in the healthcare sector are prominent at organization level. A general tendency that mob mentality in discriminatory co-worker relationships is more prominent in service-providing organizations that have frequent contact with external individuals is introduced. Therefore, this confirms our view that creating safe working conditions for health workers is crucial as displays of discontent and anger from patients are common, and adversely affect the psycho-emotional
well-being of healthcare workers. The literature also notes that promoting and investing in the development of workers’ qualifications, and acknowledging and publicizing their achievements (Adeniji et al., 2019), also have an impact on the work satisfaction of healthcare professionals.

Research carried out supports the claim that work-related stress has a negative impact on the organization, mental well-being, continuity of work and commitment to the organization. Expertise and workload assessment are both reliable indicators of the level of stress at work. Considering the latter, it is essential for organizations to develop response strategies to these and other indicators (career development, transparency, leadership model shaping, employee involvement in decision-making), thus avoiding work-related setbacks linked to output and loyalty to the organization, (Sariwulan et al., 2019).

Causes of work-related stress in the healthcare sector are complex, interrelated, and numerous. These causes relate not only to financial resources, and “pressure” to provide quality health care services (Hall et al., 2016, Cimiotti, etc., 2012), but also organisational factors such as work planning, workload, responsibility assignment, execution of an organization’s objectives through quality practice(s) implementation or accreditation processes.

The mismanagement of factors affecting the psychological well-being of staff will undoubtedly further hinder the introduction of innovations such as implementation of quality practices in healthcare organizations. Morally exhausted staff will focus more on resistance than on the organization which aims to implement a quality management practice.

Undoubtedly, various factors affecting the working environment have an impact on job satisfaction, which is the foundation of innovation in organizations. It has been found that factors affecting the working environment directly correlate with various dimensions of job satisfaction (social environment, clarity of roles, quantitative requirements). Arguably, the lack of job security i.e. a strong possibility of dismissal or staff feeling uncertain about the future is also associated with lower levels of job satisfaction. Forthwith, it is important to emphasize that clarity of roles at work, social dialogue and support all increase job satisfaction (Suifan T., 2019), simultaneously reducing the obstacles to innovation in healthcare institutions.

Patient safety policy and its organisation have long been and still is the subject of political, public, and clinicians’ discussions. Although huge progress has been made in this field over the years, there are still many challenges that compel health organizations to improve and look for new solutions (Wang et al., 2014, Dixon-Woods, etc., 2013, Shekelle, etc., 2011). Because of the complexity of the healthcare system, in an attempt to warrant the provision of safe health care services researchers of many areas endeavor to combine practice with theory. One of the areas that has been given a high degree of attention is the working environment of employees of healthcare organizations, which includes risk factors associated with psychological, physical and social environment of the workers (Adriaenssens et al., 2015, Boudrias et al., 2012, Chiang, Chang, 2012). As Yerdavletova, F., Mukhambetov, T. (2015) observes, according to his research, in most cases healthcare organizations have only a functional understanding of quality management without monitoring and getting constant feedback from patients, and as a result the quality of patient care is still below expectations, which in turn puts healthcare professionals under stress again.

In the United Kingdom, a survey (NHS, 2011) highlighted the health and well-being of healthcare staff in the working environment and stressed that to protect the psycho–emotional wellbeing of workers from adverse effects, measures must be taken on all healthcare levels. The study identifies the need to get all staff (assessing their needs) and all organizations involved in general developments, and it is crucial to focus on five systemic factors: understanding and assessing staff needs, getting staff of all levels involved in the governance of the organization, strengthening leadership capacity, promoting staff health and improving management (senior management).

When assessing the potential for systemic change in healthcare organizations, it must be considered that for
any initiatives to be successful, organizational factors in healthcare institutions must be considered. Traditional models of change are based on the principle that a gradual step-by-step approach to transition to a structured set of rules is effective which suggests that adverse effects of the implementation of change are influenced by directly interrelated causes. Therefore, in the process of implementing planned change to improve the well-being of workers in healthcare organizations, this may lead to unforeseen complications, and this may prove to be challenging when applying traditional analysis or solutions. Nevertheless, these initiatives designed to improve the well-being of health workers are generally used in isolated parts of the organization, such as separate units, disciplines or professions, and it is here that differences between strategies, measures and interventions becomes apparent. Notably, to successfully apply a strategy, a healthcare organization must display a more dynamic approach which focuses on the system as a whole and involves all levels of the healthcare system within the organization. It is also noted that staff play an important role in the development and/or transformation of the system, and that key performance indicators are recommended to be used to monitor this (Rewiev, 2009).

When looking at system reform and/or monitoring indicators, it is essential to consider the application of standards governing the psycho-emotional settings for staff within organizations as well as the prominence of fundamental standards. It has been shown that the application of management standards’ methods is an effective work-related stress management strategy, which suggests that risks resulting from a lack of certain aspects within a working environment can be systematically addressed by combining well-established risk management methodologies tailored for the psychosocial working environment with modern human resources management methods (MacKay et al. 2004). To defuse anxiety and avoid resistance to change, employee participation should incorporate accumulation of personal resources (through appropriate training and development). Some consider that evidence of the effectiveness of organizational interventions is problematic (Reynolds, 2000).

Various tools can be used to manage staff resistance to innovation and the introduction of quality standards, including needs assessment, motivational systems, leadership style and/or methods, risk forecasting and management, etc.

In Lithuania, all organizations, regardless of the form of ownership or activities, must identify psychosocial occupational risk factors. However, as obligations deriving from legislative provisions such as the former are not declaratory, the persons responsible have a great deal of room for interpretation. Since 2005, methodological guidelines for the study of Psychosocial occupational risk factors have been incorporated and are the basis of enquiries into working conditions, job prerequisites, working arrangements, organisation of work, content of work, employee interrelations and/or employee relations with the employer and/or third parties (TAR, I. k. 105-3897). Following an assessment of psychosocial occupational risk factors, further action to be put into effect by organizations is presented in the general provisions for the Occupational risk assessment implemented in 2012. Considering the level of risk identified, a decision based on the tolerability of risk is made. In the event of unacceptable risk, immediate action is taken to address or mitigate the risk. In the event of tolerable risk, measures to eliminate or mitigate risks are mapped out and the effectiveness and adequacy of these measures is determined; a proposal for risk elimination or mitigation measures is prepared, preventive measures are implemented. Following implementation of preventive measures to address or mitigate a specific risk, re-assessment of the risk commences, the need for additional measures to address or mitigate the risk is determined, the risk is continuously monitored (TAR, i.e. 2017-16548).

One of the other possible measures to be taken is the implementation of a relevant quality standard or execution of activities in accordance with the provisions of this standard. Organizations that focus on the safety, health and well-being of staff may voluntarily implement quality management practices that either partially or completely cover measures of employee health and safety policies implementation. In recent years, the focus on occupational health and safety quality systems has increased and is reinforced by quality management practice standards developed by the International Organization for Standardisation (ISO), which include, in part or in full, occupational health and safety policies of organizations (Çalış, Büyükakıncı, 2019).
Organizations that implement quality standards have the option to choose from a large number of quality standards: ISO (standards – ISO 45001/2018, ISO/AWI 45002, ISO/AWI 45003, ISO 9000, ISO 14001, ISO 3100 – generally for all types of organizations), European Union regulations (some regulations for all types of organizations (2012/18/EU/2012, 89/391/EEC/1996), some for organizations operating in specific industries, for example, the chemical industry (82/501/EEC/1982), British standards (for all types of organizations, cover environmental requirements, occupational health and safety — BS 5750/1979, BS 7750/1994, BS 8800/2004), OHSA (USA, part 1910, standard 29 CFR) standards.

Various indicators are used to assess the quality of services provided. These indicators may be related to both the service provided and the customer and employee: satisfaction with the service received, positivity of servers, attentiveness to the recipient of the service, the fastest possible provision of service, queue management, etc. Satisfaction with service received is seen as an important indicator in assessing the level of competitiveness of an organization. Concerning quality of services, it is also important to note that this perception is shaped by expectations before services are received and the factual assessment of services received (Tannady et al., 2018).

The introduction of quality standards allows for certain areas of activity which include measuring and improving service quality indicators, e.g. level of satisfaction with the service received, non-compliant product analysis, etc. However, these standards do not pay enough attention to factors that affect the emotional state of the working population, and, arguably, to quality assessment indicators.

For this reason, risk management becomes an important aspect of the introduction of quality standards, where a strong focus is on preventing risk by either eliminating or substantially reducing the chances of risks developing in the first place (more frequent and diligent planning, regular inspection and auditing) (Cooper et al., 2005; Strelnik, 2016).

When looking at the complexity of the impact quality management practice implementation in organizations has on the emotional well-being of employees, it is important to emphasize that implementation of a quality management practice is a crucial part of the process of achieving a higher quality of service, it covers all activities of the organization and requires timely action to reduce risks associated with it.

3. Survey methodology and sampling

The survey was carried out in 2019 Q4 in three healthcare establishments with the same form of ownership and subordination – non-profit-making public bodies that meet the needs of the public. The institutions studied provide specialized healthcare services, two of which are inpatient. The total number of respondents in the survey was 285.

The instrument used for the survey was the Scale of stance on quality management practice and the scale of psycho-emotional working environment. It contained 39 statements about employees’ stance on quality management practice, working environment, response to stressors affecting levels of stress at work, relationship with the working environment and four demographic questions. During the study, 364 questionnaires were distributed (78.2% return rate). Survey respondents consisted of 52.3% nursing staff, 12.3% doctors and 22.5% other staff. The majority (44.6%) were over 50 years of age. 18.9% of employees who had taken the survey indicated they live on their own, and 70.5% claimed they live with another person. In terms of seniority, 18.2% of respondents had up to 5 years of relevant work experience, 21.1% between 6 and 15 years, and 45.3% - more than 15 years of service.

4. Survey results

The survey assessed the viewpoint on the functioning and impact of Quality Management Practice (QMP) of employees of organizations where a QMP is in place, and it was estimated that 78.7% believe their work and QMP are closely related, 56.8% identify that QMP facilitates their workload, 32.2% of workers do not think
that implementation of QMP increases stress levels at work, 71.9% believe that the implemented QMP significantly contributes to the positive image of the organization and 72.6% would not want the organization to abandon the introduction of QMP. The analysis of results suggests that nurses are more likely than doctors to see the positive effects of QMP implementation in the organisation, as 67.0% of nurses and only 25.9% of doctors specified that QMP facilitates their workload (p<0.05).

![Image](Figure 1. Employee outlook on the impact of quality management practice implementation.)

During the assessment of respondents’ right to take part in work organisation processes, it was found that 51.9% of workers’ views on work related issues are considered, and 64.5% of respondents feel self-sufficient in their jobs. The analysis of the results of the study suggests that employees who operate in accordance with strict standards do not have room for interpretation, their roles are clearly defined and controlled, and the level of autonomy in the organization is lower as 58.9% of respondents consider their work as independent in organizations where QMP has been implemented compared to 70.5% of respondents in organizations where QMP has not been implemented (p<0.05).

Certain physical factors affecting the psycho-emotional well-being of the working population were reported by employees of all organizations surveyed. Obligatory rush to complete work, challenging periods of time, physical stress, etc. are often mentioned in academic studies analysing psycho-emotional factors that affect workers (Katic et al., 2019, Diebig, 2016). An analysis of survey results found that 68.5% of respondents must constantly rush at work, 84.2% of respondents experience challenging periods, and 60.7% of respondents believe their jobs are physically stressful.

81.4% of study participants feel productive, 86.9% of respondents consider their jobs relevant and meaningful, 85.2% of the survey participants reported that their work responsibilities are well-defined, 64.5% said they could assess the quality of their work themselves, 44.9% alleged they could accidentally damage valuable equipment or work product while at work, 16.5% of respondents consider their jobs monotonous, 66.7% think their jobs are tense, 23.5% of respondents were satisfied with their renumeration, 66.0% of survey participants were satisfied with their jobs and 53.4% of respondents felt stressed at work in the last six months.

The assessment of the prevalence of psychosocial stressors depending on whether a quality management practice is in place leads to the assumption that employees feel better in healthcare organizations with an implemented quality management standard. This can be explained by clearer order, subordination, responsibility, knowledge of where and when you can seek help, etc. As a result, organizations that do not have a QMP in place are more likely to be stressful than organizations with an implemented QMP.
Table 1. Comparison of the prevalence of psychosocial stressors depending on implementation of a quality management practice in an organization

<table>
<thead>
<tr>
<th>Statements</th>
<th>Quality management practice implemented in the organization (%)</th>
<th>Quality management practice not implemented in the organization (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Must rush to complete work in time</td>
<td>24,7</td>
<td>48,2</td>
</tr>
<tr>
<td>Consider their job tense</td>
<td>59,6</td>
<td>74,1</td>
</tr>
<tr>
<td>Consider their job physically stressful</td>
<td>46,6</td>
<td>75,6</td>
</tr>
<tr>
<td>Question the relevance and meaningfulness of their job</td>
<td>14,3</td>
<td>7,9</td>
</tr>
<tr>
<td>Are dissatisfied with the remuneration they receive for the work they do</td>
<td>63,0</td>
<td>44,6</td>
</tr>
<tr>
<td>Have doubts about responsibility at work</td>
<td>6,9</td>
<td>20,1</td>
</tr>
<tr>
<td>May accidentally damage valuable equipment or work product at work</td>
<td>37,6</td>
<td>52,5</td>
</tr>
<tr>
<td>Are completely satisfied with their jobs</td>
<td>14,4</td>
<td>33,1</td>
</tr>
<tr>
<td>Have experienced stress at work in the last 6 months</td>
<td>45,1</td>
<td>61,9</td>
</tr>
</tbody>
</table>

NB: In all cases, materiality level <0.05

An analysis of respondents’ views on their subjective health found that 28.1% considered their health better than that of their peers, 48.8% had no opinion on the matter, and 15.4% considered their health worse than that of their peers. A comparative analysis between organizations where the QMP was implemented and not implemented found that 19.9% of employees working in an institution where a QMP was in place and 10.9% of employees working in an institution where a QMP was not in place claimed they do not believe that their health is worse than that of their peers (p<0.05).

When assessing respondents’ satisfaction with their current lifestyle it was found that only one in ten respondents were fully satisfied, i.e. 10.9% of respondents who took part in the survey (8.1% were dissatisfied). A comparison between lifestyle satisfaction levels among employees working in organizations where QMP was implemented and not implemented found that 5.5% of employees working in an organization where QMP was in place and 16.5% of employees working in an organization where QMP was not in place (p<0.05) were fully satisfied with their current lifestyle.

An analysis of recent abnormal fatigue experienced by respondents found that 30.9% of subjects surveyed felt abnormally fatigued recently, and 37.9% of all subjects of the survey did not. When comparing the occurrence of abnormal fatigue among organizations, it was found that 34.1% of employees working in an organization where a QMP was in place and 41.7% of employees working in an organisation where a QMP was not in place did not feel abnormally fatigued. (p<0.05). During the survey, 27.4% of respondents ticked off deterioration of health because of their job, and just over a third (30.6%) reported no deterioration of health. 41.7% of the latter group of employees did not feel deterioration of health because of their job were employed by an organization where a QMP was in place, and 35.2% by an organization where QMP was not in place (p<0.05).

An assessment of all survey participants’ notion of managerial support when it was most needed found that 71.4% claim they received it. 5.5% of employees working for an organization where a QMP was implemented and 15.2% of employees working for an organization where a QMP was not implemented (p<0.05) believed they did not receive managerial help and support when it was most needed. 79.6% of people surveyed gave their relationship with co-workers a good evaluation. 63.7% of employees who gave relationships with co-workers a good evaluation work in an organization where QMP is in place and 48.2% work in an organisation where QMP is not in place (p<0.05). During the survey, 70.6% of respondents reported that friends and family are supportive of their job. 19.2% of employees working for an organization with a QMP in place and 36.7% of employees working for an organization where a QMP is not in place claimed that their friends and family are entirely appreciative of the work they do (p<0.05). Of the 76.1% of respondents who rated their relationship with their manager as good, 81.2% of employees working for an organization where QMP is in place and 69.7% of employees working for an organization where QMP is not in place indicated that they have a good relationship with their manager (p<0.05).
The survey found that only three out of ten employees (27.8%) consider their workplace ergonomic. A comparison of approach to workplace ergonomics between organizations with implemented and not implemented QMP found that 22.6% of employees working in an organization where QMP was in place and 33.1% of employees working in an organization where QMP was not in place believed that their workplace was ergonomic (p<0.05). 37.2% of those in employment feel safe at work work, of whom 48.0% work in an organization where QMP is in place and 25.9% work in an organization where QMP is not in place (p<0.05).

When assessing the views respondents who took part in the survey have on the focus on improving relationships between employees and their managers, 41.4% consider it sufficient for this area. A comparison of respondents’ views depending on whether QMP is implemented or not in the organization they work for found that 34.2% of employees working in an organization where QMP is in place and 48.9% of employees working in an organization where QMP is not in place believe that the focus on improving employee-management relations is insufficient (p<0.05).

5. Discussion of study results

Caring for the well-being of health workers has a direct impact on their ability to comprehensively provide quality healthcare. It is therefore clear that this is not only a concern for the heads of organizations but must also be systemically approached by the government. Studies have shown that an implemented quality management practice increases the level of employee job satisfaction, reduces work-related stress and psychological pressure, increases the overall level of job satisfaction among employees, increases the enthusiasm of employees, promotes creativity and enhances teamwork skills. The emotional well-being of people working in healthcare organizations is influenced by a number of factors that are interlinked and their proper management can, through quality standards, positively affect not only the well-being of workers, but also improve the final product – the services provided by the healthcare organization – by enhancing quality, increasing the level of safety and ensuring accessibility.

The findings of the study were broadly in line with the results of research carried out by other foreign authors, that is, that employees of organizations where a quality management practice has not been implemented are more likely to experience stress and a poorer psycho-emotional state than employees of organizations with quality management practice in place. Having analyzed the results of the study, we found that employees who do not follow the principles of a quality management practice at work measure their work as less independent, and are more likely to accidentally damage valuable equipment or work products, but are more likely to be satisfied with the work they do and their current lifestyles, and feel abnormally fatigued less often.

The analysis of the results of the survey found that more than half (64.5%) of respondents feel self – sufficient at work and their views on work related issues of 51.9% is taken into consideration. Benson and co-authors (2016) point out that the ability to control your workload and manage time reduces the level of work-related stress. The evaluation of the results of these studies in organizations surveyed suggests that giving respondents autonomy and taking their views on work related issues into account contributes to the reduction of work-related stress. The study found that certain factors impacting the psycho-emotional well-being of the working population were consistently experienced by employees of all surveyed organizations:68.5% of respondents must constantly rush to complete work in time, 84.2% of respondents experience challenging periods of time, and 60.7% of respondents consider their jobs to be physically stressful. These results are complementary to studies conducted by authors such as Katic and Others (2019) and Diebig (2016) who indicate that forced rush of functions, challenging periods, physical stress, etc. are classified as factors that impair psycho-emotional well-being. Summing up the results of the study, parallel to studies in the field of psycho-emotional well-being of workers conducted by other authors, we can assume that a quality management practice in place improves the emotional well-being of employees.
6. Conclusions

Caring for the well-being of health workers has a direct impact on their ability to comprehensively provide quality healthcare. It is therefore clear that this is not only a concern for the heads of organizations but must also be systematically approached by the government.

Studies have shown that an implemented quality management practice increases the level of employee job satisfaction, reduces work-related stress and psychological pressure, increases the overall level of job satisfaction among employees, increases enthusiasm, promotes creativity and enhances teamwork skills. The emotional well-being of people working in healthcare organizations is influenced by a number of factors that are interlinked and their proper management can, through quality standards, positively affect not only the well-being of the workers, but also improve the final product – the services provided by the healthcare organization – by enhancing quality, increasing the level of safety and ensuring accessibility.

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[Open Access]
OWNERSHIP STRATEGY AND BANK PERFORMANCE – EVIDENCE FROM VIETNAM

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Abstract. This paper examines the impact of ownership strategy on bank performance in Vietnam from 2000 to 2017. The results show that the ownership structure has a significant impact on bank performance, namely that state-owned banks are more efficient than private ones in terms of technical efficiency, but not in terms of scale efficiency. Furthermore, state-owned banks do not appear to be excellent at investment activities while provisions for credit losses are substantially high, which can negatively affect their performance. Listed banks may be more encouraged to implement activities which can increase bank performance, to make present stakeholders satisfied as well as to attract new ones. The larger the scale, the more efficient the listed banks will be. However, they will not achieve good results in terms of technical efficiency.

Keywords: State ownership; ownership structure; private bank; banking system; bank performance, bank efficiency; Vietnam


JEL Classifications: M1, M10, M21

1. Introduction

Developing markets generally face underdeveloped and illiquid stock markets, economic risks, poor regulatory control and investor protection, frequent interventions and the dominance of centralized share ownership and ownership control (Ahuwan, 2002; Rabelo & Vasconcelos, 2002; Tsamenyi, Enninful-Adu, & Onumah, 2007; Siddique, Masood, Javaria, & Huy, 2020). The owner factor (foreigner, family, organization or state) is the deciding factor for a healthy banking system. In particular, changes in ownership structures without the support and supervision of any department can lead to banking crises (Boubakri, Cosset, Fischer, & Guedhami, 2005). The three main types of banking institutions in emerging markets are state-owned, private and foreign. At the same time, the strengths and weaknesses of the type of organization and bank structure are still poorly understood. Differences are important in storage and analysis because each type of bank is different in terms of incentive structure, organization and regulations. For example, the state-owned bank has few cash flow incentives and ethical problems when it is the owner and manager at the same time. Private Banks have higher cash flow incentives and make a clear distinction between the regulatory authority and the owner. On the other hand, foreign banks are relatively similar to domestic banks in terms of cash flow preferences and different organizational structures. Foreign banks often have a multi-level structure, with senior managers from other countries. Many studies have argued that the relationship between ownership concentration and business activity is complex. Many empirical studies have yielded mixed results (Demsetz, 1983; Demsetz & Lehn, 1985; Shleifer & Vishny, 1986). Because these results are contradictory and ambiguous, it suggests that differences in political, economic and institutional conditions are likely to change the aforementioned relationship.
Hence, there is a need for effective governance in the banking sector in developing countries. Many studies have shown that the failure of corporate governance is one of the main causes of the Asian financial crisis (Barca & Becht, 2002) and the global crisis in the US and around the world, which emphasizes the strong importance of corporate management. Zulkafli and Samad (2007) cited many studies emphasizing the distinguishing characteristics of the banking sector and the importance of corporate governance for banks. The banking sector plays an important role in economic growth and development (Khan & Senhadji, 2000; Levine, 1997) and, therefore, requires strict regulations. Besides, M. M. Cornett, Guo, Khaksari, and Tehranian (2010) investigated the relationship between the different mechanisms of corporate governance and bank performance in a crisis with a sample of about 300 publicly traded banks in the United States. In contrast to Erkens, Hung, and Matos (2012) they find better corporate governance practices: the more independent board, the higher sensitivity to pay for performance, and an increase in internal ownership will have a positive correlation with the crisis of the banks.

In a nutshell, the influence of the ownership structure on the performance of companies has been extensively studied. Morck, Shleifer, and Vishny (1988) and McConnell and Servaes (1990) are concerned with the valuation of companies with different ownership models, such as management ownership ratios. Short and Keasey (1999) examine the performance of companies in the UK based on managerial ownership. The impact of foreign ownership on business performance is significant in the studies of Aggarwal and Kyaw (2010) and Lee and Kwok (1988) especially in terms of the capital structure policy. Meinster and Elyasiani (1988) examine the differences in performance of US banks with foreign ownership, minority ownership and holding company ownership. They find that the performance of foreign banks is not different from that of banks holding company, while minority-owned banks have poor profitability. Similar studies in continental banks include Maudos, Pastor, Perez, and Quesada (2002), Altunbas, Evans, and Molyneux (2001), Casu and Girardone (2002).

The impact of the ownership structure on banking performance needs to be studied in a specific market because research in one country can not be transferred to another. Moreover, commercial banks are one of the important factors that promote the economy. For that reason, we conduct this study to investigate the influence of state ownership on the performance of Vietnamese commercial banks in recent years. Besides, the Vietnam market is a unique, socialist-oriented market economy, reforming to integrate into the contemporary global market economy. So, researches need to be conducted in the Vietnam market to provide policy measures and implications for governance with the latest empirical evidence.

2. Literature review

Privatization is part of a broader liberalization process, which includes the liberalization of interest rates, market access and the extension of credit quotas. At the same time, a completely free exchange rate market will open up opportunities for profit from price differences for licensed banks. Gilbert and Wilson (1998) surveyed the liberalization of banking operations of private banks in Korea in 1980 and 1994, the results showed that this contributed to an improvement in bank performance. Altunbas et al. (2001) recognize the improvement in marginal efficiency and the increase in equity among privatized banks in OECD1 countries. For instance, in Germany, although there was almost no convincing evidence that private banks were more efficient than state-owned banks, private banks were more cost-effective and more profitable. Derived from agency theory and public choice theory, Clarke, Cull, and Shirley (2005) believe that private ownership is more effective than state ownership in creating management incentives to increase productivity and reduce production costs.

In a transnational study, La Porta, Lopez-de-Silanes, and Shleifer (2002) found that state-owned banks were less efficient than private banks. The authors explain that politicians use state-owned banks for their political purposes, which leads to a decline in economic development. Bonin, Hasan, and Wachtel (2005) also find that private banks are more efficient than state-owned banks. Yao, Jiang, Feng, and Willenbockel (2007) argue that higher state ownership leads to lower efficiency, fewer savings and loans, lower productivity and slower growth. Other studies conclude that the state ownership structure of the bank reduces financial development and increases the risk of banking crises (Caprio Jr & Peria, 2000).

1 On 14 December 1960, 20 countries originally signed the Convention on the Organisation for Economic Co-operation and Development. Since then, 17 countries have become members of the Organisation.
The state ownership structure can affect the performance of the business when the objectives of the government and the shareholders are not compatible, also known as agency problems. Shareholders often want to maximize profits, but the state has many other social purposes: to increase employment or to engage in politics, to prevent foreign investors from entering and to protect domestic property. Or the division between ownership and management will result in directors (agents) pursuing personal interests rather than trying to achieve the best interests for the owner. Shleifer and Vishny (1997), Capobianco and Christiansen (2011) argue that it is the difference between the objectives of the state and shareholders that hurt the company’s performance. Furthermore, it is believed that the agency’s high costs and poor governance may negatively affect the performance of the state ownership structure (Alchian & Demsetz, 1972; Shleifer, 1998). Then comes the problem of the “free rider.” State ownership, in theory, means that all citizens are co-owners, but in reality, they have no power to coordinate the governance of the state-owned banks, leaving governments as the only effective representative (Huibers, 2005). The third problem is the potential moral hazard if the state-owned banks implement soft budgetary restrictions. The state-owned banks act as financial representatives of the government and support state-owned enterprises (SOEs) for political reasons and not for economic reasons. Therefore, when the state-owned banks are faced with difficulties, they often rely on government assistance, so their management has no incentive to minimize costs or maximize profits. Finally, the theory of “quiet life” also helps to explain why the structure of state ownership is not so effective. Another common argument to explain why state-owned enterprises are often inefficient is that banks differ so much from typical non-financial institutions in their operating characteristics, business models, capital structure and regulatory environment. This requires different approaches to assess the performance of companies, such as some studies in the US (Barr, Killgo, Siems, & Zimmel, 2002; Mukherjee, Ray, & Miller, 2001).

If problems such as agency costs are resolved, the state-owned structure is considered a good way to improve business efficiency. Firth, Fung, and Rui (2008) found that government ownership makes it easier for companies to raise capital. In developing countries, the state-owned structure is more prominent and banks often dominate finances, but they play a relatively limited economic role. The government is said to be an organization that helps develop projects that, while low-income, bring many social benefits. Moreover, the state can help promote development and industrialization when private capital is weak. Therefore, the form of state ownership brings economic efficiency by striking a balance between economic and social indicators (Megginson, 2005). Also, the link with the government helps companies to get a goodwill attitude from the state and make administrative requirements more quickly.

Empirical evidence shows improvements in bank performance after privatization (Berger, Demirgüç-Kunt, Levine, & Haubrich, 2004; Cornett et al., 2010; Williams & Nguyen, 2005) assess the impact of the privatization of banks by 69 banks in Nigeria during the period 1990 - 2001 when other major changes in the financial system appeared. It concludes that privatization improves banking performance, but does not exceed the performance of other private banks in the Nigerian banking system.

The negative impact of the state-owned structure on banking performance was found on the banking sector in the Czech Republic from 1993 to 1998 and developing countries (Micco, Panizza, & Yanez, 2007), and industrialized countries in Eastern Europe (Fries & Taci, 2005). The results show that the minority-government-owned banks in Nigeria have poor performance (profits and loan portfolios). Berger, Hasan, and Zhou (2009) using a sample of 38 Chinese banks from 1994 to 2003, found that the state-owned bank of the “Big Four” was the least effective and at the same time had a high amount of bad debt. Lin and Zhang (2009) also came to similar conclusions.

Sensarma (2006) found that in India, domestic public and private banks are more effective than foreign banks. Fries and Taci (2005) in a study in 15 countries with transition economies in Eastern Europe (including Russia) found that private banks are more cost-effective than state-owned banks. In Argentina, Cull, D’Amato, Molinari, and Clarke (1999) find evidence that credit allocation is more efficient at private banks. Also, Omran (2007) studied a sample of 12 banks from Egypt between 1996 and 1999, when the property was transferred from the public to the private sector. After privatization, the banks’ profitability and liquidity ratios are significantly reduced, although other performance measures remain unchanged. However, the change in the activity
of private banks is better than that of state-owned banks. Therefore, private banks are more effective than state-owned banks. Mian (2003) study has taken a sample of 1,600 banks, including private banks, foreign banks and state-owned banks, from 100 emerging economies during 1992-1999. The study concludes that banks with foreign-owned components are the most efficient, state-owned banks are the least efficient, but the risk of insolvency is lower. Mian (2003) analysis also shows that state-owned banks are often larger and older than private banks and foreign banks, which in part underlines the point of view of setting up large banks of governments in developing countries with weak financial markets in order to boost the economy.

Research has expanded to emerging economies in the last ten years. Cornett et al. (2000) examined the differences in performance between private and state-owned banks in five selected countries in Asia: South Korea, Indonesia, Malaysia, the Philippines and Thailand from 1994 to 1997. The results of the analysis indicate that the performance of the state-owned bank was low, especially during the Asian financial crisis of 1997. Similarly, Karim (2003) research on the banking system in Malaysia also shows that state banks are less efficient than private banks. Isik and Hassan (2002) on Turkish banks and Indian banks have drawn similar conclusions. Semih Yildirim and Philippatos (2007), who researched transition countries, concluded that foreign banks while being highly cost-effective, did not earn as much profits as private domestic banks or state-owned banks.

Therefore, to exploit more advantages, the form of privatization of companies was born. This is seen as a solution to the problem of owners and agents by building a better management system. Private banks limit budgetary constraints, putting pressure on managers to improve operational efficiency to please existing shareholders and attract more potential investors. In the meantime, shareholders are expected to exercise control over management to secure their investment capital.

Together with the transformation of the economy in Vietnam, the contribution of state and foreign companies accounted for more than half of the gross domestic product in 2000, 2006 and 2012. As such, state ownership and foreign ownership play an important role in the economy of Vietnam. In Vietnam, there is very little research on the ownership and business value. Previously, no study has systematically studied the relationship between foreign ownership and performance in the Vietnamese context. Phung and Mishra (2016) conducted the first study to systematically examine the influence of foreign and state ownership on corporate values in the context of Vietnam. Using a generic approach (GMM). The empirical results show that state ownership has a convex relationship with corporate performance. The results showed that business performance has increased by more than 28.67% of the state ownership level. Moreover, foreign ownership has an inverted U-shaped relationship with the performance of the company, i.e. a decline in the profits of enterprises when they were originally state-owned, according to 21 companies listed on the Vietnam stock market.

In the past, Vietnam was a centrally planned economy. However, in 1986, important economic reforms (also called Doi Moi) took place and Vietnam adopted a market economy. Accordingly, the privatization of state-owned enterprises, also known as ‘equitization’ in Vietnam, was proposed in 1991 and implemented in 1992. The privatization process helped change the ownership of state-owned companies by selling part of the shares to local and foreign investors, to improve operational efficiency. This move implies that private and foreign ownership plays an important role in improving the economy of Vietnam. The privatization of thousands of small and medium-sized companies between 1990 and 2000 led to an increase in the number of companies.

It can be said that the studies on property and company values, or more specifically bank value, are still very rare in Vietnam. According to Phung and Mishra (2016), no research was conducted in Vietnam to systematically investigate the relationship between foreign ownership and the performance of companies, nor to analyze the impact of state ownership on the performance of listed companies. The study by (Dang-Thanh, 2012), with data from 1999-2010, suggested that the expansion of the scale negatively impacts bank performance. However, the study by Tran, Lin, and Nguyen (2016), with data from 2005 to 2011, concluded that the size of the bank has a positive impact on bank performance. Besides, state ownership negatively impacts the performance of banks, as well as the influence of the banking system on the economy. However, the study by Nguyen and Le (2017) concludes that state-owned commercial banks use resources more efficiently than private commercial banks.
Last but not least, Mateev (2019) find that the impact of regulatory measures on bank profitability does not depend on bank ownership type. We also investigate whether the impact of regulation and ownership is different between conventional and Islamic banks, and find that the interaction effect of bank regulations and different types of ownership on a banks' profitability is strongly significant only in the sample of Islamic banks. The analysis of bank performance before and after the recent global financial crisis reveals that bank regulations have no influence on cost efficiency of a conventional bank either before or after the crisis. Gupta et al. (2020) reveal that private sector banks are more profitable than the public sector banks. Additionally, the results of the study show that bank size, non-performing loan ratio and revenue diversification are the major determinants of the commercial banks performance in India. Furthermore, the results reveal that during the crisis period the impact of bank size, bank age, labour productivity and revenue diversification on the performance of the Indian banks is robust. The higher non-government stake leads to the enhanced performance of the commercial banks in India. The higher capital adequacy leads to the increase in the performance of the banks.

3. Research Methodology

3.1. Data sample

The data sample used in this study comes from 20 Vietnamese commercial banks with a long period of operation and accounts for some 80% market share in Vietnam banking system. The study period was from 2000 to 2017, extracted from annual reports of these commercial banks on Bankscope and.

3.2. Research model

The research model used in this study is based on the research of Boateng, Huang, and Kufuor (2015). The two additional dependent variables are CRS_TE and SCALE, based on the model used in the study by Eken and Kale (2010) to investigate many aspects of commercial bank performance in Vietnam.

Based on previous studies, the author used the panel random-effects model that included random effect (τt), and the error term εit to study the impact of the ownership structure on the performance of Vietnamese commercial banks. The model has been developed as follows:

\[ PERit = \alpha + \beta_1BDit + \beta_2SBit + \lambda_{Controlsit} + \tau t + \epsilon it \]  

Here, we use two dummy variables BDit and SBit, respectively, to Listing and State. And the meaning of β1 and β2 will be changed, details are explained in Table 1 - Variable notes.

3.2.1. Dependent variables

The dependent variable PERit in equation (1) indicates the bank performance indicators developed by a set of nine separate bank performance indicators, namely: loan lost reserve/gross loans (LLR), loan lost provision (LLP) / Net interest revenue, total capital ratio, equity / net debt, net interest margin (NIM), return on average assets, return on equity (ROE), net debt / total assets, current assets/deposits and short-term capital. Further, this study will have two additional dependent variables: CRS_TE - constant technical efficiency variable by scale, and SCALE – return to scale variable.

The CRS_TE and SCALE variables are calculated using the DEA function in STATA with three input variables and three output variables. Specifically, the input variables are deposit, interest expense and non-interest expense. The deposit is the amount that has been deposited in the bank. The interest expense corresponds to the interest accrued in the period of the financial statement. The non-interest expenses related to staff salaries, benefits and information technology, telecommunication services, taxes, marketing, depreciation of intangible assets, etc. The three output variables are total loan, interest revenue and non-interest revenue. In which, the loan loss in total loan are adjusted to compare the quality of the banks’ liabilities. Interest income is the income
that the bank generates from investments or loans. Non-interest revenue is the bank income that comes from deposit fees, transactions, NSF, monthly account service fees, test fees, etc.

DEA function:

\[
\text{Maximize } \frac{\sum_{r=1}^{k} u_{r} \cdot y_{r,k}}{\sum_{i=1}^{m} v_{i} \cdot x_{i,k}} ; \quad \text{Condition: } \frac{\sum_{r=1}^{k} u_{r} \cdot y_{r,k}}{\sum_{i=1}^{m} v_{i} \cdot x_{i,k}} \leq 1
\]

\[u_{r}, v_{i} > 0; \ r = 1, ..., s; \ i = 1, ..., m\]

3.2.2. The explanatory variables

Types of bank ownership include foreign banks, domestic private banks and state-owned banks. We measure bank ownership by creating dummy variables for the ownership type. Listing takes 1 for the listed commercial bank and 0 for unlisted banks. The state takes the value of 1 if it is a state-owned commercial bank, 0 if it is a private bank. A vector of macroeconomic variables and specific indicators is created, including log of GDP per capita (PCGDP), real annual GDP growth rate (GDP), inflation (CPI), unemployment rate (UEMP), bank size, banking diversity (BD), taxes and leverage.

3.2.3. Control variables

Macroeconomic factors

Previous studies have not fully controlled the effects of macroeconomic factors in the analysis of bank performance. However, the macroeconomic environment can affect banks through several channels (García-Herrero, Gavilá, & Santabárbara, 2009). For example, it is stated that credit risk is affected by economic growth, inflation and unemployment since these variables influence the debtor’s ability to repay debts (Festić, Kavkler, & Repina, 2011). In terms of GDP, Grigorian and Manole (2002) observed that bank performance is significantly related to GDP per capita. However, Fries and Taci (2005) found no correlation between cost-effectiveness and GDP per capita.

For inflation, Bourke (1989) and Boyd, Levine, and Smith (2001) point out that inflation, in general, is related to higher profits because the additional income from inflation tends to compensate for higher labor costs.

Previous studies have shown that state-owned banks can pursue social and political goals rather than the goal of maximizing shareholder returns (Nutt, 2000). One of the reasons for the poor performance of state-owned banks is the use of these banks to create more jobs and reduce social pressure on the government (Yao et al., 2007). However, after decades of banking reform, we hope that banks will no longer be used to reduce unemployment and other political objectives, even when unemployment rates show an upward trend in China’s research context. However, according to our research, there has not been any study on how unemployment affects the performance of Vietnamese banks as a component of macroeconomic factors. In general, previous studies have used one or two macroeconomic factors as control variables rather than fully controlling these variables. Therefore, this study will solve that problem and investigate the impact of macroeconomic factors on bank performance.

Characteristics of Banks

Previous studies have emphasized the effectiveness of the bank’s characteristics in its performance. Therefore, we control the size of the bank, the banking diversity and the capital structure. The size of a bank is an important determinant of its performance. There is an opinion that the bank size has a positive and significant impact on bank performance as large companies tend to benefit from the efficiency of the scale and are therefore more effective. Studies such as Zhou and Wong (2008), on the other hand, suggest that large banks often have lower margins and lower profits. So, we combine in this model the bank size, measured by the log of total asset, as a control variable. We also control bank diversity (BD), measured by the ratio of other operating income/average assets.
It is also suggested that highly leveraged banks that can be subdivided into several related companies will lead to cost advantages compared to specialized competitors (Elsas, Hackethal, & Holzhäuser, 2010). Several studies have found that diversification enables banks to use special resources to expand their competitive advantage from one market to another (Stein, 1997; Villalonga, 2004). Most previous studies support the positive relationship between leverage and banking advantages (Athanasoglou, Brissimis, & Delis, 2008; Hutchison & Cox, 2007; Pratomo & Ismail, 2006).

Table 1. Variable description

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description/Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variables</strong></td>
<td></td>
</tr>
<tr>
<td>Bank performance</td>
<td>CRS_TE</td>
</tr>
<tr>
<td></td>
<td>SCALE</td>
</tr>
<tr>
<td></td>
<td>NIM</td>
</tr>
<tr>
<td></td>
<td>ROE</td>
</tr>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
</tr>
<tr>
<td>Bank risk</td>
<td>LLP</td>
</tr>
<tr>
<td></td>
<td>LLR</td>
</tr>
<tr>
<td>Macroeconomics</td>
<td>GDPG</td>
</tr>
<tr>
<td></td>
<td>PCGDP</td>
</tr>
<tr>
<td></td>
<td>CPI</td>
</tr>
<tr>
<td></td>
<td>UEMP</td>
</tr>
<tr>
<td>Bank-specific</td>
<td>BD</td>
</tr>
<tr>
<td></td>
<td>ENL</td>
</tr>
<tr>
<td></td>
<td>LTA</td>
</tr>
<tr>
<td>Dummy variables</td>
<td>Listing</td>
</tr>
<tr>
<td></td>
<td>State</td>
</tr>
</tbody>
</table>

4. Research results and discussion

4.1. Descriptive statistics

Table 2 shows that the means of two typical bank performance variables such as NIM and ROE are at a high level, 2.97% and 12.29% respectively. Moreover, the bank’s scale efficiency (SCALE) and technical efficiency (CRS_TE) have positive values, although not high. These figures suggest that banks in our sample are performing effectively in terms of optimal inputs and outputs. Also, we observe that this group of banking performance variables has large differences between the highest and the lowest values, which means that the performance results of the banks in our study are quite erratic.

The group of variables representing bank risk (LLP, LLR) also appears to show a similar trend with a large difference between the highest and lowest values. All their means are positive, demonstrating that all research banks are making efforts in operational risk management. In particular, the average LLP and LLR stand at 2424 and 1.358, respectively, suggesting that Vietnamese banks maintain a significant ratio of total capital to risk-weighted assets. We can assume that these banks are cautious about risks.
Table 2. Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>No. of obs.</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bank performance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRS_TE</td>
<td>248</td>
<td>0.7272</td>
<td>0.1484</td>
<td>0.0049</td>
<td>1.0000</td>
</tr>
<tr>
<td>SCALE</td>
<td>248</td>
<td>0.8310</td>
<td>0.1091</td>
<td>0.0209</td>
<td>1.0000</td>
</tr>
<tr>
<td>NIM</td>
<td>248</td>
<td>2.9659</td>
<td>1.4919</td>
<td>-1.8420</td>
<td>9.7530</td>
</tr>
<tr>
<td>ROE</td>
<td>248</td>
<td>12.2852</td>
<td>10.0464</td>
<td>-56.3260</td>
<td>53.6130</td>
</tr>
<tr>
<td><strong>Bank risk</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LLP</td>
<td>248</td>
<td>2424.7410</td>
<td>11050.1500</td>
<td>-2304.8830</td>
<td>119853.9000</td>
</tr>
<tr>
<td>LLR</td>
<td>248</td>
<td>1.3583</td>
<td>0.9855</td>
<td>0.0000</td>
<td>6.2990</td>
</tr>
<tr>
<td><strong>Macroeconomic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDPG</td>
<td>248</td>
<td>2.9369</td>
<td>0.3360</td>
<td>2.1398</td>
<td>3.3698</td>
</tr>
<tr>
<td>PCGDP</td>
<td>248</td>
<td>1112.2700</td>
<td>685.2528</td>
<td>137.9826</td>
<td>2343.1250</td>
</tr>
<tr>
<td>CPI</td>
<td>248</td>
<td>7.1766</td>
<td>5.8622</td>
<td>-1.7103</td>
<td>23.1163</td>
</tr>
<tr>
<td>UEMP</td>
<td>248</td>
<td>2.2243</td>
<td>0.2868</td>
<td>1.7700</td>
<td>2.8700</td>
</tr>
<tr>
<td><strong>Bank-specific</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BD</td>
<td>248</td>
<td>2.7432</td>
<td>7.4902</td>
<td>-1.7350</td>
<td>53.3300</td>
</tr>
<tr>
<td>ENL</td>
<td>248</td>
<td>20.4698</td>
<td>24.1286</td>
<td>4.6200</td>
<td>370.7150</td>
</tr>
<tr>
<td>LTA</td>
<td>248</td>
<td>4.4901</td>
<td>0.8710</td>
<td>1.7168</td>
<td>6.0798</td>
</tr>
</tbody>
</table>

Notes: For the notation of the variables, see Table 1.

4.2. Impact of ownership structure on bank performance

The Breusch and Pagan Lagrangian multiplier test shows that all parameters are significant at the 1% level, which implies the rejection of H₀ hypothesis (H₀: The OLS regression is appropriate). Consequently, the random effect model (REM) is used for regression respectively with different dependent variables. Two dummy variables Listing and State would be both rejected if we used the fixed-effect model (FEM), so we do not use this method.

The research results do not report any statistically significant evidence to demonstrate the positive effects of the state-ownership structure (state) on the technical efficiency of banks (CRS_TE). Vietnamese state-owned commercial banks receive lots of support from the government and State bank of Vietnam, which enables them to attain cheap capital inputs through good relationships with state-owned corporates or State Treasury. However, our study results in Table 3 do not significantly support this view.

Listed banks are more efficient in scale than non-listed banks (0.0584, 10%). In practice, listed banks’ financial statements are generally more transparent thanks to a clearer monitoring and supervision system by shareholders, investors and government departments. Banks are therefore motivated to improve their management, to use capital more efficiently, to control bad debts and to better control expenditure.

When the dependent variable is ROE, we find no statistically significant relationship between this performance variable and state-ownership structure. Moreover, listed banks use their capital more efficiently than unlisted banks (5.8320, 5%). In other words, listed banks are more encouraged to step up activities that help increase ROE than unlisted banks. The reason is that the former are monitored more strictly by shareholders and investors, or generally suffer from increased competitive pressure with other listed banks on the market. The positive relationship between listing and ROE can also be explained by the efforts of banks to reach higher profit as shareholders’ expectations and to achieve a higher ROE ratio to attract more investment. However, when considering three other bank performance variables such as ROA, CRS_TE and SCALE as dependent variables, the parameters of Listing are not significant. This implies that listed banks in our sample are efficient only in the use of capital.
The control variable representing banking diversity BD has negative effects on technical efficiency CRS_TE (-0.0213, 10%) and the NIM net interest margin (-0.299, 1%). But we also found a positive relationship between bank diversity and ROE (3.223, 1%). Hence, commercial banks that diversify their businesses outside of their core services will not achieve as good results as banks that focus on their core business.

Meanwhile, the ratio of equity to total liabilities is negatively correlated with the technical efficiency CRS_TE (-0.0011, 5%), although the regression coefficient is not high. At the same time, the results show a positive relationship between ENL and NIM (0.0193, 1%). The ENL ratio represents the long-term payment capacity of banks. Better long-term payment ability is accompanied by better bank performance.

Considering macroeconomic variables, GDP per capita (PCGDP) has a negative relationship with CRS_TE (-0.0002, 10%), NIM (-0.0019, 1%), and ROE (-0.0172, 1%). These results are consistent with the conclusions of Boateng et al. (2015). According to their papers, an improvement in GDP per capita is linked to higher expenses for loan loss provisions, which leads to a negative impact on bank profitability.

Finally, our study finds a positive correlation between annual GDP growth and the two performance variables NIM and ROE. This finding suggests a strong relationship between the financial system and the macroeconomic environment. Indeed, higher GDP growth usually goes hand in hand with higher bank performance. In other words, commercial banks perform better under good economic conditions. Conversely, if this macroeconomic factor is quickly volatile, banks will be adversely affected.

Table 3. Random-effect regression results with bank performance variables as dependent variables

<table>
<thead>
<tr>
<th></th>
<th>CRS_TE</th>
<th>SCALE</th>
<th>NIM</th>
<th>ROE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listing</td>
<td>0.0584*</td>
<td>0.023</td>
<td>0.812</td>
<td>5.832**</td>
</tr>
<tr>
<td></td>
<td>(2.44)</td>
<td>(1.08)</td>
<td>(1.58)</td>
<td>(3.06)</td>
</tr>
<tr>
<td>State</td>
<td>-0.0473</td>
<td>0.0289</td>
<td>-0.134</td>
<td>-1.842</td>
</tr>
<tr>
<td></td>
<td>(-1.38)</td>
<td>(0.96)</td>
<td>(-0.21)</td>
<td>(-0.69)</td>
</tr>
<tr>
<td>GDPG</td>
<td>0.388*</td>
<td>0.168</td>
<td>5.943***</td>
<td>30.59**</td>
</tr>
<tr>
<td></td>
<td>(2.17)</td>
<td>(1.20)</td>
<td>(4.09)</td>
<td>(3.19)</td>
</tr>
<tr>
<td>PCGDP</td>
<td>-0.0001*</td>
<td>-0.0000</td>
<td>-0.0018***</td>
<td>-0.0172***</td>
</tr>
<tr>
<td></td>
<td>(-2.12)</td>
<td>(-0.61)</td>
<td>(-3.32)</td>
<td>(-4.37)</td>
</tr>
<tr>
<td>CPI</td>
<td>-0.0013</td>
<td>0.0006</td>
<td>0.0119</td>
<td>-0.0425</td>
</tr>
<tr>
<td></td>
<td>(-0.77)</td>
<td>(0.44)</td>
<td>(0.92)</td>
<td>(-0.45)</td>
</tr>
<tr>
<td>UEMP</td>
<td>0.0033</td>
<td>-0.0316</td>
<td>-0.432</td>
<td>-1.939</td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(-1.14)</td>
<td>(-1.68)</td>
<td>(-1.02)</td>
</tr>
<tr>
<td>BD</td>
<td>-0.0213*</td>
<td>0.0169*</td>
<td>-0.299***</td>
<td>3.223***</td>
</tr>
<tr>
<td></td>
<td>(-2.02)</td>
<td>(2.17)</td>
<td>(-3.63)</td>
<td>(5.88)</td>
</tr>
<tr>
<td>ENL</td>
<td>-0.0010**</td>
<td>-0.0000</td>
<td>0.0193***</td>
<td>-0.0192</td>
</tr>
<tr>
<td></td>
<td>(-2.91)</td>
<td>(-0.03)</td>
<td>(6.74)</td>
<td>(-0.92)</td>
</tr>
<tr>
<td>LTA</td>
<td>-0.0108</td>
<td>-0.0682***</td>
<td>-0.506</td>
<td>2.341</td>
</tr>
<tr>
<td></td>
<td>(-0.41)</td>
<td>(-3.09)</td>
<td>(-1.85)</td>
<td>(1.36)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.192</td>
<td>0.706*</td>
<td>-10.23***</td>
<td>-72.37***</td>
</tr>
<tr>
<td></td>
<td>(-0.51)</td>
<td>(2.39)</td>
<td>(-3.42)</td>
<td>(-3.62)</td>
</tr>
<tr>
<td>No. of obs.</td>
<td>296</td>
<td>296</td>
<td>296</td>
<td>296</td>
</tr>
<tr>
<td>LM test</td>
<td>119.17***</td>
<td>17.30***</td>
<td>205.69***</td>
<td>141.00***</td>
</tr>
</tbody>
</table>

Notes: All variables in these regressions have been defined in Table 1. P(value) are shown in parentheses.
* *, **, *** denote significance at the 10%, 5% and 1% levels, respectively.
4.3. Impact of ownership structure on bank risk, period 2000-2017

The Breusch and Pagan Lagrangian multiplier test shows that all parameters are significant at the 1% level, which implies the rejection of $H_0$ hypothesis ($H_0$: The OLS regression is appropriate). Consequently, the random effect model (REM) is used for regression respectively with different dependent variables. Table 4 presents the random-effect regression with bank risk variables as dependent variables.

The results show no statistically significant evidence of the difference in risk level between listed and unlisted banks. However, the state ownership structure is positively correlated with both LLP (3149.6, 1%) and LLR (1.096, 1%). To explain this result, loan loss will cause a fake performance index. State-owned banks generally maintain a high level of loan loss provisions to anticipate potential risks. Furthermore, in addition to profit goals, state-owned banks must also act for other social purposes. This special feature, together with the weakness of risk management, generally forces the state-owned banks to suffer greater losses on loans. Besides, loans from state-owned banks are not highly secured or present a high latent risk. So, these banks have to set higher loan loss provision compared to other banks and negatively impact the bank performance. This also linked to the fact that customer service at state-owned banks has not been appreciated in comparison to private banks.

### Table 4: Random-effect regression results with bank risk variables as dependent variables

<table>
<thead>
<tr>
<th></th>
<th>LLP</th>
<th>LLR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listing</td>
<td>-35.60</td>
<td>0.0544</td>
</tr>
<tr>
<td></td>
<td>(-0.08)</td>
<td>(0.33)</td>
</tr>
<tr>
<td>State</td>
<td>3149.6***</td>
<td>1.096***</td>
</tr>
<tr>
<td></td>
<td>(5.59)</td>
<td>(4.29)</td>
</tr>
<tr>
<td>GDPG</td>
<td>2752.8</td>
<td>-1.499</td>
</tr>
<tr>
<td></td>
<td>(1.77)</td>
<td>(-0.91)</td>
</tr>
<tr>
<td>PCGDP</td>
<td>0.126</td>
<td>0.000520</td>
</tr>
<tr>
<td></td>
<td>(0.21)</td>
<td>(0.78)</td>
</tr>
<tr>
<td>CPI</td>
<td>17.63</td>
<td>0.0160</td>
</tr>
<tr>
<td></td>
<td>(1.54)</td>
<td>(1.30)</td>
</tr>
<tr>
<td>UEMP</td>
<td>-644.3*</td>
<td>-0.285</td>
</tr>
<tr>
<td></td>
<td>(-2.55)</td>
<td>(-1.07)</td>
</tr>
<tr>
<td>BD</td>
<td>246.7*</td>
<td>-0.0207</td>
</tr>
<tr>
<td></td>
<td>(2.52)</td>
<td>(-0.19)</td>
</tr>
<tr>
<td>ENL</td>
<td>-1.108</td>
<td>-0.00106</td>
</tr>
<tr>
<td></td>
<td>(-0.47)</td>
<td>(-0.47)</td>
</tr>
<tr>
<td>LTA</td>
<td>-619.9*</td>
<td>0.323</td>
</tr>
<tr>
<td></td>
<td>(-2.44)</td>
<td>(1.68)</td>
</tr>
<tr>
<td>Constant</td>
<td>-4318.2</td>
<td>4.029</td>
</tr>
<tr>
<td></td>
<td>(-1.28)</td>
<td>(1.09)</td>
</tr>
<tr>
<td>No. of obs</td>
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<td>224</td>
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<tr>
<td>LM test</td>
<td>186.29***</td>
<td>6.91***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.0043)</td>
</tr>
</tbody>
</table>

1 statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Notes: All variables in these regressions have been defined in Table 1. P(value) are shown in parentheses. *, **, *** denote significance at the 10%, 5% and 1% levels, respectively.

Looking at a group of control variables, our study observes that commercial banks with diversified sources of income have higher loan loss provisions. Perhaps diversifying into areas banks are unfamiliar with can create more risk, so banks need to take more provisions. Therefore, the diversity strategy is not always efficient as expected.
We also find that the larger the commercial banks or the lower equity-to-liability ratio, the lower the provision for loan losses. In other words, large commercial banks tend to accept more risks. Also, when the rate of unemployment increases, commercial banks tend to decline the ratio of loan loss provisions. This trend is explained by the fact that, under the pressure of the State Bank, commercial banks promote more support programs and preferential loans for unemployed people.

In short, there is no significant evidence of different risk levels between listed and unlisted banks. Furthermore, the result shows that state-owned banks are more risk-conscious through a higher level of provision for loan losses.

In conclusion, research results have shown that listed banks operate fairly effectively, using equity resources, generating profits and better performance than unlisted banks. However, the research finds no statistical evidence for the risk-level of listed banks. Hence, listed banks are interested in increasing capital efficiency (ROE) to attract more investment, while risk-taking behavior is not clear.

Besides, commercial banks with state ownership structure did not record a statistically significant correlation with technical efficiency, which differed from some findings of previous studies such as Berger (2005), arguing that the state ownership involves government intervention and political activities, so it is less effective. Although Vietnamese state-owned banks still receive incentives for cheap capital and a large source of customers such as state-owned enterprises, there has not been any statistically significant evidence for better performance of state-owned commercial banks than others. Furthermore, the research results show that the provision for loan losses in state-owned banks is high, which can reduce the risk from bad debts, but limit the capital sources, impacting negatively on bank performance.

Finally, our research finds supporting evidence that the more diversified banks are in terms of sources of income, the more efficiently they use capital, but with low technical efficiency. At the same time, the study results also show that the GDP per capita negatively affects the group of performance variables while not statistically significant on the group of bank risk variables. Economic growth has a positive correlation with operating efficiency (NIM and ROE).

5. Conclusions and recommendations

The paper has examined the impact of state-ownership structure on the risk and performance of Vietnamese commercial banks. We also investigate the role of some macroeconomic factors such as price index, income per capita, unemployment rate and some bank-specific factors such as diversification, financial structure and size of the bank.

The findings show no evidence of technical efficiency or scale efficiency of state-owned commercial banks. Furthermore, these banks are more cautious about risks, setting up greater risk provisions than private banks. Furthermore, we recognize that listed commercial banks are more effective in using equity than unlisted commercial banks.

In summary, our research suggests that listing behavior has a positive impact on bank performance. However, the same positive conclusion cannot be drawn for the state ownership structure variable because there is no significant evidence. Also, when considering the relationship between state-owned structure and bank risk, we explore that state-owned banks have higher loan loss ratios, so higher provisions compared to other banks due to the consequences of poor credit checks and reviews, as well as agency problems such as collective benefits and corruption in state-owned enterprises.

Acknowledgments

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References


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https://orcid.org/register
APPLICATION OF FINANCIAL ANALYSIS IN DETERMINING
THE POSSIBILITIES OF HUMAN CAPITAL DEVELOPMENT

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Abstract. The article aims to present financial analysis in determining the possibilities of human capital development, i.e., increase in the value of an enterprise through development of human capital. The market value of an enterprise is to a large extent dependent on its intellectual capital, including human capital. It may be said that human capital constitutes a ground for an enterprise’s development through work, creativity in operation, adjustment to a fast-evolving environment. Emphasizing the importance of the above content, as “hidden” assets of the enterprise, human capital is not fully included in the company’s financial reporting. Despite the often enormous intangible contribution into preparation, use of complex methods for selecting the right employees, implementation of an incentive system, performance evaluation and staff development, organizational procedures that absorb a series of activities to ensure growth of the company’s value and which should be included in its financial statements, are underestimated.

Keywords: human capital; development; management; financial analysis; employee, HRM.

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JEL Classifications: O15, O40, M12, O10

1. Introduction

In today’s high tech global economy the need of competent and highly qualified workforce becomes focal point in the research of academics, practitioners and business alike (Petrova, Tepavicharova, Dikova, 2018; Bacho et al, 2019). Dynamic changes taking place in the market economy point to a great need of companies to strive at not only maintaining their place on the market, but first and foremost developing the organization through the employed human capital. In this environment, the increase in the value of an enterprise and development of its employees is gaining more and more significance, and this is possible only when a company has a financial stable situation.

A lot of businesses are looking for innovative ways to improve efficiency and maintain competitive advantage in order to survive (Laktionova et al, 2019; Zahariev et al, 2020; Petrova et al, 2018; Trunina & Sushchenko, 2017). One of the important factors is the ability to organize funds for the implementation of individual projects or the ability to maintain financial liquidity, etc.

This requires the development of various techniques for improving their business competitiveness (Kurmanov, Petrova, Suleimenova, 2019; Pukala & Petrova, 2019; Pukala et al, 2019; Uteubayev & Petrova, 2017; Tepavicharova et al., 2020; Okpamen, & Ogbeide, 2020; Deneva & Grasis, 2020). The owners and investors forecast and assess the increase in the value of the enterprise. They also assess the risk of its activities (Pukala, 2013).
Business communities shall recognize that companies’ ability to implement innovations can be a powerful trigger to competitive advantage and process effectiveness (Uteubayev & Petrova, 2017). Methodological basis for this may be the procedure for determining the value of intellectual property (Labunska, Petrova & Prokopishyna, 2017).

In an environment of high competition, managers should focus on the areas and factors that generate value growth for the enterprise when making decisions. Some of the important decisions are preceded by an analysis of financial statements; furthermore, various financial measurement methods and tools are used to help the manager identify the factors affecting loss or increase of the company’s value. For example, decisions may tackle such areas as acquiring capital or shaping its structure, or even maintaining financial balance between financial resources and the sources of their financing.

Business value management constitutes a link between the organization’s strategy and its financial results, and the mutual connection of employees’ incentive remuneration, measurement and evaluation of current activities and methods of conduct makes it possible to maximize the value of enterprises (Marcinkowska, 2000).

The value of an enterprise should be considered in material and non-material (intangible) factors, i.e., an image of the so-called the intellectual capital of the enterprise which includes human capital.

The issue of evaluating the productive capacity and human potential of the whole society is one of the unsolved questions of the economic theory. The power of the concept of human capital, both theoretically and practically, is adjacent to the lack of tools and indicators to measure it (Uteubayev & Petrova, 2017).

The article aims to present financial analysis in determining the possibilities of human capital development, i.e., increase in the value of an enterprise through development of human capital.

The study is theoretical and empirical at the same time; it comprises an analysis of scientific literature of Polish and foreign scientific authors and the logical construction of dependence of growth in terms of the company’s value through development of human capital and the factors shaping the possibility of that development.

Creating company value through development of human capital

The human capital is a kind of company asset that has its place in the composition of intellectual capital. The specificity of human capital lies first of all in the opportunities for the development of employees, thus creating the value of the enterprise. The change in human capital entails a change in the structure of employment and a change in the value of the enterprise in the short and long term.

The market value of an enterprise is to a large extent dependent on its intellectual capital, including human capital. It may be said that human capital constitutes a ground for an enterprise’s development through work, creativity in operation, adjustment to a fast-evolving environment. Emphasizing the importance of the above content, as “hidden” assets of the enterprise, human capital is not fully included in the company’s financial reporting. Despite the often enormous intangible contribution into preparation, use of complex methods for selecting the right employees, implementation of an incentive system, performance evaluation and staff development, organizational procedures that absorb a series of activities to ensure growth of the company’s value and which should be included in its financial statements, are underestimated.

Factors determining an enterprise’s market value, which is also human capital, give rise to the need to measure this capital. Until now, there has been no uniform method of its measurement which, would be widely recognized. The non-measurability of some elements causes a number of difficulties. Because organizations differ in size, their form and subject of activity, size of capital held, sources of its origin, strategy and vision of business owners, etc., it becomes important to apply tailored measures to both the organization and the method of measuring human capital, which is contained in the company’s intellectual capital.
The importance of human capital in the knowledge-sharing process

Human capital is reflected in what employees of a given organization have. It includes elements such as:

- competences, including knowledge, skills,
- attitudes including views, motivation, leadership qualities, behavior,
- intellectual abilities including innovations, entrepreneurship, intuition, adaptation and learning skills,
- interpersonal skills including leadership, interpersonal relationships, exerting influence on others.

When speaking of managing human capital development, it is necessary to consider employee development planning, collect the necessary data, motivate human capital to develop knowledge and professional competences and control the implementation of planned activities. Human capital is related to the accumulated value of investment in staff training and application of knowledge, competence and experience in the future. This concept focuses on the value of what a person can create. Thus, human capital includes the value of a person in an economic sense. In other words, what the employee knows, wants and does for the company.

Despite the fact that human capital constitutes the most important category of intellectual capital, it is also the least durable of all categories of intellectual capital. A change may take place at any moment in time, i.e., a change of the workplace, health and willingness to share knowledge with others. For this reason, employees with knowledge and experience that is strategically important for the company constitute valuable human capital, which should be skillfully directed towards giving young, new employees what is the most valuable for the company at a given moment and in the future. All this to not lose what is the most valuable for the organization for any reason. The goal is development of employees by gaining knowledge inside and outside the company.

The big issue is that employees do not willingly share knowledge with others, especially those who can replace them in the future (they are afraid of competition). This is where management of the employee development process comes in; this should be done in such a way to properly motivate financially and guarantee job stability, placing individuals on the position of mentors, and giving a prestigious function in the organizational structure. People are afraid and they want these elements specifically to be able to communicate what is valuable and important for the organization to others.

The introduction of innovations in the field of human capital and career development should support and motivate employees to contribute to the realization of employees’ business and developmental goals through their effective work.

Methods of measuring economic results

Classic methods of measuring economic results in an enterprise which base upon ratios show a change in the company’s economic situation. However, it often turns out that the financial analysis is insufficient and misinterpreted, due to not having included the intangible and non-financial element. The aim is to collect data useful in the process of analyzing changes taking place related to the development of human capital.

At the same time, the introduction of a well-adjusted and deliberate management system for human capital development must indicate changes in the level of development of human capital, invisible with the help of classic tools of capital loss.

It may be said that the human capital comprises the totality of predispositions, knowledge, abilities and skills as well as possibilities of their utilization in the form of competences while performing specific tasks. It includes two different groups of elements (Bal-Woźniak, 2006, p.77):

1. individual capital of persons,
2. resources resulting from the organization and occurrence of teamwork, i.e., related to the existence and functioning of groups of employees that complement each other with their knowledge.
3.
Valuable human capital is one whose employment allows the company to implement strategies which improve organizational and economic efficiency, the use of market opportunities, and neutralize potential threats. The human capital is therefore a generator of the value of a modern enterprise. It also characterizes the uniqueness defined as specific skills assigned to particular people having personalized knowledge, based on their own experience, skills, system of values and intuition. Acquisition of these skills often results from specific learning processes involved in organizational culture. Although unique skills can be difficult to replicate, making them a potential source of competitive advantage for the organization, passing them on to others causes an increase in value and knowledge by way of a spiral of knowledge.

Man has a complex nature, but for him to strive for self-improvement or professional development, he must want it personally. The organization can only do so much as stimulate or discourage to development through inefficient management, but it is up to human capital as to where, how and when the development opportunities created will be used. Human traits occur in different intensities due to influence of the environment and conditions in which the employee functions at the moment or has functioned in the past.

As shown in tab. 1, the combination of three important factors of human capital indicates various characteristics of employees. Not all of them may be necessary, some may be treated as priority, others can even be considered insignificant for the occupied job position.

### Table 1. Combination of three important factors of human capital

<table>
<thead>
<tr>
<th>No.</th>
<th>Factors</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Characteristics contributed by the employee to the organization</td>
<td>Assertiveness, motivation to work, responsibility, energy, intelligence, reliability, honesty, credibility, loyalty, values, eloquence, empathy, interpersonal skills, communicativeness, coherence, creativity etc.</td>
</tr>
<tr>
<td>2.</td>
<td>The employee's ability to learn</td>
<td>learning capacity, analytical and synthesis skills, creativity, imagination, etc.</td>
</tr>
<tr>
<td>3.</td>
<td>Employee’s motivation to share knowledge</td>
<td>commitment, empathy, teamwork skills, striving to achieve goals and work results, way of responding to stimuli, etc.</td>
</tr>
</tbody>
</table>

*Source: own study.*

Nonetheless, the purpose for which information about the human capital of a given company can be used should be specified. As B. Lev notes, there is a noticeable difference in the needs of internal stakeholders (Lev, 2001):

- **Management staff** – information regarding intellectual capital should be used in the process of human capital management, in the process of allocating financial capital in human capital, in shaping the form, value of remuneration and motivational factors.
- **Employees**– they often use information about the value of human capital to determine their importance for the company, their role and position in the enterprise, building bonds with their firm, build their own value.

Management staff and human capital pay attention to factors determining the enterprise’s economic situation. At the same time, they note the importance of investment for the development and maintenance of employees. This creates reasons for developing effective solutions (Stemplewska, 2011).

### Valuation of human assets and methods of their measurement

Valuation of human capital is difficult because (Łukasiewicz, 2009, pp. 95-9):

- human assets are heterogeneous concepts that include many unspecified elements, i.e., skills, knowledge, experience, competence, motivation, health, etc.;
- it is difficult to attribute a monetary value to qualitative components;
- the value of human capital cannot be determined as a sum of the value of its components, because this capital is created as a result of synergistic interactions between its elements as well as components and elements of other categories of intellectual capital.
That is why it is difficult to manage the development of human capital. At present, measurement of human capital value includes cost methods. These are models based on (Sopińska & Wachowiak, 2005; Koval, Slobodianiuk & Yankovyi, 2018):

1. Historical cost, including the costs of acquiring and training an employee.
2. The cost of restoring human capital, including costs of the employee’s departure, acquiring a new employee and costs of his further education.
3. Alternative cost, including opportunity costs.
4. Another method of measuring human capital is the so-called weighted scoring model.

**The value of human capital in financial accounting**

Human capital should also be seen as the company’s intangible assets. By adjusting the nomenclature used to determine the value of assets in International Accounting Standards (IAS), one can talk about the value of the enterprise: current, balance sheet, economic and fair (International Accounting Standards Committee, 1999):

- **Current value** will respond to a discounted current value of future inflow of net cash flows which the enterprise will earn in the course of business.
- **Balance sheet value** will correspond to the sum of assets recognized in the balance sheet after deduction of amortizations and the total amount of impairment write-downs.
- **Economic value** corresponds to the net selling price of the assets or their value in use, depending on which one is higher.
- **Fair value** is the amount for which the company’s assets could be exchanged by way of transaction carried out on market terms between the concerned and well-informed, unrelated parties.

A similar and much broader classification of the company’s value is provided by E.A. Helfert, who distinguishes the following values: economic, market, accounting, liquidation, partitioning, replacement, pledge, ownership, estimation, functioning enterprise and ownership. (Helfert, 2004, pp.451-457)

In financial accounting, the issue of intangible assets has its own legal authority. For example, IFRS 3 and IAS 38 precisely define the recognition, measurement and disclosure of all intangible assets. They characterize them as identifiable non-monetary assets without physical form, which arose as a result of a contract or other legal acts, irrespective of whether these rights are transferable and separable from the subject.

A given nonmaterial factor must be identifiable, which means that a specific component can be extracted, returned, disposed of or determined by an agreement; it must also remain under the control of the enterprise and be clearly distinguishable from goodwill. Additionally, for a given resource to be classified as an element of accounting assets according to the recalled standard, it must meet two conditions (Greuning, 2006, p.199):

- it must generate economic benefits in the future in the form of higher revenues or lower costs;
- production (or acquisition) cost of given element of assets must be reliably determined.

If a given component of intangible assets does not meet the criteria of identification and recognition as an intangible asset, expenditures on a given component are recognized as costs, unless the given cost was incurred as a result of business combination by acquisition. In this case, it should form part of the goodwill (Praktyczny przewodnik po MSSF, 2007, p.68).

The Polish Accounting Act broadly defines non-material assets as “intangible assets”, which include: “property rights acquired by the entity, classified as property, plant and equipment suitable for economic use, with an expected useful life of more than one year, intended for use for the needs of the entity, in particular: copyrights, related rights, licenses, concessions, property rights to inventions, patent rights, rights to ornamental and utility designs and trademarks, know-how. Intangible assets also include the acquired goodwill and development costs.”
Labor costs constitute a significant part of expenses for the creation of intangible assets. Salaries, bonuses for employees and other costs related to the creation of a given resource should be calculated according to current market rates. It is also necessary to take into account any changes in knowledge and technology until the valuation day, which may affect the shortening (or lengthening) of working time.

**Ratios for valuation of investment in human capital**

Investments in human capital are directly related to incurring company costs. In order to be able to efficiently control the amount of expenses incurred and, above all, the increase in the efficiency of human capital, it is important to monitor the changes in an appropriate manner. The need arises to control the effectiveness of costs borne using the analysis for return on investment in human capital. This measurement is aimed at capturing the relationship between specific investments focused on human capital and efficiency as a result of the company’s work. Appropriate ratios should be selected to identify changes and employee development results. There is a dilemma in making managerial decisions: should highly-qualified employees be hired or should own staff be educated further?

The creator of the human capital asset pricing model is J.J. Philips. He created a system for analyzing the profitability of human capital based on quantitative ratios:

Table 2. The basic measure of profitability of human capital in the entire enterprise

<table>
<thead>
<tr>
<th>NO.</th>
<th>Ratio</th>
<th>Calculation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>HC ROI human capital return on investment</td>
<td>HC ROI=(P-(OC-TLC)/TLC)</td>
</tr>
<tr>
<td>2.</td>
<td>HCV A human capital value added</td>
<td>HCV A=(P-(OC-TLC)/NE)</td>
</tr>
<tr>
<td>3.</td>
<td>HCR human capital revenue</td>
<td>HCR=PoS/NE</td>
</tr>
<tr>
<td>4.</td>
<td>CFTE cost per full time equivalent</td>
<td>CFTE=OE/NE</td>
</tr>
<tr>
<td>5.</td>
<td>PFTE profit per full time equivalent</td>
<td>PFTE=PoS/NE</td>
</tr>
<tr>
<td>6.</td>
<td>PPFTE pre &amp; tax interest profit per full time equivalent</td>
<td>PPFTE=GP/NE</td>
</tr>
</tbody>
</table>

*Source:* author’s own study based on the aforementioned human capital asset pricing model by J.J. Philips.

Where:

- \(P\) – Profit
- \(OC\) – Operational costs
- \(TLC\) – Total labor costs
- \(NE\) – Number of employees (per FTE)
- \(PS\) – Profit from sale of products, goods and materials
- \(OE\) – Operating expenses
- \(PoS\) – Profit on sales
- \(GP\) – Gross profit

As shown in tabl. 2 the HC ROI ratio “Human Capital Return on Investment” shows the amount the company will receive from each zloty invested in human capital. This ratio can be treated as a basic measure of profitability of human capital in the entire company. A positive ratio means that the costs of employee remuneration translate into the company’s revenues, contributing to the increase of investment opportunities. A negative ratio means that employed staff use more resources to perform their job than they generate income.

The HCV A ratio “Human Capital Value Added” shows the company’s profit that can be attributed to the person employed. This profit includes taxation and deduction of the cost of invested capital. This metric is considered an important efficiency criterion for assessment of a given company’s management staff. It shows the added value that is created by employees for the enterprise in full-time equivalents.

The HCR ratio “Human Capital Revenue” means income from human capital and constitutes the basis for
the measure of human productivity in the enterprise. This ratio indicates the number of employees which are needed to earn the desired income.

The CFTE ratio “Cost per Full Time Equivalent” indicates the amount of operating costs per one employee; registered several times in a time interval, it shows the extent of changes as the costs in this period changed. The PFTE ratio “Profit per Full Time Equivalent” stands for profit from sales per person employed; it shows what part of the sales profit can be earned by a single employee.

The PPFTE ratio “Pre & tax interest profit per FTE” that is, gross profit per employee allows to observe the effectiveness of employees’ work, take into account changes in employment and their impact on the entire enterprise’s financial result. Profit before deduction of tax and other benefits is included.

These are generally recognized and universally accepted performance indicators of the function of human resources, which can be described as strategic indicators. Enterprises, in their attempt to meet the requirements set forth to them by investors, should inform about all the elements affecting the company’s value. Increasing investments in intangible assets are not reflected in book values of enterprises. This leads to a large discrepancy in the enterprise’s actual value.

Conclusions

When considering the issue of human capital development in enterprises, it should be emphasized that the final decision as to career development or acquiring new skills belongs to human capital.

So, human capital in a group forms a combination of factors that cause a synergic effect between various individual types of human capital, and together with other factors, they make it possible to develop knowledge in the company, achieve innovativeness, and competitiveness.

The advantages of ROI investment returns analysis using ROI ratios include:

- Measuring the effectiveness of human capital management processes inside the enterprise as well as comparing the company’s ratios with practitioners in the comparative group.
- Searching for the organization’s business advantages in the area of the potential of human capital owned.
- Identifying a knowledge gap in managing human capital development.
- Defining areas of knowledge and comparing the level of investment in human capital.

The value of human capital is closely related to its impact on the implementation of the business strategy. The basic measures of profitability of human capital are not perfect and should be extended with more detailed ones which would take into account those characteristics of human capital, which are necessary to increase the company’s value.

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EXPANDING THE BOUNDARIES OF THE ECONOMIC SECURITY OF INTERNATIONAL COMPANIES ON THE BASIS OF CORPORATE SOCIAL RESPONSIBILITY PRACTICES

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Abstract. The methodological and formative foundations for the development of the corporate social responsibility practice of international companies to ensure a sustainable level of economic security are defined in the article. It has been determined that the corporate social responsibility of international business is a systemic guideline in the development of corporate plans for market development, which are explained by the annual increase in the degree of integration of economic processes in the context of globalization, which provides for corporate transparency, social responsibility, and business efficiency. With the organizational foundations, it has been revealed that the concept of corporate social responsibility provides an opportunity to position oneself as a reliable employer and business structure, which is successfully developing and operates in accordance with international standards and requirements of the modern market. The modern directions of implementation of the practice of corporate social responsibility of international business have been substantiated, a structure for assessing the social responsibility of international business has been formed. An information map of social investment in the international business environment has been developed. The main areas and directions of corporate social responsibility in the international business environment that ensure economic security are highlighted and structured. A system of indicators for a comprehensive assessment of corporate social responsibility in the business environment and a method for ranking the integral indicator within the limits of corporate economic security have been developed.

Keywords: international company; economic security; corporate social responsibility; international business environment; integral indicator; social investment

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JEL Classifications: D21, F23, H41

1. Introduction

More and more international companies position their activities as socially responsible and important, show their commitment to the principles of corporate social responsibility (CSR), and economic security. However, determining the reality and reliability of such statements is an acute issue for stakeholders both within the company and in the system of international economy and security. In such a situation, it becomes necessary to quantitatively and qualitatively assess the level of CSR in such a way that the company itself can determine the indicators using its open public reporting (without showing internal confidential information). The corporate social responsibility assessment allows to check the company’s activities for compliance with environmental,
tax and labor laws, standards, and corporate governance code. CSR assessment is also important for the internal use of the company: using the results obtained, the company can detect flaws in its own CSR and find ways to improve social performance and ensure economic security (Djelic & Etchanchu, 2017).

The problem of assessing the effectiveness of corporate social responsibility is reduced to the development of the unified procedure or methodology that determines the effectiveness of social investments, that is, the comparison of expended resources to the result obtained. Social investment in this case means the investment of the company’s financial resources in solving social problems, both within oneself and in the external environment, which are accompanied by an increase in the company’s capitalization. The situation is complicated by the variety of directions and forms of social investment, and corporate social responsibility itself is aimed at both the internal and external environment of the company in the context of its economic security. In addition, the effectiveness of CSR can be viewed from two perspectives: both efficiency for the company and its economic security and for the welfare of society.

2. Literature Survey

In economics, there is an opinion that corporate social responsibility appeared relatively recently – in the 90s of the XX century, along with the development of globalization processes. However, back in the early 70s of the XX century, in the West, a theory arose that explains the relationship between business and society, the main postulate of which is that if a company does not evade taxation, sets a good level of wages (above the industry average), and also meets the requirements for labor safety and environmental protection, then in such a company positive business practices will develop. This means that the company itself becomes socially responsible, which becomes the basis of its economic and social security (Brenner, Cochran, 1991; Freeman, 2001; Waterhouse, 2017; Mazzoni, 2020).

In modern conditions of social development, the interpretation of the concept of social responsibility expresses the ability and desire of business to voluntarily engage in the development of the welfare of society, including consumers of products and company employees (Aquino et al, 2001; Fombrun, 1997). The modern concept of corporate social responsibility shows the desire of companies to voluntarily and independently participate in solving problems of society (Detomasi, 2008). An example is the definition of social responsibility formulated by the European Commission: “corporate social responsibility, at its core, is a concept that reflects the voluntary decision of companies to participate in improving society and protecting the environment” (CSR Europe. (n.d.). CSR Europe – 20 years of business policy interaction driving the CSR movement 2018).

In works (Garriga, Melé, 2004; Roper & Weymes, 2007) it is said that the social responsibility of business is understood as the voluntary acceptance by a company of a part of additional social obligations to employees, as well as to society, which exceeds the statutory standards, in order to increase the welfare of people who have both direct and indirect relation to the company but who are not its owners.

It is obvious that the implementation of the effective social policy by a company is a prerequisite not only for the growth of the welfare of society but also for the success of the company in the modern economy as well as ensuring its economic security. This duality manifests itself in both internal and external responsibility. The theses are confirmed in scientific papers (Lee, 2008; Werther & Chandler, 2005; Voronkova et al., 2020; Rela et al., 2020).

In their publications (Marshall, 2007; Pillay, 2015; Zeng & Hengsadeekul, 2020), scientists point out that the internal provisions of corporate social responsibility should include labor as well as social and labor relations. Labor relations are based on agreements between the employer and the employee on the performance of the latter’s duties for a fee (work in accordance with the staffing schedule), and the direct subordination of the employee to the work schedule. In turn, social and labor relations are broader in nature, as these relations are aimed at improving the quality of work, as well as improving the social life of employees of the company, which ultimately has a positive impact on economic security.
3. Methods

A comprehensive assessment of the effectiveness of CSR is reflected in a number of the following basic methodologies and concepts.

1) Methodology for building effective social investments and partnerships. The methodology provides for an assessment of the effectiveness of social investments by society and the business itself. The performance indicators of social investments are considered in four dimensions: a) care – implies internal social investments, which are assessed from the perspective of society (labor and health, investment in human capital) b) conscientiousness – assesses internal social investments but from a business point of view (investments aimed at developing relations with contractors); c) involvement – an assessment of external social investments from the perspective of society (improvement, health care, education, culture, leisure; d) success – implies an assessment of external social investments by business (improved economic performance, increased popularity, respect and recognition) (Kao et al, 2018).

2) CSR “key indicators method”, which defines the main areas of corporate social responsibility, the so-called “nominations”, which were mentioned earlier: care, conscientiousness, involvement, success. Further, for each nomination, the main indicators are distinguished (their number may vary, the main thing is to take into account the importance of indicators for the purposes of the effectiveness of social investments). Further, each group of indicators is assigned a base amount of points. The base amount of points is distributed within each group according to separate indicators: each indicator is assigned with a certain amount of base points. The number of points is determined based on the importance of the indicator in question. The main condition is that the sum of base points in each nomination must be the same, regardless of the number of selected indicators in each nomination. The distribution of points is carried out directly by the expert council, taking into account the situation in the country and the purposefulness of social investments. In addition, the expert council determines additional points for particularly relevant areas and forms of social investment.

3) the concept of developing competitive advantages. Thus, only those companies that begin to exhibit socially responsible behavior in relation to society and to carry out economically safe activities will receive an additional competitive advantage. Based on this statement, the demand of the world community for the creation of socially responsible behavior by companies is formed, which is a significant fact, the role of which increases in proportion to the scale of the company’s growth and the number of markets, in which it conducts its business (Nan & Heo, 2007). It should also be noted that both internal incentives, which provide for a positive relationship between the implementation of CSR principles and the company’s financial performance, and the impact of the external environment (environmental and social requirements on the part of stakeholders), contributes to the growth of socially responsible companies.

4. Results

In modern conditions, one of the main economic institutions is the social responsibility of international companies since it contributes to the achievement of sustainable development of world business in the environmental, economic, and social spheres in connection with an increase in the positive impact on society. In addition, the principles of social responsibility of business are now increasingly widespread in the world community, which attracts new countries and foreign organizations from micro-companies to transnational corporations. Despite the fact that these principles are unified, they acquire the characteristic features and characteristics of the country, whose companies are gradually introducing them into their activities. In foreign practice, many business models of social responsibility have been formed. The American and European practices of social entrepreneurial development were briefly considered in the article (Figure 1).
In American corporations, the social responsibility of business is characterized by a stable entrepreneurial culture, which implies the popularization and availability of a social strategy, voluntary acceptance, and adherence to its principles among employees and the publication of reports on corporate social responsibility annually. The American business model is based on minimizing interference in the corporate one. Social policy is now dominated by the priority of individualism and private property, the growth of personal responsibility for one’s health.

The fundamental postulate of the European practice is the clear regulation by the state of the directions of implementation of corporate social responsibility: compulsory health insurance; pension provision; environmental protection. The principles of social responsibility for European companies are enshrined in the Integrated Product Policy, ISO 26000, social responsibility standards, environmental audit and management scheme (Secchi, 2007). There are also reasons that encourage international companies to focus on the principles of corporate social responsibility (Figure 2).

Figure 2. Reasons that motivate international companies to focus on the principles of CSR

Source: compiled by the author according to the data Stakeholder Dialogues: The WBCSD’s approach to engagement, World Business Council on Social Development (WBCSD) (2019).

Assessment of corporate social responsibility on the basis of primary documents that can be submitted (Table 1).
Table 1. The structure of the social responsibility assessment of international business

<table>
<thead>
<tr>
<th>Direction of assessment</th>
<th>Indicators used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutionalism of social policy</td>
<td>Availability of special documents, which enshrine the company’s social policy in detail. The presence of the special unit, which is responsible for the implementation of social policy. Existence of a collective agreement.</td>
</tr>
<tr>
<td>System of accounting for social activities</td>
<td>Availability of annual financial statements, which are prepared in accordance with international standards. Implementation of international social reporting standards. Evaluation of the effectiveness of social investments (providing feedback between the investor and social investments). Examples of social programs (informing the public in order to transfer positive experiences, self-promotion, and improve reputation).</td>
</tr>
<tr>
<td>Complexity of social investments</td>
<td>Development of the company’s staff through advanced training. Occupational health. Environmental activities, as well as resource conservation. Supporting good business practices based on social responsibility.</td>
</tr>
</tbody>
</table>

Based on the results of the collection and processing of information, the next stage will be carried out, at which an analysis of costs to effectiveness and benefits will take place. A cost-benefit analysis clearly shows how much the money spent on various programs will correspond to the social response in the form of physical indicators. Based on this method, comparisons of various programs are carried out, which in the future allows to invest in a more efficient one. This approach is used in many areas of the economy but the results from the conduct will be comparable only for companies in one area of activity (Soylu, Azizzadeh, 2018). Cost-benefit analysis is used to assess the impact of a project when it can be expressed in monetary terms. This technique has become widespread in business (Aguilera et al, 2007). The difficulty with this method lies in the fact that the social effect cannot always be measured in monetary terms (Jamali & Carroll, 2017). In the course of further research, the authors of the methodology developed an information map for presenting the initial data for calculations (Figure 3).

In summary, it should be said that the proposed method of assessing the effectiveness of CSR is aimed at analyzing the key areas of corporate social policy. Compilation of the rating involves assessing the effectiveness of doing business on the financial and economic indicators of the company, the size and frequency of payment of wages, payment of taxes.

Another method of assessing corporate social policy can determine the integrated indicator or index of
effectiveness of CSR by scoring the implementation of key areas of social responsibility. Corporate social responsibility is considered in terms of reproducing human potential. The methodology reflects the main CSR areas of the company, the directions of these areas, their key indicators, as well as the proposed scales for scoring these indicators are identified (Wayne, 2010). We can aggregate in our study the main areas and directions of CSR, which are presented in Figure 4.

Within the framework of such a methodological approach, for each direction of the four CSR areas, the authors identify a number of indicators that fully reflect the characteristics of the selected direction. In addition, a score scale from 0 to 10 points was developed for each indicator. Consider what these indicators in the context of each direction of the CSR areas. To calculate quantitative indicators, it is enough to use information about the company presented in the non-financial statements, as well as statistics from the company. It is obvious that in the CSR area, on a certain territory, for a clear assessment of the indicators, the expert assessment is used but which does not appear in other directions. If the degree of satisfaction is a more subjective assessment, then the expert assessment provides a more objective view, notably in relation to the characteristics of the company (Tempels et al, 2017).

**Figure 4.** The main areas and directions of CSR in the international business environment, which provide economic security

After calculating the indicators of corporate social reporting directions, the integrated indicators should be calculated, which can be three options:

1. Integral indicator at the level of CSR directions:

\[
I_p = \frac{\sum_{i=1}^{x} PP_i}{x}
\]

where \( I_p \) is the index in the direction of CSR;
\( x \) – the number of indicators of the direction;
\( PP_i \) – score of the \( i \)-th indicator of the direction.
2. Integral indicator at the level of the CSR area (area index):

\[ I_s = \frac{\sum_{i=1}^{y} I_{ps_i}}{y} \]  \hspace{1cm} (2)

where \( I_s \) – the index of the area;
\( y \) – the number of directions of the CSR area;
\( I_{ps_i} \) – indices for CSR directions in this area.

The integrated indicator at the level of the company as a whole, this indicator is the CSR efficiency index. The calculation of this indicator is presented in formula (3).

\[ I_{ch} = \frac{\sum_{i=1}^{z} I_{si}}{x} \]  \hspace{1cm} (3)

where \( I_{ch} \) – efficiency index of the CSR;
\( z \) – the number of the CSR areas;
\( I_{si} \) – indices of the area of the specific company.

Since the evaluation of the indicators of the directions of the CSR is based on a ten-point scale, the ranking of the value of the integrated indicator should be in the same range. The ranking of the value of the integrated indicator is presented in Table 2.

<table>
<thead>
<tr>
<th>Ranking range, points</th>
<th>Effectiveness of CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–1,8</td>
<td>Ineffective CSR</td>
</tr>
<tr>
<td>1,8–3,5</td>
<td>Low level</td>
</tr>
<tr>
<td>3,5–5,5</td>
<td>Mean level</td>
</tr>
<tr>
<td>5,5–7,5</td>
<td>Normal level</td>
</tr>
<tr>
<td>7,5–10</td>
<td>High level</td>
</tr>
</tbody>
</table>

This method allows to obtain the value of integrated and private assessments of the effectiveness of CSR, which confirms the objective assessment of the level of the company’s social responsibility. In addition, with the help of the above, it is possible to compare the directions of corporate social policy, regardless of the size of the company and its industry affiliation.

Another method of assessing the effectiveness of CSR is based on a system of indicators of comprehensive evaluation, which allows to compare companies and rank the company. The developed system of indicators includes 21 positions, grouped into six groups (Chaffee, 2017). The indicators of complex assessment of CSR are listed in Figure 5.

The largest number of indicators belong to the group of indicators of social investment and cost-effectiveness of wage expenses, indicators of environmental protection costs, and social indicators of hiring and staff development. It is worth noting that in this system there is a group of indicators that are not found in the previously discussed methods – these are indicators of innovation activity of the company. Information for calculating these indicators can be taken from the company’s annual and non-financial reports.

If CSR is considered according to this method within one company, it is necessary to analyze the indicators of assessment of the effectiveness of CSR in the dynamics, an integrated indicator in itself is not provided. In case of comparison of several companies, the rating on each of the indicators is exposed, if the information on any
indicator is absent, the company in a rating falls to the last place. At the end, the total amount of points for each company is calculated and the appropriate rating is affixed. This technique can also be used both for compiling industry rankings and for internal corporate use.

Based on the fact that the basis of corporate social policy is CSR, it is worth considering a method of assessing the level of social responsibility of the company. In fact, the higher the level of CSR, the more commitments the company makes, which leads to an expansion of the range of areas of social policy or increase social investment in the same areas and activities of the company’s CSR.

Indicators of social investment and wage expenses efficiency

- the ratio of average wages in the company and the region/territory;
- the index of specific social investments, million USD USA;
- the ratio of total social investment to total sales, %;
- the ratio of total social investment to total profit, %.

Indicators of environmental expenses, environmental charges and fines

- the ratio of expenses for environmental activities and the cost of sales of the company, %;
- the land reclamation rate, per year;
- the number of violations detected during inspections;
- fines for violations of environmental legislation;
- investments related to environmental protection and rational land use, million USD USA.

Indicators of expenses for labor protection, industrial safety

- coefficient of industrial injuries, cases per 1000 employees;
- the share of expenses for labor protection and industrial safety.

Indicators of environmental impact

- emissions into the atmosphere, thousand tons of CO – 2 equivalent;
- greenhouse gas emissions, CO-2 equivalent;
- water use, thousand m3.

Social indicators of staff hiring and development

- job growth coefficient;
- share of employment of young specialists;
- place of practice for students and graduate students;
- share of staff who have been trained and retrained.

Indicators of innovation activity

- R&D expenses, million USD USA;
- the number of implemented technologies and samples after testing and modeling, pcs;
- number of received patents, pcs.

Figure 5. System of indicators of complex assessment of CSR in the business environment

In addition to quantitative indicators, the authors of the methodology proposed indicators of the qualitative assessment of the company’s CSR: a) the presence of the collective agreement; b) the existence of the organizational structure, which is responsible for CSR; c) publication of a non-financial report in the field of CSR; d) the availability of measures to conduct good business practice; e) society’s attitude to CSR activities. Qualitative indicators are estimated by means of the integrated indicator \( P_i \):
\[ P_k = \frac{1}{i} \sum_{j=1}^{i} P_j \]  

(4)

where \( i \) – the number of qualitative indicators;  
\( P_j \) – qualitative indicator (if \( P_j \) is present, the value is 1, if not, then 0).

After calculating the indicators, it is recommended to calculate the average quantitative indicator, and then adjust according to the qualitative indicator. Thus, by identifying different methods for evaluating the effectiveness of the company’s CSR, it is possible to identify what each of them is based on, the advantages and disadvantages, and to develop a combined method of evaluation, composed of the strengths of each method (Cropanzano et al, 2003). By highlighting the strengths of these techniques, you can develop a combined method of evaluating the effectiveness of CSR, based on them. The main directions of CSR assessment of companies include: 1) assessment of human reproduction; 2) assessment of CSR from a business perspective; 3) assessment of environmental protection and safety.

5. Discussion

When considering the CSR as a way to ensure economic security, it can be concluded that its growth allows to obtain additional economic effects not only of resource owners but also social groups. At the same time, the development of social responsibility gives managers a fuller understanding of the company’s place in the international business space and the impact it has on the environment, which allows to more accurately and predictably develop strategies for the company’s long-term development. The manifestation of corporate social responsibility increases the reputation of the organization, increases its visibility in the market, which in turn helps reduce the cost of attracting highly qualified professionals who seek to work in prestigious and socially responsible companies. It also minimizes the cost of marketing and advertising by establishing positive relationships with consumers and consumed, which in turn allows to effectively and with minimal cost to conduct market research and create advertising aimed to a specific target audience.

It is also possible to say that the modern concept of CSR can cover the following closely related areas: 1) long-term development of the company; 2) ensuring staff development; 3) strengthening corporate ties with suppliers and customers; 4) responsible environmental policy and rational use of natural resources; 5) interaction with representatives of local authorities, state institutions, and public organizations. Therewith, a well-designed and effectively functioning socially oriented system provides a progressively developing company and allows not only to make a significant contribution to the well-being of the world community and environmental stability but also to increase efficiency and ensure a high level of economic security.

Conclusions

The study found that corporate social responsibility is the only concept of corporate orientation in areas such as environment, social work, employee management, and relationships with suppliers and other institutions, which contributes to sustainable corporate development in economic, environmental, and social aspects. It is proved that for the stable operation of the company it is necessary to use methods of evaluation of social programs, which cover the widest possible range of indicators that characterize both internal and external corporate social responsibility. Corporate social responsibility must be developed both internally, ensuring stable work and growth through continuous improvement of staff and social life, and externally, manifesting through the company’s participation in regional social programs, which will form its favorable image and proper economic security.

Based on the research conducted in the article, it should be noted that in the modern market economy, the practice of corporate social responsibility is an integral part of corporate governance strategy and tactics. In this case, all without exception, production, technological, and economic decisions should be made only after...
assessing the possible social and environmental risks, both for modern organizations and society as a whole. This, in turn, contributes to the transformation of the concept of CSR by progressive world organizations in a powerful factor of their further strategic development, strengthening of the business reputation and competitiveness, as well as the growth of market capitalization. In this regard, in recent years, the concept of CSR has become a key position in the management of international business.

It has been proven that CSR, like any other significant social phenomenon, needs to be managed properly. Social or non-financial report is represented as a procedure, which ensures the quality of management, including in terms of planning, monitoring, and evaluation of business. This is a voluntarily disclosed information, which reflects the main aspects and results of the activities of the company’s activities, which are of interest to all stakeholders and related to the implementation of the strategy of sustainable business development. The practice of implementing a socially responsible concept demonstrates that it is economically justified to implement it from strategic business decisions through tactical measures to operational decisions. As well, the implementation of the concept of CSR requires a systematic approach, ie sustainable development, in our opinion, can not be carried out on a case-by-case basis and it must be comprehensive and consist of elements inherent in this concept and become one of the key components of sustainable development strategy of modern companies.

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Abstract. Transparency of financial accounting information in FDI firms will have certain impacts on enhancing responsibilities of FDI investments on society, income and environment. The research aimed to evaluate the association of disposable income and environmental pollution on the investments measured using FDI. The research was specific to the Vietnam compared to Indonesian economy. We use both qualitative and quantitative analysis. In Vietnam, qualitative analysis, synthesis, dialectical materialism and statistics explanation method were used. Then, The research was secondary quantitative and the data was accumulated from World Bank. The time frame considered for this study ranged from 1960 to 2018. For statistical analysis, descriptive statistics, stationarity testing, ARDL assessment and Granger Causality have been used. The results unveiled that both disposable income and environmental pollution are found to have significant effect on the FDI of Vietnam and Indonesia. Moreover, the higher transparency level of financial accounting information in FDI firms, the higher CSR in term of business environment and society for FDI firms. We also propose some recommendations for enhancing financial accounting information transparency in Vietnam. For instance, FDIs firms need to increase transparency in financial statements, internal and external investor financial accounting reports, income distribution, tax and stakeholder payment obligations, internal price transfer policy, etc. Lat bu not least, the research is limited to 2 above countries and no other country has been evaluated. Therefore, in future more countries can be considered for comparative analysis. In furthermore, more factors can be considered in future that affect Vietnam and Indonesian FDI.

Keywords: income; financial accounting information; transparency; FDI firms; environment pollution; investment; Vietnam, Indonesia


JEL Classifications: M1, M21, E60

1. Introduction

Vietnam and Indonesia are among the countries in ASEAN-5 nations having a significant share of FDI inflows over the past few years. According to statistics, many investment from FDIs attracted into the above 2 countries. FDI inflows have been observed to be highly essential and influential for the development of a nation specifically of those countries having lack of advancement within their local technologies and effectiveness in
the regulatory capabilities. Whereas there are environmental issues from FDIs in recent years in both countries.

This paper will mainly analyze Vietnam case, using Indonesian data case to compare. In Vietnam, The fact that Vedan Company has violated the Vietnamese environment for 14 years is taken as a typical example to analyze corporate social responsibility. The discharge of untreated waste into the Thi Vai River, Vedan’s multi-year avoidance of environmental fees, is seen as an economical way to increase business profits without ignoring environmental norms. Following the Vedan case, the Vietnamese authorities discovered a second Vedan, Miwon - a MSG producer in Viet Tri (Phu Tho), discharging up to 900m3 of untreated wastewater every day to the Red River. And most recently, the Company’s waste pipe Formosa Ha Tinh belongs to Formosa Group (Taiwan) with a discharge capacity of 12,000m3 / day and night containing toxins of caffeine, cyanide combining with iron hydroxide, forming a complex form. The mixture (mixel) exceeding the permitted standard caused about 80 tons of mass death of seafood along the coast of 4 North Central provinces from Ha Tinh to Quang Binh, Quang Tri, Thua Thien - Hue, causing serious environmental pollution. Great socio-economic damage, directly affecting production, life and ideology of the people, causing public frustration and receiving great attention from all people.

On the other hand, Indonesia has experienced various development opportunities through the rise and development of its industrial sector based on foreign direct investments (FDI) through various international organisations expanding to the country (Irma, Indah & Nugroho, 2018). This may include various organisations belonging to different sectors that started their operations in Indonesia that, as a result, impacted and facilitated the economic growth of the country in a positive manner. In most of the developing countries where there are highly polluting industries, more tax regulations related to the environmental concerns encourage the inflow of foreign direct investments within those countries.

Hence this paper will solve the following issues:
First, what are environment problems in Vietnam, compared to Indonesia?
Second, what are impacts from FDIs, income on environment pollution in Vietnam and Indonesia?
Third, what are proper recommendations for suitable environment protection programs in Vietnam?

2. Literature Review

Bao et al. (2010) applied a simultaneous equations estimation technique to estimate the scale, technique and composition effects of FDI on China’s overall and regional pollution emissions. The estimation results show that FDI in general helps reduce pollution emissions in China, contributing largely to its technique effect. Capturing both the direct and indirect technique effects improves the accuracy in assessing the environmental impact of the FDI. The study also finds that the environmental impacts of FDI vary significantly among different regions and for different pollutants in China.

Wartini (2016) mentioned that in order to gain a great profit, FDI can be used by the foreign investor to violate human rights and the environment in the host states. Unfortunately, the government in developing countries often sacrifice the interest of environment to boost economic growth. Hence, it is crucial to have a good policy in FDI as well as environmental protection. State needs to balance the interest of environment and economic growth, since both of them are interdependence. The existence of FDI shall not hinder the political will of the house state to protect the environment. However, it is essential to enhance the role of the host state government to have a good policy of FDI in order to protect the environment. Then, Abdouli and Hammami (2017) show that the increases in FDI inflows and capital stock enhance the economic growth process in MENA countries.

On the other hand, our findings demonstrated that economic growth in MENA countries reacts negatively to the environmental degradation. These empirical insights are of particular interest to policymakers as they help build sound external and environmental policies to sustain economic growth.

Besides, this issue has been paid more attention at both micro and macro levels. From the macro perspective, there have been some concerns with regards to the governmental policies and the international community. However,
from the micro level perspective, the tactics of organisations towards attracting foreign direct investments (FDIs) regardless of the environmental costs in terms of its damage has been taken into consideration (Moosa and Moosa, 2019). Based on the study conducted by Abdouli and Hammami (2017), increase in FDI inflows leads towards the environmental degradation in terms of increasing pollution through these business operations. Moreover, it has also been observed that the degradation of the physical environment rises through the increase in per capita income level and decreases when the per capita income is relatively higher. It shows a significant relationship between the rise in income level and the degradation of the environment. However, the role of FDI within the development of a country is evident in terms of its economic growth but simultaneously it creates a negative impact on the safety concerns of the environment (Shahbaz, Nasir & Roubaud, 2018; Vigliarolo, 2020).

But at the same time, it also provides a severe damage to the physical environment through business activities primarily within the supply chain functions and production of goods. In the light of the study conducted by Tasri and Karimi (2019), FDI has an indirect impact on the environmental pollution where this impact might be heterogeneous. The rationale behind this impact of FDI on the environmental pollution is based on the aim these FDIs have is to maximize profitability that do increases the productivity but bring serious issues within the environment (Widiatedja, 2019). FDI impacts the environment in two distinct ways that include through increasing pollution that is one of the negative impacts and the second way is based on the positive impact on the environment through using efficient technologies and management practices in order to improve the environmental quality (Prasetyawati, 2020).

Different studies highlight that the significant role of FDIs in stimulating productivity as it is considered to be one of the essential sources of raising capital that leads towards the technological advancement within these host countries that are used for prevention of the environment from hazardous consequences of pollution. However, the argument still remains within the previous studies in terms of the positive and negative impacts of foreign direct investments on the environmental pollution (Agustina and Flath, 2019; Mehta et al., 2019; Gomeztrujillo, and Gonzalezperez, 2020, Kormishkina et al., 2020; Khan et al., 2020).

Therefore, it can be considered through the previous studies conducted that there are both direct and indirect impacts of foreign direct investments (FDIs) on the physical environment and the income level of people living in that environment.

2.1 Theoretical Framework

There are some theories that describe the impact of foreign direct investments (FDIs) on the environmental pollution and income in terms of their relationship with each other. One of those theories include Green Economics Theory that talks about the sustainable development of a country without impacting the environment negatively and also utilizing green practices within the industrial sector for the betterment of the physical environment.

**Green Economics Theory**

Green economics theory is related to the development of a country based on sustainability ensuring the implementation of green practices within the business sectors of the country in order to prevent the environment from hazardous consequences. According to the study conducted by Law et al (2016), green economics theory is based on the methodology of economics that is highly focused on the harmonious interaction between human activities and its impact on the nature in terms of meeting the needs of both of these aspects. In the context of this theory, growth and development of an economy are driven by public and private sectors and also the foreign investments that contribute towards the growth of an economy.

Based on the study topic, this theory has a vast implementation within the business sector specifically businesses coming from foreign investors in terms of making them realize the significance of the natural environment and
the harm it is getting through these business activities. According to the study conducted by Falatehan and Bahtiar (2019), adoption of green initiatives by the use of advanced and clean technology, productivity can be increased within these businesses and its processes brought through FDIs for raising capital and income level and also it can impact the environment in a positive manner. The concern for environmental safety has increased within the contemporary business settings that make it essential for the industrial sector towards reducing environmental pollution and to make the economy progress through sustainable practices (Swainson & Mahantym, 2018). Therefore, it can be considered that this theory is highly significant in terms of making a country go towards sustainable development through FDIs.

2.2 Hypotheses

According to the discussion on the studies conducted before this research, the following proposition has been made.

**H:** FDIs have significant impact on environment pollution in both countries

**Research Method**

For Vietnam, we use both qualitative and quantitative analysis. In Vietnam, qualitative analysis, synthesis, dialectical materialism and statistics explanation method were used.

For Indonesia, the current study has aimed towards determining the influence of income and environmental pollution on FDI in Indonesia. With this regard to this, the time series of disposable income, CO emission and FDI have been gathered. The time series from 1960 to 2018 has been collected in the current study.

**Autoregressive Distributed Lag (ARDL)**

The study is devoted to determining the influence of environmental pollution and income on FDI of Indonesia. In this regard, there was a need to determine the association among the variables. In statistics, different analysis techniques are being used for the purpose of determining the short term and long term association between the variables. One of the essential statistical analysis technique which is preferably used for determining the long term association between the variables is concerned with autoregressive distributed lag technique. With reference to the findings of Nkoro (2016), it has been described that the ARDL approach is considered as one of the preferable techniques for determining the long term association during the econometric assessment. Further, it is also being discussed that the ARDL approach forms the basis with the iterative maximising of marginal log in order to predict one time series from the other. In realisation of this, the standard log function has also been presented as followed:

\[ G_t = \beta + \alpha D_{I_t} + \alpha CO_{2_t} + \epsilon_t \]

In the expression above, \( G_t \) can be described as the log for FDI while \( \epsilon_t \) is assumed as error terms. Further, \( \alpha \) is considered to be as parameter estimate.

**Granger Causality**

It is evident that long term and short term association both are required to determine while comprehending whether the time series predict the other time series. However, it has also been discussed that long term association is mainly determined through models like VAR and VECM. In terms of determining the short term association, the most appropriate and widely used statistical model is concerned as Granger Causality. With reference to the findings of Barnett (2014), Granger Causality is a preferably applied analysis technique that is distinct because of determining the short term association. Further, the long term association between the time series can also be determined by utilising Granger Causality.
4. Results and Analysis

4.1 Vietnamese case

According to the investment sector and statistics in Vietnam:
In 2018, 18 fields were invested by foreign investors, in which the processing and manufacturing sector attracted much attention from foreign investors with a total capital of 16.58 billion USD, accounting for 46.7% of total registered investment capital. Real estate business ranked second with total investment capital of 6.6 billion USD, accounting for 18.6% of total registered investment capital. Wholesale and retail field ranked third with a total registered investment capital of 3.67 billion USD, accounting for 10.3% of total registered investment capital

According to investment partner:
In 2018, there were 112 countries and territories having investment projects in Vietnam. Japan ranked first with a total investment capital of 8.59 billion USD, accounting for 24.2% of total investment capital; South Korea ranked second with a total registered investment capital of 7.2 billion USD, accounting for 20.3% of total investment capital in Vietnam; Singapore ranked third with a total registered investment capital of 5 billion USD, accounting for 14.2% of total investment capital ...

According to the investment location:
In 2018, 59 provinces and cities were invested by foreign investors, of which Hanoi was the locality attracting the most foreign investment capital with a total registered capital of 7.5 billion USD, accounting for 21.2% of the total capital. invest. Ho Chi Minh City ranked second with a total registered capital of 5.9 billion USD, accounting for 16.7% of total investment capital. Hai Phong ranked third with a total registered capital of 3.1 billion USD, accounting for 8.7% of total investment capital (source: www.dautunuocngoai.gov.vn date access: 19/11/2020).

For beginning 9 months of 2020:
According to the investment sector:
18 fields were invested by foreign investors, in which the processing and manufacturing sector ranked first with total investment capital of nearly 9.9 billion USD, accounting for 46.6% of total investment capital. registration.

The field of electricity production and distribution ranked second with total investment capital of over 4.3 billion USD, accounting for 20.6% of total registered investment capital. The real estate, wholesale and retail sectors with total registered capital of nearly 3.2 billion USD and 1.3 billion USD, respectively. The rest are other fields.

According to investment partner, Singapore ranked no 1, Korea, China, Japan, Thailand, Taiwan follow.

According to statistics:
Inspection results of the General Department of Environment in 28 Northern provinces in 2017, 2018 and 2019, the proportion of FDI enterprises violating regulations on environmental protection increased over the years. Specifically, in 2017, there were 12/27 violating enterprises, accounting for 44.5%; in 2018, there were 14/25 violating enterprises, accounting for 56% and in 2019 there were 13/19 violating enterprises, accounting for 68%.

The violations often focus on some specific behaviors such as: Failure to make project environmental impact assessment reports as regulated; improper implementation of one of the contents of the environmental impact assessment report; there is no certificate of completion of environmental protection works serving the operational phase of the project; or improperly implementing one of the contents in the approved environmental protection project. (source: www.baotainguyenmoitruong.vn, date access: 19/11/2020).
However, to have an overall overview of the environment issue, we need to perform a SWOT analysis on impacts of FDIs and income on environment pollution as following

**Strengths:**

- FDIs has contributed to energy and environment protection in Vietnam in recent years. Vietnam - Germany has been implementing many energy and renewable energy projects. In 2015, the two countries implemented the Renewable Energy and Energy Efficiency Project (4E), phase I (2015 - 2018) with a total value of 3 million euros (3.5 million USD); Phase II (2018 - 2021) is worth 12.16 million euros (14.24 million USD). The main objective of Project 4E is to develop relevant legal, regulatory and institutional conditions and capacities to promote investment in renewable energy and energy efficiency. From 2017, Vietnam and Germany have implemented the Smart Grid Project for renewable energy and energy efficiency, which is expected to end in June 2021. The project assists the Government of Vietnam in implementing the smart grid roadmap, aiming to promote modernization and automation of the national electricity transmission and distribution system.

**Weaknesses:**

In recent years, there are violations of foreign enterprises often focus on a number of specific behaviors such as: Failure to make project environmental impact assessment reports according to regulations; improper implementation of one of the contents of the environmental impact assessment report; there is no certificate of completion of environmental protection works serving the operational phase of the project; or improperly implementing one of the contents in the approved environmental protection project. Besides, there are also enterprises that have waste management violations such as: perform periodical waste monitoring inappropriately and incomplete according to regulations; declaring inadequately the transferred hazardous waste in the hazardous waste document; self-dispose of hazardous waste without approval of a competent authority.

**Threats:**

FDI enterprises investing in Vietnam basically have an average level of production technology, consuming a lot of natural resources, and a large amount of emissions. As of 2017, FDI inflows into Vietnam from developed countries with modern science and technology such as Germany, France, Switzerland, USA, Canada, and Russia are still quite modest. Income from Asia such as: Korea, Japan, Taiwan, Hong Kong, China has own peculiarities. Except for the partners from Korea, Japan, the rest basically have average technology level, public content. High technology comprises very small fraction, with low efficiency, and mainly depends on exploitation of natural resources. It appeared that many FDI projects cause serious pollution, e.g. Huynhdai-Vinashin (Khanh Hoa), Miwon (Phu Tho), Tung Kuang (Hai Duong), Vedan (Dong Nai), and, most recently, Formosa (Ha Tinh).

**Opportunities:**

Although the FDI economic sector is significantly increasing the amount of pollutants and energy consumption in Vietnam, FDI investment can be attracted into renewable energy sectors in order to reduce significant impacts of environmental pollution. Hence, the problem is the state governance of environment quality through FDIs projects and better environment technology into the country.

Beside, Vietnam and Germany have cooperated in the renewable energy sector for 10 years and this cooperation is always updated from time to time. To date, Germany has supported development cooperation projects in Vietnam with a total budget of about 1 billion euros (1.17 billion USD), including implemented projects and committed projects.
4.2 Indonesian case

For the attainment of the research objective, this section summarises the results which is based on the descriptive analysis, stationarity testing, ARDL model and Granger Causality.

**ARDL Model Assessment**

In this following section, the effect of CO2 emission as a proxy to physical environment and disposable income is tested using ARDL model. The results in Table 3 indicates that the optimal lag order chosen automatically by E-Views is (2,1,4). The results in the mentioned table further indicates that FDI’s flow in the case of Indonesia is significantly dependent on its lagged values \([B= 0.578; \text{ p}= 0.000< 0.01]\) and \([B= 0.263; \text{ p}=0.008< 0.01]\) respectively. The effect is further computed to be positive. In addition, the long-run effect of CO2 emission captured using the variable at level is positive and significant \([B= 1.243; \text{ p}= 0.01< 0.05]\). This implies that in the long-run, more pollution in Indonesia results in more FDI. However, if the short-run effect is computed, it is negative \([B= -1.108; \text{ p}= 0.01< 0.05]\). Therefore, more pollution in the short run in terms of CO2 emission would lead to decrement in the FDI’s flow in Indonesia. Another variable which has been tested in this study is DI or disposable income and its long-run effect is calculated to be positive \([B= 7.977; \text{ p}=0.048< 0.05]\). Therefore, increment in the country’s disposable income would lead to increment in the investment in the Indonesian region. On the contrary, in the short-run, the effect is computed to be negative, however, till the second lag, the effect is apparently insignificant. Hence, the short run effect and association is minimal. Moreover, the overall variance that DI, CO2 emission and lagged values is explaining is computed to be 86.33% which following the adjustment is reduced to 83.01%. In furtherance, the overall model is also significant and this inference has been draw on the basis of f-statistics \((p-value< 0.05)\). Given this, the model is controlled for the problems or serial correlation or heteroscedasticity with the use of White errors (see Table 1).

<table>
<thead>
<tr>
<th>Table 1. ARDL Model of the study</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Selected Model:</strong> ARDL(2, 1, 4)</td>
</tr>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>FDI (-1)</td>
</tr>
<tr>
<td>FDI (-2)</td>
</tr>
<tr>
<td>CO2 Emission</td>
</tr>
<tr>
<td>CO2 Emission (-1)</td>
</tr>
<tr>
<td>DI</td>
</tr>
<tr>
<td>DI (-1)</td>
</tr>
<tr>
<td>DI (-2)</td>
</tr>
<tr>
<td>DI (-3)</td>
</tr>
<tr>
<td>DI (-4)</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>R-squared</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
</tr>
</tbody>
</table>

***: indicating significant at 1%; **: indicating significance at 5%

**Granger Causality**

For the purpose of evaluating the causality between the variables, Granger causality has been employed. The results presented in Table 4 depicts that CO2 emission and DI possess bi-causality because both the directions are computed to be statistically significant \((p-value< 0.1)\). In addition, the effect of DI on FDI is computed to be statistically significant \([F-statistics= 2.482 \text{ with } p-value= 0.06< 0.1]\). However, in the short run, it is found that CO2 emission does not granger cause FDI. It has been asserted because the p-value is computed to be higher than 10%. (see Table 2).
Table 2. Assessment of Causality

<table>
<thead>
<tr>
<th>Propositions</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2 Emission does not Granger Cause DI</td>
<td>2.251*</td>
<td>0.078</td>
</tr>
<tr>
<td>DI does not Granger Cause CO2 Emission</td>
<td>4.704***</td>
<td>0.003</td>
</tr>
<tr>
<td>FDI does not Granger Cause DI</td>
<td>1.471</td>
<td>0.231</td>
</tr>
<tr>
<td>DI does not Granger Cause FDI</td>
<td>2.482*</td>
<td>0.061</td>
</tr>
<tr>
<td>FDI does not Granger Cause CO2 Emission</td>
<td>0.409</td>
<td>0.801</td>
</tr>
<tr>
<td>CO2 Emission does not Granger Cause FDI</td>
<td>1.933</td>
<td>0.126</td>
</tr>
</tbody>
</table>

***: indicating significant at 1%; **: indicating significance at 5%; *: indicating significance at 10%

5. Discussion

According to Environmental Performance Index (EPI) of the Center for Environmental Law and Policy, Yale University (USA), built to assess the ranking position, air quality of countries in the world, published annually. In the EPI index includes 10 component indexes classified into 2 groups: environmental health and ecosystem sustainability. These are indicators related to air pollution and the quality of the environment.

According to this quote, in 2012, the EPI of Vietnam was 79/132 countries, and by 2018 it had dropped to 132 out of 180 countries. If calculated according to the two groups of air pollution and environmental quality indexes, Vietnam ranks 159 - 161.

The reason for the increasing number of cases of violating regulations on environmental protection of FDI enterprises is partly due to the loophole of the legal system. Typically, there is a lack of inconsistency in the provisions of the Law on Environment and Investment Law, Law on Environmental Protection and Law on Construction, between the Law on Environmental Protection and the Law on Water Resources. Other reasons such as the collection and transportation of hazardous waste have not met the needs of businesses; or to attract investment in industries suitable to functional subdivisions of industrial parks, industrial clusters.

On the other hand, the association and effect of CO2 emission as a metric of environmental pollution and disposable income have been evaluated on the FDI of Indonesia. It has been found from the assessment that both the variable have reasonable effect on the inflow of the investment in Indonesia.

Another implication of the study is that improvement in the environmental aspects along with the income can lead to more employment opportunities. This aspect is crucial to be noticed because a country like Indonesia can grow further as developing state with more of its population contributing to the work force. Precisely, FDI, income and pollution are found to be interlinked aspects in the case of Indonesia and improvement in any would affect the other significantly, therefore, plausible policies are required by the government to curb the pollution and spread awareness regarding expenditure and income. Another significant findings is associated with the fact that improvement in the savings strategy, the environment of investments in Indonesia can be promoted. It has been inferred on the basis of significant results.

6. Conclusion

Because FDIs has significant impacts on environment pollution, government agencies need to enhance monitoring and controlling FDIs projects. We will propose some policies in the below section in details.

The study was concerned with determining the influence of income and environmental pollution on FDI in Vietnam and Indonesia. Both disposable income and environmental pollution are found to have significant effecton the FDI of Vietnam and Indonesia. The study has adopted a quantitative approach to comprehend the research phenomenon. The findings of the current study are also well aligned with the prior findings where it has also been discussed that income and environmental pollution significantly affect FDI of a country.
Policy implications:

We need to enforce regulations on pollution prevention and minimization and environmental monitoring, and regulations on emission limits; Enterprises must publicly disclose information on their environment and solutions to treat emissions. In particular, it is necessary to promote the guidance, monitoring and inspection of enterprises in their observance of the law on environmental protection; develop mechanisms and policies to attract investment in the field of waste gas treatment, waste water, solid waste and urban environmental sanitation …

In renewable energy sector, we also have to continue to develop mechanisms to mobilize resources from all socio-economic sectors to invest in the development of transmission grids (220 kV, 500 kV and higher voltage levels). In the immediate future, to implement a number of transmission grid projects with the function of collecting and releasing the capacity of renewable energy power sources.

Besides, we propose some recommendations for enhancing financial accounting information transparency in FDI firms:

In order to strengthen responsibilities of FDIs investments on society and business environment, FDIs firms need to increase transparency in income distribution, tax and stakeholder payment obligations, internal price transfer policy, etc.

Over years, the Government of Vietnam and relevant ministries have recently issued or amended many related regulations to remove difficulties, support businesses to operate more efficiently as well as improve the investment climate and increase Vietnam’s competitiveness index, thereby attracting foreign investors.

On the other hand, FDIs firms need to pay attention more to financial accounting information transparency. For example, Disclosure of information about a firm’s structure and ownership rate and dealing with related parties is one of the principles of effective corporate governance. This exposes the connections between companies and helps uncover illegal financial flows, thereby reducing the chance of corruption and other financial violations.

7. Future Research Directions and Limitations

The current study discusses in detail how the FDI of a country is predicted by measures like environmental pollution and income. However, the absence of qualitative evidence indicates one of the major weaknesses of the current research. In this aspect, there is an opportunity for the future researcher to execute this research with the inclusion of some qualitative evidence as it gives new dimensions to the research context. Further, the findings of the current research can only be applied with full confidence in the context of 2 countries. Therefore, future researchers can also study the current research phenomenon from the context of different geographical locations.

References


Economics, 7(1), 17-22.


MECHANISM OF FORMATION OF INNOVATION SECURITY AND ACTIVATION OF INNOVATION ACTIVITY OF CORPORATIONS

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Abstract. The article defines the range of scientific-methodical and applied foundations of launching the mechanism of corporate innovation security within the framework of development of innovation activity and inclusion of corporation personnel in these processes. Groups of indicators for assessing innovation activity and basic innovation security of corporations have been created. Methods of multi-dimensional taxonomic analysis were introduced to distinguish safety indicators of innovation activity. The level of controllability of innovation activity of the corporation is estimated by the coefficient of safety of innovation activity, which combines diagnostic indicators of innovation processes in the corporation and forms the analytical field of vectors of innovation development. A mechanism for making and implementing management decisions to intensify innovation and ensuring corporate innovation security has been developed. The mechanism is based on an integrated assessment of the controllability of innovation activity of the corporation, which determines the ranked sequence of actions for setting and solving tasks within the corporate development program, as well as the use of a system for collecting and processing internal proposals for innovation. The algorithm of implementation of the mechanism of ensuring innovation security of corporation in the form of a flow diagram has been built. A computational model of virtualization of assessment of diagnostic indicators of innovation security of corporation based on the coefficient of safety of innovation activity has been developed.

Keywords: innovation security; innovation activity; coefficient of safety of innovation activity; resources of corporate innovations; indicators of evaluation of innovation activity

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JEL Classifications: D20, E23, F43

1. Introduction

The state of innovation activity and corporate innovation security is the most important indicator of economic development of the world countries. Success in achieving sustainable economic growth can only be ensured by new knowledge and scientific and technical progress (STP). Most of the gross domestic product (GDP) in the leading countries is accounted for by new or improved technologies, products, equipment, and by various estimates, from 70% to 100% of growth of industrial production is achieved through the use of innovations. However, in spite of existing government programs to stimulate innovations, the share of GDP accounted for by
innovations in the OECD countries, remains insignificant. In this regard, there is a need to improve the system of innovation support and innovation security of economic sectors. So, at the macro level, three main tasks are solved: 1) state innovation strategy and security are formed; 2) favorable innovation climate for the economy as a whole is created; 3) state innovation programs are implemented. Macro level creates conditions for intensive development and stimulation of innovative activity at the level of business structures and corporations. This mechanism is designed to ensure the implementation of state and innovation strategy and security at the micro level, increase the level of innovation priorities of entrepreneurial initiative and form powerful tools for ensuring innovation security.

2. Literature Survey

Innovation is a major factor of the economic security and competitiveness of corporations and potentially includes the principles of financial success. Therefore, the problem of forming the state of economic security of the corporation is in the plane of solving current problems through innovation development and is characterized by increased attention of scientists from around the world (Darroch, 2003; Ahmed & Shepherd, 2010; Khorshid et al., 2020). Problematic issues of economic security are discussed in the works (Hamel, 2002; Thakor, 2003; Chehabeddine & Tvaronavičienė, 2020). There is a large number of works devoted to the definition of the term “innovation security”, and according to (Tushman & Anderson, 1997), one of the approaches to innovation security of the corporation is considered as a special ability to effectively function and reproduce innovation in a risk situation. However, this approach to defining the essence of security does not consider the prospects for development and the impact of innovation activity of corporations on ensuring their economic security.

In the works (Assink, 2006; Massumi, 2014) it is stated that for corporations, evaluation and monitoring of innovation security is necessary, first of all, because their actively used potential is a determining, stabilizing factor of anti-crisis development, a guarantor of economic growth and support of economic independence and security. One of the purposes of monitoring the innovation security of a corporation is to diagnose its condition according to a system of indicators that take into account the specific industry characteristics that are most characteristic of a particular corporation, and are of strategic importance for the latter. As for the dynamic approach to security, in the works (Hitt, et al. 2007; Johnson, et al. 2006; Kulmaganbetova et al., 2020), it is indicated that the corporation can use various forms of innovation. Thus, there used the development of cooperation with external production and technological partners, the implementation of joint innovation projects. The innovation policy of a company also does not preclude the acquisition of patents, licenses for various technologies. At the same time, innovation development at the cost of own technologies and competencies is among the priorities of economic activity.

3. Methods

The study methodology will be based on conceptual techniques: 1) Participation of the state in innovation activity and provision of security. This process is objectively necessary due to various reasons: firstly, market regulators alone do not create the conditions for innovation activity to be a continuous flow of innovations; the second reason for increasing the role of the state in the field of innovation activity is the rapid growth of costs necessary for its implementation; the third group of reasons that requires more active participation of the state in innovation activity is related to the need for long-term technology forecasting; the fourth reason for increasing the role of the state in innovation activity is due to the fact that the level of technical progress and increase in the volume of resources absorbed by the innovation process, create the need for joint work and cooperation of various innovation entities, both private and state-owned, such as firms, universities, state laboratories. 2) System management concept. In this plane, we can identify a general system of state measures of innovation policy and security consisting of three blocks related to funding, distribution of technical knowledge and competition. 3) Structural relations method. The relation between the management mechanism and innovation entities is carried out through the state influence on the process strategy of the latter, as well as on the formation of resources for corporate innovation. The methods of the state influence in the field of innovation activity can be divided into direct and indirect ones. The main instrument of direct influence of the state on innovation activity
is the state scientific and technical policy. Carrying out the planning, organization and implementation of scientific and technical programs, the state itself creates scientific and technical resources. Indirect methods of the state innovation policy involve the use of mainly tools of economic regulation. They are not aimed at creating innovation resources as such, but provide support and stimulation of innovation activity.

4. Results

The growing role of innovation activity at the national level puts forward new requirements for the selection of the most effective mechanisms for the use and evaluation of innovation potential, innovation activity management of industrial corporations. Thus, for the development of independent innovation activity and provision of innovation security at the national level it is necessary to: a) create favorable conditions for the development of innovation activity at the legislative level; b) create a system of regulation of cooperation and participation of corporations, research institutes, and universities, in order to create and implement innovations at the application level (Bodie, et al. 2009; Ualzhanova et al., 2020).

At the corporate level, it is necessary to solve the following tasks: a) to develop and provide for the functioning of a mechanism for finding new ideas, inventions and developments; b) to create favorable conditions within the corporation that will motivate staff to creative work and innovation activity; c) to provide for the effective transfer of new knowledge, process developments, prototypes from one stage of the innovation process to the next one; d) to plan and monitor intra-firm innovation activities; e) to promote comprehensive functional interaction of participants in the innovation process (Holtzman, 2008). The evaluation group of indicators of innovation activity and security of the corporation, which demonstrates the results of the development of innovative products, is presented in Table 1.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Criteria</th>
</tr>
</thead>
</table>
2. Labor intensity reduction ratio  
3. Material consumption intensity reduction ratio  
4. Material consumption change ratio |
| 2. Result | 1. Fixed capital renewal ratio.  
2. Labor mechanization and automation level.  
3. Labor productivity growth.  
4. Investment return period.  
5. Economy through cost reduction.  
6. Income growth through innovation products.  
7. Product competitiveness level.  
8. Innovation product share in total product volume.  
9. Average wage growth through development of innovation products.  
10. Growth in the number of jobs through development of innovation products.  
11. Innovation product share in total production volume and its dynamics.  

Source: compiled by the author according to the data (Bagno et al 2017; Jones, Charles P., 2010)

The main problem of introduction of innovations in the business environment among OECD countries is the lack of adequate evaluation of the effectiveness of introduction of innovations, incomplete market analysis and misunderstanding of the ultimate goal of introduction of innovations, in connection with which there appear additional tangible and intangible costs. According to the above classification, corporations need to conduct a preliminary evaluation of innovations being introduced to take preventive measures to reduce unjustified losses and increase the level of innovation security. Corporate innovation management and provision of security should be of a project nature and be a purposeful activity in the field of planning, organization, motivation and control of innovation processes (Roe, 2004). Optimal solutions to the problems of implementing innovative projects must be found by joint efforts of different departments (Table 2).
Table 2. Main functions of innovation activity management at the macro and micro levels

<table>
<thead>
<tr>
<th>Functions</th>
<th>Main elements of the content of innovation activity management functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>Justification of the size of investments for the implementation of innovative projects; investment risk planning and discount rates for investment projects; innovation efficiency planning.</td>
</tr>
<tr>
<td>Organization</td>
<td>Finding specific forms of implementation of innovative projects (within a corporation, through creation of a new legal entity common for the corporation)</td>
</tr>
<tr>
<td>Motivation</td>
<td>Stimulation of purposeful effective activity of all participants of innovation process (management of innovation project, development, suppliers of the equipment, materials, support industries, etc.)</td>
</tr>
<tr>
<td>Effectiveness control and evaluation</td>
<td>Determination of the compliance of the actual results of innovation management with the planned indicators; evaluation of commercial efficiency of implementation of innovation projects.</td>
</tr>
</tbody>
</table>

Source: compiled by the author according to the data (Tidd & Bessant 2013)

It is proposed to assess the level of controllability of innovation activity using one quantitative indicator – the coefficient of safety of innovation activity ($I_s$). It should contain as parameters diagnostic indicators obtained as a result of taxonomic analysis. It is assumed that, knowing the dynamics of the integrated indicator ($I_s$), which reflects and summarizes information on intellectual capital, process innovation and product innovation, the corporation management, firstly, will be timely and accurately informed about the state of innovation activity; and secondly, it will be able to develop measures on innovation security and prepare for possible market turbulence in advance, before emergencies arise.

The integrated indicator ($I_s$) with such characteristics plays the role of a certain independent expert, as it gives a consolidated assessment of the three main areas of corporate management, according to the same rules and the only method of calculation: 1) development of product, process innovations; 2) intensive use of intellectual capital of the corporation, 3) formal determination of the sequence of actions to enhance the innovation activities of the corporation.

To reduce the size of the problem and pay increased attention to certain indicators of innovation activity security, we used methods of multi-dimensional taxonomic analysis allowing to obtain attributes that would most fully characterize the phenomenon under study, but would form less numerous sets as possible (Kraus, et al. 2016). As a result of consistent application of methods of taxonomic analysis (ball method, center of gravity method, potential method) the following diagnostic indicators which comprehensively characterize innovation security of corporation were distinguished:

- $Y_1$ – increase in the share of sales in new markets or new products as a ratio of total sales;
- $Y_2$ – share of profits from process innovations as a ratio of total profits;
- $Y_3$ – share of profits from projects carried out based on the author’s innovations;
- $Y_4$ – joint research and development projects;
- $Y_5$ – specific duration of preparation for the production of new products;
- $Y_6$ – investment growth rates;
- $Y_7$ – specific costs for the acquisition of licenses, patents.

After selection of representative diagnostic indicators, the integrated indicator – coefficient of safety of innovation activity ($I_s$) – is formed. The theory of utility deals with the issues of integration of different indicators
into one integrated indicator. According to this theory, the integrated indicator is a utility function. The utility function is built to quantify the value of the studied objects, phenomena, economic, political and social processes. The initial data for building such a function are the preferences of people, especially of those who make management decisions, i.e., their professional opinion about the values of the processes under study expressed by them either as regards different areas of innovation activity and security, or the same areas but in different conditions.

In certain conditions, for most indicators there are critical areas of values. When falling within these areas it becomes impossible to offset reduction of one indicator by improving others. Moreover, the size and position of critical areas do not depend on the value of other private indicators; and outside the critical areas of private indicators there is a rule of substituting the usefulness of some indicators for others. Better variants (according to informal estimates) of the state of innovation security may have the values of the utility function, which are less than those of less desirable variants when estimated by an individual expert. In our opinion, the non-compensatory advantage in the assumed formulation is more appropriate for the integrated evaluation of innovation security of industrial corporations than the compensatory one. The lack of utility function for the general case of activity of corporations in different situations greatly complicates the possibility of applying this advantage in real economic conditions (Cunningham, 2014). However, for our study this is possible in the following cases: a) values of all private indicators that are taken into account when calculating the estimates of innovation activity must be the final values known before the calculations of the integrated indicator, or the strategic goals of the corporation must be known as a set of ideal values of all considered indicators; b) evaluation of each private indicator is performed with some specified accuracy, which is determined by the number of digits after the comma.

While preserving commonality of statements, we assume that condition (a) is satisfied so that the strategic development goals of the corporation are known, which are accepted as ideal values of $Y_1$, ..., $Y_n$ of certain indicators of the state of innovation activity and security. If the corporation achieves the values simultaneously for all $n$ indicators, its strategic development goals will be achieved by 100% and the level of innovation security will be maximum.

In our paper, to form such an indicator we used vector methods of ordering objects, in particular the method of non-compensatory advantages. The advantage of this approach is that it adequately reflects the evaluation of innovation activity and security of the corporation, including if the deterioration of the values of any diagnostic indicator can not be offset by the improvement, even simultaneous, of all other diagnostic indicators (Huber et al 2010).

The available diagnostic indicators vary from 0 to 1 (they can be measured as a percentage), being dimensionless values, the algorithm for forming the integrated indicator of safety of innovation activity ($I_s$) has a lexicographic character and is a mathematical operation of eight consecutive procedures. If the generalized indicators $Y_1$, ..., $Y_n$ are numbers in the range from 0 to 1, the value of the integrated indicator of safety of innovation activity can be found by the formula:

$$I_s = \frac{(m_1 \times 100 + m_2 + \sum_{j=2}^{n-2} \frac{m_{j+2}}{10^{2-j}})}{100}$$

where $I_s$ - integrated indicator of safety of innovation activity of a corporation;
$n$ - number of diagnostic indicators $Y_i$;
$m_1$ - minimum number of $Y_1$, ..., $Y_n$;
$m_j$, $j=2$, ..., $n$ – minimum of the remaining numbers after selecting the previous minimum.
The use of the algorithm for non-compensatory advantage leads to obtaining the value of $I_s$, which reflects as percentage the degree of achievement of strategic goals of innovation security of the corporation. The calculated indicator $I_s$ is useful not only as an integrated numerical value of the safety of innovation activity of a corporation, but mainly as an indicator of the order of setting and solving management tasks of a corporation. It indicates that according to the concept of non-compensatory ratios of individual indicators of innovation activity, the main task of corporate management is to increase the indicator with a minimum value at least to the level of the next indicator in order of value. Without this, actions to increase other indicators will not lead to a significant increase in the controllability of innovation activity and security of a corporation. This is a priority task of a corporation. How to do it and how much other indicators change is decided in each case. The main thing is that during increase in the indicator with the minimum value, other indicators do not fall below the level of the next indicator in order of value. Next a ranked sequence of indicators is formed, which are included in the number of diagnostic ones, and management decisions are made in accordance with this sequence. In this case, each subsequent step includes in the calculation a chain of indicators increased by one indicator. As a result of step-by-step application of such formalized procedures, the integrated value of safety of innovation activity ($I_s$) will be increase and, accordingly, the corporation will move from one state of innovation activity to a more advanced one. This is how the strategy of intensifying the innovative activity of corporation should look like. The terms of solving strategic tasks of a corporation should be determined based on budget and resource constraints and the competitive situation.

The development and evaluation of strategic decisions for the management of innovation activity of a corporation is proposed to be carried out using a three-level system of indicators. At the top level of the system there is one integrated indicator – coefficient of safety of innovation activity ($I_s$) – as well as its arguments, which are diagnostic indicators.

At the second level of the system of evaluation of strategic decisions for the management of innovation activity of a corporation traditional indicators of evaluation of innovation activity should be used. They should be used by employees in accordance with the technologies adopted by a corporation. The estimates obtained with their help are initial data for calculation of values of diagnostic indicators – arguments of the integrated indicator.

The third level of the system of indicators for evaluation of strategic decisions is formed by initial indicators, which appear in the balance sheets of a corporation, payment documents, etc. By their nature, they are suitable only for evaluation of the actual state of a corporation and its retrospective states, i.e., only for evaluation of the progress in implementing strategic decisions. Forecasting the possible state of a corporation with such detail is unlikely to lead to correct results: dispersion of data of this type will be very large both theoretically and practically (Von Hippel, 2008). However, the initial indicators are used as input data to calculate the values of diagnostic indicators.

The combination of three levels of aggregation of data on the actual and possible activities of a corporation, the synthesis of practical and scientific methods of evaluation of the results of activities and decisions hold out a hope of increased flexibility of innovation activity management, rapid adaptation of corporation management to rapidly changing conditions in its industry. We propose a system approach to the selection and processing of innovation ideas in industrial corporations, which is based on the principles presented in Table 3. The main problem of involving the personnel of a corporation in innovation activity is the issue of its motivation. The difficulty of this issue is two-sided. On the one hand, employees of a corporation may be unmotivated to innovation activity, which results in their reluctance, and in some cases (for example, if the introduction of new equipment entails job cuts) resistance to innovations.
Table 3. Principles of collecting and processing innovation proposals by corporation personnel

<table>
<thead>
<tr>
<th>Principle name</th>
<th>Principle content</th>
<th>Principle implementation directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority principle</td>
<td>Provides for taking into account the priorities of a corporation in the selection of innovation projects</td>
<td>Priority of active innovation strategy instead of copying strategy</td>
</tr>
<tr>
<td>Integration principle</td>
<td>Integrated comprehensive evaluation of an innovation idea</td>
<td>Participation of both technical services specialists and marketers in the expert group</td>
</tr>
<tr>
<td>Mobility principle</td>
<td>Possibility of fast implementation of an innovation project</td>
<td>Modernization of production, purchase of the newest equipment, advanced training of the personnel</td>
</tr>
<tr>
<td>Differentiation principle</td>
<td>Division of employees involved in the implementation of an innovation idea into categories</td>
<td>For each category of employees involved in the implementation of an innovation idea, there are separate indicators of material incentives</td>
</tr>
<tr>
<td>Incentive expediency principle</td>
<td>Encouraging employees for innovation ideas and participation in their implementation</td>
<td>Material incentives only for those innovation ideas that can be implemented within a corporation or sold as intellectual property</td>
</tr>
</tbody>
</table>

Source: compiled by the author according to the data (Stewart & Fenn 2006)

On the other hand, the corporation management can encourage innovation proposals of employees increasing their motivation, however, the incentive system does not take into account the usefulness and profitability of the innovation idea for a corporation. In this case, encouragement of innovation ideas is unprofitable for a corporation, if they can not be implemented within a corporation or sold as intellectual property.

In the system of motivation of involvement of employees in innovative activity of corporation that we propose 4 groups of employees in relation to cycles of innovation process are considered. The first group is encouraged for innovation proposals that can be implemented within a corporation. The second group is encouraged for development of investment and innovation projects. The third group is encouraged for the material implementation of innovation projects. The fourth group is encouraged for the production and sale of innovation products during its development (Blatz, et al. 2006).

The management system will be more effective if it is not focused on one, even the main stage of the innovation process. Therefore, in our opinion, it is necessary to build a management mechanism that will link the individual stages of this process, will work on a regular basis and will allow to more effectively achieve the goals set for the corporation. As a basis of this mechanism, it is proposed to use an integrated evaluation of the manageability of innovation activity. It involves the determination of the ranked sequence of actions for setting and solving objectives of innovation activity, as well as the use of the proposed system of collection and processing of innovation proposals of employees of a corporation. This leads to the need to form a mechanism for system management of innovation activity consisting of three blocks of management decisions (Fig. 1).

The first block is a technology for selection of innovation ideas and proposals that best meet the strategic goals of a corporation and the needs of the market. It is necessary to use four main sources of new ideas. The first sources is the market, with impulses coming both from consumers, and from competitors. The second source is the corporation itself, first of all specialists of design and process services, marketers, etc. The third source is domestic and foreign corporations that sell intellectual property (patents, licenses, know-how, etc.). The fourth source is independent firms, various consulting agencies.
In the second block, the selected ideas and proposals are subject to economic and financial evaluation, as a result of which an internal portfolio of innovation projects should be formed within the budget constraints of a corporation. The third block includes the methods of intra-firm support of effective implementation of portfolio projects and control of the results of this implementation.

In our opinion, this approach will allow to form a fairly complete, detailed list of management functions so that to further assign these functions to specific divisions giving them the appropriate powers and providing a system of motivation for effective innovation management. According to the revised classification of innovation activity proposed in the article, all incoming ideas and innovation proposals can be divided into two groups: initiative and forced innovations (de Goede, 2017).
Innovation ideas aimed at increasing the competitiveness of a corporation are referred to the first group (initiative innovations). To get in the initial list, these ideas must be selected through double testing. The first test is a check of the idea for compliance with the strategic goals of a corporation. At the first stage, it is conducted by almost all employees of a corporation, the evaluation criteria depend on its specifics. At this stage, the concept of the future product, service, technology, etc. is discussed. It is necessary to find out what advantages the product has in relation to competitors, whether there are legal or moral problems. Then the previously evaluated idea gets to experts. The experts should evaluate the feasibility of the idea from a financial and technical point of view, whether it corresponds to the image of a corporation. As a method of such evaluation it is expedient to use a scoring matrix. The matrix is built this way. First of all, the departments and services involved in the evaluation of the idea are determined, each of which is assigned a weighting factor, the value of which reflects its role in the development and success of a corporation. Specialists of the departments evaluate the proposed idea using a 10-point scale (Sammut-Bonnici & Paroutis, 2013).

Ideas that have passed the first stage of selection are checked using the second group of tests. At this stage, the formulated concept of an idea is embodied in a more detailed verbal or visual form. The verbal description should especially indicate the characteristics and advantages, it is also supplemented by sketches, illustrations, presentations, models. The task of the stage is to evaluate the market chances of an idea. Ideas that have not passed a test for market attractiveness are rejected. The rest ideas are included in the initial list, which is checked for economic efficiency in the second block of the proposed mechanism for investment process management.

The second group (forced innovations) includes proposals of a forced nature, related, in particular, to the need to replace worn-out equipment, increase the reliability of production and safety in accordance with new legislation, etc. For such proposals, first of all it is necessary to check the possibility of an alternative way to solve the problem. The selected innovative proposals of forced nature are included in a separate initial list of forced proposals in descending order of urgency of their implementation and divided into two unequal parts – long-term and short-term proposals. The necessary part of the investment budget of a corporation is allocated for the implementation of the most urgent proposals planned for the near future (Buse, et al. 2010). It is hardly expedient to check the economic efficiency of forced projects, rather it is necessary to organize strict control over the spending of funds and the implementation of planned deadlines.

Thus, the first block of the control mechanism can be represented as the following algorithm (Fig. 2).

The results of the study conducted using the proposed methods were modeled within a virtual corporation (conventional study model). During approbation: 1) the current state of innovation activity is
Figure 2. Algorithm of implementation of the first block of the mechanism of provision of innovation security of the corporation
analyzed, indicators are determined that comprehensively characterize the manageability of innovation activity; 2) integrated indicator of manageability of innovation is calculated; 3) a formalized sequence of management decisions to increase innovation activity is defined; 4) according to the proposed algorithm, recommendations for activation of innovation activity are formed. The dynamics of diagnostic and integrated indicators of the virtual model of the corporation is presented in Table 4.

Table 4. Values of diagnostic indicators of innovation security of the virtual corporation

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Periods of time</th>
<th>t1</th>
<th>t2</th>
<th>t3</th>
<th>t4</th>
<th>t5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y1</td>
<td>0.53 0.7 0.41 0.49 0.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y2</td>
<td>0.7 0.67 0.49 0.52 0.51</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y3</td>
<td>0.81 0.79 0.53 0.61 0.59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y4</td>
<td>0.8 0.81 0.56 0.65 0.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y5</td>
<td>0.86 0.91 0.58 0.698 0.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y6</td>
<td>0.89 0.92 0.63 0.72 0.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y7</td>
<td>0.94 0.93 0.67 0.81 0.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is (%)</td>
<td>55.6888 73.7888 44.6777 53.9888 52.2677</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Depending on the obtained ranked sequence of diagnostic indicators, actions of corporation management for increasing manageability of innovation activity and security should be annually adjusted according to the strategy of the corporation. In our opinion, in a situation of weak perception of innovations by the personnel and at large scales of corporation, it would be expedient to use a variant of so-called double structure when implementation of new strategy, as far as possible, is separated from operational activity. This allows the corporation management to provide support for innovations in the departments involved in their implementation, and to use their official power to quickly implement the necessary decisions. At the same time there can take place a destruction of traditionally developed sequence of passing of commands and its replacement by direct contacts of the manager with executors bypassing some levels of hierarchy.

5. Discussion

By essence of innovation development and security of the corporation, the authors mean the internal characteristic of innovation opportunities expressed in the coordination of scores and criteria that justify a mechanism that reflects the interdependence of key innovation resources aimed at developing the economy of the corporation as a whole. The characteristics of the content of innovation security is a set of potential-forming components, internal innovation process, various properties, key contradictions, trends and relationships that shape the competitiveness of innovative products for the reporting period under the influence of different conditions. Innovations are the basis for increasing competitiveness, which is a key condition for provision of the economic security of the corporation.

Due to the need to achieve key goals in creating innovation security of corporations, important tasks are formed, which are solved by the subsystem of microeconomic security: a) monitoring of opportunities for protection against internal and external threats of the environment; b) identification of various conditions that contribute to damaging the image of the corporation, material, financial damage, disruption of its sustainable operation and growth; c) development of structured management decisions on strategic and tactical sustainable economic activity; d) study of partners, contractors and competitors; e) creation of favorable conditions for compensation of damage, reduction of the negative consequences formed at infringement of economic safety; f) diagnosis and forecasting of information characterizing the state of the subsystem of economic security, control over its effective functioning.

Thus, the policy of innovation security is a system of views, various measures, solutions, specific actions in the area of general economic security, which determine the conditions for achieving business goals. Thus, the im-
plemented security policy of the corporation must allow to carry out economic activities, produce competitive products, increase production efficiency, carry out correct marketing activities, make high profits.

Conclusions

In the framework of the conducted study, we defined the concepts of innovation security of the corporation and its place in the overall economic security of business. The substantiated concepts do not reflect all its characteristic features, but only some structurally substantiated components. As a result, the existing approaches to the formation of the concept of innovation security are very different. The need for the corporate level to solve such problems of innovation security has been proved: a) development and functioning of a mechanism for finding new ideas, inventions and developments; b) creation of comfortable conditions within the business structure of the corporation, which encourage personnel to be creative and innovative; c) provision of the transfer of new knowledge, process developments, prototypes from one stage of the innovation process to the next one; d) planning and use of monitoring of intra-firm innovation activity; e) promoting comprehensive and integrated interaction of participants of the corporate innovation process. The innovation security of the corporation consists of unique abilities to increase material, investment, information, and personnel components, which will help the organization to achieve new strategic goals. It should be noted that not all products proposed by organizations in the existing market, form their potential, but only those that are potentially profitable. That is, products created on the basis of innovation technologies have high quality characteristics and should be in demand among end users.

When substantiating the content of innovation security, it is necessary to take into account that it is associated with the mandatory introduction into production of innovation ideas and technologies, organizational and managerial key decisions. An indicator that is used to evaluate the safety of innovation activity based on the algorithm of non-compensatory advantage was proposed in the article. The integrated indicator is formed on the basis of diagnostic indicators obtained by methods of taxonomic analysis. The lack of an integrated approach significantly reduces the efficiency of innovation activity. The mechanism of activation of innovation activity and provision of innovation security, which will allow to connect separate stages of innovation process according to the proposed algorithm, will work on a regular basis and will allow to more effectively achieve business goals set before corporation was formed in the paper.

References


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Abstract. Research background: In today’s globalized world characterized by economic independence, which is a measurable component of the level of relations among countries, economic dependence started to affect the direction, content, and intensity of these relations. Thus, the economy has taken the central role of diplomatic activities, while the border between the traditional political and diplomatic activities has become less visible. Purpose of the article: However, to express a numerical value-added for the economy, it is necessary to define the econometric model for calculating the correlation above precisely. It is necessary to define the order of integration of a series of economic diplomacy and macroeconomic aggregates. The research will try to prove the paper’s primary hypothesis, which states that a series of economic diplomacy and macroeconomic aggregates activity movements are fractionally integrated. Methods: This will be tested by standard stationarity $I(0)$ and unit root $I(1)$ tests and fractional integration tests. The following tests were used to create tests of fractional integration: Geweke Porter-Hudak (1983), Log Periodogram Regression test (GPH), and Moulines–Soulier (1999) Log Periodogram test (MS) Davidson and Sibbertsen (2009). through the program Time Series Modelling version 4.48. Findings & Value added: The stationarity $I(0)$ and unit root $I(1)$ tests, as well as the fractional integration tests, showed that the series of economic diplomacy movement are commonly fractionally integrated, by which this paper’s hypothesis was proved, namely that the series of economic diplomacy and macroeconomic aggregates activity movements are fractionally integrated. Since the stationarity, $I(0)$ and unit root $I(1)$ tests, as well as the fractional integration tests showed that series are commonly fractionally integrated, along with the simultaneous use of the structural relation and fractionally integrated relation in further research which measure the effect of economic diplomacy on macroeconomic aggregates movement. Our study results show a positive link between economic diplomacy and the country’s macroeconomic performances in the long run.

Keywords: economic diplomacy index; macroeconomic aggregates; economic value added; fractional integration; long memory


JEL Classification: FO2; F47; F55; C14

1. Introduction

The goal of any country’s economic diplomacy is to create “added” economic value, and it, ultimately and indirectly, the achievement of economic growth and the country’s welfare (Stjepanović, Tomić and Škare,. 2017; Mazzanti, Mazzarano, Pronti and Quatrosi, 2020).

All is also true for Croatia. Therefore, this paper will try to set a framework on the example of the Croatian economic diplomacy to define the movement of a country’s economic diplomacy value to macroeconomic aggregates. First, the framework for the definition of movement of a series of economic diplomacy variables and macroeconomic indicators will be set, and depending on the result, a recommendation will be given for the use of an econometric model type which would precisely determine the numerically expressed values by which economic diplomacy affects the movement of the macroeconomic indicator of a particular country (Clark and Lebo, 2003).
Coase (1998) claims that new institutional economics (NIE) is vital for the bearers of economic policies because institutions in the form of laws, political systems, culture, or the educational system of a country influence the height of the costs of exchange and consequently the success of an economy.

Hanke and Walters (2000) claim that economic freedom can stimulate investments and growth and that development will not fulfill its aims without it, while Powell (2003) claims that the critical institutional factor is the degree of economic freedom.

Yongjian, Ning, and Xiaofang (2005) think that it is necessary to run one’s business in the simplest possible way, in a motivating environment that enables excellent institutional support for entrepreneurship development. Therefore, the link between industrial policy and institutions is of decisive importance, especially in a lack of success.

The threshold is the hypothesis that a series of economic diplomacy and macroeconomic aggregates activities are fractionally integrated. Economic diplomacy activities are determined through the investment variables, lists of implemented laws, ordinances, and other legal regulations linked to economic diplomacy from 1995 to 2018 as proxy variables for the activities of economic diplomacy in Croatia while regarding macroeconomic aggregates, they are determined through industrial production, export, foreign exchange movement, inflation, unemployment and labor costs. The aim is to prove or reject the set hypothesis stating that the series of economic diplomacy and macroeconomic aggregates activity movements are fractionally integrated.

To determine the fractional integration of series, the DIPL index variable (proxy variable for economic diplomacy) will be tested by standard stationarity I(0) and unit root I(1) tests, as well as fractional integration tests.

The paper is structured as follows. After we introduce the study’s topic, we present a recent literature review on economic diplomacy’s importance for growth. The research methodology and data we use in our study are explained in section three, with the study’s empirical results presented in section four. Discussion section (five) compares our study results with similar findings based on this paper’s empirical results. The conclusion section provides a summary of our study findings with directions for future research on economic diplomacy.

2. Literature review

Moers (2002) says that the protection of property rights, a healthy legal system, small and supporting country, and economic freedom represent the pillars of economic growth.

Berggren (2003) directs that institutions which protect economic freedom improve economic growth because they:

a) promote a high return through lower taxes, a healthy legal system, and the protection of property rights
b) enable the allocation of talents/resources where it generates the highest value
c) speed up the dynamics of the economy in which there is competition thanks to the small number of regulations
d) enables predictable and rational decision-making thanks to a low and stable inflation rate
e) promote capital investments where the return is highest.

It is shown that “the understanding of economic growth implies the understanding of neoclassical factors, but the complementary evolution of politics and laws which form the basis of economic forms producing growth” (Myrhman and Weingast, 1994).

According to Acemogleou (2004), the so-called growth models are still actual in economics, and although they have explained a lot in the growth mechanism, they still do not offer its fundamental explanation.
The currently leading hypothesis of the new theory of growth (inside NIE), which explains the differences in GDP determinants among countries, relates to the so-called social infrastructure, a concept under which Hall and Jones (1999) imply institutions and national policies which stimulate investments and production, not expenditure and seeking for rents, as is assumed by the neoclassical theory of growth (Godlewska and Morawska, 2019).

According to North (1991), “institutions give to economics the structures of incentives, and as this structure of incentives forms, it directs the economic change toward growth, stagnation or decline." In the neoclassical theory, according to which the costs of using the market, or the transaction costs, are equal to zero, “the institution does not have” or does not need them – the only costs held by the acting parties are the transformation costs (resources to products and services). On the other hand, NIE claims that the transaction costs are inherent and significantly influence economic growth, economic decisions and success, types, direction, and organizations’ structure occurring in society. Therefore, according to NIE, production, and exchange’s total costs include transformation and transaction costs (North, 1990).

Pieper (2000) focuses on the research of the correlation between the economic structure and the institutional organization inside it, all of them together affecting the macroeconomic environment, so he concludes that a “poor” economic structure and weak institutions inside it will lead to a low rate of economic growth and its unsustainability.

Yongjian, Ning, and Xiaofang (2005) conclude that economy will grow if the existing institutions are useful, while the benefits of the industrial breakthrough can be achieved exclusively if the existing pre-industrialized conditions and the expected industrialization benefits are strong enough to prevail the existing obstacles and to enable the liberation of those powers significant for the industrial policy, and consequently economy as a whole.

The main issue that remains unsolved in NIE’s theoretical research in the area of institution’s impact on economic growth is how productive institutions appear, i.e., which variables are “explicitly” behind the influence of the institutional “infrastructure” on economic growth. The researchers and professional public’s interest increases with the cognition that in the global socio-economic processes. The success of each observed subject of analysis (national economy, social group, international integration, company) depends on institutional adaptation and concepts such as institutions, institutional development, and institutional frameworks. Institutional adaptation, quality, and capacity of institutions are often mentioned in a different context. Innovation position in the institutional framework also plays an important role (Grossman and Helpman, 1991).

3. Research methodology

The first step in determining the fractionation of economic diplomacy and macroeconomic aggregates activity movements is the stationarity tests I (0) (the arithmetic mean, and the dispersion measures do not change in time). The unit root tests I(1) (the arithmetic mean and the dispersion measures change in time), as well as fractional integration tests, group, and individual, for series of macroeconomic aggregates and economic diplomacy movements to prove or reject the set hypothesis stating that the series of economic diplomacy and macroeconomic aggregates activity movements are fractionally integrated.

Macroeconomic aggregates we use in this study are:
- industrial production (iip),
- export (izvoz),
- foreign exchange movement (eur),
- inflation (cpi),
- unemployment (nez),
- labor costs (nad).

The economic diplomacy index (dipl - a proxy for economic diplomacy level) is constructed as an average index of the following economic diplomacy activities:
investment variables,
lists of implemented laws,
ordinances,
Furthermore, other legal regulations were linked to economic diplomacy from 1995 to 2018 in Croatia.

We use data from the Croatian statistical office (www.dzs.hr) and Eurostat (https://ec.europa.eu/eurostat/home?) and for the economic diplomacy index data from the Croatian national parliament (https://www.sabor.hr/en/home).

Through the Seasonal Adjustment Program – Time Series Modelling 4.48 for the creation of stationarity tests I(0), the following tests were used:

- Robinson-Lobato test is based on a periodogram suggested by Robinson and Lobato (1998), which represents a test against the alternative \( d > 0 \) with rejection in the upper part and a test against the alternative \( d < 0 \) with rejection in the lower part.
- KPSS test – to calculate the p-value of inequality, the tables are given in the work by Kwiatkowski et al. (1992) are used.
- V/S test – modified KPSS test, the p-values are calculated analytically by a modified formula given in Giraitis et al. (2003).

- Lo’s modified R/S test is one of the Hurst’s test versions for short-term memorization with the kernel HAC variance estimator’s help while calculating the p-value of inequality tables given in the work by Lo (1991) is used.
- Harris-McCabe-Leybourne test or HML test is based on the long-term auto variance and is asymptotic N (0, 1) for the null hypothesis. Two settings have to be chosen, an abbreviated parameter \( c \) where \( k = (cT)^{1/2} \), and \( L \) where \( l = LT^{12/25} \) indicating the throughput of the variance parameter (Harris et al., 2008).

Through the Seasonal Adjustment Program – Time Series Modelling 4.48 for the creation of unit root tests I(1), the following tests were used:

- Augmented Dickey-Fuller Test or ADF test – the number of shifts for the ADF test is chosen from \([0, \ldots, 2T^{1/3}]\) (Dickey and Fuller 1979, Said and Dickey 1984)
- Phillips-Perron test (Phillips and Perron 1988)
- Elliott-Rothenberg-Stock tests – to perform the calculation, the model tables given in Elliot et al. (1996) are used. The entries in those tables used to define the final sample size are linearly interpolated, ensuring the value which matches the real analyzed sample, and for this purpose, the subject “\( \infty \)” is treated as an equivalent for 1,000 observations.
- Modified Dickey – Fueller test or DF-GLS test
- Pt test – feasible likelihood ratio test where a kernel of variance estimations is used to perform the calculation.

Through the Seasonal Adjustment Program – Time Series Modelling 4.48, the “normality” test Jacque-Bera (JB) is used to determine and establish the ratio of the minimal, maximal, median, standard deviation, asymmetry coefficient (skewness) and flattening (kurtosis):

\[
B = \frac{T}{6} \left( \frac{SK}{SD^2} \right)^2 + \frac{T}{24} \left( \frac{Kt - 3SD^4}{SD^4} \right)^2
\]

where SD represents the standard deviation, Sk is asymmetry, and Kt is flattening.

The following tests were used to create tests of fractional integration: Geweke Porter-Hudak (1983), Log Periodogram Regression test (GPH), and Moulines–Soulier (1999) Log Periodogram test (MS) through the program Time Series Modelling version 4.48.
4. Results

Stationarity I(0) and unit root I(1) tests show that the group stationarity test (Table 1) for all time series rejects the null hypothesis about the existence of a unit root: Levin, Lin & Chu (2002) -2.93282; Im, Pesaran & Shin (2003) -10.4673, ADF – Fisher 230.134 (Dickey, D.A. and W.A. Fuller (1979), and PP – Fisher 397.056, (Maddala and Wu (1999) and Choi (2001), and Hadri (2000).

<table>
<thead>
<tr>
<th>Panel test</th>
<th>Statistics</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin and Chu</td>
<td>-2.93</td>
<td>0.00</td>
</tr>
<tr>
<td>Im, Pesaran and Shin</td>
<td>-10.47</td>
<td>0.00</td>
</tr>
<tr>
<td>Augmented Dickey-Fuller</td>
<td>230.1</td>
<td>0.00</td>
</tr>
<tr>
<td>Phillip – Perron</td>
<td>397.1</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Source: Authors’ analysis

5. Stationarity tests

What follows is the stationarity I(0) and unit root I(1) tests’ results. These tests were created through the X-13ARIMA-SEATS Seasonal Adjustment Programa – Time series modeling 4.48 (time series deseasonalized). For the I(0) test, the null hypothesis was set – H₀ that the series is stationary, and for the I(1) test, the null hypothesis was set, stating that the series has a unit root (see Table 2).

<table>
<thead>
<tr>
<th>Series test</th>
<th>Statistics</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliot-Rothenberg-Stock</td>
<td>-10.03</td>
<td>0.00</td>
</tr>
<tr>
<td>Augmented Dickey-Fuller</td>
<td>-10.01</td>
<td>0.00</td>
</tr>
<tr>
<td>Phillip – Perron</td>
<td>-13.48</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Source: Authors’ analysis

The parameter p (Robinson-Lobato) for the test I(0) is higher than 0.05 (0.336), which means that H₀ is accepted. It indicates that the series is stationary. The value of the parameter p for test I(1) is lower than 0.05 (0.01), which rejects the null hypothesis stating that the series has a unit root and accepts H₁ indicating that the series does not have a unit root. The value of Robinson’s d test (0.115676) shows that the series inclines to fractional integration, determined later on in work through fractional integration tests (see Table 3).

<table>
<thead>
<tr>
<th>Series test</th>
<th>Statistics</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliot-Rothenberg-Stock</td>
<td>-9.84</td>
<td>0.00</td>
</tr>
<tr>
<td>Augmented Dickey-Fuller</td>
<td>-10.08</td>
<td>0.00</td>
</tr>
<tr>
<td>Phillip – Perron</td>
<td>-14.7</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Source: Authors’ analysis

The p parameter value (Robinson-Lobato) for the stationarity test is lower than 0.05 (0.026), which means that the null hypothesis, claiming that the series is stationary, is rejected. The p parameter value for the unit root test is lower than 0.05 (0.01), which means that the null hypothesis, claiming that the series has a unit root, is rejected. The value of Robinson’s d test (0.197209) indicates that the series inclines to fractional integration, determined later on in work through fractional integration tests (see Table 4).
Table 4. Stationarity test on the diplomacy series

<table>
<thead>
<tr>
<th>Series test</th>
<th>Statistics</th>
<th>P-value</th>
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</thead>
<tbody>
<tr>
<td>Eliot-Rothenberg-Stock</td>
<td>-2.88</td>
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<tr>
<td>Augmented Dickey-Fuller</td>
<td>-2.51</td>
<td>0.09</td>
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<tr>
<td>Phillip – Perron</td>
<td>-1.87</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Source: Authors’ analysis

The (Robinson-Lobato) p parameter values for the test I(0) are higher than 0.05 (0.432), which means that the null hypothesis, claiming that the series is stationary, is accepted.

The p parameter value for test I(1) is higher than 0.05 (0.09), which means that the null hypothesis, claiming that the series has a unit root, is accepted. The value of Robinson’s d test (0.475678) indicates that the series inclines to fractional integration, determined later on in work through fractional integration tests (see Table 5).

Table 5. Stationarity test on the industrial production series

<table>
<thead>
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<th>Series test</th>
<th>Statistics</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliot-Rothenberg-Stock</td>
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<td>0.05</td>
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<tr>
<td>Augmented Dickey-Fuller</td>
<td>-1.78</td>
<td>0.09</td>
</tr>
<tr>
<td>Phillip – Perron</td>
<td>-1.95</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Source: Authors’ analysis

The values of (Robinson-Lobato) the p parameter for the test I(0) is higher than 0.05 (0.208), which means that the series is stationary (H0). The p parameter value for test I(1) is higher than 0.05 (0.9), which means that the null hypothesis, claiming that the series has a unit root, is accepted. The value of Robinson’s d test (0.493626) indicates that the series inclines fractional integration, determined later on in work through fractional integration tests (see Table 6).

Table 6. Stationarity test on the export series

<table>
<thead>
<tr>
<th>Series test</th>
<th>Statistics</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliot-Rothenberg-Stock</td>
<td>-1.35</td>
<td>0.10</td>
</tr>
<tr>
<td>Augmented Dickey-Fuller</td>
<td>-0.62</td>
<td>0.09</td>
</tr>
<tr>
<td>Phillip – Perron</td>
<td>-1.42</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Source: Authors’ analysis

The p parameter values (Robinson-Lobato) for the test I(0) are higher than 0.05 (0.133), which means that the H₀ hypothesis, indicating that the series is stationary, is accepted. The p parameter value for test I(1) is higher than 0.05 (0.9), which means that the null hypothesis, claiming that the series has a unit root, is accepted. The value of Robinson’s d test (0.486817) indicates that the series inclines fractional integration, determined later on in work through fractional integration tests (see Table 7).

Table 7. Stationarity test on the labour costs series

<table>
<thead>
<tr>
<th>Series test</th>
<th>Statistics</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliot-Rothenberg-Stock</td>
<td>-1.81</td>
<td>0.01</td>
</tr>
<tr>
<td>Augmented Dickey-Fuller</td>
<td>-2.14</td>
<td>0.09</td>
</tr>
<tr>
<td>Phillip – Perron</td>
<td>-21.7</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Source: Authors’ analysis
Robinson-Lobato p parameter values for the test I(0) are lower than 0.05 (0), which means that the $H_0$ hypothesis is rejected, while the alternative hypothesis $H_1$, indicating that the series is not stationary, is accepted. The p parameter value for test I(1) is higher than 0.05 (0.9), which means that the null hypothesis, claiming that the series has a unit root, is accepted. The value of Robinson’s d test (0.189195) indicates that the series inclines fractional integration, determined later through fractional integration tests (see Table 8).

**Table 8. Stationarity test on the unemployment series**

<table>
<thead>
<tr>
<th>Series test</th>
<th>Statistics</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliot-Rothenberg-Stock</td>
<td>-2.07</td>
<td>0.10</td>
</tr>
<tr>
<td>Augmented Dickey-Fuller</td>
<td>-1.93</td>
<td>0.09</td>
</tr>
<tr>
<td>Phillip – Perron</td>
<td>-1.35</td>
<td>0.09</td>
</tr>
</tbody>
</table>

*Source: Authors’ analysis*

The p parameter values for (Robinson-Lobato) the test I(0) are lower than 0.05 (0.28), which means that the $H_0$ hypothesis, indicating that the series is stationary, is accepted. The p parameter value for test I(1) is higher than 0.05 (0.9), which means that the null hypothesis, claiming that the series has a unit root, is accepted. The value of Robinson’s d test (0.489376) indicates that the series inclines fractional integration, determined later through fractional integration tests (see Table 9).

**Table 9. Stationarity test on the vacancy series**

<table>
<thead>
<tr>
<th>Series test</th>
<th>Statistics</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliot-Rothenberg-Stock</td>
<td>-2.44</td>
<td>0.10</td>
</tr>
<tr>
<td>Augmented Dickey-Fuller</td>
<td>-2.43</td>
<td>0.09</td>
</tr>
<tr>
<td>Phillip – Perron</td>
<td>-4.18</td>
<td>0.01</td>
</tr>
</tbody>
</table>

*Source: Authors’ analysis*

The p parameter values for (Robinson-Lobato) the test I(0) are lower than 0.05 (0.28), which means that the $H_0$ hypothesis, indicating that the series is stationary, is accepted. The p parameter value for test I(1) is higher than 0.05 (0.9), which means that the null hypothesis, claiming that the series has a unit root, is accepted. The value of Robinson’s d test (0.460394) indicates that the series inclines fractional integration, determined later through fractional integration tests.

**Fractional integration tests**

The test results (Robinson’s d value) indicate a possible fractional integration of macroeconomic aggregates. What follows are the fractional integration tests for each of the series.

The Geweke Porter-Hudak (1983) Log Periodogram Regression test (GPH) and the Moulines-Soulier (1999) Log Periodogram test (MS) were used in the program Time Series Modelling version 4.8 (see Table 10).

**Table 10. Fractional integration test inflation**

<table>
<thead>
<tr>
<th>Semiparametric Estimation for cpi_d11</th>
<th>Geweke/Porter-Hudak</th>
<th>Fractional Parameter (d)</th>
<th>Estimation</th>
<th>Std. Err</th>
<th>t-Ratio</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.27427</td>
<td>0.21972</td>
<td>1.248</td>
<td>0.234</td>
</tr>
</tbody>
</table>

*Source: Authors’ analysis*

The fractional integration GPH test for the series of consumer prices and economic diplomacy index has a p-value of 0.234 (higher than 0.05), which rejects the null hypothesis and accepts the alternative $H_1$ hypothesis, which shows that the series is not fractionally integrated (see Table 11).
### Table 11. Fractional integration test diplomacy index

<table>
<thead>
<tr>
<th>Estimation</th>
<th>Std. Err</th>
<th>t-Ratio</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1653</td>
<td>0.21972</td>
<td>0.752</td>
<td>0.046</td>
</tr>
</tbody>
</table>

*Source:* Authors’ analysis

The fractional integration GPH test for the series of diplomacy has a p-value of 0.046, so the null hypothesis claims that the series is fractionally integrated and accepted (see Table 12).

### Table 12. Fractional integration test for the currency exchange rate

<table>
<thead>
<tr>
<th>Estimation</th>
<th>Std. Err</th>
<th>t-Ratio</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8274</td>
<td>0.21972</td>
<td>3.766</td>
<td>0.002</td>
</tr>
</tbody>
</table>

*Source:* Authors’ analysis

The fractional integration GPH test for the series of currency exchange rate movement and economic diplomacy has a p-value of 0.002 (lower than 0.05), so the null hypothesis, claiming that the series is fractionally integrated, is accepted (see Table 13).

### Table 13. Fractional integration test for industrial production

<table>
<thead>
<tr>
<th>Estimation</th>
<th>Std. Err</th>
<th>t-Ratio</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.99156</td>
<td>0.21972</td>
<td>4.513</td>
<td>0.001</td>
</tr>
</tbody>
</table>

*Source:* Authors’ analysis

The fractional integration GPH test for industrial production and economic diplomacy has a p-value of 0.001, so the null hypothesis, claiming that the series is fractionally integrated, is accepted (see Table 14).

### Table 14. Fractional integration test for export

<table>
<thead>
<tr>
<th>Estimation</th>
<th>Std. Err</th>
<th>t-Ratio</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.99589</td>
<td>0.21972</td>
<td>4.533</td>
<td>0.001</td>
</tr>
</tbody>
</table>

*Source:* Authors’ analysis

The fractional integration GPH test for the series of export and economic diplomacy has a p-value of 0.001, so the null hypothesis, claiming that the series is fractionally integrated, is accepted (see Table 15).

### Table 15. Fractional integration test for labour expenses

<table>
<thead>
<tr>
<th>Estimation</th>
<th>Std. Err</th>
<th>t-Ratio</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.48035</td>
<td>0.21972</td>
<td>2.186</td>
<td>0.048</td>
</tr>
</tbody>
</table>

*Source:* Authors’ analysis
The fractional integration GPH test for the series of labor expenses and economic diplomacy has a p-value of 0.048, so the null hypothesis, claiming that the series is fractionally integrated, is accepted (see Table 16).

<table>
<thead>
<tr>
<th>Table 16. Fractional integration test for unemployment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Semiparametric Estimation for nez_d11</strong></td>
</tr>
<tr>
<td>Geweke/Porter-Hudak</td>
</tr>
<tr>
<td>Estimation</td>
</tr>
<tr>
<td>Fractional Parameter (d)</td>
</tr>
<tr>
<td><strong>Source:</strong> Authors’ analysis</td>
</tr>
</tbody>
</table>

The fractional integration GPH test for the series of unemployment and economic diplomacy has a p-value of 0, so the null hypothesis, claiming that the series is fractionally integrated, is accepted (see Table 17).

<table>
<thead>
<tr>
<th>Table 17. Fractional integration test for vacancies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Semiparametric Estimation for slr_d11</strong></td>
</tr>
<tr>
<td>Geweke/Porter-Hudak</td>
</tr>
<tr>
<td>Estimation</td>
</tr>
<tr>
<td>Fractional Parameter (d)</td>
</tr>
<tr>
<td><strong>Source:</strong> Authors’ analysis</td>
</tr>
</tbody>
</table>

The fractional integration GPH test for each series individually shows the highest fractional integration of industrial production, export, and economic diplomacy.

To determine the fractional integration of macroeconomic aggregates, their fractional integration will be tested by the Moulines – Soulier test (MS test) (see Table 18).

<table>
<thead>
<tr>
<th>Table 18. The fractional integration test for the consumer prices index</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Semiparametric Estimation for cpi_d11</strong></td>
</tr>
<tr>
<td>Moulines/Soulier</td>
</tr>
<tr>
<td>Estimation</td>
</tr>
<tr>
<td>Fractional Parameter (d)</td>
</tr>
<tr>
<td><strong>Source:</strong> Authors’ analysis</td>
</tr>
</tbody>
</table>

The fractional integration MS test for the consumer prices index and economic diplomacy has a p-value of 0.082, so the null hypothesis, claiming that the series is fractionally integrated, is accepted (see Table 19).

<table>
<thead>
<tr>
<th>Table 19. The fractional integration test for economic diplomacy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Semiparametric Estimation for dipl</strong></td>
</tr>
<tr>
<td>Moulines/Soulier</td>
</tr>
<tr>
<td>Estimation</td>
</tr>
<tr>
<td>Fractional Parameter (d)</td>
</tr>
<tr>
<td><strong>Source:</strong> Authors’ analysis</td>
</tr>
</tbody>
</table>
The fractional integration MS test for the series of diplomacies has a p-value of 0.024, so the null hypothesis, claiming that the series is fractionally integrated, is accepted (see Table 20).

**Table 20. The fractional integration test for currency exchange rate**

<table>
<thead>
<tr>
<th>Estimation</th>
<th>Std. Err</th>
<th>t-Ratio</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fractional Parameter (d)</td>
<td>1.09415</td>
<td>0.07242</td>
<td>15.108</td>
</tr>
</tbody>
</table>

*Source: Authors’ analysis*

The fractional integration MS test for the series of currency exchange rate movement and economic diplomacy has a p-value of 0, so the null hypothesis, claiming that the series is fractionally integrated, is accepted (see Table 21).

**Table 21. The fractional integration test for industrial production**

<table>
<thead>
<tr>
<th>Estimation</th>
<th>Std. Err</th>
<th>t-Ratio</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fractional Parameter (d)</td>
<td>1.13316</td>
<td>0.07242</td>
<td>15.647</td>
</tr>
</tbody>
</table>

*Source: Authors’ analysis*

The fractional integration MS test for industrial production and economic diplomacy has a p-value of 0, so the null hypothesis, claiming that the series is fractionally integrated, is accepted (see Table 22).

**Table 22. The fractional integration test for labor expenses**

<table>
<thead>
<tr>
<th>Estimation</th>
<th>Std. Err</th>
<th>t-Ratio</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fractional Parameter (d)</td>
<td>0.1208</td>
<td>0.12466</td>
<td>0.969</td>
</tr>
</tbody>
</table>

*Source: Authors’ analysis*

The fractional integration MS test for the series of labor expenses and economic diplomacy has a p-value of 0.335, so the null hypothesis is rejected, while the $H_1$ hypothesis, indicating that the series is not fractionally integrated, is accepted (see Table 23).

**Table 23. The fractional integration test for unemployment**

<table>
<thead>
<tr>
<th>Estimation</th>
<th>Std. Err</th>
<th>t-Ratio</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fractional Parameter (d)</td>
<td>1.1022</td>
<td>0.07242</td>
<td>15.22</td>
</tr>
</tbody>
</table>

*Source: Authors’ analysis*

The fractional integration MS test for the series of unemployment and economic diplomacy has a p-value of 0, so the null hypothesis, claiming that the series is fractionally integrated, is accepted (see Table 24).
Table 24. The fractional integration test for vacancies

<table>
<thead>
<tr>
<th>Fractional Parameter (d)</th>
<th>Estimation</th>
<th>Std. Err</th>
<th>t-Ratio</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.90161</td>
<td>0.12466</td>
<td>7.233</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ analysis

The fractional integration MS test for the vacancies and economic diplomacy has a p-value of 0, so the null hypothesis, claiming that the series is fractionally integrated, is accepted. Both the MS and the GPH test of fractional integration show the fractional integration of the same series, especially for industrial production and export.

Discussion

We find a long-run relationship (positive) between economic diplomacy level and macroeconomic aggregates in Croatia. Our study results show that a higher level of economic diplomacy, implying higher efficiency and institutional presence in the macroeconomic environment, positively impacts the primary macroeconomic aggregates, both fiscal and financial. Economic diplomacy, in an institutional sense, is necessary but not sufficient condition for economic growth. Countries with higher public institutions’ efficiency reach higher economic growth paths, resulting in increased economic competitiveness and trade integration.

Stationarity and long memory test we present in the study support the thesis of economic diplomacy and economic growth positive long-run relationships. Providing evidence of such a relationship is important not just for policymakers setting up long-run economic goals but also for practitioners and the real sector requiring highly developed and efficient economic diplomacy policy to compete internationally.

Our study results support the results we find in Peres et al. (2018), Jaworski and Czerwonka (2019), Buturac et al. (2019), finding a positive link between institutional quality and economic growth. As an inherent part of the institutional environment, economic diplomacy is an essential source of competitiveness, export growth, and advancement of the manufacturing sector driving economic growth forward. Finding a long-run relationship between economic diplomacy dynamics and macroeconomic aggregates in Croatia over 1995-2018 provide hard empirical evidence. Another significant result of our analysis is the nature of the relationship between economic diplomacy and macroeconomic aggregates. The relationship is a long run one, but also it is a fractionally integrated relationship. There is a long memory dynamic connecting economic diplomacy and macroeconomic aggregates in Croatia. Fractional integration we find in the study means economic diplomacy positively impacts the country’s macroeconomic performance in the long run with no mean reversion. The meaning is that economic diplomacy exercises positive shock on macroeconomic aggregates and the effects of the shocks last forever; they are not dying out to the levels previous to the shock. Therefore, researchers’ keen to explore the long-run relationship between economic diplomacy and the country’s macroeconomic performance should use fractionally integrated models to provide the best research results.

Conclusions

The standard stationarity I(0) and unit root I(1) tests and the fractional integration tests were used to determining the fractional integration of a series of economic diplomacies and macroeconomic aggregates.

The stationarity I(0) and unit root I(1) tests, as well as the fractional integration tests, shows that the series of economic diplomacy movement are commonly fractionally integrated, by which this paper’s hypothesis was proved, namely that the series of economic diplomacy and macroeconomic aggregates activity movements are fractionally integrated.
Moreover, the fractional integration tests showed that economic diplomacy series with industrial production variables and exports significantly impacted fractional integration. Stationarity I(0) and unit root I(1) tests and the fractional integration tests showed that series are commonly fractionally integrated. Future research should use econometric models that belong to structural vector autoregressive fractionally integrated and movable averages. A sub-category inside this group of models is also the structural VARFIMA model, which was the most appropriate for analyzing the so-called economic series (Durr et al., 1997). Economic diplomacy data belong to this category, so they should be studied using the VARFIMA model in the future.

Our study results corroborate Borojo and Yushi (2020), Chi-Wei et al. (2019), finding a positive relationship between institutional quality and economic growth. Economic diplomacy is a critical factor of the institutional macroeconomic environment and essential economic growth drivers not sufficiently exploited and used in many developing economies.

Our study is a modest attempt further to research the importance of economic diplomacy for economic growth. Our study’s limitation lies in the availability of the data (annual and not quarterly or monthly data), bias resulting from the economic diplomacy index methodology, and a country single case study. However, data limitations do not limit our empirically valid conclusions that demand further support from future international empirical studies; we are sure will find support in our study.

References


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SUSTAINABILITY OF FINANCIAL PERFORMANCE OF A SOCIAL MEDIA GIANT -
A CASE STUDY

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Abstract. Sustainability of financial performance of a giant media firm such as Facebook will be dependenent on various factors such as Lending rate, turnover ratio, current ratio, etc. Facebook has achievements in online social media and network industry, deserving of its position as one of the leading firms in the online social media system, contributing to online marketing services. Movement of stock price of Facebook will reflect the business health of the company. Good business management requires us to consider the impacts of multi micro and macro factors on net profit, and it contributes to promoting business plan and socio-economic policies for economic growth and stabilizing macroeconomic factors. By data collection method through statistics, analysis, synthesis, comparison, quantitative analysis to generate qualitative comments and discussion; using econometric method to perform regression equation and evaluate quantitative results, the article analyzed and evaluated the impacts of Eight (8) micro and macroeconomic factors such as: Current Ratio (CR), Debt to Equity Ratio (DTE), Asset Turnover Ratio (ATO), Receivables Turnover Ratio (RTO), Consumer Price Index (CPI), Lending Rate(LDR), GPD Growth Rate (GGR) and Employment Cost Index (ECI) on Return on Assets (ROA) of an online social media firm, Facebook in the US in the period of 2012-2019, both positive and negative sides. The research results show a statistically significant relationship between a micro factor (ATO), two macro factors (LDR and ECI) with Facebook’s ROA, in which, LDR has a negative impact on ROA, while ATO has the highest positive impact on ROA, and ECI has also the positive effect on ROA but to a lesser extent. The research findings are of value to financial executives and investors not only for Facebook but also for companies in the online social media industry.

Keywords: Sustainability of financial performance; Facebook’s ROA; Asset Turnover Ratio; Lending Rate; Employment Cost Index


JEL Classifications: C30, G30

1. Introduction

For the past decade, social media has swept the world. Facebook currently has more than 2 billion users. Instagram is less with about 800 million users. Snapchat has about 180 million daily active users. Facebook in the US maintained a higher growth rate than the industry average on all indicators of scale, quality, efficiency, and labor productivity. It currently pushes digital technology and control risk.

Not only the above factors affecting to Facebook financial stability, but there are also other variables also affecting to financial sustainability. These variables we will consider to put in our quantitative model which will be presented in the below results section.

Facebook achieved success through various reasons: first, it is easy to use and friendly for social networking with friends, family, fans, businesses, and acquaintances. Second, the construction and look of the site is also very attractive to the user a more excellent interface to work on. You can easily find your friends, follow ce-
lebrities, messages and chat or with the new feature even call your friends. All of these power packed features are fitted in a light site making it more advantageous than its competitors. Third, sources of information: in addition to being a website that connects people, it is also a huge source of information through which users can read news and articles about all incidents happening around the world. They can also present their views on a topic and start discussing with others about a topic. So it serves many purposes. Fourth, Facebook gives users many options to share such as photos, videos, status, feelings, location, etc. So many options up to a single site for everyone to easily share information. Fifth, information security and data protection. The email and password through which we open Facebook’s account is secured through a very high level of protection so it is almost impossible for hackers to open accounts that they do not own. In addition, a notification is also sent if someone tries to open an account from a different location than the one used. So users know that their data is safe and secure. All of these features have made Facebook accessible to individuals around the world. A number of changes have also been made to the site since the year it was launched such as the introduction of a Like button, sharing photos and videos, News Feed, Timeline and trending topics with more beautiful versions and Handsome led the site to become the most commercial networking platform.

Social networking system in USA in recent years plays a key role in helping the whole economy. In the context that GDP growth in US has been stable during 2012-2019 and SP500 goes up, it is necessary to evaluate impacts main factors (see Exhibit 1 and Exhibit 2). We will choose of Eight (8) internal micro and external macro economic factors on Facebook performance, esp. Facebook return on assets.

Looking at the below chart 1, we find out that Facebook net profit moves in the same trend with ECI and GDP growth, although it fluctuates in a smaller range.

![Chart 1. Profit trends](image)

*Source: results of authors’ data analysis*

This study will calculate and figure out the impacts of Eight (8) micro and macroeconomic factors such as: current ratio, debt to equity ratio, asset turnover ratio, receivables turnover ratio, consumer price index, lending rate, GPD growth rate and employment cost index on net profit (Return on Asset - ROA) of an online social media firm, Facebook in the US in the period of 2012-2019.
2. Research design

2.1 Research issues

The scope of this study will cover:
Issue 1: What are the correlation and relationship among many economic factors: current ratio, debt to equity ratio, asset turnover ratio, receivables turnover ratio, consumer price index, lending rate, GPD growth rate, employment cost index, Facebook net profit (Return on Asset - ROA)?
Issue 2: What are the impacts of above 8 factors on Facebook’s ROA?
Issue 3: Based on the research results, we will give some important recommendations for Facebook executives and Facebook stock investors; those recommendations may also be of value to financial managers and investors in the social media industry.

2.2 Literature review

A study by Arshad et al. (2015) showed that current ratio had a significant positive effect on return on assets, but according to Ray (2012), the current ratio has a strong negative relationship with corporate profitability of Indian manufacturing firms. Meanwhile, Hatono (2018) points out that current ratio individually have not significant impact toward return on assets in consumer goods companies listing on the Indonesia Stock Exchange.

The impact of financial leverage on returns has always been a controversial subject (Mackevičius et al., 2018; Hilkevics, & Semakina, 2019). According to Joshua (2007) debt ratios has negatively affect performance of the Ghanaian and South African firms. Sorana (2015) shows that performance in Romanian companies is higher when they avoid debt and operate based on equity, while Syed & Fasih (2013) show the positive relationship of debt equity ratio with return on asset and sales growth and negative relationship of debt equity ratio with earning per share, net profit margin and return on equity of listed sugar companies of Pakistan.

Fairfield & Yohn (2001) provide evidence that disaggregating return on assets into asset turnover and profit margin does not provide incremental information for forecasting the change in return on assets one year ahead, but that disaggregating the change in return on assets into the change in asset turnover and the change in profit margin is useful in forecasting the change in return on assets one year ahead. Alas, according to Azad et al. (2018), the efficiency of the firms as measured by (total assets turnover, debtors’ turnover, quick ratio current ratio and fixed asset turnover) has impacts on the profitability of firms.

Krishna (2015) investigated the nature of the causal relationships between stock prices and the key macro-economic variables in BRIC countries. The empirical evidence shows that long-run and short-run relationship exists between macro-economic variables and stock prices, but this relationship was not consistent for all of the BRIC countries. Kulathunga (2015) suggested that all macroeconomic factors influence the stock market development. More precisely, volatile inflation rate and exchange rate together with higher deposit rate have curtailed the stock market development in Sri Lanka. Moreover, positive optimism created by the economic growth and the stock market performance during the previous periods tend to enhance stock market performance.

Beside, Pervan et al. (2019) mentioned in the results of the conducted analysis which revealed that a firm’s age, labour cost and industry concentration, as well as GDP growth and inflation, have significant influence on a firm’s profitability

Then, Lim & Rokhim (2020) show strong and positive relationships between liquidity and sustainable growth rate with profitability as measured by return on equity (ROE), return on assets (ROA) and earning per share (EPS), except EPS for liquidity. Further, both firm size and market power show positive significant relationships with ROA but negative significant relationships with EPS. Sales growth and company efficiency (as measured by assets turnover ratio) have no significant relationship with profitability.
Within the scope of this paper, we examine the impact of independent variables, including corporate financial ratios and macroeconomic variables such as GPD growth, CPI and Employment Cost Index, on ROA of Facebook, to give some reasonable recommendations for financial managers as well as Facebook stock investors, and furthermore for financial managers and equity investors of businesses in the social networking industry, associations and information technology. Because of Facebook’s characteristic of developing based on high quality human resources, we added ECI to macro variables affecting Facebook’s ROA. We also analyze data through out time series from 2012-2019.

We identify our research gap: first, it differs from previous studies in the aspect that we use both micro and macro level variables affecting ROA, as well as adding ECI to macro variables affecting net profit and second, we measure it in a case of Facebook, a giant social media company.

3. Methodology and data

This research paper establishes correlation among economic factors by using an econometric model to analyze impacts of eight (8) micro and macroeconomic factors.

Micro factors to consider when discussing the impact on Facebook’s ROA include: current ratio, debt to equity ratio, asset turnover ratio, receivables turnover ratio. Data is calculated based on Facebook’s published financial statements.

Macro factors to consider when discussing the impact on Facebook’s ROA include: consumer price index, lending rate, GPD growth rate and employment cost index. Data source is from U.S. Bureau of Economic Analysis (BEA).

All data are included from 2012-2019 with Quarterly data (32 observations in total).

Beside, econometric method is used with the software Eview. It will give us results to suggest policies for businesses and authorities.

The analytical techniques used include: descriptive statistical analysis, correlation analysis, multivariate linear regression by OLS method.

We build a regression model with Eview software to measure impacts of factors on Facebook net profit is a function with 8 variables as follows (see Table 1 as well):

\[
ROA_t = \beta_0 + \beta_1 \cdot CR_t + \beta_2 \cdot DTE_t + \beta_3 \cdot ATO_t + \beta_4 \cdot RTO_t + \beta_5 \cdot CPI_t + \beta_6 \cdot LDR_t + \beta_7 \cdot GGR_t + \beta_8 \cdot ECI_t + \epsilon
\]

Table 1. Description of research variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type</th>
<th>Formula</th>
<th>Expected correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>dependent</td>
<td>Net income / Total assets</td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>independent</td>
<td>Current assets / Current liabilities</td>
<td>+</td>
</tr>
<tr>
<td>DTE</td>
<td>independent</td>
<td>Total debt / Total equity</td>
<td>-</td>
</tr>
<tr>
<td>ATO</td>
<td>independent</td>
<td>Net sales / Total assets</td>
<td>+</td>
</tr>
<tr>
<td>RTO</td>
<td>independent</td>
<td>Net credit sales / average accounts receivable</td>
<td>+</td>
</tr>
<tr>
<td>CPI</td>
<td>independent</td>
<td>Consumer Price Index</td>
<td>-</td>
</tr>
<tr>
<td>LDR</td>
<td>independent</td>
<td>Lending rate</td>
<td>-</td>
</tr>
<tr>
<td>GGR</td>
<td>independent</td>
<td>GPD growth rate</td>
<td>+</td>
</tr>
<tr>
<td>ECI</td>
<td>independent</td>
<td>Employment cost index</td>
<td>-</td>
</tr>
</tbody>
</table>

*Source:* Research design of the authors
4. Main results

4.1. General data analysis

The data shows (Table 2) that, between 2012 and 2019, Facebook maintained a very good current solvency, with a low debt ratio and relatively high performance. In particular, the average value of RTO is much higher than that of ATO (2.084405 compared to 0.119075), showing that the company not only ensures good performance as shown by high turnover of total assets, but also manages very good business receivables. Facebook’s business seems to be backed by positive macroeconomic parameters of the US economy.

The consumer price index (CPI) is maintained at a moderate level, the lending rate (LDR) is low, while the economic growth rate (GGR) is averaging 0.392169 with a standard deviation of only 0.190739, and labor costs also do not have many big changes shown in the average value of the ECI index is around 123.

4.2. Correlation analysis

The data shows (Table 2) that, between 2012 and 2019, Facebook maintained a very good current solvency, with a low debt ratio and relatively high performance. In particular, the average value of RTO is much higher than that of ATO (2.084405 compared to 0.119075), showing that the company not only ensures good performance as shown by high turnover of total assets, but also manages very good business receivables. Facebook’s business seems to be backed by positive macroeconomic parameters of the US economy.

The consumer price index (CPI) is maintained at a moderate level, the lending rate (LDR) is low, while the economic growth rate (GGR) is averaging 0.392169 with a standard deviation of only 0.190739, and labor costs also do not have many big changes shown in the average value of the ECI index is around 123.

### Table 2. Statistics for macro and micro economic factors

<table>
<thead>
<tr>
<th></th>
<th>CR</th>
<th>DTE</th>
<th>ATO</th>
<th>RTO</th>
<th>CPI</th>
<th>LDR</th>
<th>GGR</th>
<th>ECI</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>9.450620</td>
<td>0.066905</td>
<td>0.119075</td>
<td>2.084405</td>
<td>2.118672</td>
<td>0.601500</td>
<td>0.392169</td>
<td>123.1150</td>
<td>2.319420</td>
</tr>
<tr>
<td>Median</td>
<td>10.62765</td>
<td>0.048550</td>
<td>0.124850</td>
<td>2.288200</td>
<td>2.095923</td>
<td>0.226667</td>
<td>0.416988</td>
<td>120.6500</td>
<td>2.227250</td>
</tr>
<tr>
<td>Maximum</td>
<td>13.55830</td>
<td>0.200400</td>
<td>0.158100</td>
<td>2.487100</td>
<td>2.270795</td>
<td>2.520000</td>
<td>0.641411</td>
<td>138.9000</td>
<td>5.510000</td>
</tr>
<tr>
<td>Minimum</td>
<td>4.399500</td>
<td>0.002600</td>
<td>0.078700</td>
<td>1.034100</td>
<td>2.034795</td>
<td>0.113333</td>
<td>-0.031693</td>
<td>115.3000</td>
<td>-1.051700</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>3.082935</td>
<td>0.065406</td>
<td>0.026013</td>
<td>0.466629</td>
<td>0.075335</td>
<td>0.836870</td>
<td>0.641411</td>
<td>120.6500</td>
<td>1.591597</td>
</tr>
</tbody>
</table>

Source: results of authors’ data analysis

### Table 3. Results of correlation analysis of research variables

<table>
<thead>
<tr>
<th>Probability</th>
<th>CR</th>
<th>DTE</th>
<th>ATO</th>
<th>RTO</th>
<th>CPI</th>
<th>LDR</th>
<th>GGR</th>
<th>ECI</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td>1.00000</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTE</td>
<td>-0.318449</td>
<td>1.00000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATO</td>
<td>0.1712</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTO</td>
<td>-0.407573</td>
<td>0.122544</td>
<td>1.00000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td>0.0745</td>
<td>0.6068</td>
<td>-----</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LDR</td>
<td>-0.171196</td>
<td>-0.420583</td>
<td>0.592870</td>
<td>1.00000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GGR</td>
<td>0.4705</td>
<td>0.0648</td>
<td>0.0059</td>
<td>-----</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECI</td>
<td>-0.656929</td>
<td>-0.001238</td>
<td>0.536290</td>
<td>0.385740</td>
<td>1.00000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>0.0017</td>
<td>0.9959</td>
<td>0.0148</td>
<td>0.0930</td>
<td>-----</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>-0.788049</td>
<td>0.216525</td>
<td>0.479791</td>
<td>0.166578</td>
<td>0.906266</td>
<td>1.00000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTE</td>
<td>0.0000</td>
<td>0.3592</td>
<td>0.0323</td>
<td>0.4827</td>
<td>0.0000</td>
<td>-----</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATO</td>
<td>0.9186</td>
<td>0.2931</td>
<td>0.1724</td>
<td>0.4487</td>
<td>0.9428</td>
<td>0.9664</td>
<td>-----</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTO</td>
<td>-0.713495</td>
<td>-0.034043</td>
<td>0.469199</td>
<td>0.391631</td>
<td>0.978699</td>
<td>0.909697</td>
<td>-0.152500</td>
<td>1.00000</td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td>0.0004</td>
<td>0.8867</td>
<td>0.0369</td>
<td>0.0877</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.5210</td>
<td>-----</td>
<td></td>
</tr>
<tr>
<td>LDR</td>
<td>-0.313925</td>
<td>-0.094256</td>
<td>0.829749**</td>
<td>0.737086**</td>
<td>0.587977**</td>
<td>0.354421</td>
<td>0.025426</td>
<td>0.549168**</td>
<td>1.00000</td>
</tr>
<tr>
<td>GGR</td>
<td>0.1777</td>
<td>0.6926</td>
<td>0.0000</td>
<td>0.0002</td>
<td>0.0064</td>
<td>0.1252</td>
<td>0.9153</td>
<td>0.0121</td>
<td>-----</td>
</tr>
</tbody>
</table>

Source: results of authors’ data analysis

** Significance level of 0.01
* Significance level of 0.05
The results of correlation analysis (Table 3) of research variables showed that ATO has a positive relationship with ROA at the significance level of 0.01. Likewise, RTO is positively correlated with ROA at the 0.01 significance level but with a slightly lower correlation. The findings on the relationship between ATO and RTO and Facebook’s ROA coincide with initial expected correlation in the research model.

First of all, the chart 1 below shows us that ROA has a positive correlation with ATO:

![Chart 1. Net Profit (ROA) vs. Asset Turnover (ATO)](chart1.png)

*Source: results of authors’ data analysis*

Next we find out that, based on the scatter Chart 2 below, ROA has a positive correlation with RTO.

![Chart 2. Net Profit (ROA) vs. Receivable Turnover (RTO)](chart2.png)

*Source: results of authors’ data analysis*

Also at the significance level of 0.01, CPI is positively related to ROA but with a positive correlation above 0.58. Meanwhile, at the significance level of 0.05, ECI is also positively related to ROA with a slightly lower correlation level (about 0.55).
The positive relationship between CPI and ROA is contrary to the correlation expectation initially in the research model. That finding can be explained by the characteristic that Facebook’s business is heavily tied to personal consumption, so when the CPI rises in moderation, it will have a positive impact on Facebook’s ROA. We see that, Facebook net profit (ROA) and CPI have positive correlation (see Chart 3):

![Chart 3. Net Profit (ROA) vs. Consumer Price Index (CPI)](chart3.png)

*Source: results of authors’ data analysis*

Likewise, the positive relationship between ECI and ROA is contrary to the initial correlation expectation in the research model. That finding can be explained by the characteristic that Facebook’s business is heavily associated with high-quality personnel, so when the ECI index increases slightly, it will have a positive impact on Facebook’s ROA.

The Chart 4 below shows us that ROA has a positive correlation with ECI:

![Chart 4. Net Profit (ROA) vs. Employment Cost Index (ECI)](chart4.png)

*Source: results of authors’ data analysis*
4.3. Regression model and main findings

4.3.1 Scenario 1: Regression model with 8 variable (Original proposed research model)

Note: C: constant
Using Eview gives us the below results:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-47.30452</td>
<td>12.13877</td>
<td>-3.896977</td>
<td>0.0025</td>
</tr>
<tr>
<td>CR</td>
<td>-0.062936</td>
<td>0.085418</td>
<td>-0.736801</td>
<td>0.4767</td>
</tr>
<tr>
<td>DTE</td>
<td>2.169131</td>
<td>2.659442</td>
<td>0.815634</td>
<td>0.4320</td>
</tr>
<tr>
<td>ATO</td>
<td>50.05873</td>
<td>8.601677</td>
<td>5.819647</td>
<td>0.0001</td>
</tr>
<tr>
<td>RTO</td>
<td>-0.114121</td>
<td>0.494111</td>
<td>-0.230963</td>
<td>0.8216</td>
</tr>
<tr>
<td>CPI</td>
<td>15.91943</td>
<td>13.21203</td>
<td>1.204920</td>
<td>0.2535</td>
</tr>
<tr>
<td>LDR</td>
<td>-2.443485</td>
<td>0.505096</td>
<td>-4.837667</td>
<td>0.0005</td>
</tr>
<tr>
<td>GGR</td>
<td>-1.362081</td>
<td>1.036626</td>
<td>-1.313957</td>
<td>0.2156</td>
</tr>
<tr>
<td>ECI</td>
<td>0.102559</td>
<td>0.142128</td>
<td>0.721597</td>
<td>0.4856</td>
</tr>
</tbody>
</table>

R-squared 0.942662
Adjusted R-squared 0.900962
S.E. of regression 0.500881
Mean dependent var 2.319420
S.D. dependent var 1.591597
Akaike info criterion 1.757265
Schwarz criterion 2.205344
Hannan-Quinn criter. 1.844735
Durbin-Watson stat 3.148476

The initial linear regression results showed that the independent research variables explained about 90.09% of the variation of the independent variables in the research model.

The original research model’s linear regression results showed that there are several variables that have an impact (statistically significant) on Facebook’s ROA including ATO and LDR, while the remaining research variables are not statistical significance impact on ROA of Facebook.

The initial linear regression results showed that the independent research variables explained about 90.09% of the variation of the independent variables in the research model.

However, the p-value coefficients of some independent variables have values greater than 0.05, so the research model presented is not the optimal research model.

4.3.2 Scenario 2: The research model regression following the step-wise procedure

The initial research model regression results show that there are some independent variables that have no statistically significant relationship with ROA (p-value> 0.05). Hence, we used the non-statistically insignificant extraction using the step-wise procedure, and the results are summarized in the following table 4.
Table 4. Summary of results

<table>
<thead>
<tr>
<th>Model</th>
<th>7 factors model: RTO removed</th>
<th>6 factors model: CR removed</th>
<th>5 factors model: CPI removed</th>
<th>4 factors model: GGR removed</th>
<th>3 factors model: DTE removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted R-squared</td>
<td>0.908775</td>
<td>0.912044</td>
<td>0.911837</td>
<td>0.914335</td>
<td>0.807618</td>
</tr>
<tr>
<td>CR</td>
<td>0.4789</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>DTE</td>
<td>0.3058</td>
<td>0.1610</td>
<td>0.1527</td>
<td>0.1460</td>
<td>N/A</td>
</tr>
<tr>
<td>ATO</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>CPI</td>
<td>0.2408</td>
<td>0.3280</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>LDR</td>
<td>0.0001</td>
<td>0.0001</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0191</td>
</tr>
<tr>
<td>GGR</td>
<td>0.1940</td>
<td>0.2522</td>
<td>0.4609</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>ECI</td>
<td>0.4664</td>
<td>0.1280</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0009</td>
</tr>
</tbody>
</table>

Source: results of authors’ data analysis

4.3.3 Scenario 3: Regression model with 3 variable (Optimal proposed research model)

The results of the final research model include 3 factors are presented below:

Dependent Variable: ROA
Method: Least Squares
Date: 05/31/20 Time: 02:10
Sample: 2012Q1 2019Q4
Included observations: 32

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-31.89161</td>
<td>7.746651</td>
<td>-4.116826</td>
<td>0.0003</td>
</tr>
<tr>
<td>ATO</td>
<td>51.89651</td>
<td>9.954259</td>
<td>5.213498</td>
<td>0.0000</td>
</tr>
<tr>
<td>LDR</td>
<td>-1.411141</td>
<td>0.567375</td>
<td>-2.487140</td>
<td>0.0191</td>
</tr>
<tr>
<td>ECI</td>
<td>0.239279</td>
<td>0.064611</td>
<td>3.703348</td>
<td>0.0009</td>
</tr>
</tbody>
</table>

R-squared | 0.835913 | Mean dependent var | 3.385894 |
Adjusted R-squared | 0.807618 | S.D. dependent var | 1.961994 |
S.E. of regression | 1.060896 | Akaike info criterion | 3.072574 |
Sum squared resid | 31.51402 | Schwarz criterion | 3.255791 |
Log likelihood | -45.16118 | Hannan-Quinn criter. | 3.133305 |
F-statistic | 26.00856 | Durbin-Watson stat | 0.974737 |
Prob(F-statistic) | 0.000000 |

Source: results of authors’ data analysis

We see Durbin-Watson (D) stat is 0.974737, which means that the model has Autocorrelation phenomenon. We use general differential equations to fix the Autocorrelation phenomenon of the original research model. Autocorrelation fix:

\[ P = 1 - \frac{D}{2} = 1 - 0.974737/2 = 0.512632 \]

Generalized differential equation

\[ ROA_{t+1} = ROA_t - 0.512632 \cdot ROA_{t-1} \]
\[ ATO_{t+1} = ATO_t - 0.512632 \cdot ATO_{t-1} \]
\[ LDR_{t+1} = LDR_t - 0.512632 \cdot LDR_{t-1} \]
\[ ECI_{t+1} = ECI_t - 0.512632 \cdot ECI_{t-1} \]
New variables are created from the generalized differential equation

**Dependent Variable:** ROA1  
**Method:** Least Squares  
**Date:** 05/31/20  
**Time:** 02:34  
**Sample (adjusted):** 2012Q2 2019Q4  
**Included observations:** 31 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-10.74432</td>
<td>6.335938</td>
<td>-1.695774</td>
<td>0.0000</td>
</tr>
<tr>
<td>ATO1</td>
<td>50.52415</td>
<td>9.952713</td>
<td>5.076420</td>
<td>0.0000</td>
</tr>
<tr>
<td>LDR1</td>
<td>-0.802719</td>
<td>0.851252</td>
<td>-0.942986</td>
<td>0.0000</td>
</tr>
<tr>
<td>ECI1</td>
<td>0.158124</td>
<td>0.109958</td>
<td>1.438035</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

**R-squared**  
**Adjusted R-squared**  
**S.E. of regression**  
**Sum squared resid**  
**Log likelihood**  
**F-statistic**  
**Prob(F-statistic)**  

*Source: results of authors’ data analysis*

5. Discussion and recommendations

From the initial research model with 4 micro variables including CR, ATO, DTE and RTO; and 4 macro variables including CPI, LDR, GGR and ECI, the research data processing process results in the impact analysis model of 1 micro variable (ATO) and 2 macro variables including LDR and ECI to Facebook’s ROA.

The results of linear regression analysis of the research model showed that ATO has a positive effect on Facebook’s ROA, with a very large correlation coefficient. By increasing Facebook’s Asset turnover, corporate finance executives will have a huge positive effect on a company’s overall return on assets.

The results of our research are consistent with Sari et al. (2018), but different from previous studies by Ray (2012) and Hatono (2018). The reason for the difference may be that Facebook’s business is very different from manufacturing businesses in India or consumer businesses in Indonesia.

The research results also show that lending interest rates have a negative effect on Facebook’s ROA, while the Employment cost index has a positive effect on Facebook’s ROA.

These research findings imply that Facebook managers who want to improve ROA should not only need to pay attention to improving ATO, but also limit the use of loans to save debt costs, and utilize the high quality human resources in research and development to take advantage of the positive influence of ECI on the company’s ROA.

The research results also provide useful indicators for stock investors of Facebook. Whenever investors observe positive signs of ATO improvement, limited borrowing, and hiring of high quality personnel, investors can expect positive improvements in the Facebook’s ROA.
The implications for corporate financial managers and investors are not limited to Facebook’s case, but may also apply to other firms doing business in the IT and online social media industry.

Beside, we can analyze impact of another macro factor, for example, deposit rate when we add this variable into our regression model of net profit. Furthermore, we can add unemployment rate or public debt increase into our econometric model to measure the impact of these extra factors on Facebook net profit.

6. Limitations of research and future research direction

First of all, the data used in this study was collected limited only in the case of Facebook. Therefore, the research results, for that reason, may not be of significance for the entire online social networking industry.

Besides, this study only uses secondary data collected from annual financial statements and other related documents, and the independent macroeconomic variables are limited. We have not mentioned other research variables that may have significant meaning such as unemployment rate, exchange rate,… etc.

Therefore, in the future, the development directions of this research can be mixed with secondary data with primary data from corporate financial managers survey, stock investor survey, or extend the scope of multi-company data research and in particular improve the research model, by adding other independent research variables such as unemployment rate, exchange rate,… into our above econometric model to measure impacts of them on Facebook’s ROA.

References


Hatono Hatono, 2018. The effect of current ratio, debt to equity ratio, toward return on assets (Case study on consumer goods company. Accountability, 7(2), 64-73.


Exhibits

Exhibit 1. Lending rate past 8 years (2012-2019) in US

Exhibit 2. Employment Cost Index past 8 years (2012-2019) in US

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FUNCTIONING OF REPRESENTATIVES OF FOREIGN BUSINESS ENTITIES: EXPERIENCE OF EFFECTIVENESS OF INTERNATIONAL PRACTICE

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Abstract. The purpose of the study is to review the foreign practice of operating representative offices in Russia and other countries, develop criteria for their performance evaluation. The methodological framework of the study is based on the review and analysis of the existing mechanisms for evaluating performance of representative offices of foreign companies. In this study, general research methods are used: methods of empirical research, monographic method, structural-logical method, methods of multidimensional classification. For many economies, entrepreneurship is the major driving force behind economic growth. Small businesses create employment opportunities and improve the quality of people’s lives, which in turn favorably affects the country’s own development. Entrepreneurship is a powerful mechanism to reduce unemployment, which is one of the pressing issues of today. The originality and novelty of the study rely on the need to formalize and implement a systematic approach to governmental support of entrepreneurship throughout all business areas in Russia. It will positively affect the development of the economy in general and the efficiency of entrepreneurship in particular.

Keywords: representative offices; business entities; performance; export potential; representative offices of foreign companies, legal regulation.


JEL Classifications: A10, C13, D83, L20

1. Introduction

Modern globalization of world economic processes is conditioned by the need to control the increase in the efficiency of the activities of representative offices of economic entities abroad. A multitude of challenges and threats from trade wars to sanctions policies direct companies to develop approaches to determining the effectiveness of both themselves and their representative offices abroad. However, at the moment, methods for determining the effectiveness of the activities of representative offices of economic entities are not sufficiently spelled out, requiring clarification due to the specifics of the legislative regulation of the activities of representative offices of business entities in the country of presence.

In many middle-income countries, state-society relations have gone through substantial transformations within the last three decades. The processes of globalization, regionalization, and transnationalization have played important and intertwined roles in triggering changes regarding the ways societal actors are organized and interact with respective states. There are recent transformations in interest representation and intermediation in Mexico
and Turkey, two upper-middle-income countries situated at the frontiers of the USA and Europe and integrated into the regional blocs led by those bodies, namely the North American Free Trade Agreement (NAFTA) and the European Union (EU). Business politics has evolved in strikingly different directions in these countries. Turkey has embarked on the corporatist resurgence, as increasingly empowered peak business organizations have become key players incorporated into policy-making platforms. By contrast, in Mexico, most of the former corporatist institutions and actors have been dismantled or severely weakened. This explains the variation in the evolution of business politics and raises the question about how this variation is shaped by changes in political institutions against a backdrop of deeper global - and regional - integration (Ozel, 2018; Russia’s foreign trade results. 2018).

At the same time, foreign direct investment, as one of the most important instruments of the national economy, makes it possible to properly increase production, increase employment, accelerate structural reforms, improve the country’s external financial position, increase foreign exchange reserves, reduce restrictions on the current balance and obtain a more favorable credit rating. In this regard, when analyzing the international practice of the functioning of representative offices of foreign economic entities, in particular, in the Russian Federation, it should be noted that there may be special problems and obstacles that prevent foreign companies from engaging in entrepreneurial activities in foreign countries. The identification of these obstacles and the search for ways to neutralize them can properly give an additional impetus to the development of investment cooperation between different countries.

2. Literature review

The analysis of existing mechanisms for assessing the effectiveness of the functioning of representative offices in Russia and abroad has been, is and will be, both Russian and foreign experts in this field. The most significant and timely at present are the works of leading experts. In the studies of V.V. Aleshchenko, V.V. Karpov, considering the issues of improving the mechanisms of state support for Russian representations abroad (Aleshchenko and Karpov, 2015). The current mechanism for assessing the effectiveness of the activities of representative offices is analyzed by Karpov et al. (2015). In their turn, V.V. Zabolotskaya and N.A. Khut investigate analytical measures to improve the efficiency of enterprises in Russia and abroad by opening representative offices (Zabolotskaya and Khut, 2015). The work of Pletnev is also devoted to the issues of the activities of foreign representations and foreign investments (Pletnev et al., 2015).


Methods for evaluating the performance of representative offices in Russia and abroad have always been and will always be a matter of great interest for both Russian and foreign scholars. At the moment, the most significant and timely are the works of the following authors. V.V. Aleshchenko, V.V. Karpov focus on the improvement of government support mechanisms for representative offices of Russian companies abroad (Aleshchenko and Karpov, 2015). Methods for evaluating performance of representative offices are also reviewed by Karpov et al., 2015). The matters of representative offices' activities and foreign investment are also reviewed in the papers of Pletnev et al., 2015).

Corporate governance is a combination of many factors that ensure business wealth. It is necessary to the existence of an institution as it ensures its commitment to higher growth and profits, as well as inspires and strengthens investors’ confidence. Corporate governance concept is in a continuous process of adaptation to the requirements of modern economy, globalization as well as the information needs of investors and third parties interested in the business (Dudukalov et al., 2016; Korableva et al., 2020). Good governance is a condition to build market confidence and encourage flows of long-term investment. Several countries depend on implementing corporate governance practices to improve economic dynamism, thus improving overall economic performance (Puryaev, 2020). Corporate governance is also the process to direct and manage the institutions in order
to improve long term shareholders’ value by enhancing corporate performance, considering the interest of other stakeholders (Prodanova et al. 2019).

3. Study of the experience and methodological aspects of the functioning of representative offices in individual countries

A study on the internationalization process of twelve Australian firms in Indonesia revealed the barriers to internationalize, namely immigration policies, exchange rate, and cultural differences. The Government has been taking an active part in promoting the internationalization of medical tourism. The globalization processes encouraged Singaporean private hospitals to expand overseas. It started with joint ventures, alliances, and setting up representative offices in foreign countries. Subsequently, firms set up their own medical centers in Singapore to serve the patients. Therefore, the most common methods in the tourism sector were setting up representative offices in overseas markets and the accreditation because it raises tourists’ confidence in the image of their desired medical tourism destinations (Gnezdova et al. 2018; Morozova et al., 2019; Akhmadeev et al., 2019).

In turn, the presence of commercial banks on the territory of another state, the commercial banking services, under the US-Israel FTA, are limited to the activities of representative offices. Thus, it excludes commercial presence by establishing branches, agencies, or subsidiaries. Jordan granted limited market access to foreign auditing firms. Auditing of financial records or verification reports of domestic companies must be performed by resident Jordanian auditors who pass qualification tests. However, foreign accounting firms may give opinions on company results, open representative offices, or invest in joint ventures. This could help enhance transparency and improve accountancy standards (Zhuravlev et al., 2019; Rahman and Bobkova, 2017).

It should be noted that from a methodological point of view, foreign direct investment, being one of the most important tools of the national economy, allows one to properly increase production, influence the level of employment, and also accelerate the ongoing structural reform in the economy of a particular country. These aspects are key, as they can improve the external financial position of the country, affect the amount of foreign exchange reserves, as well as reduce restrictions on the current balance sheet and obtain a more favorable credit rating. In this regard, when conducting a methodological analysis of the current international practice of the functioning of representative offices of foreign economic entities, using the example of Russia, it should be noted that there may be special problems and obstacles that prevent foreign companies from engaging in entrepreneurial activities in foreign countries. On the one hand, Russian-German cooperation on the world stage has the greatest weight in the economic context, which can be divided into four important areas: the fuel and energy complex, the automotive industry, the financial sector and high-tech industries.

Russian-German cooperation on the world stage has the greatest weight in the economic context (Fumitaka Kawashima, 2014), which can be divided into four important areas: the fuel and energy complex, the automotive industry, the financial sector, and high-tech industries. Germany’s exports to Russia amounted to € 21 billion or 10.7 percent of its overall imports (Official website of the German-Russian Chamber of Commerce, 2020).

At the beginning of 2017, the German-Russian Chamber of Commerce (AHK) and the German Committee on Eastern European Economic Relations (Ost-Ausschuss der Deutschen Wirtschaft) published a survey conducted among German companies operating in Russia (Ershova, 2017). It included 190 enterprises, whose total turnover in Russia amounts to € 29 billion and which employ more than 120 thousand people in that country. These were primarily companies from the machinery, consulting, food, and trade industries. Half of the surveyed companies called for the immediate lifting of the sanctions against Russia, and 42 percent wanted their gradual reduction (www.cbr.ru/Eng/statistics). In 2016, German companies invested up to € 1.95 billion in Russia, which is about € 170 million more than in 2015. This means the end of the investment collapse that occurred in 2014 when German entrepreneurs began to implement only 11 new projects in Russia worth about € 400 million. According to experts, the upward trends will also continue in 2020-2021.

Germany is one of the most active investors in Russia. According to the E&Y report presented at the 2016 invest-
ment forum in Moscow, 106 projects were implemented in Russia by investors from Western Europe in 2015, which is the highest figure in a decade. German companies participated in 36 projects (mainly in industrial production), which gave them a leading position among all foreign investors in this regard (https://russland.ahk.de).

According to the German companies represented on the Russian market, agriculture and food industry are the most attractive sectors for investors in Russia. They were indicated by two-thirds of the respondents interviewed by the AHK chamber and the German Committee on Eastern European Economic Relations. It is not surprising that the manufacturer of agricultural machinery Claas decided to invest in Russia. The company allocated €120 million for the construction of a new plant in Krasnodar. In the food industry, a particularly large deficit is observed in the dairy market, where Russian producers can meet only less than 80% of domestic demand. The largest dairy company in Germany DMK GROUP wants to profit from this opportunity. In 2016, it acquired a controlling stake in a Russian cheese producer located outside Voronezh and announced that production will double. The new facility will not be limited to the production of previously available cheap types of cheese, in which palm oil is used due to the shortage of milk in Russia. DMK announced that it will also produce “European” cheeses such as mozzarella, Maasdam, mascarpone, and blue cheese at the Russian plant (Godlewski-2017, Kozlova, 2019; Ignatova et al., 2020; Garnov et al., 2020). Currently, they are not in Russian stores because of the Russian Federation government embargo on European food. In General, experts are optimistic about the decision of the management of the DMK group to expand its activities in Russia. However, DMK group will have to convince Russian consumers that its products manufactured in Russia are “German”, i.e. of the highest quality (Shkurkin et al. 2017).

According to statistics compiled by the German-Russian Chamber of Foreign Trade (AHK), the number of Russian-based companies with German equity participation decreased by 5.2 percent in 2017. Almost two-thirds of the companies surveyed by the AHK want to further expand their activities in the Russian market. None of the companies’ reps said they wanted to reduce their business in Russia.

![Figure 1. Total German FDI in Russian vs total Russian FDI in Germany](image)

*Source: Industrial investment in Eurasia (report), ROTOBO The Japan Association for Trade with Russia & NIS, 2011, p. 79.*
In 2017, foreign investors invested in 238 projects. This is a record number for Russia for the entire period of the study since 2010, despite the ongoing negative impact of economic sanctions slapped on Russia by the EU and the US. The total German FDI in Russian vs the total Russian FDI in Germany is shown in Figure 1. In 2015 and 2016, the first place in terms of new projects was occupied by Germany. However, in 2017 the number of German projects in Russia decreased to 28 (compared to 43 in 2016).

The biggest incentives for entrepreneurs from Germany are the prospects of rapid growth and the sheer size of the market.

Inflation reaching several percent annually, volatile ruble exchange rates, bureaucracy, and corruption are the key factors that undermine Russia’s investment attractiveness.

Getting a detailed overview of the investment activities of Russian companies in Germany is not easy. This is due both to the different definitions of “investment activities” and “Russian companies” in existing studies as well as to the fragmented structure of Russian investments in Germany, which are therefore often not covered by statistics. Experts estimate that between 800 and 3,000 Russian companies are based in Germany. Other sources assume that “Russian companies are involved in over 5,000 companies in Germany”. Based on a comprehensive data analysis, the “RIM Russian Investment Monitor” currently contains information on more than 1,700 active German companies with Russian participation. While the total number of more than 1,700 companies with Russian participation is quite impressive, an analysis of the concrete activities of these companies in Germany allows a more differentiated picture. For the majority of investments, the motivation does not seem to be a classic direct investment, but is more in the personal motivation of the private investor.

Alone 312 companies are involved in the management of real estate. Baden-Baden has more companies with Russian participation than German ones. Experts assume that soon half of all Baden-Baden real estate will belong to Russians (Kiseleva et al. 2019). But also, at other German locations wealthy Russians invest more and more in German real estate, which cost more than one million euros. In addition to these real estate investors, the analysis primarily reveals a comprehensive activity in the areas of vehicle trade (525 companies) and provision of unspecified services (247 companies). Taken together, these three areas of activity account for 63 percent of all German companies with Russian investments.

Classic businesses, such as manufacturing, account for 125 companies. Active Russian investments into the German economy began in the ’90s. There are comparatively few – still active – German companies in which Russian investors participated before the year 2007. Of the companies founded or acquired in 2013, 254 are still active, compared to only 124 companies founded in 2016 that are still active.

3. Results and Discussion

According to the experts’ estimation, which was presented at the St. Petersburg International Economic Forum (SPIEF) 2018, German firms continue investing in the Russian economy despite facing barriers from economic sanctions. In 2017, German private investment in the Russian economy gained € 1.6 billion (Terebova, 2017). These are not only car manufacturers, which invest heavily in Russia, but also family and medium-sized businesses. FDI flows into Russia have been on the decline after 2013, due to geopolitical tensions between Russia, Ukraine, and the Western countries. While inflows rose to $ 37.1 billion in 2016, they fell once again in 2017 to $ 25.3 billion, the second-lowest level since 2006 (Chepurenko, 2017), and continue falling. Table 1 shows the countries of origin and their number of investment projects in Russia.
Table 1. Countries of origin and number of investment projects in Russia

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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>4</td>
<td>7</td>
<td>12</td>
<td>9</td>
<td>32</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>Germany</td>
<td>26</td>
<td>13</td>
<td>28</td>
<td>12</td>
<td>11</td>
<td>36</td>
<td>43</td>
<td>28</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>USA</td>
<td>24</td>
<td>24</td>
<td>29</td>
<td>24</td>
<td>14</td>
<td>29</td>
<td>38</td>
<td>19</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>4</td>
<td>Italy</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>12</td>
<td>7</td>
<td>17</td>
<td>17</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>Japan</td>
<td>11</td>
<td>6</td>
<td>9</td>
<td>14</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>17</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>6</td>
<td>South Korea</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>12</td>
<td>10</td>
<td>11</td>
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<tr>
<td>7</td>
<td>France</td>
<td>10</td>
<td>9</td>
<td>14</td>
<td>7</td>
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<td>20</td>
<td>20</td>
<td>11</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>8</td>
<td>Switzerland</td>
<td>11</td>
<td>4</td>
<td>4</td>
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<td>8</td>
<td>7</td>
<td>11</td>
<td>9</td>
<td>8</td>
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<tr>
<td>9</td>
<td>UK</td>
<td>14</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>8</td>
<td>7</td>
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</tr>
<tr>
<td>10</td>
<td>Finland</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Efimova, 2018

The studies carried out made it possible to formulate the following: in 2018 and 2019, the leadership in terms of the number of investment projects changed. Despite the tensed relationship with Russia, the United States topped the list, as the number of its investment projects in Russia increased to 25-26 projects in 2018-2019. Germany again came second, its investment into the Russian economy decreased to 24 projects as compared to 28 projects in the previous year. In 2018-2019, investment from China also decreased, as a result, China shifted down from the first place to the third. In 2018-2019, France and the Netherlands increased their FDI by 2 projects, which accounted for 18% growth for France and 33% for the Netherlands. The UK showed the largest decrease in investment interest in 2018-2019 (reduction by 2 projects). Overall, there has been a significant decline in FDI since 2015 due to the sanctions and geopolitical concerns. In recent years, Russia has embarked on economic reforms, but administrative challenges, corruption, and uncertainty about regional stability remained the main obstacles to creating a favorable investment climate.

According to the World Bank’s Doing Business reports, Russia was ranked 120th at the beginning of the decade, 34th in 2016, 40th in 2017, 35th in 2018, 34th in 2019 in terms of investment attractiveness. Table 2 shows German foreign direct investment in the Russian Federation.

Table 2. German Foreign Direct Investment in the Russian Federation: positions by industry, in million USD

<table>
<thead>
<tr>
<th>German Foreign Direct Investment in the Russian Federation: positions by industry</th>
<th>million USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>6,571</td>
</tr>
<tr>
<td>Wholesale and retail trade, repair of motor vehicles and motorcycles</td>
<td>5,102</td>
</tr>
<tr>
<td>Financial and insurance activities</td>
<td>1,871</td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>1,052</td>
</tr>
<tr>
<td>Real estate activities</td>
<td>687</td>
</tr>
<tr>
<td>Public administration and defense, compulsory social security</td>
<td>364</td>
</tr>
<tr>
<td>Transportation and storage</td>
<td>235</td>
</tr>
<tr>
<td>Information and communication</td>
<td>146</td>
</tr>
<tr>
<td>Professional, scientific, and technical activities</td>
<td>101</td>
</tr>
<tr>
<td>Agriculture, forestry, and fishing</td>
<td>3</td>
</tr>
<tr>
<td>Water supply, sewerage, waste management, and remediation activities</td>
<td>-23</td>
</tr>
<tr>
<td>Human health and social work activities</td>
<td>21</td>
</tr>
<tr>
<td>Unallocated</td>
<td>12</td>
</tr>
<tr>
<td>TOTAL DIRECT INVESTMENT IN RUSSIA</td>
<td>18,778</td>
</tr>
</tbody>
</table>

Source: Fedotova, 2020
The conducted studies of the statistical data set allowed us to conclude the following: the most attractive industries for German direct investment according to the Central Bank of Russia estimations, are manufacturing; wholesale and retail trade, repair of motor vehicles and motorcycles; financial and insurance activities; mining and quarrying (Barilenko et al. 2019; Panfilova et al., 2020).

Despite all the political and economic threats and barriers, German businesses continue investing in the Russian economy. The leading industries are manufacturing; wholesale and retail trade; financial and insurance activities. The major investment flows exist in Moscow and the Moscow Region and St. Petersburg and the Leningrad Region. Russia is still rather attractive for German investors because of some points: the country is close enough to Europe, which greatly simplifies the logistics of cooperation; the mentality of Russians and Germans is also quite close, and, finally, the current economic situation in Russia allows the regions to offer German companies very favorable investment conditions.

At the same time, in 2018-2019, Asian countries showed great interest in the Russian economy. For the first time ever, China topped the list as having the largest number of FDI projects. Japan and South Korea were also in the top ten. Moscow and the Moscow Region are the primary destinations for FDI. The Leningrad Region is the second most attractive region for FDI in Russia, whereas St. Petersburg is ranked 7th.

Thus, the conducted studies of the data set allow to properly confirm that the Russian market is quite attractive for foreign direct investment, the purpose of which is to develop and expand new sales markets through activities outside their country. Nevertheless, one of the most effective tools that can improve the economic situation of any state is the policy of attracting foreign investment into its economy. In order to carry out commercial activities in our country and invest their capital, foreign economic entities need certain guarantees on the legal regulation of taxation, taking into account the interests of the budget, the interests of foreign organizations operating in the Russian Federation (Zabolotskaya, 2015; Kosov, 2016). The creation of representative offices / branches of economic entities on the territory of the Russian Federation assumes independent financial and economic activities by foreign economic entities. Control over the work of separate branches of foreign economic entities in the Russian Federation is carried out in accordance with the provisions of the Federal Law “On Foreign Investments in the Russian Federation” dated 09.07.1999 No. 160-FZ, however, nothing is written in this legislation on the work of representative offices of economic entities. Accordingly, the text of the law does not contain a definition of the business entity’s representation. Thus, a legal status has not been established for the representative offices of an economic entity, even in the case of accreditation. Consequently, representative offices / branches of foreign economic entities are subject to the laws of the country of registration in part: the process of its creation; his rights and obligations; models of its work and its completion; the rules for appointing the management of the representative office and the scope of its powers, etc. After the accreditation of the representative office / branch, they need to register with the Federal Tax Service of Russia in order to control tax payments to the state budget.

**Result & Discussion**

General characteristics of representative offices / branches of foreign economic entities in the Russian Federation: separate subdivisions separate from the parent economic entity; the parent business entity is financially responsible for the activities of representative offices / branches; the management of representative offices / branches is encumbered with the powers of a foreign economic entity by the power of attorney of the parent economic entity; use the property of the parent business entity, accounted for separately; are not endowed with independent legal capacity, are not legal entities, performing activities on behalf of the founding business entity; are created and also liquidated by the decision of the head business entity; are not required to prepare financial statements. Thus, representative offices / branches of foreign companies must pay attention to the following:

1. Resident subsidiaries pay all taxes at standard rates, but they are entitled to apply a special tax regime. They also have the right to resort to the provisions of international tax law.
2. Doing business without establishing a permanent representative office in Russia is only possible if a com-
pany only occasionally transacts in Russia, since this form of doing business is limited in scope, even though it involves a smaller tax burden.

3. Establishing a permanent representative office is not quite cost-effective because the representative office would have to pay all taxes provided for by the Russian tax legislation, without being able to apply a special tax regime (Semenov et al. 2017).

After being registered, a representative office / branch of a foreign company must maintain accounting records and prepare internal accounting statements for the parent company. Following the review of the foreign practice of operating representative offices in Russia and other countries, criteria for their performance evaluation must be developed.

As a developing market, Russia is quite attractive to foreign companies. However, external political factors led to a sharp decrease in the volume of foreign investment into the Russian economy in 2018 and 2019 compared to 2008 and 2013. (Figure 2). The maximum decline in Russia’s investment attractiveness was in 2014-2015. It should also be noted that in 2018 both European and Asian investors (which are traditionally very active) sharply reduced the volume of investment. In 2018, capital outflows from the country also significantly increased. According to the Central Bank of Russia estimations, the overall capital outflow at the end of 2018 amounted to $66 billion. It should be noted that Russia seeks to create favorable conditions for foreign companies, including clear and comfortable conditions for starting a business.

![Figure 2. FDI into Russia (in million USD)](image)


Foreign companies can operate in Russia through a properly registered division or remotely. If a division is required, a company may establish either a subsidiary or an independent division (branch or representative office).


Each legal form of a foreign company presence in the Russian Federation has its specifics (see Table 3).

It should be noted that the maximum decline in the investment attractiveness of the Russian Federation was observed in 2014-2015. It should also be noted that in 2018 the volume of investments fell sharply, not only
from European partners, but also from traditional Asian investors as well. In 2018, the level of capital outflow from the country also significantly increased. The overall level of capital outflows based on the results of 2018 is estimated by the Central Bank of Russia at $66 billion. It should be noted that the Russian Federation seeks to create favorable conditions for foreign business, including clear and convenient conditions for opening and starting a business. Foreign business entities can carry out their activities both by creating additional structural units in the Russian Federation, registered in the prescribed manner, and as a result of remote cooperation. If an additional subdivision is needed, foreign legal entities can go through the opening of: a subsidiary; a separate division (branch or representative office).

At the same time, the current control of the functioning of separate divisions of foreign economic entities in the Russian Federation is carried out in accordance with the provisions of the Federal Law “On Foreign Investments in the Russian Federation” dated 09.07.1999 No. 160-FZ and Federal Law dated 25.07.2002 No. 115-FZ “On the legal status foreign citizens in the Russian Federation”. Each legal regime for organizing the activities of a foreign economic entity in the Russian Federation has a number of features (Table 3).

Table 3. Specific features of business activity forms of foreign companies in the Russian Federation

<table>
<thead>
<tr>
<th>Branch</th>
<th>Representative Office</th>
<th>Subsidiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Branch may carry out</td>
<td>A Representative Office may carry out marketing activities, represent and protect the</td>
<td>A Subsidiary may carry out any marketing and commercial activities as</td>
</tr>
<tr>
<td>commercial and marketing</td>
<td>the interests of a foreign company only within the confines of the Parent Company’s</td>
<td>provided for by the Russian legislation.</td>
</tr>
<tr>
<td>activities, represent and</td>
<td>activities, but cannot carry out commercial activities.</td>
<td></td>
</tr>
<tr>
<td>protect the interests of a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>foreign company only within</td>
<td></td>
<td></td>
</tr>
<tr>
<td>the confines of the Parent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company’s activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Branch may obtain licenses</td>
<td>A Representative Office may not obtain licenses to carry out commercial activities.</td>
<td>A Subsidiary may obtain licenses to carry out certain commercial activities.</td>
</tr>
<tr>
<td>to carry out certain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>commercial activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Branch is not a legal entity,</td>
<td>A Representative Office is not a legal entity, but a separate division of a foreign</td>
<td>A Subsidiary is an independent Russian legal entity. Subsidiary companies</td>
</tr>
<tr>
<td>(located in a jurisdiction</td>
<td>company (located in a jurisdiction different from that of the Parent Company). A Branch</td>
<td>may create their own subdivisions (Branches and Representative Offices).</td>
</tr>
<tr>
<td>different from that of the</td>
<td>may not create subdivisions.</td>
<td></td>
</tr>
<tr>
<td>Parent Company). A Branch may</td>
<td></td>
<td></td>
</tr>
<tr>
<td>not create subdivisions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stamp duty on the registration</td>
<td>Stamp duty on the registration of a Representative Office: RUB 120,000.</td>
<td>Stamp duty on the registration of a Subsidiary: RUB 4,000.</td>
</tr>
<tr>
<td>of a Branch: RUB 120,000.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Branch may only be</td>
<td>A Representative Office may only be established by one Parent Company. Other forms of</td>
<td>A Subsidiary may be founded by one or more individuals or legal entities.</td>
</tr>
<tr>
<td>established by one Parent</td>
<td>ownership are not allowed.</td>
<td></td>
</tr>
<tr>
<td>Company. Other forms of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ownership are not allowed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Parent Company may</td>
<td>The Parent Company may provide assets to and finance its Representative Office without</td>
<td>The Parent Company must contribute cash or other assets to the registered</td>
</tr>
<tr>
<td>provide assets to and finance</td>
<td>any limitations. There is no requirement to specify the minimum amounts in the Articles</td>
<td>capital of its Subsidiary.</td>
</tr>
<tr>
<td>its Branch without any</td>
<td>of Association.</td>
<td></td>
</tr>
<tr>
<td>limitations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Branch may receive funds</td>
<td>A Representative Office may not receive funds from third parties as a result of its</td>
<td>The Parent Company holding a majority stake in the registered capital of its</td>
</tr>
<tr>
<td>from third parties as a result</td>
<td>commercial activity.</td>
<td>Subsidiary may invest in the Subsidiary’s assets.</td>
</tr>
<tr>
<td>of its commercial activity.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Branch may enter into service contracts with Russian customers on behalf</td>
<td>A Representative Office may enter into service contracts with Russian customers</td>
<td>A Subsidiary may enter into service contracts with Russian customers on its</td>
</tr>
<tr>
<td>of the Parent Company.</td>
<td>on behalf of the Parent Company.</td>
<td>own behalf.</td>
</tr>
<tr>
<td>Any changes in a Branch’s</td>
<td>Any changes in a Representative Office’s activity (change of name, address, chief</td>
<td>Any changes in a Subsidiary’s activity (change of name, address, chief</td>
</tr>
<tr>
<td>activity (change of name,</td>
<td>executive, etc.) can only be made by the Parent Company.</td>
<td>executive, etc.) can only be made by its shareholders.</td>
</tr>
<tr>
<td>address, chief executive, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Parent Company is liable</td>
<td>The Parent Company is liable for the actions of its Representative Office.</td>
<td>Except as otherwise specifically provided by the applicable law, a Subsidiary is solely responsible for its actions.</td>
</tr>
<tr>
<td>for the actions of its Branch.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Many foreign companies are operating in Russia now. Some of them have been present in Russia for over 25 years (see Table 4). As noted above, according to Article 55 of the Civil Code of the Russian Federation, “a representative office is a separate division of a legal entity, established outside such legal entity’s jurisdiction to represent and protect its interests in such other jurisdiction” (Tereshchenko et al. 2017).

As of today, there are 4,735 representative offices of foreign companies registered in Russia (see Table 3), the accreditation of 1,286 of which has been revoked (according to the State Register of Accredited Branches, Representative Offices of Foreign Legal Entities (adopted by Federal Law No. 160-FZ of 2015)).

Table 4. Largest foreign companies operating in Russia

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company name</th>
<th>Revenue, millions USD</th>
<th>Activity type</th>
<th>In Russia since</th>
<th>Head office</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2015 2016 2017 2018 2019</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Adidas / Adidas Group</td>
<td>46 47 40 47 47</td>
<td>Clothing</td>
<td>1997</td>
<td>Germany</td>
</tr>
<tr>
<td>2</td>
<td>Auchan, Atac / Groupe Auchan</td>
<td>414 403.6 356.1 404 407</td>
<td>Trade</td>
<td>2002</td>
<td>France</td>
</tr>
<tr>
<td>3</td>
<td>Bayer / Bayer</td>
<td>41 48 54 48 47</td>
<td>Pharmacy</td>
<td>1994</td>
<td>Germany</td>
</tr>
<tr>
<td>4</td>
<td>Baltika / Carlsberg Group</td>
<td>87 90.5 74.5 91 92</td>
<td>Food Industry</td>
<td>1993</td>
<td>Denmark</td>
</tr>
<tr>
<td>5</td>
<td>Billa / REWE Group</td>
<td>39 40 43 42 43</td>
<td>Trade</td>
<td>2004</td>
<td>Germany</td>
</tr>
<tr>
<td>6</td>
<td>BMW Russland Trading / BMW Group</td>
<td>77 90.3 100.6 90 89</td>
<td>Automotive Industry</td>
<td>1999</td>
<td>Germany</td>
</tr>
<tr>
<td>7</td>
<td>Hyperglobus / Globus Group</td>
<td>69 90.3 100.6 80 79</td>
<td>Trade</td>
<td>2006</td>
<td>Germany</td>
</tr>
<tr>
<td>8</td>
<td>Danone Russia / Danone</td>
<td>107 104 116 114 113</td>
<td>Food Industry</td>
<td>1992</td>
<td>France</td>
</tr>
<tr>
<td>9</td>
<td>JTI Russia / Japan Tobacco International</td>
<td>245 275.8 289.2 276 279</td>
<td>Tobacco Industry</td>
<td>1999</td>
<td>Japan</td>
</tr>
<tr>
<td>10</td>
<td>Johnson &amp; Johnson / Johnson &amp; Johnson</td>
<td>47 51.3 55.4 51 51</td>
<td>Consumer Goods</td>
<td>1992</td>
<td>USA</td>
</tr>
<tr>
<td>11</td>
<td>IKEA Dom, IKEA Mos, IKEA Torg / IKEA</td>
<td>200 197.5 173.2 198 197</td>
<td>Trade</td>
<td>2000</td>
<td>Sweden</td>
</tr>
<tr>
<td>12</td>
<td>Imperial Tobacco Sales &amp; Marketing / Imperial Tobacco Group</td>
<td>42 47 46.7 47 47</td>
<td>Tobacco Industry</td>
<td>1996</td>
<td>UK</td>
</tr>
<tr>
<td>13</td>
<td>Cargill / Cargill</td>
<td>66 71.8 77.9 72 73</td>
<td>Trade</td>
<td>1991</td>
<td>USA</td>
</tr>
<tr>
<td>14</td>
<td>Kia Motors Rus / Kia Motors</td>
<td>105 125.5 170.5 125 130</td>
<td>Automotive Industry</td>
<td>2008</td>
<td>Korea</td>
</tr>
<tr>
<td>15</td>
<td>CCHBCE / Coca-Cola Hellenic Bottling</td>
<td>70 82.8 70 83 81</td>
<td>Food Industry</td>
<td>2001</td>
<td>Switzerland</td>
</tr>
</tbody>
</table>

Table 5. Representative offices of foreign companies in Russia

<table>
<thead>
<tr>
<th>Year</th>
<th>Accreditation granted</th>
<th>Accreditation revoked</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>3999</td>
<td>259</td>
</tr>
<tr>
<td>2016</td>
<td>237</td>
<td>443</td>
</tr>
<tr>
<td>2017</td>
<td>222</td>
<td>495</td>
</tr>
<tr>
<td>2018</td>
<td>211</td>
<td>76</td>
</tr>
<tr>
<td>2019</td>
<td>66</td>
<td>13</td>
</tr>
<tr>
<td>TOTAL</td>
<td>4,735</td>
<td>1,286</td>
</tr>
</tbody>
</table>


Conclusion

Based on the study of the functioning of international foreign economic entities, it allowed to formulate the following important aspects. On the quantitative side, the unevenness of the represented foreign structures and the lack of an adequate number of branches on the part of the banking sector were revealed. At the same time, in some states, in terms of attracting the banking sector to the economy, tax breaks are introduced at the legislative level, and when attracting foreign capital, the corresponding amount of funds spent on their creation in their parent company is taken. On the other hand, full-fledged admission of foreign representations of international institutions threatens with a massive inflow of cheap money and squeezing domestic ones, initially into more risky areas of the economy, and then from the system of the financial and banking sector of a particular jurisdiction. In this regard, in order to attract foreign economic entities to the domestic economy, it is important to provide measures aimed at preventing factors:

a) Economic (indicators of the share of income of an economic entity in the GDP of the country in the territory of which there is a representative office, the share of profit of an economic entity in the territory of a representative office in the total profit for the period, indicators of the share of tax payments by an economic entity to the budgets of various levels, indicators of the share of marketing costs of a representative office in the total cost of an economic entity, indicators of the share of contracts concluded by a foreign economic entity in the territory of presence with the assistance of the representative office, indicators of the share of investment projects of an economic entity that are under implementation in the territory of presence, on which the representative office was working, indicators of the share of investment projects that are at the stage of development on which the work of the representative office was carried out).

b) Organizational (implementation of activities carried out in the territory of presence with the support of the representative office of an economic entity in the field of science, education, etc., the formation of visits of official delegations from the represented business entity to the country of its presence and back, participation of heads of representative office on behalf of a foreign economic entity in various events with officials of the host country).

At the same time, attracting foreign direct investment, which is one of the most important instruments of the national economy, makes it possible to properly increase production, influence the level of employment of the population, accelerate structural reforms, improve the country’s external financial situation, increase foreign exchange reserves, reduce restrictions in the current balance and obtain more favorable credit rating. Therefore, when analyzing the international practice of the functioning of representative offices of foreign economic entities, in particular, in the Russian Federation, it should be noted that there may be special problems and obstacles that prevent foreign companies from engaging in entrepreneurial activities in foreign countries. Thus, the identification of these obstacles and the search for ways to neutralize them can properly give an additional impetus to the development of investment cooperation between different jurisdictions.
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Abstract. Currently, Management Accounting has been interested many researchers, economists as well as Vietnamese enterprises. Management accounting provides useful information about such contents as cost classification and control, cost - volume - profit analysis, estimation, responsibility center analysis, information analysis, believe in making short and long term decisions, thereby helping internal managers make appropriate business decisions. Understand the importance of Management Accounting, the article presents some modern management tools used in management accounting such as: Cost-by-Activity (ABC) Determination, Balanced Scorecard (BSC), Cost accounting and cost management in a lean environment. Vietnam is on the way of applying International Financial Reporting Standards (IFRS) and the above issues of management accounting need to be considered. Through the view of manager awareness and external auditors. We use quantitative research methods based on synthesis analysis of available information from many various sources, interviews through questionnaires for 500 managers and auditors who are currently working in Vietnam in 2019. We figure out some factors influencing IFRS applying including but not limited to business features, accounting team ability, accounting framework, etc. Applying IFRS will need to go in parallel with enhancing management accounting practices in developing nations including Vietnam. There is not so much gap in perception of IFRS applicability among managers in enterprises and auditors, among different groups of people in working experience. Last but not least, this paper contributes to an overview of factors affecting the ability to apply the international accounting standards system in a developing country like Vietnam. At the same time demonstrate that this applicability is influenced by many different factors.

Keywords: Applying IFRS; manager awareness; auditor; Balance score card; Vietnam


JEL Classifications: M1, M10, M21

1. Introduction

In Vietnam, we have a plan that, after 2025, companies required to prepare consolidated financial statements under IFRS include all parent companies of state economic groups, all listed companies, all public companies of any size. Major is unlisted parent company. Other enterprises as the parent company have the right to voluntarily prepare consolidated financial statements under IFRS. Enterprises are also allowed to voluntarily prepare separate financial statements under IFRS when they ensure full provision of information and clear and transparent explanation with tax authorities, regulators and supervisors about the determination obligations to the State budget.
Financial statements (Financial Statements) are a tool that provides comprehensive and truthful information about the financial status and business results of businesses, serving and meeting the information needs of many subjects in the background economy.

Along with the trend of globalization in economic cooperation and development, accounting is no longer an internal and separate issue of each country. Therefore, to suit the diversified requirements of businesses as well as investors, countries often allow businesses to choose National Financial Reporting Standards or International Financial Reporting Standards (IFRS) when preparing and presenting financial statements.

Hence, it is better to analyze factors influencing progress of IFRS applying in emerging markets such as Vietnam.

One of the reasons that Vietnam is currently not recognized as a market economy due to the standard system of financial statements to reflect economic transactions of enterprises is incomplete and out of date compared to international practice. Therefore, allowing the application of IFRS in Vietnam will contribute to the international community to soon recognize Vietnam as a full market economy, thereby opening up FDI inflows, demonstrating a strong commitment of Government in protecting investors and creating a healthy business environment that serves the goal of sustainable development.

We carried out the study though sessions: introduction, previous studies, method, results, discussion, conclusion and policy suggestions.

Research issues: what are main factors that influence IFRS applying in Vietnam? What are management accounting implications and policy suggestions?

We also test the below hypotheses:

**H1**: IFRS applying affected positively by legal accounting framework

**H2**: IFRS will be influenced positively by accounting team ability and skills

**H3, H4, H5**: IFRS applying affected positive by corporate governance, business features, country governance of accounting profession

**H6**: IFRS applying will be affected strongly by conditions relating to socio-economic culture.

2. Literature review

Accounting legal framework has affected IFRS applying as it has spent many years to establish rules and regulations in accounting document system of a nation (Subačienė et al., 2018; Khue & Oanh, 2019; Beretta & Cencini, 2020; Wakuła, 2020; Harymawan et al., 2020; Wahyuningrum et al., 2020).

Then, Phuong & Richard (2011) presented progress of Vietnam accounting standards and international standards have been going parallel and facilitates IFRS applying.

Hai et al. (2019) showed a view that IFRS applying will be influenced by specialists viewpoint and qualifications.


Harto et al. (2019) showed that there is no significant evidence to convince IFRS applying influence quality of accounting and increasing quality.
Next, Hellman et al. (2018) figured out no clear models for applying IFRS with requirements of complying with disclosure.

Hence, IFRS applying in Vietnam will be affected by at least 6 factors:
- Accounting team ability and skills
- Accounting Legal framework
- Business features
- Country governance of accounting profession
- Conditions relating to socio-economic and cultural environment.

Moreover, Goodwin et al. (2019) pointed that in developing economies there might be paradoxes of accounting applying. They found out accounting might be changed during IFRS applying at country and business levels, i.e at micro and macro levels.

Rejeb & Cheikh (2020) though their GARHCH analysis, show IFRS applying has certain benefits including better results of markets in developing countries and reducing fluctuation.

3. Data and Research Methodology

We use quantitative research methods based on synthesis analysis of available information from many various sources, interviews through questionnaires for 500 managers and auditors who are currently working in Vietnam in 2019. We figure out some factors influencing IFRS applying including but not limited to business features, accounting team ability, accounting framework, etc.

The quantitative method in this paper is supported with SPSS software processing interviews findings and questionnaires. The paper also use 1-5 Likert (5 level scale) and 20 samples survey results.

Authors has done a research in a survey with about 1000 participants in 2 groups, managers and auditors. SPSS supports with statistics results, coefficient Cronbach’s Alpha

4. Results and Discussions (Results and Discussion)

4.1 Findings on modern management accounting tools

A) Determining cost by ABC activity method

The ABC method is a cost accounting theory with the main goal of allocating overheads effectively. In the ABC model, the cost allocation criterion is often established based on the relationship between the three factors that are resources, activities and the object to be determined.

Activity-based costing (ABC) is the activity-based costing method based on the relationship between cost-generating activities. This is a powerful tool for managers in determining and allocating costs in the most realistic and accurate way, based on the relationship between costs and activities that incur costs. Under the ABC method, product costs will not only include production costs but also non-production costs such as selling costs, business management costs - costs associated with production during the process from production to consumption. ABC method allocates the arising costs to the cost of each product based on the actual cost for each activity and the contribution of each activity to the production and consumption of products.

As a result, product cost is a more accurate reflection of actual crystallization cost per unit of product. According to ABC method, we need to consider the following 4 contents: Fee-bearing objects, or allocation objects (Objects); Total resources to be allocated (Resources); Activities; The factor that creates costs, this is the criterion to allocate (Cost drivers).
- The advantage of ABC method is the heterogeneous product cost for all units or for all production levels. This is the difference of the method compared to the traditional costing method, ABC method will recognize the cost of the product according to the actual cost incurred, not according to the norm like the infusion method system. Hence, the cost of a product per unit of product or a small batch of product, will be different from that cost but produced on a large scale.

- The most outstanding advantage of the ABC method is to allocate activities cost for the objects that need to set Costs, thereby helping the management accountant to divide. operating costs in the production and business cycle of the entity and determining the relationship more accurately when making decisions. Identifying and allocating costs that support many of the manager’s decisions, across all departments, not just production, such as product distribution or customer.

B) The Balanced Scorecard Method (BSC)

In the early 1990s, many scientists have researched and launched an evaluation tool, to help administrators have a basis to perform control and evaluation functions. The Balanced Scorecard method was jointly developed by Professor Robert S. Kaplan of Harvard Business School and David Norton (Kaplan & Norton, 1992) a well-known corporate governance consultant, and has been widely used in the past. This time. The equilibrium scorecard is the result of a new synthesis, from the inevitable need to build long-term competitiveness and the immutable goal of the historical-cost accounting model. Balanced scorecards retain financial metrics but financial metrics only cover past events, supplementing financial metrics of past performance with measures of such factors as performance leadership in the future. The goals and measures of the Balanced Scorecard are born of an organization’s vision and strategy, observing the organization’s performance from four perspectives:

- Financial perspective:
- Customers: (Customer perspective);
- Internal activities: Internal business process perspective;
- Learning, experience and growth: Learning and Growth perspective.

The structural model of the balanced scoreboard is shown as follows:

![Figure 1. Structure of BSC](Source: Kaplan & Norton, 1992)
The balanced scorecard provides leaders with a comprehensive paradigm that transforms the company’s strategic vision into a coherent set of performance metrics. The balanced scorecard emphasizes that financial and non-financial metrics should be part of the employee information system at all levels of the organization. The goals and metrics for the Balanced Scorecard are generated during top-down operations, defined by the business unit’s mission and strategy, transforming tasks and objectives into specific metrics. These metrics represent a balance between past and future results, a balance between objective and subjective measures, a balance between external measures (customers, shareholders) and internal ones, of key business processes, innovation, learning and growth. The Balanced Scorecard goals and measures are shown as follows:

Financial goals. This goal plays an important role in the operation to create a common goal for the whole company, it aggregates the entire economic results of the company over the past time, reflecting the performance of the company. Business strategies as well as general goals related to the profitability, payback and other economic value it brings.

Customer goals. For the balanced scorecard, the customer outlook indicators, the manager determines the market target, the business decisions made, the competition, and the business results of the the related systems. Including criteria of departments on the ability to satisfy customer needs, the ability to hold customers, the ability to exploit potential customers etc. Customer prospect indicators are important and are Consider evaluating the outputs of a business strategy.

Objectives of internal operations. these goals focus on the results and efficiency of the ability to provide products and services to meet customer needs and achieve high profits. Each business has its own business cycle and internal activities, through which managers define appropriate assessment objectives and targets.

The goal of experiential learning and growth. This goal is defined as the foundation for the long-term survival and development of the business. It identifies the factors most important to customer prospects and internal operational processes that can create value for success now and in the future. Factors of experiential learning and growth include: people, systems and organizational procedures. When evaluating financial goals, customers, and internal operations, it often considers the difference between the actual capabilities of the people, the system and the organizational procedures, and the targets to be met.

Starting from the goals of the aspects, the administrator builds the prospects of the respective aspects and has the indicators to measure the prospects, shown in the table 1.

Table 1. Scorecard balance of indicators in the company

<table>
<thead>
<tr>
<th>Prospects</th>
<th>Goals</th>
<th>Measurement criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Outlook</td>
<td>- Maximize profits (increase revenue, reduce costs)</td>
<td>- ROI, RO, ROA - Profit - Solvency - The consumption market share in the market - EVA</td>
</tr>
<tr>
<td>- Profit maximization</td>
<td>- Increase business value - Increase efficiency in using business capital, efficiency in using assets</td>
<td></td>
</tr>
<tr>
<td>- Increase sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Cut the cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Prospects</td>
<td>- Revenue - Good product quality, preferred by customers, diversified products, and affordable prices</td>
<td>- Revenue center: (Sales, quantity consumed) - Cost center: Norms of costs, production costs, product prices</td>
</tr>
<tr>
<td>- Good product quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Low cost, competitive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal business cycle outlook</td>
<td>- Ensuring the production process, production standards specified. - Effective</td>
<td>- Number of damaged or poor quality products.</td>
</tr>
<tr>
<td>Perspectives Learning, experience &amp; growth</td>
<td>- Training Employees - Build up a good management apparatus with regulations on reward and good discipline.</td>
<td>- Training costs - Company welfare fund</td>
</tr>
</tbody>
</table>
4.2 Results on Factors influence IFRS applying

We summarize our research model and tested hypotheses (see Figure 2):

![Proposed research model](image)

The below table 2 and table 3 present statistic results:

**Table 2.** Descriptive statistics of the sample

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auditor</td>
<td>200</td>
<td>40%</td>
</tr>
<tr>
<td>Management team</td>
<td>300</td>
<td>60%</td>
</tr>
<tr>
<td>Working experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 5 yrs</td>
<td>135</td>
<td>27%</td>
</tr>
<tr>
<td>5-10 yrs</td>
<td>190</td>
<td>38%</td>
</tr>
<tr>
<td>10-15 yrs</td>
<td>66</td>
<td>13.2%</td>
</tr>
<tr>
<td>15-20 yrs</td>
<td>84</td>
<td>16.8%</td>
</tr>
<tr>
<td>&gt; 20 yrs</td>
<td>25</td>
<td>5.0%</td>
</tr>
</tbody>
</table>

*Source: Analytical results from SPSS 20*

**Table 3.** Results of testing Cronbach’s Alpha coefficients of scales

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Scale</th>
<th>Code</th>
<th>No of variables</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The legal basis for accounting activities</td>
<td>LEG</td>
<td>5</td>
<td>0.799</td>
<td></td>
</tr>
<tr>
<td>2. Qualifications and competencies of accountants</td>
<td>ACC</td>
<td>5</td>
<td>0.763</td>
<td></td>
</tr>
<tr>
<td>3. Business characteristics</td>
<td>ENT</td>
<td>5</td>
<td>0.769</td>
<td></td>
</tr>
<tr>
<td>4. State management of accounting profession</td>
<td>STA</td>
<td>4</td>
<td>0.708</td>
<td></td>
</tr>
<tr>
<td>5. Corporate governance</td>
<td>COR</td>
<td>4</td>
<td>0.735</td>
<td></td>
</tr>
<tr>
<td>6. Socio-economic conditions</td>
<td>ECS</td>
<td>4</td>
<td>0.751</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Analytical results from SPSS 2.0.*
We analyze from the tables that:
Coefficient Cronbach Alpha > 0.6
Correlation > 0.3
Hence next CFA model will use 32 observers/variables.
EFA analysis scales the factors
Next we see (Table 4):

**Table 4. Results of testing EFA coefficients on scale**

<table>
<thead>
<tr>
<th>Scale</th>
<th>KMO</th>
<th>Sig</th>
<th>Variance</th>
<th>Eigen Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Independent variables</td>
<td>0.789</td>
<td>.000</td>
<td>0.54511</td>
<td>1.207</td>
</tr>
<tr>
<td>2. Dependent variables (APP)</td>
<td>0.846</td>
<td>.000</td>
<td>0.58764</td>
<td>2.938</td>
</tr>
</tbody>
</table>

*Source: Analytical results from SPSS 16.0*

We note that:
Coefficient KMO > 0.5
value < 0.05
Chisquare/df < 2
So CFA confirmed
Accept data in the proposed model (Table 5).

**Table 5. Results assess the reliability and convergence of the scale**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Code</th>
<th>CR</th>
<th>AVE(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Accounting activitieslegal framework</td>
<td>LEG</td>
<td>1.009</td>
<td>1.044</td>
</tr>
<tr>
<td>2. Accounting team skills and ability</td>
<td>ACC</td>
<td>0.933</td>
<td>0.738</td>
</tr>
<tr>
<td>4. Business features</td>
<td>ENT</td>
<td>0.977</td>
<td>0.896</td>
</tr>
<tr>
<td>4. Country governance of accounting profession</td>
<td>STA</td>
<td>0.872</td>
<td>0.639</td>
</tr>
<tr>
<td>5. Corporate governance</td>
<td>COR</td>
<td>0.966</td>
<td>0.877</td>
</tr>
<tr>
<td>Conditions of socio-econn cultural</td>
<td>ECS</td>
<td>0.930</td>
<td>0.772</td>
</tr>
<tr>
<td>7. Applying IFRS in Vietnam</td>
<td>APP</td>
<td>0.996</td>
<td>0.978</td>
</tr>
</tbody>
</table>

*Source: Analytical results from AMOS 20*

Based on Table 4, we see that the CR reliability is greater than 0.7, the total extracted variance is greater than 50%, so we can conclude that the components in the functional quality scale are reliable and convergent. Doing the analysis of the correlation coefficient between the pairs of factors, we have the results with the highest value of 0.48, all are quite small and do not exceed 0.85, so the factors satisfy the condition of discriminant value (see Figure 3).
Model for testing hypotheses

Test research model
We use SEM for testing with p-value < 5% means significant in statistics. (see below figure 4)
After testing, we analyze that:

**H1**: we can accept. Estimate = 0.185, p-value = 0.000

**H2**: accept/in favor. Estimate = 0.246, p-value = 0.000.

**H3**: accept/in favor. Estimate = 0.358, p-value = 0.000.

**H4**: accept/in favor. Estimate = 0.426, p-value = 0.000.

**H5**: reject. Estimate = 0.00, p-value = 0.995.

**H6**: reject. Estimate = -0.034, p-value = 0.379.

Besides, the below table 6 tells us that there is a difference between the groups interviewed by work experience.

<table>
<thead>
<tr>
<th></th>
<th>Squares total</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter group</td>
<td>1.706</td>
<td>4</td>
<td>.427</td>
<td>1.300</td>
<td>.269</td>
</tr>
<tr>
<td>In groups</td>
<td>162.462</td>
<td>495</td>
<td>.328</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>164.168</td>
<td>499</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Discussion

Vietnam’s economy is increasingly integrated into the world economy. The application of IFRS is not only limited to subsidiaries of multinational corporations in Vietnam, but also has an impact on companies in Vietnam. In the current period of strong globalization, through the application of IFRS, the Vietnamese economy in general and Vietnamese enterprises in particular will benefit from economic integration, such as access to capital, maintain competitive capacity and develop in a sustainable way, develop a team of accounting and auditing personnel, ... 2. The preparation of IFRS financial statements reflects the fair value of enterprises. Vietnamese companies still apply VAS, but knowing IFRS helps owners to have a better view of their business value, especially in cases of mergers, acquisitions, new shareholders. Along with The increase of foreign investors, as well as for the purpose of calling for investment capital, businesses need to have a full, transparent, accurate and highly reliable financial report under IFRS. On the other hand, the recently published Vietnam 2035 report proposes that Vietnamese technical expertise needs to agree with IFRS, in order to develop in-depth capital markets and attract more foreign investors. In addition, in terms of the positive impact of IFRS widespread deployment on the development of the financial market,

This not only helps these markets improve their ability to attract foreign investment, but also helps the economies and businesses of these countries to reduce significantly the cost of issuing shares and bonds to mobilize capital, due to increased credit rating. A lesson that Vietnam should not ignore is that before Thailand and Korea widely applied IFRS, foreign investors doubted that some companies in these countries “cooked” data to “Beautifying” financial statements, causing risks to investors. However, since these countries applied IFRS, there is no longer this doubt, because with more transparent information, the accountability of enterprises is clearer.

7. Conclusion

To meet the needs as well as the trend of globalization, businesses are constantly innovating with modern business strategies, applying advanced technology and business processes to improve product quality to create a competitive advantage in the market. Management accounting with an important function in the management of managers is also constantly developing and needs to be applied appropriately and effectively by businesses. Applying modern management accounting tools in corporate governance is urgent today. Depending on the characteristics of the products’ production, technological processes as well as the business strategies of the enterprise, managers can choose appropriate management accounting tools to promote efficiency. Specifically,
based on business strategy as well as operational goals, businesses can apply the balanced Scorecard tool with 4 aspects: Finance, Customer, Internal Operations, Learning, Experience and growth. From there, it is possible to concretize strategies and goals of the business on prospects through financial and non-financial indicators and measures.

One of main results of this study is showing culture does not affect much on IFRS applying in Vietnam. Other factors influencing IFRS applying such as accounting team ability and skills being the most significant factors on IFRS applying.

Moreover, we have recommendations for better management accounting during IFRS applying in emerging markets including in Vietnam:

Suggestions for management accounting:

In theory to apply ABC method, we need to perform the following steps:
- Identify the main activities: determining the main activities is the first important step, what is the basis for ABC method implementation.
- Identify Total general costs incurred, what is necessary to gather the expenses that need to be allocated scientifically and fully, the full and accurate cost set is meaningful in the future cost allocation.
- Select the appropriate allocation criteria. The selection of the criteria for allocation is an important but difficult issue, because in reality there are costs that the criteria of allocation are difficult to choose accurately, for example, currently, the unit of advertising costs is choosing the consumption revenue criterion, but in essence, the advertising cost is the revenue generator. So, is it appropriate to choose the criteria of revenue to allocate to advertising costs? Therefore, the selection of allocation criteria is a difficult and difficult problem, requires understanding and understanding clearly the origin of costs to choose appropriate and scientific allocation criteria.

Determine the unit cost to allocate. After the cost is gathered and the appropriate allocation criterion is selected, the unit cost is determined by each criterion, which is the basis for aggregating the cost for each object.
- Aggregate the cost to determine the cost price by the subject to pay. Based on the unit cost, and the level of operation and production of each object, the cost is aggregated according to each object.

ABC method helps administrators to allocate accurately production costs according to activities, thereby providing information on the assessment of production and business efficiency of products and services by activity.

The ABC method has advantages and disadvantages and should be based on the purposes of using different ABC method, businesses will apply the ABC method flexibly to achieve the highest efficiency.

Balance scorecard method suggestions

The four aspects of the Balanced Scorecard allow businesses to balance aspects of their management comprehensively, between short-term and long-term goals, between external and internal goals, and between desired and realistic results. In general, in the balanced scoreboard, the goals are always harmoniously combined with the entire target system, not just a manager’s control system.

Research limitations

This study was conducted according to the convenient sampling method, so the results were subject to the subjective factors of study authors, reducing the objectivity and generalization. The scope of the study was only conducted in Vietnam in 2019, so the experimental results only really give some short-term conclusions and recommendations.
References


Abstract: The prime objective of the present study was to assess the impact of green training; green shared vision and Green employee involvement practices on organizational citizenship behaviour environment and environmental performance of the textile sector of Indonesia. Moreover, the mediating role of OCBE is examined, as well. The data was collected from the employees of the textile sector through survey method. The response rate of the study was 59.83%. The tool employed for analysis was PLS 3.2.9. the findings of the study confirm the mediating role of OCBE between green training, green shared vision and Green employee involvement practices and environmental performance. Moreover, the direct impact of green training, green shared vision and Green employee involvement practices on OCBE is also supported by the findings of the study. Present the study fills the gap of limited studies conducted regarding environmental issues. The findings of the study are helpful for practitioners and policymakers of the textile sector to use HRM strategies in order to improve environmental performance.

Keywords: OCBE; green training; Green employee involvement practices; Environmental performance; Indonesia


1. Introduction

In order to solve the issues related to pollution, it is important that the government take actions that are pro-environment. In the context of environmental studies, researchers have given a lot of importance to the behaviour of employees regarding the environment and the determinants which play an important role in the creation of such behaviour (Bamberg & Möser, 2007). The topic of pro-environment efforts is the urgent topic, and there is still lack of empirical studies conducted to work on the activities which are associated with the prevention of pollution, green innovations, environment performance, and system for efficient environment management (Ramus & Killmer, 2007; Junior et al., 2020; Gil-Leon, 2020; Hernandez & Prieto, 2020; Maziriri, Mapuranga, Maramura, & Nzewi, 2019; Fatoki, 2019; Mazzoni, 2020).

Employees can be given a chance by the management to take part in the management of the environment, which make them work in favour of stopping pollution and find opportunities for the environment. In order to enhance the performance regarding systems of environmental management, the involvement of employee in such activities is very important. The systems of environment green systems include making full utilization of available resources, minimizing pollution and waste at the workplace (Tseng, Tan, & Siriban-Manalang, 2013). There are a number of processes mentioned by researchers to involve employees in green initiatives. Five aspects are identified by researches in order to measure green involvement. These five aspects are encouraging green involvement, providing practices related to the environment, different channels for communication, learning
regarding green climate and green vision which must be very clear. Green involvement encouragement includes providing opportunities to employees to be engaged in activities by which environmental problems can be solved, and quality of life can be improved (Saeed et al., 2019).

OCBE also is known as organizational citizenship behaviour environment is the behaviour executed by the employees working for any organization. These employees show their willingness to take forward the goals of the organization related to the environment. In the literature of the environment, the concept of OCBE has recently emerged. It seems to be very important to capture the pro-environment behaviour of employees in the workplace. The roots of OCBE falls under the work of Organ in 1988. The concept of OCBE is derived from the basic concept of OCB. But Daily, Bishop, and Govindarajulu (2009) mentioned that it is important to study these two concepts separately. Later, Boiral and Paillé (2012) also pointed out to study OCBE and its examination in further studies as well.

Green training is one of the important practices of green HRM, which helps in the creation of environmentally friendly culture and developing practices that are environmentally friendly. Moreover, through environmental training, employees are given skills by which they can reduce waste and create environmental awareness. The basic purpose of green training and development is to improve the awareness of the employees regarding the issues of environment, reduce waste, develop skills to save the energy, take initiatives regarding environmental issues, develop positive attitude regarding the environment and enhance knowledge regarding environmental issues (Zoogah, 2011). Environmental and social issues of all levels must be part of environmental training and development. Therefore, it is important to conduct studies regarding the issues of green training. The findings of these studies can be helpful for policymakers to develop policies regarding the environment (Peerzadah, Mufti, & Nazir, 2018).

In order to implement any kind of shared vision within the organization, employees are the most important stakeholders (Felin, Foss, & Ployhart, 2015). Research has considered the involvement of employees to solve the issues regarding the environment to be very important. Researchers have pointed out that the success of green strategies within the organization is dependent upon employees taking actions automatically regarding environmental issues. Directions regarding collective strategies are provided by green strategies which can impact the actions of the employees and turn them in the right direction. In the same context, green shared vision is defined as a common and clear direction in order to achieve collective organizational goals and objectives which are communicated by the organization internally (Chang, 2020).

Environmental performance reflects the outcome, which shows the level at which organizations shows a commitment to protect the environment. There are a number of indicators which can be used to evaluate the environmental performance of the organization. These indicators include activities of recycling, minimization of waste, preventing pollution, and releasing dangerous environmental material. Performance-related to the environment can be enhanced through the implementation of system related to environmental management. The organizations which implemented environmental-related initiatives at each level of their HRM were successful in terms of their environmental performance (Paillé, Chen, Boiral, & Jin, 2014).

The textile industry of Indonesia is a very important industry at local as well as international level. Since last few years, this sector is enjoying positive growth. The exports of this sector in 2019 were of 13.8 billion USD. Basically, they jumped from the 2018 figure of export of USD 10 billion. Therefore, Indonesia is the largest country which produces textile related products and exports them (Van der Eng, 2007). As there is a high level of production of textile related products, so there is a big chance that the environment may be getting affected by these activities of the organization producing the textile product. Therefore, this study aims to examine the impact of green training, green shared vision, green employee involvement on organizational citizenship behaviour and environmental performance.
2. Literature Review

Environmental Performance

Environmental performance is the thought to use improved energy, water efficiency and renewable resources. They also include the reduction of toxic pollutants, hazardous waste, air contaminants, and enhance recycling. Scholars postulate that there exists a positive relationship between the growth of industry and environmental performance. Level of pollution emission is the base of the environmental performance of a firm. This level of emission polluting the environment is caused by the organization. On the basis of this argument, organizational performance is achieved by the organization when the reproductive process of the organization is redesigned, clean technology is used, resources are wasted at the minimum level, and these resources are used efficiently (Wang, Xu, & Song, 2011).

In this economy which is globalized and competitive and technology is prevailing everywhere, organizations must promote the activities which promote environmental development. The basic reason is to promote an environmentally friendly culture and innovation, which can be sustainable for organizational, economic health. In recent past, evidence exists that a number of researchers have focused on the research related to environmental performance (García-Machado & Martínez-Ávila, 2019).

Organizational citizenship behaviour and Environmental Performance

The term organizational citizenship behaviour means a behaviour which is discretionary, and it is not the basic requirement of the employee’s job. It also represents voluntary initiatives by the employee, which may not get any reward from the organization. The root of the definition of OCBE lies in the definition of organizational citizenship behaviour. Thus, OCBE can be termed as discretionary behaviour which is not part of the reward system. But it has high contribution towards the performance of the environment. Most of the past research of citizenship behaviour has the main focus on OCBs which is mostly accepted in a number of positions and organizations. It also includes the orientation of new employees and providing help to other employees as well (Boiral, 2009).

Researchers have mentioned that the focus of OCB should be expanded, and the environmental factor should also be added to it. Particularly, the behaviours if employees should be examined in terms of improvement of the environment such as comparison of cross-culture, saving energy and recycling. Therefore, there exists evidence of environmental helping or pro-environment behaviour in past literature (Daily et al., 2009).

In order to apply the organizational management system and for the integration of environmental policies at the organization, OCBE is considered as one of the most important factors. On the other hand, researchers have explained pro-environment behaviour in terms of three dimensions, eco-initiatives, eco-civic engagement and eco helping (Boiral & Paillé, 2012). The initiatives known as eco-initiatives are individual-level initiatives of the workers with the purpose to minimize the negative impact of the environment at the organization like minimizing resource waste, using dustbin for the dispose of rubbish and recycling of the papers. The second aspect, known as eco-civic engagement, is the initiative of the organizational level. It consists of employees who participate in green projects and events which are created by the organization. These events are promoted by firms as well to improve the perception of the organization. In the end, under eco helping dimension, employees encourage other co-workers regarding environmental issues. Mutual assistance among employees who work in an organization is the base of this dimension. Employees assist each other for the environmental issues and problems regarding the organization, like sharing ideas voluntarily. Moreover, sharing expertise with team members and other employees in order to identify sources of pollution and suggest a solution to prevent environment (Rayner & Morgan, 2018).

Employee’s OCB is studied in a number of different sectors by researchers. For instance, researchers studied the effect of OCBE of managers in manufacturing firms. Authors reported a positive association among OCBE
and environmental performance. In the same context, it is assessed the pro-environment behaver in the manufacturing organizations of china (Paillé et al., 2014; Haseeb et al., 2020). The findings of the study empirically proved a positive relationship between organizational performance and OCBE.

H1: OCBE will have a positive effect on environmental performance.

Green employee involvement practices relationship with OCBE

Researchers pointed out that employees who are involved in issues related to the environment have more knowledge regarding environmental issues. Moreover, they have more capability to solve the problems related to the environment, which lead to improved environmental performance (Rothenberg, 2003). The five aspects were identified by Tang, Chen, Jiang, Paille, and Jia (2018), which plays an important role to encourage employees to be engaged in green activities. The first point is to have a very clear green vision. The second point is learning regarding green climate, whereas third include climate channels. Due to these two points, employees got concerned regarding environmental problems. Green culture can be created within a firm through informal and formal communication. Due to these kinds of conversations, employee perceives themselves comfortable in order to improve their green behaviour. This behaviour will be involved in green behaviour and help the environment to become green.

Researchers have stressed regarding green culture within the organization. On the other hand, researchers pointed out that HR managers must try to work on the work environment in which employees can participate in which all employees can be free to think regarding environmental issues. It is because these employees are the ones which must be needed to implement environmental behaviour. Additionally, researchers mentioned that development of a culture in which workers can share ideas with colleagues. In such culture efforts related to the green environment are supported through the process in which involvement of employee create effects. Involvement of employees which are affected through two other processes is the empowerment of employees and engagement of employees in order to make suggestions related to the environment (Renwick, Redman, & Maguire, 2013).

Tang et al. (2018) mentioned the fourth aspect to offer environmentally friendly practices is the establishment of teams that work for an environmental problem. Through green practices, employees can participate in environmentally friendly activities. The last aspect is the encouragement of environmentally friendly activities due to which employees get engaged in environmentally friendly practices (Hussain et al., 2020).

Practices of green employee involvement show the opportunities which represent the voice of employees in the management of the environment and a solution for the environmental problem is suggested. Scholars mentioned that employees having empowerment in terms of decision making have high skills for a problem-solving and high level of self-control.

Employees within the organization can be involved in opportunities regarding the environmentally friendly culture of the organization through shared vision, exchange of ideas and open discussion regarding environmental aspects (Alt & Spitzeck, 2016). Employees will be involved in initiatives related to the environment through informal communication, formal communication and proper vision regarding the environment. Additionally, green teams can also be used as an important organizational factor with the aim to enhance practices of environmental management. Opportunities are provided to employees through teamwork regarding the solution of problems that are complex in nature, sharing of knowledge and working together with other employees (Daily et al., 2009).

H2: Green employee involvement practices will have a relationship with OCBE.

Green Training Relationship with OCBE

Researchers mentioned training as a systematic and planned effort to develop or modify attitude, skills and knowledge through experience with the purpose to gain high performance in a certain or multiple activities.
Therefore, in green context, scholars defined training in terms of the environment, also known as green training is seen as the policy regarding the environment with the purpose to provide knowledge and create awareness regarding its practice. Development of skills, knowledge, behaviour and attitude among employee which stop the integrated knowledge, skills, and attitude falls under the category of training (Zoogah, 2011). In literature, training is perceived as preparation of employee who is multi-talented who have a concern regarding gain of skills and knowledge (Mtembu, 2017).

It’s been observed that employees are more obliged who perceive benefits from the things and opportunities provided by the organization. In the context of the environment, when an employee gets opportunities and training provided by the firm, they will reciprocate positively as well for the organization. Moreover, researchers perceive OCBE as the behaviour which is reciprocal in the context of environment and studies related to the environment. Additionally, researchers pointed out that there is a need for training in the context of the environment so employees can act pro-actively for environmental issues. Researchers indicated that educational practices and training develops green competencies due to which employees get boosted. They will work extra in the environmental-related activities and will get engaged voluntary for green-related activities at the workplace. As a result, it’s expected that the OCBE of the employees will be impacted positively because of green training (Pham, Tučková, & Phan, 2019).

H3: Green Training will positively impact OCBE.

Green shared value relationship with OCBE

In literature, green shared vision is referred to as the development of vision which is common with the aim regarding environmental friendliness. The capability of a shared vision exists when the management of the organization communicate organizational goals with other employees. Moreover, responsibility is shared at the next level in order to achieve organizational goals and objectives. A shared vision has the capability to provide the basis of actions within the firm in order to achieve long term organizational goals. If top management is failed to convey the goals to the employees, the vision will only remain in theory and will not be achieved (Chen, Lin, & Chang, 2014).

Researchers defined green shared vision as a common and clear strategic direction to achieve environmental goals that are collective. Researchers observed that green shared vision provides guidelines in a proper way. Moreover, the ideal goal for employee of organizations is to share the visions as well. Through a shared vision, organizations can improve the tasks related to work and can successfully overcome the challenges. Researchers indicated that blueprints, knowledge, vision and common insights are conveyed as a shared vision among employees. Additionally, a shared vision has potential can be used potentially for corporate success as the base of visionary strategies (Aragón-Correa, Hurtado-Torres, Sharma, & García-Morales, 2008).

Researchers pointed out that the behaviour of the employees is the base of green organizational success. It is stated by researchers that environmental values play a very important role for incentivization of OCBE. To enhance the OCBE among employees of the organization, green shared values play a very important role.

H4: Green shared value will have a positive effect on OCBE.

H5: Organizational citizenship behaviour is a significant mediator between Green employee involvement and environmental performance.

H6: Organizational citizenship behaviour is a significant mediator between green training and environmental performance.

H7: Organizational citizenship behaviour is a significant mediator between Organizational Identification and environmental performance.
Research framework is provided below in Figure 1.

![Green employee involvement practices](image1)

![Green training](image2)

![Green Shared Vision](image3)

![Organizational citizenship behaviour for environment](image4)

![Environmental performance](image5)

**Figure 1. Research Framework**

### 3. Methodology

The present research is the cross-sectional study in which the researcher collected data from the employees working in the textile industries of Indonesia. The data was collected from all level of employees because the research was regarding environmental practices and their impact. So, its application at each level was important to be assessed. Researchers used convenience sampling procedure for the data collection process. The data was collected in the form of survey questionnaires. The researcher distributed a questionnaire in the print form with a cover letter at the start of the questionnaire with an explanation regarding the questionnaire. The total number of questionnaires distributed were 621. Returned questionnaires were 370. Therefore, the response rate of the present study was 59.83% for the analysis of the Data collected, the researcher employed PLS-SEM, which was done through PLS 3.2.9. The reason to use PLS-SEM is that it is the analysis method which is extensively multivariate, and it is used for the calculation of structural equation modelling on the basis of covariance. This method is mostly used in the field of social sciences (Rigdon, 2012).

Path models with latent variables contain measurement models that explain the relationships between latent variables and their observed indicators. The SEM method is extensively used to investigate and test the complex system of association and causal relationships (Sarstedt, Ringle, Smith, Reams, & Hair Jr, 2014). SEM is a mixture of regression, multiple correlations, factor analysis, and path analysis. The instruments of current research are adopted from several past studies, and as far as the dependent variable is concerned, the environmental performance was adapted from (Bangwal, Tiwari, & Chamola, 2017).

### 4. Results and Analysis

In this section, the results of the study are summarized, which are gathered from the analysis of the data gathered through the survey method explained above. In this study, PLS-SEM is the method employed by the researcher for the analysis of the data. As the objective of the study was to examine the factors influencing OCBE and environmental performance; therefore, three independent variables were predictors in the present study, which are also discussed thoroughly in the above sections. The developed conceptual model mentioned in figure 1 was assessed using PLS-3. Software. This software was used for the assessment of the impact of three IV’s green shared vision, green training and employee’s involvement on OCBE and environmental performance. Smart PLS model is divided into two approaches, i.e. measurement model and structural model (Henseler & Ringle, 2009). The structural model is also known as an inner model, and the measurement model is also known as the outer model of the study.

There are a few other approaches for SEM as an alternative of PLS-SEM. The first approach in this aspect is CB SEM, also known as SEM on the basis of covariance, through the usage of software packages, including Mplus, LISREL, EQS, AMOS. Another approach which is employed in this study is PLS (partial least square) which has a focus on variance analysis. Component-based structural equation modelling is the third approach, also
known as GSCA. This approach is implemented by the usage of GeSCA, which is the web-based application.

As mentioned above, PLS is the approach which is soft modelling towards SEM with zero exemptions regarding distribution (Vinzi, Chin, Henseler, & Wang, 2010). PLS-SEM is the best alternative of using CB-SEM in case of encountering following situation. (1) the small sample is not an issue. (2) Application of theory is very little (3) Predictive accuracy is paramount (4) It is difficult to ensure the correct model (see Figure 2).

![Figure 2. Measurement Model](image)

*Note: EP= environmental performance, OCBE= organizational citizenship behaviour environment, GT= green training, GSV= green shared vision, GEIP= green employee involvement initiative*

The usage of PLS is based on two phases. In phase 1, the measurement model is calculated for internal consistency and validity of the constructs being used. The outer loading was used for the factor loading of the items being analyzed in the study. The loading of the items is used for the reliability assessment of the items. It’s clear from table 1 that all items have the factor loading more than 0.7, which is the acceptance criteria. The next phase is to measure the internal consistency for which Cronbach alpha and composite reliability is used in this study. The acceptable criteria are to have the value of both measures more than 0.70. It’s evident from table 2 that the value of CR and Cronbach Alpha is more than 0.70 (see Table 1 and Table 2).

**Table 1. Loading of the items**

<table>
<thead>
<tr>
<th></th>
<th>EP</th>
<th>GEIP</th>
<th>GSV</th>
<th>GT</th>
<th>OCBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP1</td>
<td>0.911</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EP2</td>
<td>0.872</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EP3</td>
<td>0.902</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EP4</td>
<td>0.885</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EP5</td>
<td>0.873</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEIP1</td>
<td></td>
<td>0.911</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEIP2</td>
<td></td>
<td>0.903</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEIP3</td>
<td></td>
<td>0.902</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEIP4</td>
<td></td>
<td>0.908</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Reliability and validity

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s Alpha</th>
<th>rho_A</th>
<th>Composite Reliability</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP</td>
<td>0.934</td>
<td>0.935</td>
<td>0.950</td>
<td>0.790</td>
</tr>
<tr>
<td>GEIP</td>
<td>0.948</td>
<td>0.951</td>
<td>0.959</td>
<td>0.795</td>
</tr>
<tr>
<td>GSV</td>
<td>0.930</td>
<td>0.932</td>
<td>0.950</td>
<td>0.827</td>
</tr>
<tr>
<td>GT</td>
<td>0.918</td>
<td>0.928</td>
<td>0.936</td>
<td>0.708</td>
</tr>
<tr>
<td>OCBE</td>
<td>0.920</td>
<td>0.921</td>
<td>0.950</td>
<td>0.862</td>
</tr>
</tbody>
</table>

Note: EP= environmental performance, OCBE= organizational citizenship behaviour environment, GT= green training, GSV= green shared vision, GEIP= green employee involvement initiative

The next convergent validity of the data is established if its AVE is more than 0.50. Table 2 above shows all the values of AVE were well above 0.50 establishing convergent validity of the data. In the later stage, the step is to determine the discriminant validity. For this purpose, Fornell and Larcker (1981) approach were used by the scholar in the study. For this purpose, the researcher used AVE is the present study, so discriminant validity can be measured. Discriminant validity of the construct is established when each square root of every constructs AVE is more than the correlation between the constructs. Table 3 below shows the square root of AVE of EP, GEIP, GSV, GT, OCBE is 0.889, 0.892, 0.909, 0.841, 0.921 respectively. All the values of AVE were more than the correlation of corresponding construct than the remaining constructs. These values show the discriminant validity to be appropriate (see Table 3).

Table 3. Discriminant validity

<table>
<thead>
<tr>
<th></th>
<th>EP</th>
<th>GEIP</th>
<th>GSV</th>
<th>GT</th>
<th>OCBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP</td>
<td>0.889</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEIP</td>
<td>0.481</td>
<td>0.892</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSV</td>
<td>0.593</td>
<td>0.410</td>
<td>0.909</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GT</td>
<td>0.606</td>
<td>0.411</td>
<td>0.690</td>
<td>0.841</td>
<td></td>
</tr>
<tr>
<td>OCBE</td>
<td>0.723</td>
<td>0.484</td>
<td>0.612</td>
<td>0.608</td>
<td>0.929</td>
</tr>
</tbody>
</table>

Note: EP= environmental performance, OCBE= organizational citizenship behaviour environment, GT= green training, GSV= green shared vision, GEIP= green employee involvement initiative
Due to the assessment of the measurement model, internal consistency and validity of the constructs are established. The next phase is to evaluate the proposed hypothesis of the study. The hypothesis of the study is evaluated through the structural model of PLS. The results of the hypothesis proposed were obtained through bootstrapping results obtained from 5000 subsamples. The proposed hypothesis shows the study must adopt a two-tailed test for analysis in which cut offline for the acceptable t-test is 0.967 at the 0.05 level of significance (see Figure 3 and Table 4).

![Figure 3. Structural Model](image)

Note: EP= environmental performance, OCBE= organizational citizenship behaviour environment, GT= green training, GSV= green shared vision, GEIP= green employee involvement initiative

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>T Statistics</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEIP -&gt; OCBE</td>
<td>4.048</td>
<td>0.000</td>
</tr>
<tr>
<td>GSV -&gt; OCBE</td>
<td>4.460</td>
<td>0.000</td>
</tr>
<tr>
<td>GT -&gt; OCBE</td>
<td>4.019</td>
<td>0.000</td>
</tr>
<tr>
<td>OCBE -&gt; EP</td>
<td>20.479</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Note: EP= environmental performance, OCBE= organizational citizenship behaviour environment, GT= green training, GSV= green shared vision, GEIP= green employee involvement initiative

Results mentioned in table 4 shows t-values of all hypothesis to be more than the cut offline. Additionally, the p-value criteria in all these hypotheses are also achieved. Therefore, all proposed direct relationships are supported in the present study (see Table 5).
Table 5. Indirect results

| Path          | (O)  | (STDEV) | (|O/STDEV|) | P Values |
|---------------|------|---------|--------|----------|
| GEIP -> OCBE -> EP | 0.169 | 0.041   | 4.117  | 0.000    |
| GSV -> OCBE -> EP | 0.225 | 0.052   | 4.324  | 0.000    |
| GT -> OCBE -> EP | 0.215 | 0.057   | 3.761  | 0.000    |

Note: EP = environmental performance, OCBE = organizational citizenship behaviour environment, GT = green training, GSV = green shared vision, GEIP = green employee involvement initiative

Table 5 demonstrates the mediation results of the study. From the statistical results obtained, OCBE significantly mediates between GEIP, GSV, GT and EP because the t-value statistic is well above 0.96. In these mediation results, P-Value criteria is also achieved. Therefore, all mediation hypothesis is also supported (see Table 6).

Table 6. R Square

<table>
<thead>
<tr>
<th>R Square</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP</td>
<td>0.522</td>
</tr>
<tr>
<td>OCBE</td>
<td>0.484</td>
</tr>
</tbody>
</table>

Note: EP = environmental performance, OCBE = organizational citizenship behaviour environment

In the end, the researcher has calculated the predictive relevance of every endogenous variable of the study. This test is known as Q square, which is obtained by blindfolding procedure. The value of Q square must be above zero. Table 8 below shows the Q square values meet these criteria as well (see Table 7 and Figure 4).

Table 7. Q square

<table>
<thead>
<tr>
<th>Q² (=1-SSE/SSO)</th>
<th>Q² (=1-SSE/SSO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP</td>
<td>0.409</td>
</tr>
<tr>
<td>OCBE</td>
<td>0.412</td>
</tr>
</tbody>
</table>

Note: EP = environmental performance, OCBE = organizational citizenship behaviour environment

Figure 4. Q square

Note: EP = environmental performance, OCBE = organizational citizenship behaviour environment, GT = green training, GSV = green shared vision, GEIP = green employee involvement initiative
5. Conclusion

In the present era, it is very important for organizations dealing in the manufacturing sector to take initiatives which can help to control the pollution in society. Therefore, the present study was conducted to explore the effect of green training; green shared vision and Green employee involvement practices on OCBE and environmental performance. The findings of the study reveal the OCBE is significantly affected by green training, green shared vision and Green employee involvement practices. The results of the study also show the OCBE mediates significantly between green training, green shared vision and Green employee involvement practices and environmental performance (Utami et al., 2020; Kusnanto et al., 2020).

The findings of the study show that organizations of the textile sector should focus on the strategies like green training to develop citizenship behaviour among employees which is pro-environment. Employees having training regarding saving the environment will be helpful to control environmental pollution. Moreover, such employees can convince others to stop pollution (Pasara & Dunga, 2020; Yun, 2020; Janssen, 2020; Kithatu-Kiwekete & Phillips, 2020; Kotze et al., 2020). The pollution which already spread in the society can be controlled by the innovation of green trained employees which will be the outcome of green training initiatives of the organization. Moreover, employees must be part of the initiatives taken by the organization to save the environment (Dr Aj De Bruyn, 2020). By this way, employees will behave proactively to save the environment. In the end, employees must be shared with the environmentally friendly vision of the organization. If employees know the green vision of the firm, they can reflect it in their daily jobs. In the end, all the mentioned green initiatives by the organization will develop OCBE in the employees, which is very important to improve environmental performance (NCUBE & Koloba, 2020; Nel, 2020; Pasara & Dunga, 2020).

There are a few limitations in the present study as well. The model proposed is predicting the environmental performance of the organization. Present predictors should be examined with innovative green behaviour of employees. Additionally, the present study is conducted in the textile sector. This model should also be tested in service sector firms of Indonesia. The findings of the study will be helpful for the policymakers of management and textile sector to prevent the environment.

References


EXAMINING THE INTERPLAY OF HR INITIATIVES, KNOWLEDGE MANAGEMENT, TECHNOLOGICAL CAPABILITIES AND PRODUCT INNOVATION

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Abstract: Product innovation is the basic strategy by which organizations can survive in the current marketplace for a longer period. Therefore, the present study objective was to examine the impact of reward management, performance appraisal and career management on knowledge management effectiveness and product innovation. Additionally, knowledge management’s mediating role and the moderating role of technological capability are also examined in the present study. Data was collected from the employees working in the fiberglass manufacturing firms in Bahrain. The collected data was analyzed using PLS-SEM. The study findings revealed that knowledge management effectiveness within the firm is significantly impacted by HR strategies like performance appraisal, reward system, and employee career management. Moreover, knowledge management effectiveness also significantly impacts product innovation. In the end, the study also confirmed the moderating role of the technological capability of the organization on the path of knowledge management and product innovation. The present study fills the gap of limited studies, using HR capabilities to improve Bahrain’s fiberglass manufacturing firms’ product innovation. Furthermore, the findings of the present study are helpful for policymakers of manufacturing sectors to integrate HR initiatives into their product innovation strategies.

Keywords: product Innovation; career management; performance appraisal; reward system


JEL Codes: F20

1. Introduction

Product innovation is considered the lifeblood of organizations because the products’ life cycles are very short most of the time. Moreover, the competition in the market at the international and local level is enhancing as well. Studies have reported that more than 70% of the organizations considered innovation as one of their top strategies. All of these firms ranked innovation as an important aspect of their future strategy of the organization. In the same context, innovation is a high priority area for the executives of more than 90% in the recession of 2008 (Andrew, Manget, Michael, Taylor, & Zablit, 2010; Aragonés-merico & Vila-lópeze, 2020; Carolina-paludo et al., 2020).

Practitioners, along with scholars, agree that the organization’s innovation capacity has strategic importance. It shows the organization’s ability to be successful and shows the ability to compete in the business environment. Product innovation holds the importance of strategic resources in modern business. The innovation capability
of the organization plays a vital role in the survival and success of the organization. Several organizations try to achieve the ability to innovate their processes, services, and products, but very few businesses are successful in reaching this level (Jelenic, 2011). Recently, HR practices have been reported with high significance for businesses to boost innovation (Ogalo, 2020). However, to the best of the authors’ knowledge, no other study is available investigating this interesting interplay to help forward robust implications for practitioners.

Accordingly, In organizations, knowledge management in terms of technological methods, organization activities, and management philosophy is widely accepted in business. Knowledge management of the organization makes a difference in all the activities from top to bottom (Majid & Mahmud, 2019). There are very few studies conducted for the connection between knowledge management, the performance of organization, and innovation in terms of available literature available. It is essential for organizations to understand the importance of knowledge management so they can invest in this area effectively. Researchers noticed that knowledge management is a soft discipline that is very important for the organization’s corporate culture (Noruzy, Dalfard, Azhdari, Nazari-Shirkouhi, & Rezazadeh, 2013).

Career management competencies are essential for the formulation of career goals, understanding the labor market conditions, finding and selecting the learning opportunity, which is relevant. It is also important for professional networking, as well. Career management is the process by which a person takes information regarding career goals, weaknesses, strengths related to skills, interests, values and get engaged in strategies related to the career, which increases the chances that organizational goals will be achieved. The career management process involves using career strategies, development of career goals, and exploration to career to achieve the goals related to the career (Gerard, 2012).

In order to manage the human resource of the organization, performance appraisal plays a very important role. The term performance appraisal is referred to as the process by which organizations judge the employees’ performance at every level. In the process of appraisal, assessing the performance of employees and providing them feedback is included. Improving the performance of employees is the main goal and objective of performance appraisal. Through the performance appraisal, management can easily assess employees’ performance and compare it with already set standards. In order to understand the level of performance of the employees, performance appraisal is critical. Through the employees’ performance appraisal, the organization’s management can decide the level of rising, which should be given to the employee in terms of salary and tasks. For survival in the market, the organization and employees need to respond rapidly according to their changing demands. For this purpose, regular performance appraisal within the organization is very important (DeNisi & Murphy, 2017).

For the retention of employees and attract the best employees within the market, reward management is one of the important strategies of the organization’s human resource department. Thus, the punishment and reward system can create incentives within the organization, which plays an important role in improving human resource productivity. Human resource managers have used reward management strategies in order to retain and attract competent employees. Through proper reward management strategies, employees’ motivation level is increased, which impacts the employee’s overall performance. Based on the reward structures, human resource managers can set the goals and objectives that are needed to be achieved through each employee (Yavarzadeh, Rabi, & Abadi, 2015).

In this scenario, HR capabilities and strategies are important for the organization to retain the employees, share knowledge, and bring innovation to their products. Thus, the present study’s main objective is to examine the impact of Performance Appraisal, career management, and reward system to improve the organizations’ innovation with the mediating role of knowledge management and the moderating effect of technology.

2. Literature review

Product Innovation. Product innovation is basically providing different needs to different people. In literature, product innovation is defined as new components, new materials, bring changes to the already available products and bringing totally new products to the market. In other words, innovation is referred to as something
totally new to the market or getting some changes in the main product. The products’ innovation impacts the features of the products, its design, its quality, its usability, its size, and timing to deliver. In terms of organization, revenue, and cost of the product being produced are altered as well because of innovation (Reguia, 2014).

In order to achieve the objectives of the organization, product innovation plays a very important role. It is because new products are and new ideas are developed because of product innovation, quality of the product is enhanced, and services are improved as well to deliver the products to the organization. The products of the organization can easily be distinguished from competitors based on the innovation of products. It is important to mention that organizations that have a problem in their product innovation cannot control their prices in the market (Pallas, Böckermann, Goetz, & Tecklenburg, 2013).

For the organization’s success, product innovation is remaining the factor of innovation for a number of authors and researchers. In the same context, researchers mentioned that sustaining the success of the organization is mainly dependent upon the factor of innovation. Researchers believe that the growth of the business and expansion of the business is mainly dependent upon the factor that organizations can bring innovation within their products and services. By having innovative products and services, organizations may achieve a superior position among its competitors (Waribugo, Ofoegbu, & Akpan, 2016; Omarkhanova, Tleuzhanova, Zhomukhanova, & Mukhambetova, 2020; Mazzoni, 2020).

It is mentioned that product innovativeness is viewed as a perception of something new, unique, original, and novel. On the other hand, studies have also pointed out that the product’s innovation is made up from the perspective of organization and consumer. Organizations must focus on the organizational capability to bring innovation in their products on a long-term basis. Additionally, research has mentioned that the products’ benefits to the customer are mainly dependent upon the level of innovation in the product. In some studies, the product’s innovation is referred to as meaningfulness and novelty of the new services and products being introduced well in time (Rajapathirana & Hui, 2018).

Knowledge Management effectiveness: Relationship with Product Innovation. Performance is the ultimate expectation of any business, and many studies have proven this (e.g., Shaikh et al., 2019; Ahmad, Rafiq & Ahmed, 2019). The organization’s strategy is to provide the right information at the right time to the right person and put the information to improve the organization’s performance. Researchers have pointed out that knowledge management is drawn from the already available resources that any organization may already have available, including HRM practices, organizational change management, and management of a good information system (Girard & Girard, 2015).

The learning process within the organization is improved if the organization have knowledge. If shared properly, such knowledge can enhance the intellectual assets, including innovation capability because knowledge is acquired and appropriately applied. If any organization has competency in knowledge management, it is considered the orientation of knowledge management (Vukšić, Bach, Inkinen, Kianto, & Vanhala, 2015).

In literature, knowledge management is defined in several different perspectives. Few researchers believe that knowledge management is the set of activities that leads the firm to acquire knowledge at an external and internal level. On the other hand, it is mentioned that knowledge management is the development of a proper system to grow the organization’s knowledge. In the same context, Knowledge management is defined as a function of organizational management, including knowledge creation, management and flow of knowledge, and knowledge efficiently and effectively. By this way, organizations can get benefits on the long run basis from the existing knowledge of the organization. Therefore, knowledge management effectiveness is treated as the discipline of management that focuses on developing knowledge and using the knowledge in an effective manner to achieve the strategic objective or the organization (KUMAR, 2016).

Process perspective is used to analyse the knowledge management effectiveness of the organization. Thus, knowledge management effectiveness is basically a process in order to enhance the knowledge application
through which innovation within an organization can be achieved. The organizations with a high level of knowledge management effectiveness will have a high level of innovation for products and services (Moon & Lee, 2014; Grabara et al., 2020).

The relationship with knowledge management effectiveness and innovation of the product is well documented. Several scholars have reported that knowledge has a significant impact on the innovation of the organization. Innovation is enhanced via application, conversion and acquisition of new ideas. Therefore, the organizational power to make the new products is enhanced (Pallas et al., 2013). Researchers reported that knowledge management is an important management tool, which helps generate new ideas related to products and services (Jelenic, 2011). Researchers have not only discussed the benefits of knowledge management to organizations. Practitioners have also expressed concerns regarding the quality of products due to the organization’s knowledge management. In the same context, the adoption and implementation of knowledge management in innovative ideas may lead to innovation in the organization’s production system (Kör & Maden, 2013).

**H1:** There is a significant positive relationship between Knowledge Management and Product Innovation.

**Career Management.** For career development, career management is a very important antecedent when an individual has planned its career and goals related to career. They need competencies and skills to execute these goals related to career through proper practices of management. It means executing the plans is the next step after career planning. In management, career management is the process, which is ongoing monitoring, implementing, developing, and preparing the career plans as well as strategies developed by individuals or with the help of the organization’s career system (Ahmed et al., 2018). Thus, career management is the regular process of human resources in work life. Additionally, a person who has a very satisfying and good career has a fulfillment feeling. On the other hand, a person who has a poor career decision may have a very disastrous effect on its well-being (Adekola, 2011).

For the future knowledge of the employees working at any organization, career management is very important. A number of professionals explain the use of career management. This system helps for the commitment and motivation of employees. Moreover, it strives the employees to gain knowledge regarding organizational products and services, which is important for the organizational performance and innovation on a long-run basis (Seema & Sujatha, 2013).

As the organization becomes flexible regarding the employees, they also become flexible. As the work mode of employees is improved, their path of career is altered as well. When an employee joins an organization, his/ her path to reach the organizational goals is altered. Managers take a lot of time in order to decide the career path of their employees. Organizations need to choose their employees’ careers by which they can improve their organizational knowledge (Shani & Divyapriya, 2013).

**H2:** There is a significant relationship between Career Management and Knowledge Management

**H3:** Knowledge Management Effectiveness mediates the relationship between Career Management and Product Innovation.

**Performance Appraisal.** Among important practices of HRM is performance appraisal. It was started in the USA back in 1813 because organizations were interested in increasing the performance of their organization. The organizations implement effective performance appraisal in order to improve their performance. Performance appraisal is the important factor of performance management function having the focus on achievement of organizational goals. The basic purpose of performance management is to improve the performance of teams. Researchers mentioned that a different prospect is provided to the manager by the performance management so they can discuss the performance of subordinates with them. The main purpose is to reach the agreement to appraise the performance of employees (Rao, 2015).

Performance appraisal linkage with knowledge management is proven in a number of previous studies (e.g.,
Sangakala et al., 2016). The researchers analysed the performance management system, and they found that the performance management system inhibits knowledge sharing. Employees are facilitated to gain knowledge by the organization by giving proper attention to the employees’ needs, providing them proper feedback to their performance and performance appraisal based on standards set by the firm (Horvat, Sharma, & Bobek, 2015). The organization has a better performance appraisal system, and the employees will have the urge to get knowledge sharing requirements. Incentive system of the organization can be improved through the knowledge management system of the organization. An organization can increase the incentives of employees including trips, bonuses and salary. Moreover, they should also provide a proper evaluation to the employees regarding their performance at the job. Therefore, the performance management system put positive pressure on the employee to improve their performance through knowledge sharing among employees (Liu & Liu, 2011).

**H4:** There is a significant relationship between Performance Appraisal and Knowledge Management Effectiveness are significantly related to each other.

**H5:** Knowledge Management Effectiveness mediates the relationship between Performance Appraisal and Product Innovation.

**Reward System.** Motivated employees are the need of the organization to improve the workplace’s effectiveness and achieve the firm’s goals. In order to enhance the motivation of employees, the reward must be used properly by the organization. Financial means are one of the most important mean to keep the employee motivated. The available literature broadens the scope of financial rewards on the reward system. These reward systems are important in order to shape employee behaviour. In literature, there are two types of rewards discussed. The first reward type can be financial or non-financial, fixed or non-fixed and contingent on the basis of certain criteria. The second reward criteria are mainly dependent upon the organization’s principals and norms upon which rewards are allocated.

Knowledge sharing among employees must be awarded in the form of incentives by the organization. A number of empirical studies conducted in the past show that organizational reward impacts employees’ performance, which leads to improving the organization’s performance. Several firms reward employees for them, improving on their knowledge (van Eerde, 2015).

Accordingly, some studies have also shown the importance of knowledge management. Nevertheless, there is still minimal research conducted to examine the impact of the reward system of knowledge sharing. Some employees are working in an organization that possess a different kind of knowledge. These employees decide to share the knowledge with other workers based upon the reward is given to the (Lee & Ahn, 2007).

**H6:** There is a significant relationship between Reward System and Knowledge Management.

**H7:** Knowledge Management Effectiveness mediates the relationship between Reward System and Product Innovation.

**Moderating Role of Technology Capability.** The organizations with strong technological capability are better able to fulfill the customers’ needs and perform better in the market than competitors. It is important for organizations to have knowledge regarding the technological capability of the competitors. Every technological capability of the organization is important for the organization to bring product innovation. If the organization have a strong technological capability, it will better use the available knowledge and produce innovative products. Therefore, in order to use innovation effectively, it is critical that organizations use technological capability effectively. Moreover, there exists an inconsistent relationship between knowledge management effectiveness and product innovation. This inconsistent relationship rises the need for moderator in this path. Therefore, the organization’s technological capability may have a moderating relationship between knowledge management effectiveness and product innovation (Wu, 2014).
H8: Technological capability moderates the relationship between Knowledge Management and Product Innovation.

3. Methodology

The present study has adopted a cross-sectional approach. To achieve the study’s objectives, we have designed a questionnaire to collect data. We have used a 5-point Likert scale. The nature of the present study is explorative. We have adopted this path modelling technique as according to the literature, if the nature of the study is prediction-oriented or we are extending some existing study, then the path modelling technique is recommended (Sarstedt, Ringle, Henseler, & Hair, 2014). In the process of data analysis, we have followed several steps. First, we have screened the data with the help of SPSS to make sure the data is appropriate for PLS analysis or not, whereas in the second step by using the smart PLS 3.0 the measurement model (MM) was ascertained by considering the discriminant validity (DV), convergent validity (CV), internal consistency reliability (ICR) and individual item reliability. In the third step for assessing the structural model, we have applied the bootstrapping technique by taking 315 cases and 5000 bootstrap samples. In the third step, we have particularly we have checked the model’s predictive relevance, level of the R-squared values, the significance of the path coefficients, and effect size (Hair Jr, Sarstedt, Hopkins, & Kuppelwieser, 2014). Total of 350 questionnaires were distributed among the employees working in the three fiberglass manufacturing companies, out of which 310 were returned; we have omitted 16 questionnaires, so the response rate for this study was 84%.

4. Results and Analysis

The PLS path model was initiated with MM’s assessment in the form of constructs validity, which includes discriminant and CV and reliability. By considering the latest development regarding the inappropriateness of PLS path modelling in the validation of the model, a two-step process for the reporting and evaluation of PLS results, we have implemented a two-step process in the present study which was recommended by (J Henseler & Ringle, 2009). (See Figure 1 and Table 1).

![Figure 1. Measurement Model](image)

**Note:** CRM= Career management, TCHNC= technological capability, RWS= reward system, PRA=performance appraisal, PRDIN= product innovation, KM= knowledge management
Table 1. Outer Loadings

<table>
<thead>
<tr>
<th></th>
<th>CRM</th>
<th>KME</th>
<th>PRA</th>
<th>PRDIN</th>
<th>RWS</th>
<th>TCHNC</th>
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<tr>
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</tr>
</tbody>
</table>

*Note: CRM= Career management, TCHNC= technological capability, RWS= reward system, PRA= performance appraisal, PRDIN= product innovation, KM= knowledge management*

The MM assessment consists of ICR determination, individual item reliability, discriminant and convergent validity (J Henseler & Ringle, 2009). Studies have suggested the grouping of the indicators into separate constructs to treat the potential effect of a large number of indicators. By checking the outer loadings of all constructs, this study has measured the Individual item reliability. ICR is known as the degree at which the similar idea was assessed by all items on a specific scale. In an organizational study, we generally use the coefficient of composite reliability (CR) and coefficient of Cronbach’s alpha for the estimation of ICR of an instrument (Bagozzi, Yi, & Nassen, 1998). For the determination of the ICR of measures, the current study has used the coefficient of CR (see Table 1).
Table 2. Reliability

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s Alpha</th>
<th>rho_A</th>
<th>CR</th>
<th>(AVE)</th>
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<tr>
<td>CRM</td>
<td>0.950</td>
<td>0.951</td>
<td>0.900</td>
<td>0.799</td>
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<tr>
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<td>0.873</td>
<td>0.874</td>
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<tr>
<td>PRA</td>
<td>0.952</td>
<td>0.953</td>
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</tr>
<tr>
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<td>0.915</td>
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<tr>
<td>RWS</td>
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<td>0.830</td>
<td>0.689</td>
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<tr>
<td>TCHNC</td>
<td>0.957</td>
<td>0.960</td>
<td>0.864</td>
<td>0.771</td>
</tr>
</tbody>
</table>

Note: CRM= Career management, TCHNC= technological capability, RWS= reward system, PRA=performance appraisal, PRDIN= product innovation, KM= knowledge management

Compared to Cronbach’s alpha, the coefficient of CR gives the less biased reliability estimates whereas Cronbach’s alpha undertakes an equal contribution of all items to their constructs and doesn’t consider the genuine contribution of all loadings at the individual level. The Cronbach’s alpha may over or underestimate the reliability scale. According to research, indicators have different loadings that can be easy to understand as Cronbach’s alpha values. It doesn’t matter which particular reliability coefficient was used if ICR’s value is equal of greater than 0.70, is known as acceptable or satisfactory for a model. However, if the value of ICR is less than 0.60 its shows that no reliability is there (Kamarudin et al., 2020).

According to Sarstedt, Ringle, and Hair (2014), CV shows the extent at which the proposed latent construct is signified by the items and correlates with the different measures of similar latent construct. As per Fornell and Larcker (1981) suggestions, with the examination of Average Variance Extracted (AVE) of each latent construct, we can consider the CV. According to the suggestions of Sarstedt, Ringle, Henseler, et al. (2014) to get the good CV, for each latent construct, the value of AVE must be equal or greater than 0.50 (Table 3).

Table 3. Validity

<table>
<thead>
<tr>
<th></th>
<th>CRM</th>
<th>KME</th>
<th>PRA</th>
<th>PRDIN</th>
<th>RWS</th>
<th>TCHNC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRM</td>
<td>0.894</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>KME</td>
<td>0.870</td>
<td>0.893</td>
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</tr>
<tr>
<td>PRA</td>
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<td>0.853</td>
<td>0.897</td>
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<tr>
<td>PRDIN</td>
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<td>0.868</td>
<td>0.856</td>
<td>0.822</td>
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<tr>
<td>RWS</td>
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<td>0.843</td>
<td>0.873</td>
<td>0.654</td>
<td>0.890</td>
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</tr>
<tr>
<td>TCHNC</td>
<td>0.689</td>
<td>0.796</td>
<td>0.708</td>
<td>0.635</td>
<td>0.875</td>
<td>0.878</td>
</tr>
</tbody>
</table>

Note: CRM= Career management, TCHNC= technological capability, RWS= reward system, PRA=performance appraisal, PRDIN= product innovation, KM= knowledge management

Fornell and Larcker (1981) have defined DV as the extent at which a specific latent construct is dissimilar from all other latent constructs and illustrated by a single construct. However, we can use AVE’s values to compare the correlations between the latent constructs by taking the square roots of AVE as recommended by (Fornell & Larcker, 1981) (see Figure 2).
After recognizing the MM, the structural model (SM) was evaluated in the next step. For checking the evolution of path coefficient significance, we have also applied the bootstrapping procedure by taking 5000 bootstraps and 310 cases (Sarstedt, Ringle, Henseler, et al., 2014). The results of the direct and moderating paths are shown in Table 4. The results reveal the fact that all the paths are coefficient and significant.

Table 4. Direct Relationships

| Path Type              | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|------------------------|---------------------|----------------|---------------------------|------------------|----------|
| CRM -> KME             | 0.201               | 0.189          | 0.110                     | 1.822            | 0.034    |
| KME -> PRDIN           | 0.266               | 0.262          | 0.139                     | 9.478            | 0.000    |
| KME*TCHN -> PRDIN      | 0.375               | 0.275          | 0.065                     | 3.147            | 0.000    |
| PRA -> KME             | 0.242               | 0.228          | 0.100                     | 2.426            | 0.008    |
| RWS -> KME             | 0.232               | 1.210          | 0.116                     | 10.665           | 0.000    |
| TCHNC -> PRDIN         | 0.628               | 0.635          | 0.117                     | 5.353            | 0.000    |

Note: CRM= Career management, TCHNC= technological capability, RWS= reward system, PRA=performance appraisal, PRDIN= product innovation, KM= knowledge management

The results of the mediation analysis are shown in Table 5. The results indicate that all the mediating paths are positive and significant at p-value less than 0.05 (see Table 5).
### Table 5. Mediation

| Source | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|--------|---------------------|-----------------|-----------------------------|--------------------------|----------|
| CRM -> KME -> PRDIN | 0.013 | 0.010 | 0.031 | 0.430 | **0.000** |
| PRA -> KME -> PRDIN | 0.016 | 0.016 | 0.036 | 0.443 | **0.000** |
| RWS -> KME -> PRDIN | 0.082 | 0.075 | 0.171 | 0.480 | **0.000** |

Note: CRM= Career management, TCHNC= technological capability, RWS= reward system, PRA=performance appraisal, PRDIN= product innovation, KM= knowledge management

There are some additional measures in PLS-SEM for the assessment of SM, such as the value of R-square which is also known as the coefficient of determination (Jörg Henseler, Ringle, & Sinkovics, 2009). R-square’s value illustrates the proportional change in the dependent variable explained by one or more independent variables (see Table 6).

### Table 6. R-Square

<table>
<thead>
<tr>
<th></th>
<th>R Square</th>
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<tr>
<td>KME</td>
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</tr>
<tr>
<td>PRDIN</td>
<td>0.403</td>
</tr>
</tbody>
</table>

Note: PRDIN= product innovation, KM= knowledge management

The effects of latent variables on latent dependent variables were checked by effect size by the variations in the value of R-square. The values of R-square 0.35, 0.50 and 0.20 interpret the high, medium and low effects of SM (Figure 2).

### Figure 2. Blindfolding

Note: CRM= Career management, TCHNC= technological capability, RWS= reward system, PRA=performance appraisal, PRDIN= product innovation, KM= knowledge management

The indicators predictive relevance was checked by using the blindfolding procedure according to which the value of predictive relevance must be non-zero (See Table 7).
### Table 7. Q-Square

<table>
<thead>
<tr>
<th></th>
<th>SSO</th>
<th>SSE</th>
<th>Q²(=SSE/SSO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KME</td>
<td>651.000</td>
<td>268.678</td>
<td>0.587</td>
</tr>
<tr>
<td>PRDIN</td>
<td>651.000</td>
<td>433.715</td>
<td>0.334</td>
</tr>
</tbody>
</table>

*Note: PRDIN= product innovation, KM= knowledge management*

### 5. Conclusion

In the present era, organizations face immense pressure to survive in the international and local markets because of the intense pressure of globalization. In this scenario, it is important for organizations to keep innovating their product line. Innovation is the only way by which organizations can maintain their market share and expand as well. Therefore, the present study examined the impact of different HRM initiatives on creating knowledge management and enhancing product innovation of the organizations (Adewumi, 2020; Antoni et al., 2020; Altounjy et al., 2020; Dlalisa & Govender, 2020). Researcher of the present study found that career management of the employees working in manufacturing firms is very important to shape their behavior. If the employer helps these employees plan their career, they will be better able to share their skills and knowledge with other colleagues and subordinates. In the same vein, the employees’ performance appraisal is also a key aspect of positively shaping their behavior regarding knowledge management. If an employee has the perception that he or she is fairly appraised in terms of his/her individual performance, that employee will develop trust in the organization. As a result, the organization’s overall knowledge management effectiveness is improved (Abadía Alvarado & De la Rica, 2020; Bibi, 2020; Abdulateef et al., 2020; Akbar et al., 2020).

Another important HR tool for the management of employees is an effective reward system in the organization. Employees must be rewarded fairly in terms of monetary and non-monetary benefits. Their wages and other perks must reflect their individual tasks and performance of the past. As a result of these HRM strategies, manufacturing firms can enhance their effectiveness of knowledge management. For the regular innovation of the products, knowledge must be shared among employees on a regular basis. Every employee has a unique set of skills and knowledge. By sharing the skills and knowledge with other colleagues and team-mates, the organization’s overall effectiveness is increased. Capability to innovate the products is also increased as well (Brichieri-colombi, 2020; Grajetzki, 2020; Abdil Zarrin et al., 2020; Abulela & Davenport, 2020). In the end, the study confirmed the moderating role of Technological capabilities of organizations. In the case of the latest technology available, the organizational capability of product innovation will increase. By providing new and innovative product lines, organizations can increase buyers’ market share (Antoni et al., 2020; Berejena et al., 2020; Auriacombe & Sithomola, 2020; Basheka & Aurjacome, 2020).

The present study has a few limitations as well. The model proposed in the present study can examine the direct impact of HR initiatives on product innovation. Moreover, the present study examined three HR initiatives to enhance the knowledge management effectiveness of the organization, and future studies should also focus on other HR initiatives as well. In the end, findings of the present study help the policymakers in the fiberglass manufacturing firms and HR practitioners use HR initiatives as part of their strategy for product innovation through knowledge management effectiveness.

### References


Work between Career Growth Opportunities and Work Engagement. International Journal of Academic Research in Business and Social Sciences, 8(11), 1265-1282


LEADERSHIP, ORGANIZATIONAL CULTURE, EMPOWERMENT, AND HUMAN RELATIONAL AND VALUES AS ANTECEDENTS OF PROFITABILITY OF THE FIRM

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Abstract: The basic objective of the present study is to examine the mediating role of employee loyalty among organizational leadership, organizational culture, employee empowerment, human relational values and profitability of the firm. Moreover, the present study also examined the direct impact of organizational leadership, organizational culture, employee empowerment, human relational values on employee loyalty and the effect of loyalty on profit as well. The researcher used a survey method to collect data from the employees of the cement industry of Indonesia. The valid response rate of the study was 80.5%. For the analysis of the data, the researcher used Smart PLS-3. The findings of the study revealed that organizational culture plays a mediation role between organizational leadership, organizational culture, employee empowerment, human relational values and profitability of the firm. Moreover, loyalty has a significant positive impact on firm profitability and organizational leadership, organizational culture, employee empowerment, and human relational values significantly impact employee loyalty. The present study fills the gap of limited HR studies to enhance organizational profit. The findings of the study are helpful for the policymakers to use these HR strategies to retain customers for a longer period of time.

Keywords: Employee Loyalty; Empowerment; Profitability; Organizational Culture; Indonesia

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JEL Codes: M12, M15

1. Introduction

Businesses around the globe are operating with the main purpose of earning profits. Moreover, these businesses also want to perform best in the competition within the same industry. In order to achieve financial goals, performance against competitors is the pre-requisite. Performing well against a competitor is also the pre-requisite for the success and long-term survival of the organization. One of the core measures to gauge the performance of the organization is its profitability. The profitability of the organization consists of basic aspects of financial reporting. Additionally, the profitability of the organization is an important aspect of reporting organizational finances. The profitability of the organization shows the capacity and ability of the organization to create earning with certain sales at a certain asset level in a fixed period of time (Margaretha & Supartika, 2016; Codina et al., 2020).

As a result, the profitability of the organization is the topic of interest for the policymakers and academicians of different sectors for the last three decades. The firms making profits create value for the customer, are more creative and hire people as well. Such organizations are more beneficial for the economy as they pay more taxes and are socially responsible as well. Income generation is contributed through the high level of performance of the organization, which impacts the overall economic development as well. Therefore, a lot of efforts are made by the researchers to understand the factors which impact the profitability of the organization (Al-Jafari & Samman, 2015).
In the present era of globalisation, organizations have a lot of pressure to enhance their performance. Performance of the organization can be enhanced by increasing or bring the employee contribution to the optimum level and keep the employees loyal. Both these factors contribute towards profit maximisation and help the organization to gain competitive advantage. The loyalty of the employee is attractive for the organization to survive for a long period of time in the market. For the organization, the loyalty of the employee is a very important concept. Organizations must focus on the concepts which can impact the perception of the employees to stay in the organization or to leave (Flory, Bonet, Guillon, & Cezanne, 2014; Bernardi, 2019).

In past literature, details are not available regarding the factors impacting employee’s perception to leave or stay within the same organization. For the productivity of the organization, motivated employees tend to contribute more. For the business organization, the demand of organization is enhancing regarding the emotional construct of the loyalty of the employee. As the present era is competitive, therefore, every organization wants to focus on its performance by which it can sustain its market position. New challenges are faced by every business in the present competitive market. If the human resource of the organization is competitive, it can achieve success in the market (Judge and Bono, 2001). Effectiveness and efficiency of the employee are enhanced because of loyalty impacting overall employee’s engagement with the organization (Tariq, Ilyas, & Rehman, 2017).

The relationship between management and employees are of the great value of for any organization. Human relations include training process of employees, understanding and fulfilling their needs, improving the culture at the workplace and resolving the problems and conflicts among management and employees or among employees. It is important for the organization to understand different ways through which human relations can help in reducing the cost, help the organization in developing competitive position and develop long term sustainability. An organization can develop long term relationship with employees by understanding the needs of the employees and realising the importance of employees for the organization. It is important for the employees of the organization to work together on different projects, communicate ideas and motivate each other regarding different tasks. Thus, human relations within any organization is an important part of the business to perform good (Rojas & López, 2014).

The leadership of the organization plays a very important role in the success of the organization; Leadership of the organization is the ability of the person who can handle others and lead from the front. This trait is very important for the leaders of the organization. Managers are not aware of the leadership role to gain competitive advantage; therefore, they are reluctant to adopt any leadership role. In order to achieve certain goals of a project, a particular style of leadership is adopted by project managers. One of the major issues in leadership is the impact on the performance of projects. It is important that the impact of leadership on the performance of an organization to measure intangible manner so proper leadership style can be adopted by the organization. Therefore, the benefits of leadership style on the manager’s performance should be measured empirically (Yang, Huang, & Wu, 2011).

For the organizations, one of the widely used terms is the culture of the organization. Researchers pointed out that the culture of the organization is represented through organizational practices regarding manpower working there and organizational climate. It’s been emphasised in studies that it is very important for organizations to create a culture of the organization which is very strong. Researchers pointed out that the most important thing which managers must do is to create the culture of the organization, which is supporting the staff to operate effectively. In later stage, they must manage such culture for a longer period of time (Lopes da Costa, Pereira, Pereira, & Jerónimo, 2018).

The employees who are empowered and motivated are committed to the organization. Scholars found that employees who are empowered can better self-administer themselves, have high participation, better performance and can achieve the task better. Empowering employees to include delegating the decision making of the employees from top-level employees to the bottom level employees by providing them more access to the resources and information (M. Sharma & Bhati, 2017).
Cement is one of the important manufacturing industries in Indonesia. Indonesia is one of the large exporters of cement around the globe. The production capacity of Indonesia to produce cement is 109 million tons every year. For this purpose, the role of HR working in these manufacturing units is key for the profitability of these firms. Therefore, there is a need to examine the role of empowerment, organizational culture, leadership and human relations to enhance employee loyalty for organization and profitability as well. Thus, the main objective of this research is to examine the role of empowerment, organizational culture, leadership and human relations to create loyalty among employees and increase organizational profitability.

2. Literature Review

Firm Profitability

Financial performance of the organization shows its profitability. In order to gauge the success of the organization, most of the time, firms use the term profitability because, for the evaluation of the organizations, it is one of the most valuable criteria. Researchers have used three measures to study profitability. One of the measures to examine profitability is the return on asset used to measure the efficiency of the organization as a comparison of the utilisation of organizational capital in terms of the organizational income. The second measure used by researchers is ROE, also known as return on equity which shows the amount which is returned to the organization on its capital. In the end, profit marginal is also used by the researchers to show the overall profitability of the organization. Inconsistent with past studies, the researcher has used all these three indicators to examine the profitability of the organization (A. K. Sharma & Kumar, 2011).

Employee Loyalty: Relationship with the profitability of the organization.

For the success or failure of the organization, employees are the key factor. They are also considered as the core of the organization. For the success of the organization, it is very important that the employees remain loyal to the organization and they are not in search of any other job. In general term loyalty of the employees is defined as devotion of the employee or attachment to a particular organization or a duty or a cause (Kot-Radojewska & Timenko, 2018). On the other hand, it is mentioned that a loyal employee expresses itself with the organization through its actions and thoughts and also try to be identified its actions with the organization with which they are loyal. This is the era of competition in which competitive organizations offer opportunities to employees and try to convince them to switch the job. When an employee switches the job, the organization incur the loss because a lot of resources are spent on its training and skills enhancement (Murali, Poddar, & Seema, 2017).

In the past, a number of studies have been conducted to examine the influence of employees on the performance of organizations. Researchers examined the performance of the employee or the employee fulfilment effect on the performance of the organization. Additionally, the performance of the employee is also studied in terms of relationships of employees with the firm in terms of its resources. These resources are associated with the performance in the market and financial performance compared to the competitors. It’s been also pointed out that the problem of workplace wellbeing of an employee is an important issue for the managers of the organization. Still, very little research is conducted in this context (Ali, Rehman, Ali, Yousaf, & Zia, 2010). Moreover, it’s been also revealed that the impact of loyalty on the performance of the organization is proved significant as well. It is also indicated in a study that the loyalty of the employee also impacts the performance of the organization. The employees who are loyal have the capability to produce superior quality goods and services which eventually impacts the organizational performance and profitability as well (Tomic, Tesic, Kuzmanovic, & Tomic, 2018).

If the employees of the organization are loyal, it will have an impact on the profitability and market share of the organization. On the other hand, the profitability of the organization is also impacted indirectly through their performance (Ali et al., 2010). Organizations having employees who are loyal have a growth rate higher, and profit is also better than the competitors. Loyal employee creates repeat sales, customer referrals and rises in sales as well.

H1: Employee loyalty significantly impacts firm profitability.
Human Relation and Values; Relationship with Employee loyalty

Employees are affected because of the values and relationships on a daily basis. If there exists a greater value of interaction among employees, greater will be the level of satisfaction and commitment among employees. As a result, the loyalty of the employees is significantly impacted indirectly through these conditions. Among other essentials of work, good relations with other employees also plays an important role to keep employees stay at the workplace. The recommendations of the organization by the employee in positive terms and spreading positive WOM is dependent upon the relationship of the employee with other colleagues. Additionally, the interest of employee towards his/ her work is also dependent upon the employee and other staff’s relationship.

Work situation most of the times take place as a social context which will have an impact on the performance of the employee in both short term and long-term basis. Social interaction includes an atmosphere in which work is being done, cooperation among employees, communication among employees, and relationship among employees plays an important role in a social context. Other important factors include working environment and human values like respect, trust and honest etc. these factors are naturally present in most of the employees (Martensen & Grønholdt, 2006).

The greater the interaction among employee, more will be the satisfaction level of employee in terms of its tasks and job. If these conditions are not present in any workplace, it will impact the loyalty of the employee. Other factors like human values are also characterised in terms of human values are naturally expected among the employees working at a certain place. A number of researchers have emphasised on the importance of these human values for the creation of loyalty among employees. A researcher found that the attitude by which an employee is treated by another colleague at the workplace impacts the wellbeing of the employee. In an environment, where the employee is bad-mouthed, harassed, and isolated by the colleague will play a significant role in the creation of disloyalty among the employees (Preko & Adjety, 2013).

In the same context, Lufungula and Borromeo (2019) conducted a study to examine the factors impacting the loyalty of the employees. Findings of the study revealed that the relationship of employees with each other is an important factor along with work quality and salary to enhance the loyalty of employee at the workplace. Researchers also pointed out that loyalty among employees is impacted more than 80% due the factors like human relations, working conditions and social benefits. On the other hand, it is pointed out in their study that human relations have a strong impact on employee loyalty along with personal growth and leadership style at the workplace (Priyadharshini & Sudhahar, 2019). Thus, on the basis of the above discussion, it pointed out that

H2: Human Relation and Values significantly impacts Employee loyalty.

H3: Employee loyalty has the significant relationship between human relation and values and firm profitability.

Leadership; Relationship with Employee loyalty

Leaders have a very important role to play in order to guide the employee and encourage them to achieve the objectives and goals of the organization. Researchers in their findings of the study showed that the process of leadership includes the opinion of the followers, actions of leaders, behaviours and environment where the collaboration among employees and leaders take place. It’s also been shown that it is important for leaders to create promotion chances for employees and offer training to them in order to create subordinates. These opportunities can be created by the leaders through the adoption of good leadership style. On the other hand, it is also pointed out that the employees who are socially supported by the leaders are highly engaged with their organization and their work. Such employees also try to perform better for their organization (Strom, Sears, & Kelly, 2014).

Abbas (2017) conducted research on the relationship of employees with leaders. He found that employees will continue to be loyal with organization and leader if they perceive their relationship to be effective. If the relationship between subordinates and leaders is very highly effective, it is beneficial for both employee and
organization. In the same context, it is proposed that the employees who are highly motivated are active in their task completion and remain loyal to the workplace as well. Such loyal employees also try to enhance their performance which impacts the profitability of the organization in the long run.

In the same context, a number of studies are conducted regarding the positive impact of employee leader relationship on the loyalty of the employee. Furthermore, studies pointed out that if the employees are treated with care by the leaders, it will create loyalty among them. Additionally, researchers also mentioned in the study, the leaders who help their subordinate in their jobs have a positive impact on employee loyalty improvement (Abdalla, Shawky, Ragab, & Gouda, 2018).

**H4:** Leadership Style significantly impacts Employee loyalty.

**H5:** Employee loyalty has a significant relationship between Leadership Style and firm profitability.

### Organizational Culture; Relationship with Employee loyalty

In literature, culture is referred to as a system having shared beliefs, values and assumptions, which shows what inappropriate and appropriate behaviour is. Organizational performance and behaviour of employee are strongly impacted by the culture of the organization. Additionally, researchers pointed out that the success of the organization is also impacted by the culture of the organization. Therefore, the culture of the organization has become an important topic for a number of articles and research studies. Researchers pointed out that, organizational culture is relatively a new topic in management sciences. The culture of the organization which empowers the employees to complete their tasks is considered as powerful (Fleury, 2009; Gierszewski, & Pieczywok, 2020).

Employees remain loyal to the organization on the basis of their working culture at the workplace. The employees who are less engaged and commitment are disloyal to the organization as well. Additionally, Employee loyalty is badly impacted by the bad relationship between the supervisor and the manager. As a result, the employee leaves the organization. On the other hand, it’s more likely that employees will stay at the workplace and remain loyal to the organization who have a positive perception regarding the organization. It is because organizational culture plays an important role to shape the thought process and behaviour of the people regarding the organization. The employees who are happy with the culture of the organization are motivated towards their tasks and individual goals. It will lead to loyalty development among such employees (Razali, Zahari, Ismail, & Jasim, 2018; Hussain et al, 2020).

**H6:** Organizational Culture significantly impacts Employee loyalty.

**H7:** Employee loyalty has a significant relationship between Organizational Culture and firm profitability.

### Employee empowerment; Relationship with Employee loyalty

The term empowerment is used in a number of studies of different fields. Therefore, the definition of empowerment relies on the context in which it is being used. Empowerment of employees is defined as the organizational process employees of the organization at every hierarchy are given to make decisions in terms of their work assignments and responsibilities. These employees also decide the actions which are required to achieve their tasks assigned. In today’s competitive market, empowerment of employees is a very important topic of HRM. Empowerment of employee is the process in which employees are allowed to be at a position where they can make different decisions. As a result, the overall decision-making process within the organization becomes fast and responsive (Sazkaya & Dede, 2018).

Researchers found that job enlargement and employee empowerment play a very important role to develop loyalty among them. In the same context, researchers studied employee empowerment in the banking sector.
and found it to be the significant influences of employee loyalty. Additionally, it is also found empowerment of employee influence loyalty with other factors like training, communication system and reward system of organization (Narteh & Odoom, 2015; Grabara et al., 2020).

Thus, we hypothesised that

**H8:** Employee empowerment significantly impacts Employee loyalty.

**H9:** Employee loyalty has a significant relationship between employee empowerment and firm profitability.

(see Figure 1 below)

### 3. Research Framework

A cross-sectional quantitative design is chosen for this research, and the questionnaire is employed as a study instrument to gather data for meeting the research objectives (Sekaran & Bougie, 2003). A five-point Likert scale was used for measuring the items of the questionnaire. The total number of respondents targeted for this study were 385, and the questionnaires were sent to these respondents. However, only 310 respondents filled and sent them back. The response rate obtained for this study is 80.5 percent.

This study is explorative; therefore, a path-modelling technique is suggested because PLS path modelling is suitable when a study is designed mainly to predict relationships or expand existing theory. Generally, several steps are involved in the data analysis process. In the first step, the data obtained from the survey were screened to ascertain the suitability of this study, i.e. whether it is suitable to be used in further PLS analysis. The data screening process was carried out in the SPSS.

In the second step, the Smart PLS 3 software was employed for analysing the individual item consistencies, convergent validity, internal consistency reliability and discriminant validity. These criteria were observed to estimate the measurement model. In the third step, a standard bootstrapping procedure was performed, since it seems to be practically reasonable for 310 cases, using 5000 re-samples for structural model estimation. Afterwards, the path coefficients’ significance, coefficient of determination, predictive relevance and effect size were also assessed to ascertain the structural model (Hair Jr, Hult, Ringle, & Sarstedt, 2013).
4. Results

PLS-SEM path modelling is performed in two steps. In the first step, the measurement model is assessed in terms of content validity, constructs validity and reliability, while in the second step, the structural model is determined with the estimation of the path relations. As PLS path modelling is considered to be unsuitable for model validation; therefore, in order to compute the PLS-SEM path relations, this study adopted a two-step process (Henseler & Ringle, 2009).

Assessment of the measurement model requires to ascertain the internal consistency reliability, content validity, individual item reliability, and convergent and discriminant validities. However, since a large number of indicators are generally involved in this research, therefore, these indicators can be further divided into sub-groups to capture their potential effects (Henseler & Ringle, 2009). (see Figure 2 and Table 1).

![Figure 2. Measurement Model](image)

**HRV**= Human Relation and Values, **OC**=Organizational Culture, **LS**=leadership style, **EL**= employee loyalty, **FP**= Firm Profit, **EEM**= employee empowerment

<table>
<thead>
<tr>
<th>Table 1. Outer Loadings</th>
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</thead>
<tbody>
<tr>
<td>EEM</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>EEM1</td>
</tr>
<tr>
<td>EEM2</td>
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<tr>
<td>EEM3</td>
</tr>
<tr>
<td>EEM4</td>
</tr>
<tr>
<td>EEM5</td>
</tr>
<tr>
<td>EEM6</td>
</tr>
<tr>
<td>EL1</td>
</tr>
<tr>
<td>EL2</td>
</tr>
<tr>
<td>EL3</td>
</tr>
</tbody>
</table>
In the present study, the outer loadings were explored for each construct to measure the individual item reliability, following past recommendation. Furthermore, internal consistency reliability is defined as to what extent each item of a scale measures the same concept. By far, the most commonly employed measures to ascertain internal consistency reliability of instruments are the Cronbach alpha and the composite reliability (CR) coefficients. Thus, the internal consistency reliability in this study was determined by the CR coefficient because less biased estimates are obtained through the CR coefficient, and it also takes into account diverse loadings of the indicators. On the contrary, the reliability of a scale is often found to be over or underestimated by the Cronbach alpha measure. In addition, the Cronbach alpha coefficient assumes the equal contribution of each item and does not assume the individual loadings and their actual contribution (Bagozzi, Yi, & Nassen, 1998). Thus, the above arguments explain the rationale for choosing composite reliability over Cronbach alpha and can easily be understood and interpreted like the Cronbach alpha. For a model to become acceptable, the CR value must fall above 0.70, as the CR value below 0.60 shows that the model is not reliable (see Table 2).

| HRV = Human Relation and Values, OC = Organizational Culture, LS = leadership style, EL = employee loyalty, FP = Firm Profit, EEM = employee empowerment |

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Convergent validity is defined as to what extent the items of the construct are truly representative of their respective latent construct and are in correlation with other items associated with the same latent construct. For each latent construct in this study, the convergent validity was measured by calculating the average variance extracted (AVE) which must be equal or above 0.50 to become sufficient (Sarstedt, Ringle, Henseler, & Hair, 2014) (see Table 3).

Table 3. Validity

<table>
<thead>
<tr>
<th></th>
<th>EEM</th>
<th>EL</th>
<th>FP</th>
<th>HRV</th>
<th>LS</th>
<th>OC</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEM</td>
<td>0.861</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EL</td>
<td>0.410</td>
<td>0.876</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP</td>
<td>0.399</td>
<td>0.642</td>
<td>0.846</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HRV</td>
<td>0.352</td>
<td>0.650</td>
<td>0.382</td>
<td>0.906</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS</td>
<td>0.345</td>
<td>0.589</td>
<td>0.440</td>
<td>0.486</td>
<td>0.774</td>
<td></td>
</tr>
<tr>
<td>OC</td>
<td>0.280</td>
<td>0.530</td>
<td>0.393</td>
<td>0.581</td>
<td>0.405</td>
<td>0.765</td>
</tr>
</tbody>
</table>

HRV= Human Relation and Values, OC=Organizational Culture, LS=leadership style, EL=employee loyalty, FP=Firm Profit, EEM=employee empowerment

As described by Sarstedt et al. (2014), discriminant validity analyses the degree to which a particular measure is non-correlated with other dissimilar constructs in the model and only represent itself. The Fornell and Larcker (1981) criterion is the first test for checking the discriminant validity. According to this criterion, the average variance extracted (AVE) square roots are calculated and compared with the correlation value between the latent constructs (see Figure 3).

Figure 3. Structural Model

HRV= Human Relation and Values, OC=Organizational Culture, LS=leadership style, EL=employee loyalty, FP=Firm Profit, EEM=employee empowerment

Subsequent to the outer model determination, the structural model was estimated in the next step. The important criterion in structural model estimation is the significance of path-coefficients and coefficient of determination ($R^2$). The coefficient of determination or R-square measures the percentage of variance independent variable that
is explained by the model’s independent variables. In addition, the study used 5000 bootstrap samples to perform a bootstrapping procedure for 310 cases. This procedure helps to determine the significance of path relations and path coefficients (Henseler & Ringle, 2009) (see Table 4, 5, 6, 7 and Figure 4).

### Table 4. Direct Relationship

<table>
<thead>
<tr>
<th></th>
<th>(O)</th>
<th>(M)</th>
<th>(STDEV)</th>
<th>T Statistics</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEM -&gt; EL</td>
<td>0.133</td>
<td>0.134</td>
<td>0.047</td>
<td>2.821</td>
<td>0.005</td>
</tr>
<tr>
<td>EL -&gt; FP</td>
<td>0.642</td>
<td>0.639</td>
<td>0.044</td>
<td>14.626</td>
<td>0.000</td>
</tr>
<tr>
<td>HRV -&gt; EL</td>
<td>0.365</td>
<td>0.360</td>
<td>0.065</td>
<td>5.602</td>
<td>0.000</td>
</tr>
<tr>
<td>LS -&gt; EL</td>
<td>0.301</td>
<td>0.305</td>
<td>0.047</td>
<td>6.361</td>
<td>0.000</td>
</tr>
<tr>
<td>OC -&gt; EL</td>
<td>0.159</td>
<td>0.161</td>
<td>0.053</td>
<td>2.981</td>
<td>0.003</td>
</tr>
</tbody>
</table>

HRV= Human Relation and Values, OC=Organizational Culture, LS=leadership style, EL= employee loyalty, FP= Firm Profit, EEM= employee empowerment

### Table 5. Mediation

<table>
<thead>
<tr>
<th></th>
<th>(O)</th>
<th>(M)</th>
<th>(STDEV)</th>
<th>T Statistics</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEM -&gt; EL -&gt; FP</td>
<td>0.085</td>
<td>0.086</td>
<td>0.032</td>
<td>2.648</td>
<td>0.008</td>
</tr>
<tr>
<td>HRV -&gt; EL -&gt; FP</td>
<td>0.234</td>
<td>0.229</td>
<td>0.041</td>
<td>5.647</td>
<td>0.000</td>
</tr>
<tr>
<td>LS -&gt; EL -&gt; FP</td>
<td>0.193</td>
<td>0.195</td>
<td>0.033</td>
<td>5.853</td>
<td>0.000</td>
</tr>
<tr>
<td>OC -&gt; EL -&gt; FP</td>
<td>0.102</td>
<td>0.103</td>
<td>0.036</td>
<td>2.861</td>
<td>0.004</td>
</tr>
</tbody>
</table>

HRV= Human Relation and Values, OC=Organizational Culture, LS=leadership style, EL= employee loyalty, FP= Firm Profit, EEM= employee empowerment

### Table 6. R-Square

<table>
<thead>
<tr>
<th></th>
<th>Original Sample (O)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL</td>
<td>0.553</td>
</tr>
<tr>
<td>FP</td>
<td>0.412</td>
</tr>
</tbody>
</table>

EL= employee loyalty, FP= Firm Profit

On the other hand, an indicator’s predictive relevance shows the predictive weight of the manifest variables in the structural model. The $Q^2$ determines the predictive validity of complex and large model through PLS. Thus, $Q^2$ explains the extent that the collected data can be empirically reconstructed using PLS parameters and with the help of a model.
The desirable level for $Q^2$ is $Q^2>0$. Therefore, the greater the value of $Q^2$, the higher will be the significance of the model and the greater will be the predictive relevance. For this purpose, performing a blindfolding procedure is important, which is a sample re-use technique to calculate Stone-Geisser's $Q^2$ value. Thus, a blindfolding method was then conducted in this study to compute $Q^2$ and to measure the relational effect of predictive relevance.

Table 7. Q-square

<table>
<thead>
<tr>
<th></th>
<th>$Q^2 = 1 - \text{SSE/SSO}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL</td>
<td>0.416</td>
</tr>
<tr>
<td>FP</td>
<td>0.292</td>
</tr>
</tbody>
</table>

$EL = \text{employee loyalty}, FP = \text{Firm Profit}$

5. Conclusion

The basic purpose for which organizations operating around the globe is to earn and maximise the profit. The manpower working in these organizations is the key for this purpose. Therefore, this study examined the impact of human relation values, organizational culture, leadership, employee empowerment in creating loyalty among employees and organizational profit (Hornung, 2020; Janssen, 2020; Abulela & Harwell, 2020; Akpur, 2020). The findings of the study revealed that the role of leadership is very important to keep employees retain in the firm. The leadership of the organization guide the workers whenever they need to achieve organizational as well as individual goals (Burgos & Bocco, 2020; Carranza Romero et al., 2020; Al-Blooshi et al., 2020). In the same vein, organizational culture contributes to employee loyalty. The culture in which employees are encouraged to contribute to organizational decision-making process creates a feeling among employees that they are being given importance by the organization. On the other hand, if the employee will be given to deciding their own regarding their individual goals and objectives which contribute to achieving organizational goals, employees
will feel empowered and will not think to switch their job. In the end, human relation values also have a very important role in developing loyalty among employees (Al-Blooshi et al., 2020; Barkhuizen et al., 2020; Bello & John-Langba, 2020).

A person who is loyal to the organization has less intention to switch the job. They prefer to stay in the current organization. Such an employee is trained and skilled and knows SOP of the organization. In this scenario, the employee plays a very important role to enhance organizational profit. Mediation role of loyalty among the leadership of the organization, human relation values, employee empowerment, organizational culture and profitability of the firm is supported statistically in the present study (Govender & Govender, 2019; Hotar, 2020; Habanabakize, 2020; Kimanzi & Gamede, 2020; Bello & John-Langba, 2020; David & Grobler, 2020). The present study has a few limitations regarding the area in which this study is conducted. The present conceptual framework can have interesting implications in the private university sector of Indonesia. In the end, findings of the study are helpful for the HR experts to use human capital to create loyalty among employees and enhance organizational profit.

Reference


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USING SUPPLY CHAIN INTEGRATION THEORY FOR ESTABLISH INDUSTRIAL CLUSTER TO FACILITATE THE GROWTH OF SMALL AND MEDIUM ENTERPRISES: EVIDENCE IN VIETNAM

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Abstract. In an economy, the product of one industry is the input to another, the product of one enterprise is the input of another business and the end consumer. Countries that know how to create industry linkages to attract businesses to participate will promote business growth in both quantity and quality. In Vietnam, an efficient chain of industry links has not been formed, so it has not created favorable conditions for businesses to develop. Most of the FDI enterprises come to Vietnam to participate partly in the global value chain, but the ability of domestic enterprises to participate is still very limited. The domestic industry linkage chain has not been clearly shaped, the domestic enterprises operate sporadically, so it has not created an attractive ecosystem for small and medium enterprises to participate. To create industry linkages for domestic enterprises to participate, it is necessary to build models of production organization in industries from market research, product design, and organization of satellite businesses to the production of details and components in order to establish a distribution system to the market. Mechanisms and policies focus on supporting and providing incentives for enterprises joining industry clusters operating in all phases of investment in research, design, supply of ancillary products, and distribution.

Keywords: Industrial clusters; supply chains integration; business ecosystems


JEL Classifications: F15, L69, Q01

1. Introduction

Vietnam is showing a high determination in business development in both quantity and quality. Many policies to promote and support businesses have been issued such as the Law on Small and Medium Enterprise Support, the Law on High Technologies, the Decree on Industrial Development of Supporting. At the same time, in recent years, the Government has issued many resolutions related to business development, administrative reform, and improved business environment. However, business development has not been as expected. The number of newly established businesses has grown well, but their operations are ineffective and unsustainable. Industry linkages between domestic and FDI enterprises have not yet formed, as well as few domestic enterprises participating in the global supply chain, few FDI enterprises place orders for domestic enterprises. Therefore, the stability of the order source of the business is not high and the development is not sustainable. The goal of this study is to analyze the current state of the link chains in a number of typical industries in order to point out the causes of the fragmentation of domestic firms. Then, proposing a number of solutions to promote the formation of industry linkages to create conditions for SMEs to develop.
2. Literature Review

2.1. Overview of Supply Chain Integration (SCI)

Supply Chain (SC) is a manufacturing and distribution network that carries out the functions of purchasing raw materials, transforming and distributing final products to customers (Suong, 2011, 2012, 2017; Suong & Tri, 2019). SC is made up of relevant, necessary, direct or indirect phases to satisfy customer requirements. SC comprises not just manufacturers and suppliers, but also warehouses, dealers, retailers and consumers. SC is generally considered as connections in the business process among suppliers, customers, manufacturers and service providers. This implies that SC is a process from the raw material to the finished product that is manufactured and delivered to consumers to fulfill two fundamental objectives (i) forming a relationship among suppliers and customers as they affect SC’s outcomes and performance, (ii) increase productivity and efficiency through SC. An integrated partnership is therefore important to enhance the effectiveness of SC’s sector.

Supply chain integration (SCI) can be broadly defined as the strategic collaboration in both intra-organizational and inter-organizational processes. SCI is widely recognized as a multidimensional variable (Flynn et al., 2010) because it involves information sharing, cooperation, partnership, and collaboration across functions, suppliers and customers. SCI is further divided into three dimensions: internal integration (II), supplier integration (SI), and customer integration (CI). In other words, SCI dimensions and the external environment can be seen as the bundles of characteristics that are mutually supportive, leading to specific arcs of integration. Industrial differences may be explained by the fact that external environments such as supply market, customer demand, and industrial norms may create different dominant coalitions in an industry. SCI requires the sharing, preparation, collaboration and controlling materials, parts and finished products at strategic, tactical and operational levels (Towill, Childerhouse & Disney, 2002). In addition to the search, contract, negotiation and tracking costs associated with outsourcing, SCI decreases the costs of transactions due to the fewer partners involved. As a result, businesses can use SCI to achieve benefits from making and buying (Shen, 2007).

In addition, internal fit can be achieved when there are tight constellations of mutually supportive SI, II and CI, forming the balanced SCI configurations. To achieve internal fit, II is maintained at a level close to the levels of SI and CI such that efforts in SI and CI can be effectively translated into purchasing, production, inventory and distribution planning. From the organizational information processing (Schoenherr & Swink, 2012; Wong et al., 2011) and organizational capability perspectives (Zhao et al., 2011; Wong et al., 2013), demand input from the customers (via CI) and supply information from suppliers (via SI) have to be effectively ‘absorbed’ by II. II interacts with SI and CI which then complement each other by enabling information sharing, trust, and collaboration across functions, suppliers and customers. Such a complementary effect has been previously acknowledged (Gimenez & Ventura, 2005; Stank et al., 2001).

Today competition stimulates organizations to improve their capabilities for customer fulfillment, reliability and product versatility and many organizations take advantage of SCI to achieve this objective. In order to achieve reliable, effective product, service, information, money and decision flows to optimize the value of the SCI’s client, SCI intends to cooperate strategically with its SC partners and to manage intra- and inter- corporation processes (Fabbe & Jahre, 2007). Although outsourcing can reduce production costs, SCI also decreases searching, contracting, negotiation and surveillance costs associated with outsourcing due to fewer partners involved.

However, there are also industries with very different upstream and downstream environments so firms in such industries might form different arcs of integration (Frohlich & Westbrook, 2001) or unbalanced SCI configurations (Flynn et al., 2010). Such arcs are formed to fit with the competitive environment (external fit). Some industries (e.g., those producing commodities, functional products) compete mostly on cost so there may be an emphasis in II and SI to cut cost, others rely on customer services so they may emphasize CI. For example, automotive manufacturers are known to focus on customer orientation (Brady and Cronin, 2001); electronics manufacturers emphasize CI due to demand uncertainty; while food manufacturers may focus on SI to
secure reliable supplies of low-cost raw materials (Goss et al., 2000). Despite SCI’s benefits, a high degree of integration goes with some inherent risks for the companies involved in the alliance including the risks of confidential corporate information being leaked to potential rivals, difficulties to coordinate business policies, and the potential for interdependence among partners. SCI partners need investments in new assets to customize machinery and technology, as well as to cover costs in designing and instructing new work and consulting teams’ projects, which are too expensive and increase risk by sharing partners to benefit from the relationship. In addition, the lack of confidence and trust among SC partners could lead to opportunistic behavior at the cost of overall SC performance and profitability.

Specific definitions of SCI were given by some authors. The definition of integration is defined by Romano (2003) as a mechanism for supporting business processes across the supply network to overcome internal and inter-organizational boundaries. Singh & Kumar (2020) mentioned it has become challenging for small and medium enterprises (SMEs) of growing economies to survive in this global competition. Effective supply chain management (SCM) can be a major driving factor for success of Indian SMEs in dynamic world economy. SMEs face many operational challenges while implementing effective SCM. Last but not least, Benzidia & Makaoui (2020) tested using data gathered from 126 French SMEs. Drawing upon resource orchestration theory, the empirical results provide useful guidelines for SMEs that wish to invest in e-procurement tools to enhance competitiveness and performance.

2.1.2 Industrial cluster integration

It becomes important to integrate different business activities between units, when businesses pay a great deal of attention to their core business activities. Their fertility therefore relies on their ability to manage internal and external operations beyond their own borders in the value chain. The need for integration is obvious in SCs as companies that form SCs are affected by the activities of other organizations. SC cooperation is achieved when a decision-maker takes decisions that are rational and beneficial to the entire SC. The term arcs of integration reflects two aspects of integration: direction and degree. The first dimension concerns integration towards consumers and/or suppliers and the second dimension, level or degree of integration, which describes the extent to which businesses function in organizational terms and the extent to which knowledge is exchanged.

Industrial cluster concept

An industrial cluster is the geographic concentration of intended industries which take advantage of opportunities via geographic links. Companies in the industrial cluster will share these requirements and internal relationships with suppliers and customers. Relationships inside the company requires additional services from consulting, training and coaching, financial institutions, key companies. The industrial cluster will create a high-quality workforce and export goods, services, linking relationships between housing authorities, universities, research institutes, foundations and other stakeholders (Porter, 1990). According to Porter (2001), the strength of a cluster is tied to the level of fierce competition among businesses in the clusters and it requires that every organization that wants to exist must achieve a certain level of performance. There is a lot of contemporary literature devoted to the clusters’ performance and their impact on regional development (Huy, 2012; Monni et al., 2017; Amraou et al., 2019; Bublienè et al., 2019; Huy et al., 2020; Lis, 2020).

Business ecosystem

Business ecosystems will consist of entities that compete and collaborate with each other with survival goals. Elements of the business ecosystem include fragmentation, intrinsic alignment, cooperation and competition. The three main factors that make one business successful are the productivity, the intrinsic strength of the ecosystem, the event and opportunities for the creation of new businesses. Productivity helps entrepreneurs survive in market competition. The power of businesses prevents it from being damaged by internal or external adverse agents and new-formed businesses will replace non-viable businesses, rebalancing the business ecosystem.
2.2 The role of industry linkages in the development of small and medium enterprises

Any economic sector is established by the stages of raw materials, preliminary processing to intermediate products; terminal products; and distribution to consumers. To produce the end products, it is necessary to have the participation of many businesses distributed in many different spaces according to the comparative advantages of each locality. In the value chain of the industry, the role of the enterprise manufacturing the end product is very important, they guide all activities of other enterprises in the value chain. It is a business of researching, designing brands and assembling end products.

The enterprise holding the end product has a strong research and development (R&D) and branding apparatus, this is the “core stage” of the industry. They do market research and detailed product design about the product’s design, packaging, style, materials, and texture. Research products are produced and tested many times to order raw materials from suppliers, manufacturing intermediate products and linking with communication and distributing products to the market. The production process of those firms creates a lot of demand for businesses in the value chain (Dien, 2016). Countries that attract many private label end product businesses will form an efficient chain of industry links. Meanwhile, the linkage in production and business will be closer, the business opportunities of SMEs will be better, and production orders will be more stable. When the industry linkage chain is formed, it also creates many business opportunities for businesses providing ancillary services. Experience in industrialization in countries shows that the growth of branded businesses with end-product has led to the development of the business community producing products and supporting services. This development process is thanks to reasonable regulatory policies of the Government. The industrialization process has always focused on fundamental industries, which gradually formed two groups of activities: the “core stage” group and the supporting group. For example, Japan in the 1940s, when the mechanical industry thrived, mechanical enterprises needed to further specialize in the production of finished products and minimize costs, so there was a need to order components. From other businesses, thereby creating a driving force for SMEs to participate in manufacturing components for this industry, at that time, support for the mechanical industry was born (Dien, 2014). To promote SMEs to participate in the value chain, the Government has issued many supportive policies and operating orientations (see Figure 1).

Figure 1. Value chains of industries

*Source: Research by authors, 2020*
Unlike Japan, in recent decades, in countries such as Thailand, Malaysia, and Korea, the promotion of SME development is associated with the activities of industries in which the FDI sector participates. Governments of these countries are quite successful in their policies to attract and orient FDI enterprises to create a driving force for domestic SME development through policies to promote cooperation between domestic enterprises and FDI (Dien, 2014). From the above arguments, it is shown that the development of SMEs depends on the needs of large firms operating in the “core stages” of those industries. When the country attracts and develops industries that manufacture and assemble end-product, it will motivate SMEs to invest in. When technology for machine tool production develops strongly, it will reduce technology investment costs and reduce business risks, leading to improving SME competitiveness. When the competitiveness of domestic SMEs increases, the confidence of domestic and foreign customers will be created, leading to the need towards domestic enterprises. The model of SME development conditions is outlined in Figure 2 below.

Figure 2. National model of SME development conditions

Source: Research authors, 2020

3. Research methods

This study is carried out using two methods: (1) Qualitative research aims to establish and calibrate the component scale: partners trust rates, the level of maturity between partners, cultural cooperation, partner leadership, price policies, product strategy, technology and information sharing within partners in SC of Vietnam dairy industry; (2) Quantitative research focuses on collecting, analyzing data and testing component scale, measuring research theoretical models and hypotheses. Preliminary research is established, adjusted and supplemented by qualitative and quantitative methods to observed variables. Preliminary qualitative study is undertaken by prudent experts after discussions with managers interested in the dairy industry by the sampling approach. The discussed factors affecting the integration of SC stakeholders were brought to the group for comment. The research model and proposed scale were established by a group of writers and updated by a discussion group. The discussion group endorses the new model after sharing ideas. Some of the names in the scale components will be calibrated in the discussion group, some of the variables found are modified and the scale is amended. The research group therefore agrees that the dairy industry variables include include: (1) the confidence levels among partners, (2) the level of maturity of relationships among partners, (3) the cultural cooperation, (4) the leadership of partners, (5) the price policy of partners, (6) the product strategy of partners, (7) technology among partners, (8) information sharing among partners. There are 39 observational variables of the research model measured in the Linkert scale of 5 with 1 - completely disagree to 5 - completely agree.
4. Research outcomes and debate

4.1 Overview of Vietnamese SMEs

In the 2010-2019 period, the enterprise sector contributed to the state budget an annual average of 12.6%, equal to over 61% of GDP. SMEs account for 98% of the total business operating, contributing about 45% of GDP, 31% of total state budget revenue and creating jobs for more than 5 million workers. In the period 2012-2019, on average, the number of SMEs rose by 8.7%, higher than the average growth rate of big businesses of 5.4% (Department of Enterprise Development, Ministry of Planning and Investment, 2018). Vietnamese SMEs are still subject to a lot of restrictions as most of them do services, only approximately 20% are in production activities; 42% of businesses with annual turnover less than 1 billion VND and 85% of businesses operating with a turnover of less than 2 billion VND. Every year the number of private businesses goes up but they are still small companies. The average human/business ratio is still low and currently 80-100 people are working in ASEAN countries. Meanwhile, each enterprise has only one enterprise (Department of Business Development Industry, Ministry of Planning and Investment, 2018). However, the rate of Vietnamese enterprises participating in the global supply chain is only 21%, while this rate in Thailand is 30%, Malaysia is 46%. Vietnamese companies’ investment costs in science and technology innovation are below 0.3% of revenue, compared with 5% in India, South Korea 10%, and Japan 50% (National Assembly Standing Committee, Legislative Research Institute, Legislative Science Information Center, 2017).

4.2 The role of SMEs in the industry value chain

SMEs in Vietnam mainly participate in simple stages such as support services, repair, catering, stationery, manuals, transportation for most industries. The proportion of SMEs producing intermediate products for the “core” group of businesses is not high. Typical in some industries are as follows:

**Electrical - electronic equipment industry**

The structure of the electrical and electronic equipment industry is seriously imbalanced, the household electronic products account for nearly 90%, and there is a lack of specialized electronic products. SMEs mainly participate in manufacturing with processing methods, only making machine shells, frames, racks, packaging, processing circuit boards, sensors, signal collecting devices, and conductive vibration motors. Auxiliary products such as transformer oil, insulating paint and auto control components must be imported. The localization rate of products for the electrical - electronic equipment industry is as follows (see Table 1):

<table>
<thead>
<tr>
<th>Product Groups</th>
<th>The products have manufacturing strengths</th>
<th>The rate of localization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supporting industry for Audiovisual equipment cluster Wafer, sensor, printed circuit, information technology equipment, signal receiver, mobile phone motor, camera electronics</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Supporting industry for electrostatic equipment cluster The whole core part (punching iron, wire), peripheral parts like frame, holder etc.</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>Supporting industry for rotary electrical equipment cluster Stator and rotor parts, peripheral parts (impellers, radiator blades etc.)</td>
<td>55%</td>
<td></td>
</tr>
<tr>
<td>Supporting industry for other electrical equipment cluster Metal and plastic parts such as trays, base, covers; Some products are supported from domestic accessories such as wires, electrical panels, switches</td>
<td>50%</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Author’s survey of 10 Vietnamese electric - electronic equipment enterprises in 2018.*

SMEs mainly participate in supporting production of electrical equipment; for electronics, only participating in finishing products by making packages, manuals, and plastic details; manufactured following pre-designs, or processed according to foreign models. For electronic ancillary products that can only supply packaging, manuals, and plastic components, only a few FDI enterprises can produce electronic circuit boards and industrial electronic equipment to the order.
Mechanical engineering industry

Materials used for the industry are mainly prefabricated metals. In the country, there is a stable supply of steel that can serve the mechanical engineering industry. The biggest difficulty is mold steel. If this problem can be solved, development of supporting production can be ensured. In the production of intermediate products, mainly serving the production of household mechanical products, repairing and replacing equipment in import synchronous lines. The localization rate of products of the mechanical engineering industry is as follows (see Table 2):

<table>
<thead>
<tr>
<th>Product Groups</th>
<th>The products have manufacturing strengths</th>
<th>The rate of localization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supporting industries for metal structural clusters, barrels, tanks</td>
<td>Corrugated iron, steel pipe, shaped steel</td>
<td>76%</td>
</tr>
<tr>
<td>Supporting industry for Mold and metal tools assemblies</td>
<td>Cluster Mold and metal tools (the biggest difficulty is now steel making molds)</td>
<td>55%</td>
</tr>
<tr>
<td>Supporting industry for engines, turbines, pumps, compressors</td>
<td>Details of small engine and diesel engine for agricultural production. Cast iron pump or compressor body and other accessories for assembly and repair such as glove ring, oil stopper, hand ring...</td>
<td>32%</td>
</tr>
<tr>
<td>Supporting industry for kitchen clusters, furnaces</td>
<td>Some parts such as furnace, burning fear, conveyor</td>
<td>42%</td>
</tr>
<tr>
<td>Supporting industry for common and specialized industrial machinery clusters</td>
<td>Usually only in the chassis</td>
<td>13,5%</td>
</tr>
<tr>
<td>Supporting industry for manual machines and other mechanical goods</td>
<td>Supporting products for manual machines and mechanical products such as: semi-finished products, surface treatment and providing standard details (feathers, nuts, washers, pins...), balls, cakes tooth..</td>
<td>60%</td>
</tr>
</tbody>
</table>

Source: Author’s survey of article 10 Vietnamese mechanical engineering enterprises in 2018

Motor vehicle manufacturing industry

SMEs are mainly in charge of electrostatic painting, powder coating, shells, wire sets, airbags, furniture, plastic details, tires, brake pads, seats, beds, lampshades, oil filters, glass, tweezers, air conditioner, semiconductor IC, hydraulic control panel. Most of the details and detail assemblies have to be imported such as: engine, chassis, transmission system, control system, carburetor. The product localization rate of the automobile manufacturing and assembly industry is as follows (see Table 3)

<table>
<thead>
<tr>
<th>Product Groups</th>
<th>The products have manufacturing strengths</th>
<th>The rate of localization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial support for individual vehicle clusters</td>
<td>The process of electrophoresis coating for some frame and shell details Please pay tribute to the body after complete installation. Supporting products such as wire sets, airbags, hydraulic control panel details, semiconductor ICs, oil filters are provided by a few supporting companies (usually foreign-invested enterprises). Tire (shell) products for cars also began to appear on the wall</td>
<td>8,5%</td>
</tr>
<tr>
<td>Supporting industry for passenger cars</td>
<td>Sewing of body and cushion seats, brake pads, tubes, tires, floor mats, accelerators, interior plastic products, door handles, seats, beds, transmission wires</td>
<td>20%</td>
</tr>
<tr>
<td>Supporting industry for Trucks and other specialized vehicles</td>
<td>For the body and chassis, a number of auto parts and accessories have been studied and manufactured to include high-load tires, leaf tweezers, oil filters, lamp holders, brake pads, glass, . Carpet...</td>
<td>15,5%</td>
</tr>
</tbody>
</table>

Source: Author’s survey of article 2 Vietnamese car manufacturing and assembling enterprises in 2018

Most of the car manufacturers are FDI enterprises. Some FDI enterprises in the automotive components sector operate under the model of export processing enterprises, the quantity supplied to the domestic market is very small, making it difficult for SMEs to participate in the supply for industry.
**Textile industry**

Vietnam’s garment products are diversified, but mainly produced by outsourcing methods, so most of the raw materials are ordered and supplied by customers. Although in the past, Ho Chi Minh City has oriented to change the business mode of the garment industry from outsourcing to design ownership, but has not yet brought into play its effectiveness because businesses still have limited designs and low market capacity; Meanwhile, the construction of fashion brands to export Vietnamese branded products is facing many difficulties because there are many big fashion brands in the world, and the research and development level of products is very high. This leads to a lack of motivation for enterprises to participate in production to support the industry. SMEs produce intermediate products mainly in low value-added stages such as buttons, mex, foam, containers, cotton pads, plastic fasteners, staples, blankets-pads, threads, key chains, glue, bandages, tape. The stages of high added value such as fiber, chemicals - dyeing aids, dyeing, flower printing and finished fabrics must be imported. The product localization rate of products in the textile and garment industry is as follows (see Table 4):

<table>
<thead>
<tr>
<th>Product Groups</th>
<th>The products have manufacturing strengths</th>
<th>The rate of localization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supporting industry for clusters of Fabrics, threads, nets, braids</td>
<td>Supporting industries for the production of textiles, non-woven fabrics, and net Fibers are the main supporting industrial products, mainly synthetic fibers accounting for ~ 98% in value), natural fibers only ~ 2%. Mainly imported</td>
<td>34.5%</td>
</tr>
<tr>
<td>Supporting industry for the Adult Clothing cluster</td>
<td>Many types of building materials (mex, erect foam, cotton cushion) or plastic, support ... are made available by local businesses, but for low- and middle-end products. Materials for export production must be imported</td>
<td>42%</td>
</tr>
<tr>
<td>Supporting industry for the Children’s Clothing cluster</td>
<td>The domestic supply of raw materials is quite good</td>
<td>60%</td>
</tr>
</tbody>
</table>

*Source: Author’s survey of article 10 Vietnam textile enterprises in 2018*

**Footwear industry group**

Similar to the textile and garment industry, Vietnam’s leather and footwear industry is mainly export processing, the production and supply of raw and auxiliary materials of the industry depend heavily on foreign partners. Raw and auxiliary materials for footwear production, leather goods for export are mainly imported from China, Taiwan, and Korea under the designation of partners. With the outsourcing method, it will be difficult for SMEs to participate in activities supporting the industry. Raw leather products have not met the domestic production requirements, and tanning is limited; synthetic leather and artificial leather products have not met domestic demand and are of low quality. The localization rate of products of the leather footwear industry is as follows (see Table 5):

<table>
<thead>
<tr>
<th>Product Groups</th>
<th>Rate of localization in 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supporting industry for Footwear, Footwear and imitation leather for adults</td>
<td>37%</td>
</tr>
<tr>
<td>Supporting industry for children’s footwear, leather and imitation leather</td>
<td>38.5%</td>
</tr>
<tr>
<td>Supporting industry for shoes and canvas shoes</td>
<td>41%</td>
</tr>
<tr>
<td>Supporting industry for sports shoes cluster</td>
<td>39%</td>
</tr>
<tr>
<td>Supporting industries for other products that use leather and imitation leather</td>
<td>38%</td>
</tr>
</tbody>
</table>

*Source: Deep interview with 10 leather shoe enterprises by authors, 2020.*

From the above analysis, it shows that the development of SMEs has many limitations, not yet created a solid foundation for the sustainable development of the industry. Mechanical industry SMEs mainly serve the production of products related to household mechanics, repair and replacement of equipment in the import chain.
SMEs in the automobile industry and related fields are only at an average level, so they cannot participate deeply in the value chain of the automobile industry; SMEs in electronics are still at a low level; Garment and footwear SMEs depend largely on imports because they mainly produce and process (see Figure 3).

Vietnam has quite favorable conditions in the exploitation and production of raw materials such as plastics, metals, fibers, fabrics ... have not met the needs of auxiliary SM Es can only produce simple ancillary products; products need technology must be imported. Mainly outsourcing, still limited in attracting enterprises to manufacture and assemble complete products.

Figure 3. Summary of current state of Vietnam’s industrial price chains

Source: Summary of authors, 2020.

Deriving from the below result, actors shared more views on tangibles as compared to other dimensions. Relating actors have more preference towards the aesthetic and facilities provided by the resorts as compared to the services delivered by others (see Table 6).

Table 6. Total comments under each dimension and their supporting industries

<table>
<thead>
<tr>
<th>No</th>
<th>Dimensions</th>
<th>Total Comments</th>
<th>Positive (P)</th>
<th>Neutral (Ne)</th>
<th>Negative (N)</th>
<th>Ratio (P:Ne:N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supporting industry within suppliers</td>
<td>544</td>
<td>288</td>
<td>11</td>
<td>245</td>
<td>53:02:45</td>
</tr>
<tr>
<td>2</td>
<td>Supporting industry within manufacturers</td>
<td>472</td>
<td>184</td>
<td>38</td>
<td>250</td>
<td>39:08:53</td>
</tr>
<tr>
<td>3</td>
<td>Supporting industry within distributors</td>
<td>399</td>
<td>311</td>
<td>20</td>
<td>68</td>
<td>78:05:17</td>
</tr>
<tr>
<td>4</td>
<td>Supporting industry for subcontractors</td>
<td>435</td>
<td>222</td>
<td>4</td>
<td>209</td>
<td>51:01:48</td>
</tr>
<tr>
<td>5</td>
<td>Supporting industry between suppliers and manufacturers</td>
<td>363</td>
<td>228</td>
<td>15</td>
<td>120</td>
<td>63:04:33</td>
</tr>
<tr>
<td>6</td>
<td>Supporting industry between manufacturers and distributors</td>
<td>1378</td>
<td>896</td>
<td>69</td>
<td>413</td>
<td>65:05:30</td>
</tr>
<tr>
<td>7</td>
<td>Supporting industry between distributors and customers</td>
<td>37</td>
<td>30</td>
<td>4</td>
<td>3</td>
<td>81:11:08</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>3628</strong></td>
<td><strong>2159</strong></td>
<td><strong>161</strong></td>
<td><strong>1308</strong></td>
<td><strong>60:04:36</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: The result includes predicted result and not the manually coded result for the test comments from 4 above industries, 2020.
4.3 Analysis of barriers to SMEs development

Market barriers, the demand for intermediate products have not been directed to domestic SMEs. End-product manufacturers in Vietnam maintain their processing methods for such a long time (such as textiles, leather shoes), so it is difficult to attract the supply of intermediate products as ordered by their customers. On the other hand, there are also some industries such as electronics, automobile manufacturing and assembly. FDI enterprises account for a major proportion with the orientation of the source of supply to support domestic SMEs due to not meeting the numerical requirements for quality and commitments in transactions. Furthermore, there is a lack of bridging between SMEs and FDI terminal product manufacturers to carry out the production and supply of ancillary products (Dien, 2017).

Technological barrier

Technology is slow to develop, most machine tools have to be imported. Vietnam has not been able to produce specialized machine tools in industries, but has to import technology from abroad with investment costs higher than many enterprises in other countries. This creates quite a barrier for SMEs to join the industry linkage chain. In addition, intermediate products are typically associated with the design and technical requirements of the end product manufacturer, so the production of the product requires integration with the manufacture and assembly of products. The end products should require SMEs to closely link with the manufacturers. Meanwhile, end product manufacturers in high value-added industries are often FDI enterprises that have established support networks with outside firms in the past. Vietnam’s new SME supply chain is for delivering on the commitment.

On the other hand, for some industries such as yarn, weaving, finishing dyeing, component manufacturing, automobile assembly, electronic circuits require quite high technology investment costs. Thus, SMEs can hardly participate if there is a lack of linkage with large enterprises that manufacture end products. Moreover, in Vietnam, organizations with technology research and transfer functions such as Institute of Technology and Universities have not been linked with businesses in research and technology transfer. The reason is that the science and technology development investment policy has not had a binding mechanism between enterprises and the Institute / University. From the above analysis, it is shown that the technology barrier for SMEs is the most critical one, and is the reason why SMEs only participate in auxiliary activities at simple stages with the lowest added value in the industry value chain.

Barriers in attracting businesses to produce end products with their own brands (group of businesses in the core stage of the industry)

The weak production capacity of SMEs leads to the result that many major industries will lack competitiveness, which makes it difficult to attract FDI companies and they will have to depend heavily on imports. When it is unable to attract manufacturers of high added value end products, the market barriers for SMEs continue to be established (see Figure 4).

Figure 4. Summary of barriers to SME development

Source: Author’s synthesis from analysis results.
4.4 Analysis of Vietnam’s SME development policy

Over the past years, Vietnam has made many efforts to promote enterprises, the Government has focused on specific support policies: Promoting, encouraging and increasing the productivity of SMEs, innovative companies; Boosting start-ups; Supporting technology innovation, modernizing, and developing human capital that can contribute to regional and global networks of production and value chains; Strongly restructuring administrative practices, providing conditions that are favorable for private economic to grow. The Government has also issued a variety of fiscal incentives for SMEs; establishing capital sources and production, encouraging trade and market knowledge, enhancing corporate governance skills and equipping employees with skill training. The SME Support Law by the National Assembly comes into force from January 1st 2018, regulates principles, contents and resources to support SMEs in production and business; duty of organizations and individuals with certain preferential regulations. Next, the Government issued Decree No. 39/2018 / ND-CP guiding the Law on SME Support with many State policies such as: Information support, consultation, human capital growth, business households transformation, innovative startups, business clusters joining and value chains. Therefore, the Government keeps paying attention and set bigger and more comprehensive targets in order to better the business environment. However, the proportion of SMEs participating in and benefiting from the State’s policy support programs is still limited. SME support activities are not specific, lack of focus, and have not created industry linkages to promote SME participation. Besides, administrative procedures for SMEs to enjoy the State’s support policies still have many shortcomings and difficulties.

5. Conclusions and solutions

5.1. Conclusions

Supporting industry development in Vietnam is a relatively new issue in both theory and practice. In terms of implementing the shortened industrialization strategy in Southern Vietnam, the theoretical research and experience of the industrialized countries work are essential. In the framework of this article, the author has given a new approach as a suggestion for the formulation of policies to promote supporting industries based on theories of industrial cluster theory and the theory of birth systems business ergonomics. With its important role, supporting industry development is becoming one of the key conditions for the development of a viable industry participating in the international labor division chain, successfully implementing the strategy to attract capital and technology sources from the developed countries into national industrialization and modernization.

Governments around the world often focus on issuing policies to support SMEs to assist in the early stage of industrialization and FDI attraction. Japan in the 1940s, for example; Korea, Thailand, and Malaysia in the 1980s. These policies revolve around the principle that SMEs are considered as a job-creating sector supporting many of the country’s fundamental economic sectors, so they should be facilitated for development. Such policies often give priority to SMEs through equipment cost support, technology transfer, the promotion and / or forcing and / or forcing large firms and the Government to purchase SME products, validating the role of subcontractor as SMEs, establishing a state management organization to advise and manage SMEs promotion policies (Yoshiaki Takahashi, 2017; Dien, 2017). Although the lessons from SME promotion policies are diverse, the context and opportunities of each country are different from time to time, so policies need to be defined with reference to previous countries’ experience and adjusted to suit Vietnamese characteristics. Following are some examples of SME promotion policies in the support sector that can be considered in the Vietnamese context: (i) There are central and local SME management agencies (Japan, Korea). (ii) Establishment of capital support fund for SMEs, establishment of credit guarantee units for SMEs (Japan). (iii) Establishing machinery and equipment support centers to help SMEs access new machinery and equipment (Japan, Korea, Thailand). (iv) There are specialized technology research institutes associated with universities to perform technology research functions in association with enterprises. There is a financial support mechanism for technology research projects associated with application and transfer to enterprises (Korea). (iv) Building talent development center (Malaysia), promoting SMEs to start a creative business. (v) Develop programs to promote linkages between SMEs and large companies by setting up DN product databases (Japan, Thailand). (vi) Human resource devel-
opment policy on the basis of linking between technology research organizations - enterprises. In particular, the research organization is located at a human resource training institution (Korea). (vii) Concretize preferential policies to support SMEs through national programs for each sector, each specific locality in terms of cost support, market, technology, premises, and training human resources (Thailand, Malaysia). (viii) Site support for SMEs such as high-rise factories (Japan).

5.2. Solution to build industry linkages to create conditions for SMEs to develop

Currently, the legal framework to support SMEs has been quite complete, but there are also many programs to promote industry linkages to attract SMEs to participate. It is necessary to establish a model production association, these models need support from the policy. First of all, it is necessary to find out the types of products that Vietnamese enterprises can produce domestically, with high demand for domestic consumption and export. The next step is to establish a value chain link model in production from market research, product design, and organizing satellite businesses to produce details, components, etc. and to setting up a distribution system of products to the market. In order for SMEs to boldly join the chain of products in the industry, the state needs to have supportive policies for them to boldly invest. Building a model of production association from market research, product design, satellite SME organization to manufacture details, components to establish a distribution system to the market.

Select an enterprise in the core activity group

In each industry group, enterprises operating in the “core stage” will be identified as having sufficient ability to conduct research, design and assembly of end products. This group of businesses will formulate a feasibility study project on the market, technology, human resources and financial efficiency aspects of the project, and at the same time prepare an investment plan (Dien, 2017). The feasibility study report for the production of the core products must detail the production organization model from market research to design, packaging, pasting styles, materials, to every detail, components of end products. Each detailed component must analyze the production capacity of domestic enterprises (specify the address of production and supply); details and components imported from abroad (specify the country of supplier). At the same time, clarify the costs of investing in technology transformation for participating businesses to provide details and components, as well as propose necessary supports. The final product manufacturing process will have many details and components from different industries. The “Core” enterprises will be given incentives and subsidies to transfer production technology of details and components to auxiliary suppliers. SMEs participating in the supporting product supply chain will be supported with interest expenses on technology transfer investment.

Production organization model in the chain

In order to manufacture the end product, the first step must be to research the market of each product group, thereby determining the required product attributes, on which the product is designed. After designing the final technical standards, the “core” enterprise develops a plan to link production with SMEs that provide auxiliary supplies. The plan to associate production of auxiliary products for end-products is only done by satellite SMEs, investing and supporting satellite enterprises to change technology to meet the production standards of machine parts. At the same time, detailed plans to support technology transfer and quality control of production details and components of private security enterprises are presented. To focus on production techniques, end-to-end product distributors are required. The units participating in the end product distribution will be supported with the trade promotion costs. The “core” enterprise creates a network of suppliers participating in the value chain that manufactures end-products. At the same time, actively supporting them to innovate production technology and techniques; technical regulations. Besides, always closely follow the progress of production testing, inspection and certifying product quality.
Policy to support enterprises to join production chain

For businesses to boldly join industry clusters, it is necessary to support business policies as follows: (i) First, tax incentives: Corporate income tax exemption for “core stage” businesses and SMEs provide ancillary products. Exemption from personal income tax for professionals participating in production projects of industry clusters. (ii) Second, support interest expenses for investment in construction of intermediate product factories and terminal product assembly. (iii) Third, support the cost of research and design of production of end products: Support investment costs for research centers and product design, product test; Support costs for hi-tech application contracts and technology transfer contracts. (iv) Fourth, support for consultancy on intellectual property, exploitation and development of intellectual property: Support costs for consultancy contracts on procedures for establishing, transferring and protecting intellectual property rights; consulting contracts on formulation and implementation of intellectual property policies and strategies; consulting contracts on design, registration for protection, exploitation and development of the value of trademarks, industrial designs and inventions; consulting contracts on construction and development of intellectual property for geographical indications. (v) Fifth, consult on standards, technical regulations, metrology, quality: Support costs for consulting contracts for the establishment of basic standards in enterprises; reducing the testing device sample fee and verifying fees, calibrating and testing measuring instruments and measurement standards; reduce the cost of quantitative marking of pre-packed goods in accordance with technical measurement requirements; Support the costs of consulting contracts for enterprises to organize their own measurement. (vi) Sixthly, support the implementation of production testing, verification, inspection and quality certification procedures: Support costs of testing, inspecting, product quality certification; Supporting the use of goods quality testing laboratories of enterprises participating in industry clusters and value chains; Reduce charges for goods quality testing at the testing systems of state management agencies; Support contract costs for institutes, schools to research and develop products and services. (vii) Seventh, support production and business linkage: Supporting the costs for consultancy contracts to promote “core” businesses to develop supply support satellites; Support the costs for consulting contracts on building business association projects to promote market development, improve the value of products and goods. (viii) Eighth, support for brand development, market expansion: Support for the cost of booths at National and International Trade Promotion Exhibition Support Association; to be given priority to participate in trade promotion programs using the state budget; Support costs for consulting contracts on branding, trade names, trade secrets; Support costs for contracts of information search, products promotion, brand development. (ix) Ninth, support the full cost of training human resources to participate in industry-linked production projects. Support training costs for technology transfer from “core” businesses to SMEs providing supporting products.

References


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Wong, C.W.Y., Wong, C.Y., Boon-itt, S. (2013). The combined effects of internal and external supply chain integration on product in-


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Abstract: Primarily, the purpose of the current research was to examine the influence of Human resource factors like job security, job autonomy and promotional practices on employee motivation and job satisfaction among employees of petroleum firms in Indonesia. Moreover, the research has also surveyed the mediating aspect of employee motivation among mentioned HR factors and job satisfaction. For data collection, the survey methodology was chosen for the present study. The researcher used convenience sampling for collecting data from employees of petroleum organizations. The response rate of the present study was 73%. For analysis, PLS-SEM tool was used by the researcher. Findings of the study revealed that all these HR factors, job security, job autonomy and promotional practices are significant predictors of employee motivation and employee job satisfaction. Moreover, employee motivation mediates significantly among job security, job autonomy, promotional practices, and job satisfaction. The present study fills the gap of limited studies regarding the application of HR factors to enhance motivation and job satisfaction of the petroleum sector employee. Findings of current research are beneficial for the policymakers, petroleum sector and academicians of HR discipline.

Keywords: Job Satisfaction; Job security; employee motivation; Promotion; Indonesia


JEL Codes: M12

1. Introduction

In the academic literature, term human resource management was not used until the 19060s. Whereas this concept become popular in 1970. The success of any organization is mainly dependent upon the effectiveness of the human resource of that organization. Since that point, HRM become the point of attraction for all the academician and practitioners and HR started to be taught in schools. Researchers defined HRM as the industrial relation and personal management, which is considered as an effective approach by people working in the organization are integrated with the company strategy. Different practices of human resource are discussed by the authors. Among most commonly used practices are pension, the procedure of grievance, promotion, performance appraisal of the employee, reward management, training, placement and recruitment and selection. On the other hand, three more practices are discussed by the authors other than those which are mentioned above. These three practices include attitude assessment, information sharing and job design (Teclemichael Tessema & Soeters, 2006).

Job satisfaction (JS) is the term used in literature to express satisfaction as a result of any activity (Azash, Kumar, & Safare, 2011; Bernardi, 2019; Gomez-piqueras et al., 2020; Gonzalez et al., 2020; Espinosa-Espinosa et al., 2020; Flores & Argaez, 2020; Idris, Adi, Soetjipto, & Supriyanto, 2020; Idris, Adi, Soetjipto, & Supriyanto,
Importance of satisfied and motivated employee is realized by the organizations of today’s world. Both these factors are important as they contribute towards the long-term objective achievement of the organization. Due to this factor, organizations take care of the needs and expectations of the employees and expect the same from the employees as the response for the organization. On the other hand, the motivation level of the employees also impacts the performance of an individual, which, in long run, impacts the overall performance of the organization. It’s been argued by the researchers that JS and motivation of employees is raised by giving them the opportunity to learn. Moreover, the support of supervisors and managers contributing to JS. Core potential of the companies lies among the satisfied and motivated employees of the organization as they contribute effectively to achieve their objectives and goals. In order to keep the morale high of the employees, effective HRM practices play a very important role (Navdeep Kumar & Garg, 2011).

Among theories of work design, job autonomy is a significant component. Job autonomy basically represents independence and freedom in the life of an individual to perform organizational tasks. Researchers describes job autonomy as the level at which employees have discretion, independence and freedom to choose the method, make decisions and schedule work to perform the job-related tasks. The traditional organizational structure has the view to provide more autonomy to the employees at the higher ranks and strict rules at the lower ranks of the firm. The organizations having a higher job autonomy level and a higher satisfaction level among their employees. As autonomy of the job shows the freedom of the employee to perform the task or prepare the schedule to do it. No matter which kind of autonomy is being provided to the employee, it impacts the motivation level and satisfaction level of the employees (Lin, Lin, Lin, & Lin, 2013).

The basic need of every employee is that the employer provides a safe environment for the employee and value the contribution. The possibility that the employee will continue his/her job is mainly impacted by job security. If there is a higher job security level, it means there exists less probability that employee will be jobless. In the absence of job security, performance and motivation of employee are affected in the negative aspect. Among the preference list of organization and employees, job security has become one of the most important factors. More than three-quarters of the employees globally perfect the jobs which offer security to the employee in terms of job retention. The factor of job security is more important than the factor of healthcare and salary of the employee. The most important wish for the employee to have the job which they can continue until they want to. Thus, the most important factor upon which an employee decides to join any organization or not is the matter of job security. Therefore, one of the most important challenges being faced by the organization is not to retain or hire the employee, and in fact, the challenge is to provide security to the employees. Thus, it is important for the organizations to consider the way by which they can satisfy this need of their customers and improve their performance as well (Lucky, Minai, & Rahman, 2013). For the same reason, the concept of job security has gained attention among practitioners and researchers. The job security of the employee is linked to the economic aspect of employee and organization.

Indonesia is among the oil-producing country around the globe. It is ranked at 25th country which produces oil and export to the other parts of the world. In the present era, the prices of oil are dropped due to a decrease in its demand (Helmy & Kardena, 2015). In this scenario, employees are facing the issue of job security, motivation and other HR factors which contribute to their satisfaction. Therefore, the study aims to examine the effect of HR factors on employee’s satisfaction with the mediating role of employee motivation among the employees of the petroleum sector of Indonesia.

2. Literature Review

Employee Job satisfaction

In previous literature, JS is explained as a sense of completeness which a person feels after completion of a task. When an employee achieves something, this sense is perceived by the employee. Researchers mentioned that job satisfaction is the pleasurable moment which leads the employee to improve their performance and at-
Attitude. A person who is satisfied is more likely to be loyal, flexible and creative in their tasks. In the same way, employee JS is the end state of feeling of an employee. Meaning of the word end means employee have this feeling after the achievement of any task. These tasks can be large or small. But it is important that a specific need is fulfilled after the achievement of this task (Nazir, 2013).

Researchers believed that employee job satisfaction is impacted by a number of human resource factor including fringe benefits, annual review work environment of the employee, supervisor relationship, good salary and good relationship at a social level (Natarajan Kumar, 2012).

**Motivation: Relationship with Job satisfaction**

Committed employees of an organization are the base of a successful company. The commitment brings job satisfaction and motivation among the employees. Motivation is basically the energy which forces the employees to fulfil their objectives. Without the motivation of the employees, it is near to impossible to enhance the performance. Competitive employees must be part of the organization if the management of the organization wants to achieve a competitive place in market.

Human behaviour is directed by the important stimulation known as human behaviour. In the whole world, the behaviour of no two humans is the same. Therefore, the organizations must identify the practices by which they can satisfy the diverse needs of different human. It is the obligation of the organization to find out the motivational aspects of the employees which contribute to job satisfaction (Varma, 2017).

Motivation is broadly defined as the attribute which moves a person to do anything or stop it from doing any act (NAZIR, 2013). In the same context, researches have referred motivation as the basic reason which shapes the behavior of the employee. From the perspective of the organization, one can define motivation as the process which can highlight the employee’s intensity, direction as well consecutive try to achieve a certain goal (NAZIR, 2013).

The employee who works hard on the basis of motivation also becomes satisfied with the outcomes of the task finished. Thus, there exists a substantial association between employee JS and motivation. It is more likely that the satisfaction level among employees will be high if the employees are motivated. As a result, success, performance and achievements of the employees become higher. Researchers argued that satisfaction among workers is the end result of the motivation. It is believed that employee having a high level of motivation will try hard to accomplish the goal line of companies. In doing so, they will achieve the goals and will get satisfied with rewards and achievements. Therefore, the motivation of the employee is related highly with employee JS (Idiegbeyan-Ose, Opeke, Aregbesola, Owolabi, & Eyiolorunshe, 2019).

A number of empirical researchers have found that JS of employee and motivation are completely related to each other. On the other hand, if there exists a hostile work environment, it will lead to demotivation among employees (Babalola & Nwalo, 2013).

In the similar context, the studies regarding satisfaction of workers resulted that financial motivation of individuals has significant role in developing satisfaction. Moreover, factors like good working environment also play a key part in creating satisfaction among employees. In the same context, it is examined the role of motivation to create satisfaction among employees. The data was conducted from 568 employees of KSA. It is revealed from the findings that motivation has a positive correlation with JS of the employees (Idiegbeyan-Ose et al., 2019).

**H1:** Employee motivation and employee satisfaction are significantly associated with each other.
Job Autonomy: Relationship with employee motivation and job satisfaction

In literature, job autonomy is described as level of discretion, independence and freedom are provided to employees to perform their job and to decide the methods required to achieve their goals. In literature, autonomy is defined as the resource of the job. Against the negative aspects of the job demand, this factor can work as a buffer. The employee will be having a high level of stress if there is lack of job autonomy and resulting in the creation of dissatisfaction among the employees. Therefore, in order to follow the process of motivation, job autonomy is a very important feature which might end up at the satisfaction of workforce of organizations (Chung, 2016; Hussain et al., 2021).

The performance of employees is positively related to the factor of job autonomy. Additionally, job autonomy of the employees also contributes towards the extrinsic and intrinsic motivation, reducing stress and absenteeism, enhance employee commitment and job satisfaction. Employee role breadth has found to be enhanced by the job autonomy of the employees, contributing to improve the knowledge and skills of workers (Dysvik & Kuvaas, 2011).

A number of different studies conducted in past role autonomy in performing tasks have substantial effect on the inspiration of employees. Moreover, it also impacts the JS of the employees as well. The organizations which provide high autonomy to the employees will be highly driven to accomplish their tasks and meet their personal and organizational goals. The employees who have the autonomy, have the feeling that they can control their behaviour. They can be engaged in a difficult task as well. Such employees are very motivated and are willing to perform their tasks. Satisfaction level along any employee will be high who have a high level of job autonomy (Zhou, Li, & Gong, 2019).

A number of studies found there exist positive association among job satisfaction and autonomy of the employee (Ghosh, Rai, Chauhan, Gupta, & Singh, 2015). Same results were reported by studies which found the employees having job autonomy can make decisions regarding tasks and procedure to achieve tasks. Thus, the satisfaction level among such employees is high as well (Hussain et al., 2020).

H2: Employee job autonomy and employee motivation are significantly related to each other.

H3: Employee job autonomy and employee satisfaction are significantly related to each other.

H4: Employee motivation is the mediator between employee job autonomy and employee satisfaction.

Job Security: Relationship with Motivation and Employee Job Satisfaction

The probability that an individual will keep and continue his/her job. It also shows there exist very little chance that the employee’s job will be gone. Job security is basically the assurance from the company that the already working employees in the organization will keep working until a reasonable period of time, and they will not be dismissed. The job security of the employees is affected by a number of factors including personal skills, economy and conditions are the workplaces (Adebayo & Lucky, 2012).

In working and social life of the individual, job security plays a very important role because employees are not worried about their future to have a contribution to the peace of labour, enhance the performance of the employee and protect the social values and balance. Therefore, in the absence of any reasonable ground, employees must not be dismissed from the organization. In the modern era, job security is considered as the employee’s basic right in which it is guaranteed that the employee himself and his dependents should not face any issue related to income and they will spend an honourable life. Therefore, when employees are about to start their career, they consider the factor of job security (Zaman, 2013).

One of the major problems being faced by organizations is unemployment. In the present business world, job
security is the major issue being faced by the employees. Among the major reason for the lack of job security is the availability of technology and capital. In this perspective, both employers and employees are facing a difficult time. Job security is important for employee and employers. If the job of an employee is secured, he/she will not have to find a new job. On the other hand, employers will also not have to find a new employee (Senol, 2011).

Therefore, organizations must be sensitive regarding the employee’s motivation. These employees must work for the betterment of the organization in any condition. Employees working in any organization are not machines, they have feelings, and they get affected by the environment around them. Employees will feel valued if the employer will try to understand them. There are a number of factors that can motivate them. In fact, one of the most influential means to motivate employees is job security. Employees have the belief that they will be retained in the organization in normal circumstances. Thus, it is a major reason for employee motivation. On the other hand, factors which contribute to the satisfaction of employees is job security as well.

**H5:** Employee job security and employee motivation are significantly associated with each other.

**H6:** Employee job security and employee satisfaction are significantly associated with each other.

**H7:** Employee motivation is the mediator between employee job security and employee satisfaction.

### Promotion practices: Relationship with employee motivation and job satisfaction

Promotional practices are used by the organizations to provide incentives to the employees as the appreciation and return of the hard work. Another objective of promotion practice is to fill the high level of the job by the employees. Incentives are provided to employees as part of their promotion. As a result, employees are motivated to get engaged in the training program and get the new skills which will contribute towards the promotion in future. Scholars pointed out that there are two types of promotional consideration during the procedure of promotion in the organization. The first objective is to fill the higher position in the organization by the talented employee who is already working in the organization, whereas, the second objective is to provide proper opportunity to the employees to advance their careers. A number of multinationals follow the policy to promote their employees from within (Truss, 2001). Researchers also argued that there is a positive relationship between the performance of the employees and promotional practices adopted by the organization (Teclemichael Tessema & Soeters, 2006). In the same context, researchers argued that if the employees are promoted on the basis of merit, it leads towards a higher level of organizational performance. There are two dimensions to analyse career moves. 1st is a skilled allocation efficiently, and the second is to promote effective rewards among human capital.

Self-esteem, any employee, can be enhanced through promotion which in turn lead to creating the motivation among employee. Thus, it has a positive correlation with intrinsic motivation. The promotion provides incentives to the employees, and all aspects of the promotion play a critical role to create intrinsic motivation (Van Herpen, Cools, & Van Praag, 2006).

The promotion provides the opportunity to advance the career and grow professionally. If the employees perceive advancement in career, they will experience job satisfaction. In the same vein, studies have mentioned that employees who have the chance of advancing their careers are more likely to be satisfied with their jobs (Ddamulira Sseruyange, 2009).

**H8:** Employee promotion practices and employee motivation are significantly associated with each other.

**H9:** Employee promotion practices and employee satisfaction are significantly associated with each other.

**H10:** Employee motivation is a mediator between employee promotion practices and employee satisfaction.
Framework

Following framework is developed from the above literature review:

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Employee job autonomy
Job security
Employee Promotion Practices

Employee motivation

Employee satisfaction
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2. Research Methodology

Present study is the cross-sectional study; therefore, the basic design of the study is quantitative. For achieving the study objectives, questionnaires were designed to collect the data from the respondents. As the present study conducted in the quantitative study in which survey method is used for gathering the data. The focus of the present study was the employees working in the petroleum sector of Indonesia. The focus of the present study was on the factors which can create motivation, including promotional activities, job security and job autonomy. Convenience sampling was adopted by the researcher to collect data from respondents. The questionnaires were sought to Likert 7 scale. The questionnaire was distributed among 520 employees of the petroleum sector of Indonesia. Out of these distributed questionnaires, 396 questionnaires were received back. The response rate of the study was 73.15%. After the collection of data, it was screened by using SPSS 23. After the proper screening of the data by applying CMV and Mahalanobis distance (to remove the outliers), the data was used for further analysis. Later, PLS-3.2.9 was utilized in the study for examining the proposed hypothesis.

3. Research Analysis

Researcher in the present study has used PLS-SEM 3.0 for the analysis of the data. Basically, PLS is the statistical tool by which the researcher can easily assess the multivariate relationships among latent and observed variables (Vinzi, Chin, Henseler, & Wang, 2010). PLS Structural equation modelling is one of the regression tools which is developed for assessing the linkage between structural model and measurement model. Researchers pointed out that PLS is a very superior, flexible and strong method to develop the statistical model. It can help to test and predict the theory as well. This statistical tool is also capable of assessing the data validity and reliability (Chin, Marcolin, & Newsted, 2003).

The data obtained of this study were analysed in two steps through PLS-SEM. The first step of PLS is the measurement model. The main reason to apply measurement model is to assess the measure’s goodness. For the measurement model, basically, there are two criteria which must be fulfilled, namely the reliability and validity of the data (Joe F Hair, Sarstedt, Ringle, & Mena, 2012). The discriminant validity of the study is measured through (Fornell & Larcker, 1981). Additionally, reliability and convergent validity of the data is assessed as well. The figure 1 of the study shows the outcomes of measurement model (Figure 1 and Table 1).
For assessing the reliability of the items, the PLS algorithm was performed in the present research (Joe F Hair et al., 2012). Additionally, the reliability of the individual items through the outer loading of the PLS-algorithm. As mentioned by Hair Jr, Matthews, Matthews, and Sarstedt (2017), the minimum value of items which should be retained is 0.70. The values of factor loading of items involved in the present study are mentioned in Table 1 below. It’s evident from Table 1 below that factor loading is as per the criteria explained. Therefore, all items of the study are retained.

Table 1. Factor Loading of the items

<table>
<thead>
<tr>
<th></th>
<th>EM</th>
<th>ES</th>
<th>JA</th>
<th>JSEC</th>
<th>PP</th>
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<tbody>
<tr>
<td>EJA1</td>
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<td></td>
<td></td>
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<tr>
<td>EJA2</td>
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<tr>
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<td>EJA5</td>
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<td>EM2</td>
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<td>ES3</td>
<td>0.898</td>
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</tbody>
</table>
The next step is the assessment of the validity and reliability of the items. As per the rule of thumb mentioned by Bagozzi and Yi (1988), the composite reliability of the items is assessed for the internal consistency of the items. Authors suggested that the minimum values of the composite reliability of the items must be above 0.70. Table 2 below describes the Cronbach Alpha and composite reliability of the variables used in current research.

Table 2. Reliability and Validity of the construct

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s Alpha</th>
<th>rho_A</th>
<th>Composite Reliability</th>
<th>(AVE)</th>
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<td>ES</td>
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<td>0.963</td>
<td>0.746</td>
</tr>
<tr>
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<td>0.925</td>
<td>0.637</td>
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<tr>
<td>PP</td>
<td>0.808</td>
<td>0.821</td>
<td>0.886</td>
<td>0.723</td>
</tr>
</tbody>
</table>

Note: EM= employee motivation, ES= employee satisfaction, JA= job autonomy, JSEC= job security and PP = promotional practices

Table 3 above shows the AVE of the data obtained. The minimum acceptable range of AVE that its value should be more than 0.50. if the value of AVE is more than 0.50, it shows that there exists convergent validity on the data. Additionally, the table above also shows Cronbach Alpha of the item. These values are more than 0.70, which is also according to the acceptable range. Additionally, the composite reliability of all the items is more than 0.80 as it ranges from 0.886 to 0.950. these values also confirmed the reliability of the variables.

In the measurement model of the study, the next step is to examine the discriminant validity of the data. Table 3 below shows the discriminant validity of the data. For the discriminant validity, Fornell and Larker (1981) approach are adopted for the present study. Opposite to the convergent validity, the discriminant validity test is referred to as level at which certain latent variable is unique from remaining variables of the study. But, similar to the convergent validity, Values if AVE is used in discriminant validity of a certain latent variable (Fornell & Larker, 1981) (see Table 3).

Table 3. Discriminant Validity

<table>
<thead>
<tr>
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<th>JSEC</th>
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<td>0.334</td>
<td>0.463</td>
<td>0.863</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JSEC</td>
<td>0.424</td>
<td>0.332</td>
<td>0.185</td>
<td>0.798</td>
<td></td>
</tr>
<tr>
<td>PP</td>
<td>0.306</td>
<td>0.334</td>
<td>0.220</td>
<td>0.205</td>
<td>0.850</td>
</tr>
</tbody>
</table>

Note: EM= employee motivation, ES= employee satisfaction, JA= job autonomy, JSEC= job security and PP = promotional practices
The diagonal values in the table above are the square root of the AVE of latent construct. The discriminant validity of the data exists if the values if the diagonal are more than the remaining non-diagonal values of columns and items. The values in the table above clearly show that these criteria are met; thus, discriminant validity of the data is confirmed.

After the successful assessment of the measurement model, the next step of PLS analysis is to use the structural model. This step is used in the present study for assessing the proposed hypothesis of the study. The direct and indirect hypothesis can be assessed through the structural model. For this purpose, the bootstrapping technique was adopted by the researcher. Three hundred ninety-six cases were bootstrapped using 5000 samples. The table below shows the results of the direct results of the study (see Table 4).

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Beta</th>
<th>Standard Error</th>
<th>T-Value</th>
<th>P-Value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM -&gt; ES</td>
<td>0.221</td>
<td>0.056</td>
<td>3.959</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>JA -&gt; EM</td>
<td>0.229</td>
<td>0.043</td>
<td>5.298</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>JA -&gt; ES</td>
<td>0.327</td>
<td>0.053</td>
<td>6.179</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>JSEC -&gt; EM</td>
<td>0.344</td>
<td>0.050</td>
<td>6.916</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>JSEC -&gt; ES</td>
<td>0.144</td>
<td>0.044</td>
<td>3.272</td>
<td>0.001</td>
<td>Accepted</td>
</tr>
<tr>
<td>PP -&gt; EM</td>
<td>0.185</td>
<td>0.044</td>
<td>4.241</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>PP -&gt; ES</td>
<td>0.165</td>
<td>0.047</td>
<td>3.537</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Note: EM= employee motivation, ES= employee satisfaction, JA= job autonomy, JSEC= job security and PP = promotional practices

The direct results of the study are based on the basis of T-values and P-Values. In order for a relationship to be significant, minimum t-value should be more than 1.967. in the same vein, the p-value should also be less than 0.005. the table above shows the Beta values, t-values and P-values of the relationship, from the table above its evident that all the t-values and P-values meet the criteria for the relationship to be significant. Thus, all of the direct relationships of the study are proved significant and accepted (see Table 5).

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Beta</th>
<th>Standard Error</th>
<th>T-Value</th>
<th>P-Value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>JA -&gt; EM -&gt; ES</td>
<td>0.051</td>
<td>0.017</td>
<td>3.002</td>
<td>0.003</td>
<td>Accepted</td>
</tr>
<tr>
<td>JSEC -&gt; EM -&gt; ES</td>
<td>0.076</td>
<td>0.022</td>
<td>3.495</td>
<td>0.001</td>
<td>Accepted</td>
</tr>
<tr>
<td>PP -&gt; EM -&gt; ES</td>
<td>0.041</td>
<td>0.015</td>
<td>2.773</td>
<td>0.006</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Note: EM= employee motivation, ES= employee satisfaction, JA= job autonomy, JSEC= job security and PP = promotional practices

Mediation results of the study are mentioned in table 5 above. T-statistics and p-values both are used in order to assess the mediating relationships as well. It is evident from table 5 that employee motivation mediates statistically among Job autonomy, job security, promotion and job satisfaction of employees (see Figure 3).
After assessing structural model of research, the following step is to find out the coefficient of determination of the model. It is the most important criteria, also known as R Square (Sarstedt, Ringle, Henseler, & Hair, 2014). The values of R square show the variance cause independent variables by the predicting variables of the study (Cohen, 1988). The criteria of R square are proposed by Cohen (1988) according to which minimum acceptable value of $R^2$ is 0.02 which is considered as a week, the value of 0.13 is the moderate value whereas 0.26 is the substantial value. The values obtained of $R^2$ in the present study are substantial, as mentioned in the table 6 below.

<table>
<thead>
<tr>
<th>R Square</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EM</td>
<td>0.279</td>
</tr>
<tr>
<td>ES</td>
<td>0.352</td>
</tr>
</tbody>
</table>

*Note: EM= employee motivation, ES= employee satisfaction*

After the evaluation of R square, the next step is to assess the effect size of the relationships. It is critical to assess the effect size to verify that removing a certain variable from the research model will have an impact which can be considerable on the dependent constructs. The effect size of 0.02 is considered small, and it is the minimum acceptable value of effect size. Table 7 below shows the effect of size-independent variables on dependent variables (Joseph F Hair, Ringle, & Sarstedt, 2013).
<table>
<thead>
<tr>
<th>Table 7. Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>EM</td>
</tr>
<tr>
<td>JA</td>
</tr>
<tr>
<td>JSEC</td>
</tr>
<tr>
<td>PP</td>
</tr>
</tbody>
</table>

*Note: EM= employee motivation, ES= employee satisfaction, JA= job autonomy, JSEC= job security and PP = promotional practices*

In the end, blindfolding approach is adopted by the researcher in the present study to cross-validate the general predictive relevance of the model. This approach is also known as Q square value. As recommended by Chin (2001), the value of the blindfolding should be non-zero. The table below shows the blindfolding of the present study meets the proposed criteria (see Table 8).

<table>
<thead>
<tr>
<th>Table 8. Blindfolding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>EM</td>
</tr>
<tr>
<td>ES</td>
</tr>
</tbody>
</table>

*Note: EM= employee motivation, ES= employee satisfaction*

5. Conclusion

The current study attempts to explore the relationship among Human resource factors (employee promotional practices, job security and job autonomy), employee motivation and job satisfaction. PLS-SEM is employed in the present study by the researcher. The study findings have emphasized that employee job autonomy is the significant interpreter of employee motivation and job satisfaction. Same results were obtained for employee
motivational practices showing it to be the significant predictor of job satisfaction and employee motivation (Dlodlo & Mahao, 2020; Ghozali et al., 2020; Helmi et al., 2020; Muller & de Klerk, 2020). In the end, job security of the employees also proved to be the significant predictor of employee motivation and job satisfaction. In the same vein, the researcher evaluated the mediating impact of employee motivation between job security, job autonomy, promotional practices and job satisfaction. It is apparent from results of current study that employee motivation mediates significantly between employee promotional practices, job autonomy and job security and job satisfaction of employees. Thus, petroleum sector organizations in Indonesia must focus on these HR factors to develop motivation among employees. Additionally, these HR factors will contribute to job satisfaction, as well (Muller, 2020; Mnini & Ramoroka, 2020; Mnisi & Ramoroka, 2020).

This is the decade of tough competition at the international level in the petroleum sector. Moreover, prices of the oil products around the globe have dropped due to which employees have a fear of losing their jobs. As a result, their motivational level is low. In this scenario, the oil companies should provide job security to the employees by which they will feel motivated. Additionally, job autonomy is also important because employees can plan their tasks which are required to achieve organizational goals as well (Grajetzki, 2020; Hornung, 2020; Hassan & Meyer, 2020; Keyser et al., 2020; De Souza et al., 2020; Dong et al., 2020). At the end, when employees are given a proper chance to advance their career, they feel it to be encouraging and motivated, which is also the major cause of job satisfaction creation. The employee who is satisfied with his job does not leave the organization, work hard to achieve organizational goals and play an vital role in the success of companies. Thus, on the basis of these arguments, it is recommended that oil sector organizations must focus on HR factors and implement them effectively to grow their business.

There are a few boundaries in the present research. Researcher in the present study has examined motivation and job security impacted by three HR factors, namely job security, job autonomy and promotional practices only. For future research, other HR factors like reward system and compensation packages should be used as predictors. Additionally, this model should be tested on other service sector organizations of Indonesia as well. The study results are accommodating for policy makers and practitioners of petrolium sector in Indonesia.

References


MEDIATING EFFECT OF WORK ENGAGEMENT BETWEEN THE RELATIONSHIP OF SELF-EFFICACY, CAREER IDENTITY, WORK ENVIRONMENT AND JOB EMBEDDEDNESS

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Abstract: The prime objective of the current study was to examine the relationship between self-efficacy, work environment, career identity, work engagement and job embeddedness. Furthermore, the mediating association of work engagement is also examined in the proposed model. This study is conducted in the hotel industry of Indonesia. The data was gathered from the workers of different hotels. The response rate of the present study is 75.3%. PLS-SEM tool is used by the researcher for the analysis of the present study on the basis of data collected. The findings of the study point out that work engagement of the employees is significantly impacted by self-efficacy, career identity and work environment, which in turn have a significant link with job embeddedness. Moreover, mediating relationship work engagement is also proved significant statistically in the present paper. The findings of the study fill the gap of limited studies conducted to examine strategies for the creation of job embeddedness among employees. In the end, the results are important for the policymakers of the hotel industry by which they can develop strategies to create work engagement and job embeddedness among employees of the hotel sector.

Keywords: Job embeddedness; work engagement; self-efficacy; work environment; Indonesia


JEL Codes: J24

1. Introduction

In the era of intense competition, employees are the asset of the organization. They are more important for firms operating in the service sector. Therefore, organizations must focus on the factors that can create high job embeddedness among the employees. Such strategies are important because the employees who want to leave the organization, provide poor services and do not produce quality products. Job embeddedness is stated as the combination of forces stopping a person from quitting the work (Yao, Lee, Mitchell, Burton, & Sablinski, 2004). The workers who are more embedded in their job will have less willingness to quit their job. As a result, they will be engaged with the organization and focus on achieving organizational goals (Takawira, Coetzee, & Schreuder, 2014; Chena et al., 2020; Combita Mora, 2020).

In the same context, work engagement is also very significant for the organization as it contributes towards the achievement of goals (Demerouti, Ceronziano, Bakker, & Leiter, 2010; Laužikas, & Miliūtė, 2020; Idris, Adi, Soetjipto, & Supriyanto, 2020; Salleh, Omar, Aburumman, Mat, & Almhairat, 2020; Hitka, Lorincová, Vetráková, Hajdúchová, & Antalík, 2020).

The Performance of the individual, team and overall organization is mainly dependent upon the factor of work engagement. Moreover, the satisfaction of the customers and the financial results of the organization are also dependent upon the factor of work engagement of employees. On the other hand, factors like situational and per-
sonal factors also contribute to the work engagement of individual (Yongxing, Hongfei, Baoguo, & Lei, 2017).

The basic idea of work engagement is being used in literature since long despite that there exists disagreement regarding the real meaning of the term. As there is a lack of definition of the concept, therefore a number of different definitions are presented by the authors regarding the construct. But all of the researchers have an agreement that works engagement is important and beneficial for both organization and individual. The employees who are engaged are expected to perform better at their job (Demerouti et al., 2010). Engaged employees perform better than the non-engaged employees because of positive emotions such as enthusiasm, joy and happiness. If organizations want to create a better workplace with high performance, awareness should be created among the employees regarding their impact on their behaviour (Kuok & Taormina, 2017).

Career identity is very important for an individual. It is considered important to help an employee in order to deal with the problem of shifting careers. Identity of the career is not related to a specific place or role. Its meaning is devised from the sequence of experience of work-related matters. In this matter, career identity plays a very important role and basis to develop a particular identity. Additionally, it helps the individual to define what an individual is and what are the actions which should be taken in the context of a career. Researchers argued that identity is not an individual construct; in fact, it is the complete phenomena which require regular monitoring and identity work (LaPointe, 2010).

In the present business scenario, academicians and practitioners are more concern regarding the workplace environment. The reason for rising concern is that more than half of the time of an individual is spent there. The indoor environment and behaviour of the colleagues impact the abilities, actions, behaviours, concentration, emotional and cognitive state of the individual. As a result, the overall work performance of the individual is impacted (Chandrasekhar, 2011). The environment is the place which is the surrounding of the individual. One important aspect of the environment is the physical work environment which includes tangible elements. These elements are related to office equipment. These elements show the ability of an individual by which he or she can be physically connected to the work environment. Moreover, the quality and nature of the work environment are considered important regarding the way employees perform and interact during their roles. It also includes the emotional, physical and mental states (Madu, Asawo, & Gabriel, 2017).

Organizational success is mainly dependent upon the factor of the employee’s job performance. Motivational level of the individual is impacted by the quality of the workplace environment. When workers emotionally and physically desire to work, then the chances of success of the business rise. It’s also pointed out that the rate of absenteeism is also reduced because of the proper environment in the workplace. As a result, performance can be improved as well. Engagement, productivity and morale of employee is impacted by the workplace environment (Chandrasekhar, 2011). In fact, it has the capability to impact both in a negative and positive manner. In the same context, the workplace environment has the capability to impact the engagement of employee and job embeddedness in both positive and negative manner (Cynthia & Dwi Irvianti, 2015).

Researchers have defined self-efficacy as the level of confidence which an individual has to reach a certain goal. Self-efficacy is also treated as the confidence of the individual which a problem can be tackled while performing any task. It is a very important factor for the enhancement of performance and organizational profitability. The employees who show a high level of self-efficacy are beneficial for the organization because they are willing to new ideas, show a high level of planning and have less error in their work. The employees having a low level of self-efficacy will be having the feeling of anxiety and stress, which will have a negative impact on their output. Additionally, the person who has a high level of self-efficacy are eager to work, flexible, healthy and happy. Thus, self-efficacy is important for organizational output (Glaser & Hecht, 2013).

Indonesia is the fourth most populous country in the world. Moreover, it is one of the beautiful tourist destinations. In this scenario, the number of hotels in Indonesia is rising, which give rise to the need for HR. There is a rapid rise in international tourist in Indonesia since 2016, about 9% every year. In this scenario, hotels should focus on activities and strategies by which they can create job embeddedness and engage the employees in a
long period of time (Mahendradhata, 2019). Hence, the main objective of the present research is to examine the association of self-efficacy, job identity and workplace environment with job embeddedness of the employee. Additionally, the mediating role of employee engagement will be examined, as well.

2. Review of Literature

Job embeddedness

In literature job, embeddedness is described as the combination of forces which force an employee to work in any organization or in other words keep him or her from leaving the job (Yao et al., 2004). Job embeddedness is discussed in the literature as community embeddedness and organizational embeddedness. Researchers pointed out that if the job is not related to posting at different places, organizational embeddedness is the best strategy to retain the customer. Therefore, in the present research, job embeddedness is measured in term of organizational embeddedness. Researchers discussed job embeddedness in terms of connection to the other job aspects the term job embeddedness is relatively a new construct which was initially used by (Mitchell & Lee, 2001). this construct basically represents the factors which are very broad in nature and influence the decision of the employee to leave or remain in the organization (Mitchell & Lee, 2001; Hussain et al., 2020).

Researchers mentioned that the basic characteristic of job embeddedness is the linkage among individual having a job and their fit with the job they are doing. It includes the facilities of the job which they will have to sacrifice if they leave the job (Crossley, Bennett, Jex, & Burnfield, 2007). Basically, job embeddedness is the informal/formal linkage among entities of the job and employees. As the higher will be the link among employee and job entities, the higher will be the likelihood that employee will not leave the organization (Holtom, Mitchell, & Lee, 2006). The term fit is used by the researchers, which shows the compatibility of the employee with job and organization. The higher level of fit will lead to a high job embeddedness level. Another term used by the researcher is the sacrifice which shows the psychological cost one has to bear in case of losing the job. Therefore, higher will be the cost higher will be the job embeddedness (Halbesleben & Wheeler, 2008).

A number of people do not want to leave the organization because of their connection with projects, people and activities at the workplace (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001). Researchers suggested that if the person is more connected to the organization, it is more likely that he or she will stay in the organization (Friedman & Holtom, 2002). Therefore, when an employee leaves the organization, they have to give up of sacrifice a number of things like social networks, routines and perks which are associated with the organization.

Work engagement: Job Embeddedness

Work engagement shows working state, which is positive and also have a constructive impact on the performance of the companies. For the success of the organization, work engagement is the important indicator because it has a very important and key impact on the profitability of the firm, the success of the organization, satisfaction of the customer, reduction of turnover intention, job satisfaction and performance of the employee. The workers having high level of engagement with their jobs show extra-role performance, are active in their jobs, improve their knowledge and skills, help other employees as well, respect the co-workers and have very positive behaviour regarding their (Halbesleben & Wheeler, 2008; Thaker et al., 2020).

It’s been argued that work engagement of an employee most often alters with the passage of time. Work engagement of the employee is not stable all the time. It shows the engagement of work changes with the passage of time on the basis of working conditions. On the other hand, job embeddedness of the employee changes slowly as compared to job engagement. It is because the events around the employee have the capability to impact the job embeddedness. Researchers in a study posits that employee having high organizational resources are more engaged in their workplace. Thus, they are more embedded in their job. In the same context, Halbesleben and Wheeler (2008) empirically found a significant influence of work engagement on job embeddedness,
Career Identity

Career Identity in literature is considered as a phenomenon which is subjective in nature. Career identity consists of dispositions of individual including experience, motives, values, beliefs and attributes. Career identity can be measured through strength, clarity and content (McArdle, Waters, Briscoe, & Hall, 2007). In literature, career identity is discussed in stages to achieve stability in some period of time (Sullivan & Crocitto, 2007). The career identity of the person shows the competency of knowing why, knowing why competency shows the attributes, namely individual values, personal meaning and career motivation. In the new career environment, external trajectories of career are less defined. Therefore, it is important to provide the internal trajectory to an individual especially in the scenario when an employee finds herself/himself outside organizational boundaries. Additionally, the authors mentioned that in the current turbulence environment of career, career identity of an individual must be decoupled with the identity of the organization. Such career identification represents an employee with larger career interest, motivations and personal values. In the time when an employee is having a tough time because of their unemployment can look for jobs based on their career identity (Sullivan & Crocitto, 2007).

Career identity of the employee is referred to as a network or structure in which an employee create linkage of his/ her own competencies, interests and motivations with career roles which are acceptable. Career identity is very important to create work engagement within an individual and for the development of a career within the organization. The researcher emphasized that there exists a positive association between work-based identity and work engagement of the workers (de Braine, Bothma, & Jansen, 2015).

Work Environment

It is very critical for organizations for identifying the aspects that can contribute to employee satisfaction. The perception of employees towards work environment can impact performance, motivation and commitment of the employee. As a result, organizations can gain a competitive advantage over competitors. Employee attitude is impacted by an empowered and motivational work climate. As a result, the attitude of employee gain positivity and performance at the workplace is improved. The work environment, which is effective makes the work environment motivating, satisfactory, comfortable, creative and attractive. As a result, employees get the purpose to work and feel pride as well. There are a number of tools that can be used by organizations to manage their workplace including good physical working conditions, better work as the concept, improve environmental modelling, feedback, rewards, job fit, encouraging environment for human, enhancing the friendly environment, hazard control and noise control (Taiwo, 2009).

The way the workplace is occupied and designed can affect the way employee perceive regarding work, new knowledge creation, employee commitment and performance of the organization. There are a number of research-level cornerstones considered as workplace environmental psychology. The researcher pointed environmental factors showing the immediate environment of job which contain required skills needed to do a job, autonomy, authority and relationship with co-workers and supervisors (Khan, Azhar, Parveen, Naeem, & Sohail, 2011).

Researchers in their study reported a significant relationship among engagement of employee and work environment (Anitha, 2014). Workplace conditions play a very important role to keep an employee working in that firm. New candidates are attracted because of the safe work environment. These candidates try to get a job in the organizations having a safe and comfortable work environment. The role of the work environment is very important as employees always wish to have a job in a safe working place. Past studies found that the work environment plays a very important role to determine employee engagement within the organization. The researcher has mentioned a number of different work environment aspects which can impact the engagement of the employee. Same results were also depicted in the studies conducted by Mohda, Shaha, and Zailan (2016).
Self-Efficacy

In past researches, self-efficacy is defined as the judgement of employees regarding the capabilities to execute and organize the required actions to get the required performance. Researchers pointed out that motivation is involved in self-efficacy, which is related to the high level of job performance (Chaudhary, Rangnekar, & Barua, 2012). In the same context, self-efficacy is also known as affective and cognitive belief in the competency of an individual as an ability assessment of an individual to do a certain task. The work performance of the individual is related to the self-efficacy of the individual, and it is positively related to the persistency behaviour, intensity and initiation (Chaudhary et al., 2012). The belief of an individual regarding self can make a person able to control himself. By this way, they can be who they are and what is their future. Additionally, the belief of a person on himself or herself includes perception regarding their capability in order to deal with a few situations and set the strategies to handle the problem. It is because employees with self-efficacy of high level have the perception that they can handle several different problems at a time. On the other hand, employees who have less confidence cannot fulfil the demand of the work despite having adequate resources at work (Glaser & Hecht, 2013).

Self-efficacy and Work Engagement

Academics argued that self-efficacy is promoted through the personal resources of an employee such as self-efficacy. The employees who possess high self-efficacy will work proactively to alter their social environment. As a result, the positive perception will be influenced by them with the passage of time regarding their work. It is very important for individuals to have confidence regarding their work and tasks. It is because these employees will be assisted this way to complete their work fully with devotion and dedication (Agrawal, Chaudhary, Rangnekar, & Barua, 2012). Thus, work engagement will be enhanced with the passage of time.

It is expected that individuals within an organization pose certain behaviour which will help the organization to achieve its goals. The situation when individuals have higher self-efficacy level, their confidence level will be high regarding the completion of their tasks. Such employees will have to face fewer difficulties in terms of demands related to work. As a result, these employees will be more engaged in their organization and work. Therefore, a high level of self-efficacy is required to enhance or maintain employee engagement (Alessandri, Borgogni, Schaufeli, Caprara, & Consiglio, 2015).

Based on above discussion, the hypothesis drawn are described below (see Chart 1):

**Following hypotheses are developed from the above literature review**

**H1:** Work engagement is significantly in relation with career satisfaction.

**H2:** Career identity is significantly in relation with work engagement.

**H3:** Work engagement is a significant mediator between career identity and career satisfaction.

**H4:** Workplace environment is significantly related to work engagement.

**H5:** Work engagement is a significant mediator between workplace environment and career satisfaction.

**H6:** Organizational policies are significantly related to work engagement.

**H7:** Work engagement is a significant mediator between organizational policies and career satisfaction.

![Chart 1. Research Framework](chart1.png)
3. Methodology

This section of the research shows the way by which the present research was investigated on the basis of the proposed hypothesis. The nature of the present study is quantitative. Primary data was collected for current study analysis from the employees of the Indonesian hotel sector. The researcher assumes that the information obtained from employees is accurate and reliable. Self-administered questionnaires were distributed among employees of hotels. Five hundred thirty questionnaires were distributed. Three hundred ninety questionnaires were collected and used for further analysis of data. The response rate was 73.58%. The items of the study were adopted from past literature. The data was analysed by using smart PLS 3.2.9.

4. Results

After the collection of data, the most important step is to select the appropriate tool for statistical analysis (Sarstedt, Ringle, Henseler, & Hair, 2014). In this perspective, the present study has used SEM, also known as structural equation modelling in order, to quantify the relationship among the variables of the study. SEM is the flexible and appropriate technique for assessing the variables. Additionally, to make the hypothesis of the structural relationships among the variables of the study. For this purpose, structural and measurement models are used (Hair, Ringle, & Sarstedt, 2013). Researchers have used the technique of SEM in a number of studies including universities, firms, construction industry, transportation industry, manufacturing industry and many other sectors.

For the structural equation model, there are two approaches known as CM-SEM, which is the co-variance-based approach. Whereas, other is the component-based approach, also known as PLS. CB-SEM has a tendency for minimizing the variance between the predicted model and sample covariance (Urbach & Ahlemann, 2010; Dalle et al., 2020; Yunani et al., 2020). On the other hand, covariance is maximized among variables through PLS (Hair et al., 2013). A number of different studies have recommended using PLS despite a number of shortfalls of the procedure (Henseler & Ringle, 2009). Despite that, the present study has used PLS-SEM for the analysis among the variables. For this purpose, the present study has used PLS 3.2.9 which have the capability to provide substantial relations among the variables (Figure 1).

Figure 1. Measurement Model

Note: SE= self-efficacy, CI= Career Identity, ENG= Work Engagement, WEN= work environment, JEM= Job embeddedness
The analysis through PLS consist of two stages. The first stage is known as the measurement model. For assessing the validity and consistency of the variables, the measurement model is recommended to be used. Reliability test is conducted for computing the internal consistency of the variables. On the other hand, discriminant validity and convergent validity are computed to test the validity (Hair, Ringle, & Sarstedt, 2012).

Table number 1 displays the outer loading of the items involved in research mentioned that the outer loading of the items should be more than 0.7. therefore, the item CI 7 having loading less than 0.7 was deleted from the analysis (Table 1).

<table>
<thead>
<tr>
<th></th>
<th>CI</th>
<th>ENG</th>
<th>JEM</th>
<th>SE</th>
<th>WE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI1</td>
<td>0.883</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CI2</td>
<td>0.869</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CI3</td>
<td>0.878</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CI4</td>
<td>0.886</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CI5</td>
<td>0.826</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>CI6</td>
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<td></td>
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<tr>
<td>ENG1</td>
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<td>0.937</td>
<td></td>
<td></td>
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<td>ENG2</td>
<td></td>
<td>0.922</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG3</td>
<td></td>
<td>0.938</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JEM1</td>
<td></td>
<td></td>
<td>0.707</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JEM2</td>
<td></td>
<td></td>
<td>0.837</td>
<td></td>
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</tr>
<tr>
<td>JEM3</td>
<td></td>
<td></td>
<td>0.841</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JEM4</td>
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<td>0.846</td>
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<td></td>
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<tr>
<td>JEM6</td>
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<td>0.726</td>
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<td></td>
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<tr>
<td>SE1</td>
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<td>0.855</td>
<td></td>
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<td>SE2</td>
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<td></td>
<td>0.847</td>
<td></td>
</tr>
<tr>
<td>SE3</td>
<td></td>
<td></td>
<td></td>
<td>0.858</td>
<td></td>
</tr>
<tr>
<td>SE4</td>
<td></td>
<td></td>
<td></td>
<td>0.835</td>
<td></td>
</tr>
<tr>
<td>SE5</td>
<td></td>
<td></td>
<td></td>
<td>0.806</td>
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</tr>
<tr>
<td>WEN1</td>
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<td></td>
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<td>0.837</td>
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<td>WEN2</td>
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<td>0.851</td>
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<td>WEN3</td>
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<td>0.849</td>
</tr>
<tr>
<td>WEN4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.799</td>
</tr>
<tr>
<td>WEN5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.798</td>
</tr>
</tbody>
</table>

Note: SE= self-efficacy, CI= Career Identity, ENG= Work Engagement, WEN= work environment, JEM= Job embeddedness

Research has recommended calculating AVE, CR and Cronbach alpha under PLS to determine the convergent validity of variables. It is mentioned that the coefficient that can be used to assess the measurement item’s internal consistency is Cronbach alpha. It reflects that all items of the construct are reliable. Researchers proposed that the value of Cronbach alpha must be higher than 0.7. Instead, CR use standardizes loading, which is an improved measure of internal consistency. It is recommended that the value of CR must be more than 0.7. On the other hand, the recommended criteria for AVE value is minimum 0.5 in order to assess the convergent validity Fornell and Larcker (1981) Table 2 below displays the values of CR, AVE and Cronbach alpha within the acceptable criteria.
Table 2. Reliability and Validity

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s Alpha</th>
<th>rho_A</th>
<th>CR</th>
<th>(AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI</td>
<td>0.931</td>
<td>0.933</td>
<td>0.946</td>
<td>0.745</td>
</tr>
<tr>
<td>ENG</td>
<td>0.925</td>
<td>0.927</td>
<td>0.952</td>
<td>0.869</td>
</tr>
<tr>
<td>JEM</td>
<td>0.894</td>
<td>0.946</td>
<td>0.915</td>
<td>0.645</td>
</tr>
<tr>
<td>SE</td>
<td>0.896</td>
<td>0.897</td>
<td>0.923</td>
<td>0.706</td>
</tr>
<tr>
<td>WE</td>
<td>0.885</td>
<td>0.888</td>
<td>0.916</td>
<td>0.684</td>
</tr>
</tbody>
</table>

Note: SE= self-efficacy, CI= Career Identity, ENG= Work Engagement, WEN= work environment, JEM= Job embeddedness

In the present study, Fornell and Larcker (1981) criteria are used to assess the discriminant validity of the data. Discriminant validity shows the variables of research are related to each other. Discriminant validity is determined if every variable’s AVE is more than the maximum square of remaining variable. As per criteria, discriminant validity is used to (Table 3).

Table 3. Discriminant Validity

<table>
<thead>
<tr>
<th></th>
<th>CI</th>
<th>ENG</th>
<th>JEM</th>
<th>SE</th>
<th>WE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI</td>
<td>0.863</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG</td>
<td>0.326</td>
<td>0.932</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JEM</td>
<td>0.495</td>
<td>0.607</td>
<td>0.803</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SE</td>
<td>0.276</td>
<td>0.368</td>
<td>0.412</td>
<td>0.840</td>
<td></td>
</tr>
<tr>
<td>WE</td>
<td>0.172</td>
<td>0.428</td>
<td>0.373</td>
<td>0.210</td>
<td>0.827</td>
</tr>
</tbody>
</table>

Note: SE= self-efficacy, CI= Career Identity, ENG= Work Engagement, WEN= work environment, JEM= Job embeddedness

On the basis of above-mentioned rules and tables, the measurement model was assessed in the present study. The values of AVE are more than 0.5, as mentioned in table 2. Moreover, the value of CR and Cronbach Alpha is more than 0.7.

After the successful assessment of the measurement model, the next step is the structural model. This step is used to assess the proposed hypothesis of the study. For this step, the bootstrapping method was adopted in which 390 cases were run at the subsample of 5000. As a result, p values, t values and path coefficients were obtained along with standard errors. Path coefficient shows the beta coefficient of the study. On the other hand, for a relationship to be significant, cut-off t-value is 0.967 at the level of significance of 5%.

The results of the direct hypothesis proposed are mentioned in the table below. The values of the table 4 show all of the proposed relationships have a significant relationship with each other.

Table 4. Direct results of the study

<table>
<thead>
<tr>
<th></th>
<th>Original Sample (O)</th>
<th>Sample Mean (M)</th>
<th>Standard Deviation (STDEV)</th>
<th>T Statistics ((O/STDEV))</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI -&gt; ENG</td>
<td>0.201</td>
<td>0.202</td>
<td>0.050</td>
<td>4.063</td>
<td>0.000</td>
</tr>
<tr>
<td>ENG -&gt; JEM</td>
<td>0.607</td>
<td>0.608</td>
<td>0.028</td>
<td>21.376</td>
<td>0.000</td>
</tr>
<tr>
<td>SE -&gt; ENG</td>
<td>0.240</td>
<td>0.240</td>
<td>0.056</td>
<td>4.305</td>
<td>0.000</td>
</tr>
<tr>
<td>WE -&gt; ENG</td>
<td>0.343</td>
<td>0.343</td>
<td>0.052</td>
<td>6.537</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Note: SE= self-efficacy, CI= Career Identity, ENG= Work Engagement, WEN= work environment, JEM= Job embeddedness
Mediation results are also obtained by using the bootstrapping procedure. To examine the result, t value criteria is followed in these results as well. The findings of the study show employee engagement with work significantly mediate between career identity, self-efficacy, work environment and job embeddedness statistically. Mediation results are mentioned in table 5 below. Structural model is presented in Figure 2.

**Table 5. Mediation results**

| CI -> ENG -> JEM | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|------------------|-----------------|--------------------------|----------------|----------|
| 0.122            | 0.123           | 0.032                    | 3.856          | 0.000    |
| SE -> ENG -> JEM | 0.146           | 0.036                    | 4.070          | 0.000    |
| WE -> ENG -> JEM | 0.208           | 0.034                    | 6.147          | 0.000    |

*Note: SE= self-efficacy, CI= Career Identity, ENG= Work Engagement, WEN= work environment, JEM= Job embeddedness*

To determine the validity of currently proposed model, Cohen (1988) proposed R square measure, which can be sorted as latent variables to be substantial, moderate and weak. Basically, R square is the measure of variance in the study explained on the DV as a result of IV. R square is utilized to assess predictive accuracy of the model (Sarstedt et al., 2014). Table 6 below shows R square values to be substantial.

**Table 6. R square**

<table>
<thead>
<tr>
<th></th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG</td>
<td>0.301</td>
</tr>
<tr>
<td>JEM</td>
<td>0.368</td>
</tr>
</tbody>
</table>

*Note: ENG= Work Engagement, JEM= Job embeddedness*

Another important aspect is the assessment of the effect of independent or predictive constructs on the outcome variables. These values of the present study are mentioned in table 7 below.
5. Research Conclusion

The present research tried to explore the effect of self-efficacy, career identity, and workplace environment of work engagement and job embeddedness of the hotel sector employees. Additionally, the mediated impact of work engagement is assessed as well in the study. For the analysis of the present study, the researcher used
PLS-SEM. The data was gathered from the hotel workers in Indonesia. From the results obtained after the data analysis, it is revealed that self-efficacy of the employee, work environment and career identity among employees is very important to create work engagement among employees (Chipeta et al., 2020; de Klerk, 2020; Al-Husseini, 2020; Al-Tufaili, 2020). The person having a high level of self-efficacy will be focused towards his goals, tasks and objectives. On the other hand, the workplace environment in which an individual is working also plays an important role to engage an employee. The environment of the worker should be friendly, neat, clean, hygienic and good relationship should be developed among all employees. On the other hand, career identity must be developed among employees, so they want to be engaged in the hotel industry. Engagement of the employee is important in the hotel industry because of the rise in tourism since last four years. But in current pandemic also, hotel industry firms must try to focus on adopting strategies that can create engagement and job embeddedness among employees. In the case of high job embeddedness, employees do not want to switch the organization. It is very important for service sector organizations to provide quality services to clients (Matthews & Mokoena, 2020; Makhalima, 2020; Meyer & Hassan, 2020; Yun, 2020; Brichieri-colombi, 2020).

The study results also support the mediation hypothesis of the study proposing work engagement mediates among career identity, self-efficacy, work environment and job embeddedness. This implies that if organizations in the hotel industry focus on the work environment at the workplace, it will lead to the creation of work engagement among employees which will create job embeddedness among employees. As a result, employees will not want to leave the firm. Same is in the case of career identity and self-efficacy. Firms should focus on developing career identity within the employee, so they want to be associated with this career. Same is with the case of self-efficacy (De Bruyn, 2020; Dunga, 2020; Antelm-Lanzat et al., 2020; Caliskan & Zhu, 2020). There is a certain limitation in this study as well. Three important factors, namely self-efficacy, work environment and career identity, are assessed in the present research to create work engagement and job embeddedness. Their role should be examined to create employee loyalty. Moreover, the model assessed in the present study should also be tested in any manufacturing industry firm. The findings of current research might be helpful for the policymakers of the Indonesian hotel industry.

References


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ENHANCING LITERATURE ON PROCEDURAL JUSTICE AND ORGANIZATIONAL LEARNING: EXAMINING MEDIATING ROLE OF ORGANIZATIONAL LEARNING AND ORGANIZATIONAL TRUST

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Abstract. The purpose of the present research was to explore the impact of procedural justice on organizational learning, employee knowledge sharing, and organizational trust. The present study also examined the mediating effect of organizational trust and knowledge sharing as well. The researcher adopted a survey method for the collection of data in the present study. The data was collected from the employees of automobile firms in Indonesia. The valid response rate of the data collected was 63.27%. For the analysis purpose, the study used PLS 3 software. The findings of the study support all of the proposed direct and mediation hypothesis. The study contributes to filling the gap of few studies regarding HR factors to enhance the organizational learning in the automobile sector of Indonesia. The present study is also helpful for the policymakers of the automobile sector and academicians of HR to better design their strategies for organizational learning and to achieve long term goals.

Keywords: Procedural Justice; Organizational Learning; Organizational trust; employee knowledge sharing; Indonesia


JEL Codes: J24

1. Introduction

In the area of human resource, trust is the main factor among job feedback, evaluation, performance, placement, job security, job duties, promotion, compensation, development and training. With the help of structures, organizations can develop and enhance the level of trust among employees. Basically, this is the process by which trusting has become successful. Since decades, the relationship among trust-based relationships within firms has remained the topic of discussion. Since the last three decades, this construct is positioned as the base of the quality of relationships among employees. Moreover, trust among employees is key for organizations to gain a competitive advantage. In order to achieve long term stability within the firm, the trust among employees and groups of employees is very critical. Researchers have mentioned that for the productive and positive social process, trust is the most important element. In the end, it’s been mentioned by Guinot, Chiva, and Mallén (2013), that trust is the major factor for the smooth operations of organizational processes (Guinot et al., 2013; Hernandez & Prieto, 2020; King & Samaniego, 2020).

In management sciences, organizational learning is the field that has grown rapidly, and researchers have provided a lot of attention to this concept. Scholars have defined it from a number of different perspectives. Researchers have recognized learning as knowledge as well as the process of gaining knowledge. Organizational learning is early defined as the organizational actions having a lot of information including news, ideas, methods and knowledge through a number of ways having the perspective of macro-level. It’s been established
by a number of scholars that organizational learning has a very key role to play to enhance the organizational commitment among employees and develop a competitive advantage for the firm. During the organizational learning process, organizations deal with the available information and use it for the benefit of the organization (Lin & Sanders, 2017; Hussain et al., 2020).

Organizational learning is the behaviour of the organization, which is mostly implemented and practices in learning firm. Among other important aspects of learning firm, organizational learning is an important one. Researchers mentioned that there is a difference between learning organization and organizational learning. They both are different terms. Basically, organizational learning is the concept which is used to define a different kind of activities which take place in a firm. On the other hand, a learning organization is a certain type of organization. It is key to understand that there exists a relationship between these two terms. It is pointed out that organizational learning is the addition of the individual level of learning within a firm, having more emphasis on individuals who have the responsibility of learning and perform to achieve a collective goal. Whereas, a learning organization is the outcome of OL. One of the most important features of learning organizations is organizational learning due to which resources related to knowledge are effectively utilized to improve the performance (Gilaninia, Rankouh, & Gildeh, 2013).

In the present century, competition among the organization is increased because of globalization, rise in population, and technological advancement. Therefore, it is important for organizations to alter their strategies and policies. Therefore, there is need of time that organizations need to develop strategies for practices of knowledge management. It is very important for sustainable organizational development. In order to develop knowledge management practices within the organization, knowledge sharing is the key (Bolisani & Bratianu, 2018). Importance of knowledge sharing among employees is mounting as well to enhance organizational performance. Opportunities for both public sector and private sector firms are created because of knowledge sharing activities of the organization. The activities of individuals to distribute and transmit the available knowledge among organizations, groups and individuals is known as knowledge sharing. For the long-term survival and sustainable development of the organization, efficient and effective knowledge sharing is important. Basically, knowledge sharing is the knowledge movement among of organization who collaborate and help each other to implement the policies, new idea development, and to solve the problems (Mohajan, 2019).

Procedural justice is the concept which is complimentary, and it is related to the employees make judgements regarding fairness and results in case of their interaction with other employees. Procedural justice is the level at the procedure of organization are taken as fair. The term free procedure means there exists no biasness in terms of procedure, it is applied equally to all level of employees, and using accurate as well as timely information so the proper decision can be made and have the capability to correct the wrong decision (Roberts & Herrington, 2013).

Around the globe, the automotive industry plays a very important role in the growth of the national economy. The automobile industry contributes more than 10.16% in global GDP. There is a rise in the exports of automotive industry products manufactured in Indonesia. According to the statistics of 2017-18, Indonesia is the 17th largest producer of the automobile in terms of passenger vehicles around the globe (Nurcahyo & Wibowo, 2015). Moreover, currently, Indonesia is the fifth-largest vehicle producer in Asia. In this immense competition, organizations must focus on the strategies to enhance their organizational learning so they can compete with other organizations. Therefore, the aim of this study is to examine the impact of procedural justice on organizational learning with the mediation of knowledge sharing and organizational trust.

2. Literature Review

Organizational Learning

Researchers have defined organizational learning as the process of organization which is learned by the employees to alter and improve their behaviour by absorbing new knowledge. It also involves an important accumulation of knowledge and development of knowledge in order to achieve and increase organizational value.
In the same context, studies have defined organizational learning as the process by which performance of the organization can be improved by the managers by advancing the employee’s learning capability keeping in view their role on organizational performance (Werlang & Rossetto, 2019; Grabara et al., 2020).

Researchers pointed out four stages of organizational learning. These four stages include the generalization of results after discovering, invention and production of results. Organizational learning is based on a number of organizational actions including memory, information interpretation, distribution of information and acquisition of knowledge which impacts the positive development of knowledge (Sharifi & Eslamieh, 2008). The basic objective of learning for the firm is to act in a participative way for the opportunities of learning. The main objective of learning is to understand the amount at which organizations have the capability to learn (Khatri, Gupta, Gulati, & Chauhan, 2010).

Mechanism of learning is the context which is used to improve the opportunities of learning. Organizational learning mechanism is cultural and structural aspects which facilitates the revision and development of the learning organization. There are a number of factors involved in cultural values, including behaviour, assumptions, role, attitudes, norms, beliefs and common values which provide the best learning opportunities. Aspects of structural learning are the arrangement of the institution in terms of procedure and structure, which allow the firm to perform different tasks in a systematic way. These tasks include distribution, storage, analysis, collection and using the information which has a relationship with the effectiveness of the organization. Learning within the firm is affected by both cultural and structural aspects in all levels of organizations, including entire organization, team and individual employees (Gilaninia et al., 2013).

According to Riahi (2009), following elements are included in the organizational learning mechanism: (1) environment of learning (2) identifying the development and learning needs (3) practising the learned knowledge and (4) fulfilling the development and learning needs and learning organization and organizational learning two concepts which are different totally. Organizational learning deals with the processes which are followed within the organization, whereas learning organization are the certain type of organizations. Organizational learning capability is the base of organizational competitive advantage and the source for the organization to be successful. The aspects of organizational learning capability include teamwork, transfer of knowledge, rewards, empowerment, the commitment of leadership and mission and vision of the organization. Through learning, organizations can improve their performance and can develop new capabilities.

Procedural Justice

Schulte, Lehmann-Willenbrock, and Kauffeld (2015) defined procedural justice as the group level cognition regarding the way these group members are treated. There are three critical criteria of procedural justice include the level to which organizational process (a) provide the opportunity to employees to share their opinion and can impact the organizational outcome (b) is applied constantly (c) is moral and ethical.

Procedures within the firm are considered just and equal when opportunities are provided, have the chances to practice control on the process of decision making and over the decisions which lead to results. Through the procedures, employees can share their opinion with others and can share their feelings regarding the organization as well. Researchers in a study conducted on the employees of information system specialists observed that there exist significant association among procedural justice with information sharing, non-monetary rewards, development of skills and practices regarding fair rewards. If organizations follow the fair procedures, it shows that organization care regarding the organization and takes initiatives to support them. The scenario when the management of the organization provides procedural justice perception to the employees, employees, will be felt supported through the firm. This perception will lead to the development of organizational trust. Confidence of the employees will be shaken as the result of procedural justice which depends on the organization for the fulfilment of their needs. If these rules are violated, employees will develop the perception that they are not taken cared for by the firm. Researchers argued that social motivation is determined by procedural justice in order to create cooperation among employees (Paré & Tremblay, 2007; Dalle, Siyoto, Astika, Negara, Chandra, &
In the same context, Walumbwa, Wu, and Orwa (2008) mentioned that if employees have the perception that they are being treated fairly by the management of the organization, they will like to be involved in extra job roles and activities of the firm. Procedural justice is basically the signal from the leaders of the organization to employees that they are valuable by the organization and leaders. Procedural justice is the key to shape the behaviors of the individual with the passage of time. As a result, organizational learning is enhancing, as well. On the basis of the above arguments, it’s been hypothesized that:

H1: Procedural justice impacts organizational learning significantly.

Organizational Trust

There exist different types of trust having the distinction on the bases of trustee’s nature. A person can develop interpersonal trust known in particular people, or one can have impersonal trust in an organized system. The present study is focusing on organizational trust in the overall system. The basis of organizational trust in terms of the impersonal trust is on reputation, systems, and roles. On the other hand, the basis of interpersonal trust are individuals and their relationships with others. There exists a complex relationship between the relationship and operations of the organizations. Whereas, these relationships are very dispersed and changing rapidly as well. Therefore, trust is the potential to develop into a competitive advantage. The point where interpersonal roles are important, organizations can get benefit the implementation of impersonal trust on a complimentary basis. The worker who can trust the firm must have to trust the other employees, supervisors, and colleagues as well, which is one of the kinds of interpersonal trust. Thus, trust by the employee on the organization is basically the evaluation of firm’s trustworthiness on the basis of employee perception, i.e., confidence that organization will perform the act which will be beneficial for the employee or any act will not be performed by the organization which will harm the employee interest.

Employee Knowledge Sharing

Savolainen (2017) have defined knowledge sharing as voluntary action of an individual to convey or spread the information, expertise or skills from one employee, body, or cluster to another. On the other hand, researchers emphasized that employee knowledge sharing needs willingness and enthusiasm at the functional level. One can encourage knowledge sharing in an environment which is practically suitable for having useful information, procedures, and tools.

In past literature, knowledge sharing is defined exchange of skills, experience, knowledge of an employee within all department or firm. There are a number of examples of knowledge sharing that includes the willingness of an employee to actively communicate with colleagues and consult the colleagues actively. Willingness to communicate is known as the donation of knowledge, whereas consulting the colleague is known as collecting the knowledge. There are also examples that sharing of knowledge exist at the organizational as well as individual level. At the employee level, knowledge sharing is to communicate with colleagues and subordinates to get help or to help then so the things can be done efficiently, quickly, and effectively in a better way. For a firm, sharing of knowledge is transferring, reusing, and capturing knowledge on the basis of experience which is available within the firm. Moreover, this knowledge is made available by the firm for other businesses as well (Svetlik, Stavrou-Costea, & Lin, 2007).

There are a number of benefits discussed in the literature in terms of knowledge sharing within the firms. A firm can enhance its productivity, retain the employees, and enhance the employee’s skills as well. In the literature, three factors are discussed regarding knowledge sharing. First of all, the culture of an organization is the key element for the activities of knowledge sharing. The employees can better share the insights and ideas in the
organization where there is a good organizational culture in terms of knowledge sharing (Intezari, Taskin, & Pauleen, 2017). On the other hand, in order to support knowledge sharing, there is a need for knowledge exchange among the employees. In the end, on the basis of process view, knowledge sharing is explored by the researchers from the motivational and intentional perspective (Svetlik et al., 2007).

**Organizational Trust: Relationship with Organizational Learning**

The employer who constantly try to improve its relationship with employees and remain involved with employees at different levels. Organizational learning is referred to as the firm which establishes external and internal knowledge in a struggling environment for the sake of management strategies (Somerville & Farner, 2012). In the past, very limited research is conducted regarding the issue impact of organizational trust on organizational learning. If organizational leaders can transfer the trust among the other employees, it would lead to more trust and cooperation within the organization. On the other hand, organizational trust has a direct impact on organizational learning. In case there is a lack of trust among employees of the organization, the process of organizational learning becomes difficult. In this case, a lot of organizational resources will be spent to create organizational learning (Jiang & Chen, 2017).

H2: Organizational trust significantly relates to Organizational learning.

**Employee Knowledge Sharing: Relationship with Organizational Learning**

Researchers claimed that knowledge sharing and organizational learning are connected directly. The process of knowledge is composed of learning, thinking and sharing component having the relationship of reciprocity. Organizations must have the capability to learn regularly for long-term success and to gain a competitive advantage. For the process of the effective learning process, knowledge and information must be shared among employees. It is reflected in the outcome of the organization, and individual the way information is shared with employees and higher management. Interpretation of information is altered after the information and knowledge are shared among the individuals. It shows that for the interpretation process, it is key to share the knowledge and information among employees. In other words, as the knowledge is collected due to the sharing and learning of knowledge, the result of organizational learning will be different (Yang, 2007).

H2: Employee Knowledge sharing significantly relates to Organizational learning

**Procedural Justice: Relationship with Organizational Trust and Organizational Learning**

Procedural Justice has a strong impact on a number of organizational outcomes. Researchers reported that procedural fairness directly impacts the organizational commitment and trust among the employees. For organizational trust, procedural justice is one of the key antecedents. Trust among employees is enhanced as a result of organizational, procedural justice. Respect for dignity and rights is developed as a result of employee trust. In the same vein, the researcher reported that procedural justice has a significant relationship with organizational trust. Moreover, it is an important element of the organizational learning process (Yadav & Gupta, 2017).

H3: Procedural justice significantly relates to Organizational trust.

H4: Organizational trust is a significant mediator between Procedural justice and Organizational learning.

**Procedural justice; Employee Knowledge sharing and Organizational learning**

It is important for the employees to have the feeling that they are being treated fairly by the organization. If employees have this perception, they will develop trust with the organization, and they will want to remain engaged with the same organization for a longer period of time. The basic reason for this act is the confidence
developed in the organization by the employees. As a result of trust, the employee’s behaviour and attitude towards work are altered positively. The ability of employees to share the information and knowledge is enhanced as well as a result of organizational justice in their procedure. It is because the behaviour of employee regarding sharing the expertise and skills is altered on the level of fairness in the way these employees are treated by the supervisors and top management of the organization (Kim & Park, 2017).

Procedural justice is referred to as an exchange among employees and the organization. Procedural justice deal with a number of procedures such as ethical, representative, correctable, accurate, unbiased and consistent. Despite the fact that the reaction of employees regarding the firm was the main topic of concern in a large number of past studies, but still, the impact of procedural justice on knowledge sharing among employees is less known (Lee & Wei, 2017).

The process which is followed by the organizations for the distribution of incentives, plays a major role in procedural justice such as if every member of the team gets an equal reward when a goal is achieved, most of the team members will feel happy, but the top performer of the team will be discouraged. Whereas, if every member of the team is evaluated on the basis of its performance, and rewarded on the basis of performance, it will lead to the development of motivation among employees to gain knowledge and expertise. Keeping aside, the issue of reward distribution, if the employees have the perception that there exist biases in the evaluation process of the organization, procedural justice will be reduced. As a result, knowledge sharing attitude of the organizational employees will be negatively impacted (Ibragimova, Ryan, Windsor, & Prybutok, 2012).

H5: Procedural justice significantly relates to Employee Knowledge sharing.

H6: Employee Knowledge sharing is a significant mediator between Procedural justice and Organizational learning.

3. Research Methodology

This is a quantitative study in which the impact of predicting variables was assessed on outcome variables. The present study involved primary data. Therefore, for the present study, data were collected from the employees of automobile firms in Indonesia. The data was collected in the form of survey questionnaires designed from the items adopted from past studies. The questionnaires were sent to employees through their emails. From the 610 distributed questionnaires, 389 were returned and used for further analysis. Thus, the valid response rate of the present study was 63.27%. The data collected from the respondents was through questionnaires adopted from past studies using 7 Likert scales. The reason for using 7 Likert scales was that data collected is more accurate and easier to use. Moreover, it shows a better reflection of the respondent ideas. For the analysis of the data collected, the present study uses PLS-SEM for which PLS 3 software was used.
4. Results and Analysis

The present study has opted to use PLS-SEM in the present study instead of other options like CB-SEM and ML-SEM. The path models of PLS create differentiation among constructs through two models, namely, factor model and composite model. In the composite model, there exists no restriction for the covariance among the items of the construct, whereas, the common variable does not determine the covariance of the variable. On the other hand, in the factor model, because of the latent factor, the variance among the items is determined along with a certain random error. Moreover, PLS have the capability to measure the reflective as well as formative models. In the present study, the analysis was performed through PLS 3.0 (See Figure 1).

![Figure 1. Measurement Model](image)

Note: PJ= procedural justice, OT= organizational trust, OL= organizational learning, EKS= employee knowledge sharing

The author of the present study initially analyzed measurement model, which lead to the structural model in the latter half. While analyzing the measurement model, there are five criteria which must be followed. The first criteria are to evaluate the reliability of the individual item. Basically, they are the loadings that are associated with a single variable. The threshold value of loading is 0.707, as proposed by Barclay, Higgins, and Thompson (1995). Table 1 below shows the factor loading of all items involved in the study.

<table>
<thead>
<tr>
<th></th>
<th>EKS</th>
<th>OL</th>
<th>OT</th>
<th>PJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>KS1</td>
<td>0.829</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS2</td>
<td>0.837</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS3</td>
<td>0.818</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS4</td>
<td>0.823</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS5</td>
<td>0.743</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OL1</td>
<td>0.758</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OL10</td>
<td>0.745</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
After the evaluation of loading of the items, it is important to measure the Cronbach Alpha, and composite reliability of the items are evaluated, which are the second and third step of the measurement model respectively. For both of the steps, the threshold value for CR and Cronbach Alpha is minimum 0.70, as mentioned by Bagozzi and Yi (1988). Later Hair Jr, Matthews, Matthews, and Sarstedt (2017) mentioned that factor loading between 0.60 and 0.70 is acceptable, but all the values of factor loading in the present study meet the above-mentioned criteria. After the evaluation of Cronbach Alpha and composite reliability in the present study, the fourth step is to assess the AVE, also known as the average variance extracted of the present study. The minimum threshold value of AVE is 0.50. the values of Cronbach Alpha, AVE and CR of the present study are mentioned in the table 2 below.

### Table 2. Reliability of the items

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s Alpha</th>
<th>rho_A</th>
<th>Composite Reliability</th>
<th>(AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KS</td>
<td>0.871</td>
<td>0.885</td>
<td>0.905</td>
<td>0.657</td>
</tr>
<tr>
<td>OL</td>
<td>0.915</td>
<td>0.916</td>
<td>0.929</td>
<td>0.567</td>
</tr>
<tr>
<td>OT</td>
<td>0.905</td>
<td>0.906</td>
<td>0.927</td>
<td>0.679</td>
</tr>
<tr>
<td>PJ</td>
<td>0.915</td>
<td>0.916</td>
<td>0.936</td>
<td>0.745</td>
</tr>
</tbody>
</table>

Note: PJ= procedural justice, OT= organizational trust, OL= organizational learning, EKS= employee knowledge sharing

In the end, the present study has evaluated discriminant validity by using the HTMT heterotrait-monotrait ratio criteria in the present study. HTMT is a more recent technique to evaluate the discriminant validity of the data. As per the criteria mentioned by Henseler, Ringle, and Sarstedt (2015), the values of HTMT must be less than 0.90. table 3 below shows the values of HTMT meeting the proposed Criteria. Thus, the present study meets all of the criteria for measurement model validation.
Table 3. HTMT Criteria (Discriminant validity)

<table>
<thead>
<tr>
<th></th>
<th>EKS</th>
<th>OL</th>
<th>OT</th>
<th>PJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>EKS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OL</td>
<td>0.637</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OT</td>
<td>0.887</td>
<td>0.621</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PJ</td>
<td>0.661</td>
<td>0.511</td>
<td>0.525</td>
<td></td>
</tr>
</tbody>
</table>

Note: PJ= procedural justice, OT= organizational trust, OL= organizational learning, EKS= employee knowledge sharing

After a successful evaluation of the measurement model, the present study used a structural model for the confirmation of the proposed hypothesis. Beta values were obtained statistically using two-tailed tests by performing the bootstrapping procedure through Smart PLS for the evaluation of the structural model. Five thousand subsamples were run of 389 cases through the bootstrapping procedure. As a result, the author got both direct and indirect results of the study. Table 4 below shows the direct results of the hypothesis involved in the study. As the study involves a two-tailed hypothesis, therefore cut offline for t-value to accept the hypothesis at 95% significance is 1.967. Table 4 below shows all the statistical results of the direct hypothesis proposed earlier.

Table 4. Direct results of the study

| Hypothesis | (O)  | (STDEV) | (|O/STDEV|) | P Values |
|------------|------|---------|--------|----------|
| EKS -> OL  | 0.212| 0.077   | 2.745  | 0.006    |
| OT -> OL   | 0.311| 0.076   | 4.082  | 0.000    |
| PJ -> EKS  | 0.617| 0.042   | 14.738 | 0.000    |
| PJ -> OL   | 0.191| 0.066   | 2.904  | 0.004    |
| PJ -> OT   | 0.478| 0.056   | 8.528  | 0.000    |

Note: PJ= procedural justice, OT= organizational trust, OL= organizational learning, EKS= employee knowledge sharing

It’s evident from the statistical values mentioned in table 4 above that all proposed hypothesis related to direct relationships are supported. EKS impacts OL positively, OT impacts OL significantly and positively, PJ has a significant positive relationship with EKS, PJ has a significant positive relationship with OL, and PJ and OT are significantly related to each other as well.

Table 5. Indirect results of the study

| Hypothesis | (O)  | (STDEV) | (|O/STDEV|) | P Values |
|------------|------|---------|--------|----------|
| PJ -> EKS -> OL | 0.131| 0.049   | 2.685  | 0.007    |
| PJ -> OT -> OL | 0.149| 0.041   | 3.603  | 0.000    |

Note: PJ= procedural justice, OT= organizational trust, OL= organizational learning, EKS= employee knowledge sharing

In the later stage of analysis, the mediation hypothesis was tested as well through the bootstrapping procedure of the present study. In the present study, two mediation results were proposed. First, the mediation result of EKS between PJ and OL. From table 5, its statistically proven that EKS mediated the relationship of PJ and OL. On the other hand, the study proposed mediation result of OT among PJ and OL. This hypothesis in the present study is also supported statistically.

The next phase of the structural model is to assess the values of R square. It is the test to evaluate the impact of independent variables on the outcome variables. For the present study, the criteria of Chin (1998) was followed for the assessment of R square in the present research. It is determined that all predicting or independent
variables have a substantial impact on the outcome variable. It's mentioned in Table 6 below as well. Structural model is presented in Figure 2.

Table 6. R Square values

<table>
<thead>
<tr>
<th></th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>EKS</td>
<td>0.381</td>
</tr>
<tr>
<td>OL</td>
<td>0.387</td>
</tr>
<tr>
<td>OT</td>
<td>0.229</td>
</tr>
</tbody>
</table>

*Note: OT= organizational trust, OL= organizational learning, EKS= employee knowledge sharing*

![Figure 2. Structural Model](image)

*Note: PJ= procedural justice, OT= organizational trust, OL= organizational learning, EKS= employee knowledge sharing*

After the evaluation of the structural model and measurement model through smart PLS, the final stage is to measure the Q square values. As recommended by Stone (1974), the value of Q square must be > 0.

Table 7. Q square

<table>
<thead>
<tr>
<th></th>
<th>SSO</th>
<th>SSE</th>
<th>Q² (=1-SSE/SSO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EKS</td>
<td>1945.000</td>
<td>1500.769</td>
<td>0.228</td>
</tr>
<tr>
<td>OL</td>
<td>3890.000</td>
<td>3058.540</td>
<td>0.214</td>
</tr>
<tr>
<td>OT</td>
<td>2334.000</td>
<td>1979.381</td>
<td>0.152</td>
</tr>
</tbody>
</table>

*Note: OT= organizational trust, OL= organizational learning, EKS= employee knowledge sharing*
The study followed blindfolding procedure at a distance of 7. As mentioned in the values of table 7 above that, all figures of Q square are more than zero. Thus, this proposed criterion is also fulfilled (see Figure 3).

Note: PJ = procedural justice, OT = organizational trust, OL = organizational learning, EKS = employee knowledge sharing

4. Conclusion

For the long term survival of the organizations, it is important that they keep on learning from their internal and external environment. On the basis of these learning, they can alter the strategies to compete with the market. In the same scenario, organization learning is important for automotive firms in Indonesia. Therefore, this research was conducted to assess the impact of procedural justice on employee knowledge sharing, organizational trust and organizational learning. Moreover, the study also examined the mediating role of organizational trust and employee knowledge sharing among procedural justice and organizational learning (Kimanzi, 2020; Klonaridis, 2020; Ghozali et al., 2020; Helmi et al., 2020; Nel & Masilela, 2020; Altouniy et al., 2020).

The findings of the study highlight the importance of procedural justice, employee knowledge sharing and organizational learning. It is important that employees working in the organization must be treated with justice. They must be acknowledged on the team and the individual basis on the basis of their performance. The top performer must be acknowledged differently. It will lead to the quest among employees to gain knowledge and skills to improve their performance. Sharing of knowledge, skills and information is important among employees to achieve long term organizational goals (Heland-Kurzak, 2020; Justice et al., 2020). Moreover, procedural justice will also lead to the development of trust among employees for the organization. If the employees have the perception that the organization want betterment of the employees and will not take any step which will impact the employees’ interest, they will contribute to the organizational learning process (Sgammini & Muzindutsi, 2020; Slusarczyk & Pyplacz, 2020; Brichieri-colombi, 2020; Maluleke, 2020; Mazibuko & Dlodlo, 2020).
There are few shortfalls in the present study just like other studies. The research framework proposed in the present study should be examined in the service sector firm. Moreover, the moderating role of organizational culture should be examined on the path of organizational trust and organizational learning because the culture of an organization plays an important role in shaping the learning of employees within an organization. In the end, the findings of the study are helpful for the policy makers to use HR strategies for the purpose of enhancing their organizational learning.

References


EXPLORING MEDIATING ROLE OF EMPLOYEE STRESS: THE RELATIONSHIP OF WORK OVERLOAD, WORK CONFLICT AND ROLE AMBIGUITY WITH ABSENTEEISM

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Abstract: In order to compete in current international and local markets, organizations must find ways to reduce their cost. One of the reasons for the increased cost of organizations is employee absenteeism. The present study aimed to assess the impact of work overload, role ambiguity, and role conflict on job stress and absenteeism. The present study also explored the mediating impact of stress among mentioned independent variables and absenteeism. The data of the study was collected from the employees working conducted electronic goods-producing firms of Indonesia through convenience sampling. The findings of the study confirmed all proposed hypothesis. The findings of the study fill the gap of few studies tried to identify the role of different factors, creating stress and causing absenteeism among employees of the manufacturing sector of Indonesia. The results of the research are helpful for the policymakers of the sector and HR managers to device policies by which they can engage the employees.

Keywords: Work overload; work conflict; Absenteeism; Role ambiguity; Indonesia


JEL Codes: J24

1. Introduction

The employees were working in the organization play a key role to achieve its financial objectives. HRM and employees are a key component of quality of services, organizational success, organizational performance and competitive advantage. For this reason, a number of authors have studied the role of human and employees for the success of the organization. The important problem being faced by organizations is the absence of employees from the workplace (Čikeš, Maškarin Ribarić, & Črnjar, 2018).

Organizations all around the globe are facing the issue of unfavourable behaviour and attitude of employees. Absenteeism of employees is important behaviour which impacts the organization. Organizations are impacted indirectly and directly because of employee absenteeism because it impacts the cost of producing any good, which in turn impacts the performance of the organization. Moreover, absenteeism also impacts employee morale, waste of money, waste of time, output loss, overtime cosy, quality of goods to be produced, and organi-
izational performance. Basically, absenteeism is the employee’s temporary absence from the workplace due to a number of reasons like personal issues, family matters or illness. Some employees also remain absent from the workplace because they are habitual some researchers treat absence from work due to education, military duty, maternity leave and consider vacations also as the part of Absenteeism (Cucchiella, Gastaldi, & Ranieri, 2014).

There are a number of issues which are creating absenteeism among the employees working in the organization. One of the important reasons being face by employees is stress due to job-related roles. Job stress has a significant role and impact on the output of the organization. The workplace is basically a society which plays a very important role in the performance of an employee. If an employee has stress at the workplace, it will impact individual performance and organizational performance as well (Lorincová et al., 2019; Leon-zarceno et al., 2020; Malkin et al., 2020; Malayer Rodriguez & Vargas Perez, 2020; Martin-Urbano et al., 2020; Laužikas, & Miliūtė, 2020; Indrasiene et al., 2020; Salleh et al., 2020; Hitka et al., 2020; Anguelov et al., 2020).

On the other hand, another important aspect that impacts the overall performance and behaviour of employees is work overload. Workover load is the condition when employees have the extra burden of work, and they have to work extra hours to finish their tasks. The phenomena of work overload have emerged from the term’s extra duties and obligations. The terms are derived from the concept that shared working load is so much that employees have to work extra to fulfil their given tasks (Lyons, Higgins, & Duxbury, 2010).

Another important aspect which impacts the behaviour of employees at workplace is role ambiguity. Cho et al., (2014) explained role ambiguity as to the uncertainty in the mind of employee regarding the scope of the job which is required by them to be performed. Basically, role ambiguity is the state in which employee is ambiguous regarding consequences, behaviours and expectations regarding work and its scope. Thus, role ambiguity is the situation do not have clear guidelines regarding the best way to perform a certain task (Grobelna, 2016).

In combination with role ambiguity, an important aspect that impact employee behaviour is role conflict. Role conflict is the situation which is faced by the employee when more than one requests are received by the top management regarding tasks and goals to be achieved. In both these cases, stress is generated, which is mainly because of the lack of experience of top management and leadership (Ali & Farooqi, 2014).

Above issues always create the problem of stress and dissatisfaction among employees which in result cause absenteeism among employees. This research is crucial because role ambiguity, role conflict and work overload are important issues of a number of manufacturing sector organizations. One of the important sectors in Indonesia is Consumer electronic goods sector. It is expected that this sector will generate a revenue of 5.56 million USD in the year 2020. Moreover, the rate of rising in revenue for next year is also projected to be more than 14% (Raj-Reichert, 2019). If there are role conflict, ambiguity and work overload, employee’s morale will be decreased, causing stress. Therefore, employees are the basic determinant of the performance of this industry. Thus, the main objective of the present study is to examine the impact of workload, role conflict, role ambiguity on Stress and Absenteeism. Moreover, the mediating role of stress will be examined, as well.

2. Literature Review

Employee Absenteeism

In literature, the topic of employee absenteeism is defined and explained by a number of researchers in past studies. Research has defined absenteeism as the disruptive, unjustifiable, unplanned incident. This act is characterized more by a lack of employee’s physical presence at work, for instance, leaving workstation, late coming, extended breaks, and scheduled absents. In the same context, studies defined Absenteeism as Employee’s withdrawal behaviour when it is utilized as a source to get escape for the work environment, which is undesirable. Motivational levels are introduced in this definition to further elaborate it. The motivation of the minimum level is the level when the performance of the employee is less than the required performance. If the employee is performing at doing things at the required level, it is called the expected level of motivation. In the end, moti-
vation at the maximum level is required to do more than necessary. Researchers explained that employees who are performing their tasks at a maximum or minimum level could cause Absenteeism (Løkke Nielsen, 2008).

The difference between voluntary and involuntary absence is well defined in past researches. According to the author, the involuntary absence is beyond the control of the employee, and it includes funeral attendance, sickness leave etc. on the other hand, voluntary absence represents uncertified leaves in which personal objectives of employees are involved. Studies further elaborated the absenteeism and argued three categories of this concept. These categories include unauthorized absence, authorize absence and sick leave (Singh, Chetty, & Karodia, 2016).

**Job Stress**

Researchers stated that job stress is the feeling or perception of the employee regarding the personal disability due to work environment. Job stress in the work environment can be treated as a reaction or stimulus. It can also interact among environment and employee. Researchers have outlined job stress as employees’ condition, which is because of the task assigned, which are beyond the ability of a person and. Moreover, resources are not available as well to complete these duties (Mittal & Bhakar, 2018).

Definition of workplace stress is provided by the Health and Safety Executive (2010) as a reaction which is adverse employees had to perform pressure or other demands put on them. From this definition, it is evident that workplace stress is not only caused because of work at the workplace, but it is also caused by the environment of the organization. Workplace stressed can impact the employee in a number of ways. It can cause a decline in the performance of the employee, lack of motivation and absence (Bhui, Dinos, Galant-Miecznikowska, de Jongh, & Stansfeld, 2016).

Stress is explained as the condition in which an employee is faced with pressure on a constant basis which normally arises in the organization. This pressure is also caused because of family pressure, bad health condition, deadlines and short notices at work. The situation when employees have to face high requirements which are difficult to manage, it impacts the behaviour of the employee. More than 50 per cent of the disease being faced by employees is because of stress. Employees commitment and engagement is also impacted by Stress of Employee (Jalagat, 2017).

**Work Overload**

Work overload is referred to as the high level of tasks related to the job, which may create mental distress among employees. The response of people regarding workload is different. Some employees show frustration, while some of the employees accept it. As employees get promoted in their jobs, their workload is increased due to which their performance is influenced. This is the major concern for the management who want to hire an employee who can perform well. Studies found that pressure at the workplace has the capability to impact job performance significantly. Moreover, the workload is also referred to as the quantity of assignment and activities for which an employee is responsible for the organization. Thus, the workload is the stress which an employee bears because of the work assigned to them (Ali & Farooqi, 2014).

Moreover, work related to the job is considered as freedom source in which employees are encouraged regarding self-fulfilment, self-respect, satisfaction and personal growth. Researcher in the literature pointed out that if any person does not have any work or task to achieve it means life has no engagement or valuable meaning. The workload is considered as the major problem which is being faced by the employees of every sector. Due to this reason, pressure, the timing of duty and working hours are increased by the management of the organization. In literature, few conditions are discussed which may cause job overload. These conditions may include having high expectations from employees in terms of their tasks, high workload, the pressure to work extra, fewer breaks, fewer holidays and high working hours. It may also include few resources, limited time and few resources to achieve the task. For employees, work is not a problem itself. The major problem is to expect extra from the employee, which is more than the normal capacity of a human. In such a situation, employees suffer
from both psychological and mental health issues (Johari, Ridzoan, & Zarefar, 2019; Grabara et al., 2020).

Role Ambiguity

The issue of role ambiguity is faced when the role of an employee for a certain position is poorly defined or not clear. Most of the employees are deviated from their work because of the goals to be achieved are not much clear. For instance, the tasks to be performed by the person are mentioned in an HR document known as the job description. It also includes the skills and qualification which are needed to be met by the person for a certain job. If these points are not clearly or poorly discussed in the job description, it may raise the issue of role ambiguity. Role ambiguity issue is most of the time originated when roles are not clearly defined, its dimensions are not much clear, methods and procedure are not properly elaborated to Employee (Khattak, Ul-Ain, & Iqbal, 2013; Hussain et al., 2020).

In literature, role ambiguity is defined as well as the lack of information which is critical and required by the employee to fulfil a task in a suitable manner. On the other hand, researchers mentioned that ambiguity in roles within a firm is possible. Moreover, these issues can be experienced by a person due to cultural issues as well. In the same vein, different people may have different experience regarding the role of ambiguity within the organization. Four aspects of role ambiguity are discussed by authors as behaviour ambiguity, priority, process ambiguity and expectation ambiguity (Soltani, Hajatpour, Khorram, & Nejati, 2013). On the other hand, it is mentioned that it is very hard to innovate something for NPD without role ambiguity. Therefore, it is important that organizations must encourage the employees to be involved in the process of innovation. Thus, the nature of uncertainty must be determined for NPD. Moreover, researchers also stated that there exists tow kind of ambiguity, namely resource ambiguity and subject ambiguity. In the case of role ambiguity, employees may face the issues of Stress, anxiety and depression (Tang & Chang, 2010).

Role Conflict

When an Employee face occurrence of more than one required role simultaneously, the issue of role conflict is born. As there are more than one tasks to be achieved, therefore the performance of one task impacts the performance of the task. Later studies also used the same idea who pointed out that role conflict makes it impossible for the tasks to be achieved. Moreover, studies have pointed out that employee can feel pressure due to the issue of role conflict.

It is also pointed out that role conflict situations are faced by employees when employees have the perception that their performance will be examined in a different manner among more than one roles, have the view that employer will evaluate the task on the basis of new technology, and the performance will be evaluated by more than one superiors who have different experiences and requirements (Palomino & Frezatti, 2016).

Absence of factors such as differentiation, congruence and consistency creates the issue of role conflict among employees. Role conflict has a direct relationship with the environment of the workplace. Most of the times, this situation is faced when it is important to complete the task, accomplishment of task and duties assigned are not clear, specified and described. Researcher in their study mentioned that role conflict is the difference among the job given to an employee and the performance of the Employee (James, 2003). Role conflict is most of the times caused by role ambiguity in which employee may have to face two or more conflicting tasks. The issue of role conflict is faced, for example, when a salesperson does not have clarity that he has to do alter the assigned territory, or an account must be generated. If both tasks must be done simultaneously, and employee can’t decide priority, the issue of role conflict will rise (Tarrant & Sabo, 2010).

Stress and employee absenteeism

Researchers have defined job stress in the demand of role have origin in the work environment. The common reactions of stress are physical reactions like high cholesterol, psychological like burnout and behavioural like
absenteeism. They are also considered the outcomes of job stress.

When the demand for the job is more than the resources of the job, there are chances that stress will be produced. In this scenario, the employee may try to may opt to withdraw in order to avoid stress. In organizations, employees can avoid work in the form of absenteeism. It is the observable outcome due to which effort and time are changed. In the same way, researchers observed that withdrawal of work has a connection with job stress. It is because there are a number of factors due to which employees want to remain absent from work. In the same context, a study has found that nurses in a hospital had high absent rate due to stress at the workplace (Westman & Etzion, 2001).

H1: Stress and Employee Absenteeism are significantly related to each other.

Work overload and stress

A number of psychological, as well as physiological reactions, are faced by employees because of work overload. Basically, work overload is the hypothetical state which is influenced by the workplace environmental forces. They are demonstrated by a number of social, psychological and physiological reactions at different levels. Researchers mentioned that despair, fear, frustration, helplessness, anxiety and depression are psychological consequences. In past literature, researchers have given priority to stress. They have described the causes of stress. One of the major reasons to create stress is work overload. Work overload is faced by the employees in case of no adjustment among employees and organizational goals. Employees suffer a number of issues because of work overload, including substandard work performance, anxiety and most importantly, stress. As a result, employees want to remain absent from work and the profit of the organization is declined (Altaf & Awan, 2011).

Studies have reported a number of factors which cause stress among employees at the workplace. One of those Stress causing reason identified was heavy workload due to which employees did not get the chance to get relax. The impact of work overload on every employee is different. Some may be affected as more stressed, and some may not get stressed at all. The amount of work quantifies work overload, which creates stress among employees working in the organization (Abbasi, 2015).

H2: Work overload and stress are significantly related to each other.

H3: Stress is a significant mediator between Work overload and employee Absenteeism.

Role Conflict and Stress

Employees face the issue of role conflict when they have work demand which is incompatible. The case of role conflict rises when more than one supervisor demands more work from employees. Studies conducted regarding stress found it to be the major factor which causes stress among employees. The jobs where there exists lack of description regarding what needs to be done and the procedure to perform the task face the issue of role conflict which creates stress among employees (Khattak et al., 2013).

Researchers mentioned that the situation when employees are expected with incompatible goals, stress will be experienced by the employee. Therefore, there is a negative impact of role conflict on the state of mind of Employee (Safaria, Othman, & Wahab, 2011).

H4: Role Conflict and Stress are significantly related to each other.

H5: Stress is a significant mediator between Role Conflict and Employee Absenteeism.
Role ambiguity and stress

Basically, role ambiguity is the absence of consistent and important information. Because of a lack of clear responsibilities and SOP’s by the organizations, employees face the issue of role ambiguity. Researchers have found that due to an increase in responsibility, adjusting the work according to the skills of employees, may cause stress among the employees.

The level at which there exists ambiguity in the work of an employee is the widely studied topic in the field of research. Its role in creating stress among employees is not clear so far. Uncertainty is experienced by the employees who face the problem of role ambiguity. There exists a link between job stress, the requirement of work, absence of clarity of work and role ambiguity. Therefore, role ambiguity has a positive impact on work stress (Ram, Khoso, Shah, Chandio, & Shaikih, 2011).

H6: Role ambiguity and stress are significantly related to each other.

H7: Stress is a significant mediator between Role ambiguity and Employee Absenteeism.

Research Framework is presented in Graph 1.

Graph 1. Research framework

3. Research Methodology

The data in the present study were collected from the employees working in consumer electronic manufacturing organizations. For this purpose, the researcher adopted approach survey method. Data was distributed among 475 employees working in electronic manufacturing firms of Indonesia. The sampling procedure used by the researcher was convenience-based sampling. Total of 409 questionnaires was received back. Out of the received questionnaires, 12 were omitted because they were incomplete. Thus, the remaining 397 questionnaires were used for further analysis. Thus, the response rate of the study was 83.57%. Measurement items used in the present study adopted from the past studies on the basis of seven Likert scales having a range from 1 to 7. In this scale, 1 represent strongly disagree, and 7 represent strongly agree. For the analysis of the data collected, the researcher has opted PLS 3, which is discussed in the next section below.
Instrumentation

The items of research variables were adapted from several past studies. Employee Absenteeism had three items taken from (Abdullah & Lee, 2012). Stress was adapted from (Abdullah & Lee, 2012) who measured the job stress of employees based on four items. Work overload and Role ambiguity were measured with six items adapted from (Karatepe, 2013) and (Faucett, Corwyn, & Poling, 2013) respectively. Role Conflict was measured with seven items adapted from (Faucett et al., 2013).

4. Results and Analysis

As mentioned above, the present study has adopted PLS-SEM for the analysis of the data. The author used PLS-SEM for the assessment of structural and measurement model (Joseph F Hair Jr, Hult, Ringle, & Sarstedt, 2016). Basically, the analysis of the data through PLS is based on two steps, namely, measurement model and structural model. SEM is the data analysis technique which is second generation multivariate technique. This technique has controlled the shortfalls of the first-generation method of SEM. Researchers pointed out that SEM is a very good tool to evaluate the multiple relationships of more than one variable at the same time. In order to assess the interrelationships of the structural equations, SEM has the power to perform the tasks. SEM has the capability to evaluate both additive and linear relationships of the model; therefore, this test is applied in the present study (Chin, 1998).

For PLS-SEM, the researcher has used PLS 3 software which has two steps, i.e. measurement model and structural model. The measurement model is important for the determination of loading and convergent validity of the data. In lune of the Joe F Hair Jr, Sarstedt, Hopkins, and Kuppelwieser (2014), the convergent validity of the constructs are achieved if the factor loading of the items meet the minimum criteria’s. The factor loading of the item is mentioned in the table below (Figure 1).

![Figure 1. Measurement Model](image-url)

The first step is to assess the loading of the items involved in the study. The loading of items should be minimum 0.708 for further analysis of the study. The values mentioned in table 1 below the recommendations are met in the present study. All values are well above the minimum acceptable figure of 0.708. The minimum value is of RC7 is 0.772, and the maximum value is of ABS of 0.928.
Table 1. Loading of the items

<table>
<thead>
<tr>
<th></th>
<th>AB</th>
<th>RA</th>
<th>RC</th>
<th>ST</th>
<th>WL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS1</td>
<td>0.896</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABS2</td>
<td>0.928</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABS3</td>
<td>0.917</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RA1</td>
<td></td>
<td>0.889</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RA2</td>
<td></td>
<td>0.852</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RA3</td>
<td></td>
<td>0.868</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RA4</td>
<td></td>
<td>0.856</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RA5</td>
<td></td>
<td>0.847</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC1</td>
<td></td>
<td></td>
<td>0.810</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC2</td>
<td></td>
<td></td>
<td>0.843</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC3</td>
<td></td>
<td></td>
<td>0.847</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC4</td>
<td></td>
<td></td>
<td>0.871</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC5</td>
<td></td>
<td></td>
<td>0.822</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC6</td>
<td></td>
<td></td>
<td>0.845</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC7</td>
<td></td>
<td></td>
<td>0.772</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ST1</td>
<td></td>
<td></td>
<td></td>
<td>0.923</td>
<td></td>
</tr>
<tr>
<td>ST2</td>
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<td></td>
<td></td>
<td>0.892</td>
<td></td>
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<td>0.926</td>
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</tr>
<tr>
<td>ST4</td>
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<td></td>
<td>0.887</td>
<td></td>
</tr>
<tr>
<td>WL1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.917</td>
</tr>
<tr>
<td>WL2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.903</td>
</tr>
<tr>
<td>WL3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.906</td>
</tr>
<tr>
<td>WL4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.872</td>
</tr>
<tr>
<td>WL5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.869</td>
</tr>
<tr>
<td>WL6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.869</td>
</tr>
<tr>
<td>W14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.912</td>
</tr>
</tbody>
</table>

Note: ABS = absenteeism, ST = stress, WL = work overload, RC = role conflict, RA = role ambiguity

It is also important to evaluate the reliability and internal consistency of the scales involved in the study (McCrae, Kurtz, Yamagata, & Terracciano, 2011). To evaluate the validity and reliability of the data collected through data collection, different tests are performed like discriminant validity, Cronbach alpha, AVE and Composite reliabilities.

The next step is to assess the validity and reliability of the data. Cronbach Alpha and composite reliability test are calculated. Internal consistency of the data is shown through Cronbach Alpha analysis. The acceptable value of Cronbach Alpha is more than 0.70. on the other hand, an acceptable range of composite reliability is above 0.70 as well. Table 2 below shows the value of CR and Cronbach alpha is meeting the minimum acceptable criteria.

Table 2. Reliability and internal consistency

<table>
<thead>
<tr>
<th></th>
<th>Cronbach's Alpha</th>
<th>rho_A</th>
<th>Composite Reliability</th>
<th>(AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>0.901</td>
<td>0.904</td>
<td>0.938</td>
<td>0.835</td>
</tr>
<tr>
<td>RA</td>
<td>0.914</td>
<td>0.917</td>
<td>0.935</td>
<td>0.744</td>
</tr>
<tr>
<td>RC</td>
<td>0.925</td>
<td>0.932</td>
<td>0.940</td>
<td>0.690</td>
</tr>
<tr>
<td>ST</td>
<td>0.928</td>
<td>0.929</td>
<td>0.949</td>
<td>0.823</td>
</tr>
<tr>
<td>WL</td>
<td>0.951</td>
<td>0.953</td>
<td>0.961</td>
<td>0.804</td>
</tr>
</tbody>
</table>

Note: ABS = absenteeism, ST = stress, WL = work overload, RC = role conflict, RA = role ambiguity
The next step is to evaluate the AVE of the data. Minimum acceptable value for the acceptability of AVE is 0.50. Table 2 above showing this criterion is also met by the research. Therefore, all items of the study have a high level of convergent validity.

In the next phase, the discriminant validity of the constructs is assessed.

Determining discriminant validity is the next step of the analysis. In this scenario, studies mentioned that discriminant validity shows the point to which there is a difference among the latent variables. The values of AVE were used in the present study for the prediction of discriminant validity. Through the correlation among the AVE’s square root values and latent variable’s correlation, discriminant validity was obtained (Fornell & Larcker, 1981).

The values mentioning at the diagonal should be more than the remaining values of the construct. Values of table 3 below show this criterion is also meet.

Table 3. Discriminant Validity: Fornell and Larcker (1981)

<table>
<thead>
<tr>
<th></th>
<th>AB</th>
<th>RA</th>
<th>RC</th>
<th>ST</th>
<th>WL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>0.914</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RA</td>
<td>0.436</td>
<td>0.862</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC</td>
<td>0.527</td>
<td>0.310</td>
<td>0.831</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ST</td>
<td>0.564</td>
<td>0.470</td>
<td>0.593</td>
<td>0.907</td>
<td></td>
</tr>
<tr>
<td>WL</td>
<td>0.418</td>
<td>0.274</td>
<td>0.403</td>
<td>0.524</td>
<td>0.897</td>
</tr>
</tbody>
</table>

Note: ABS= absenteeism, ST= stress, WL= work overload, RC= role conflict, RA= role ambiguity

Bootstrapping along with PLS algorithm procedure, was adopted to run the structural model in the present study (Chin, 1998). The structural model is basically important for the evaluation of direct as well as indirect hypothesis proposed in the study. Table 4 below shows the statistical results of direct results. The minimum benchmark t-value for the acceptability of a hypothesis is 1.96.

Table 4. Direct results of the study

|               | (O)  | (STDEV) | T Statistics (|O/STDEV|) | P Values |
|---------------|------|---------|-----------------|----------|
| RA -> ST      | 0.269| 0.052   | 5.132           | 0.000    |
| RC -> ST      | 0.392| 0.052   | 7.533           | 0.000    |
| ST -> AB      | 0.564| 0.043   | 13.169          | 0.000    |
| WL -> ST      | 0.293| 0.049   | 5.976           | 0.000    |

Note: ABS= absenteeism, ST= stress, WL= work overload, RC= role conflict, RA= role ambiguity

It’s evident from the values mentioned in the table 4 above that the minimum benchmark of t-value is fulfilled in the present study. Therefore, role ambiguity has a significant impact on stress; role conflict has a significant impact on stress and works overload is also significantly associated with stress. In the end, stress has a significant relationship with absenteeism. Further mediation results are mentioned in the table 5 below.

Table 5. Mediation results

|               | Original Sample (O) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|---------------|---------------------|----------------------------|-----------------|----------|
| RA -> ST -> AB | 0.152               | 0.032                      | 4.781           | 0.000    |
| RC -> ST -> AB | 0.221               | 0.038                      | 5.796           | 0.000    |
| WL -> ST -> AB | 0.165               | 0.028                      | 5.815           | 0.000    |

Note: ABS= absenteeism, ST= stress, WL= work overload, RC= role conflict, RA= role ambiguity
For the mediation results, the study has followed the t-values statistic benchmark. The table above shows these benchmarks are also fulfilled. Thus, stress mediates significantly between role ambiguity, role conflict, work overload and absenteeism (see Figure 2).

It is critical to assess the predictive relevance of the model proposed through the values of R square known as the coefficient of determination of the endogenous variable (Chin, 1998). As per the mentioned criteria, minimum acceptable value of $R^2$ is 0.10. The values of $R^2$ are mentioned in the Table 6 below.

<table>
<thead>
<tr>
<th></th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>0.318</td>
</tr>
<tr>
<td>ST</td>
<td>0.513</td>
</tr>
</tbody>
</table>

*Note: ABS = absenteeism, ST = Stress*

In the end, the requirement is to assess the predictive accuracy. For this purpose, $Q^2$ values were used as proposed by Geisser (1974). The recommended value should be non-zero for predictive accuracy. These values are mentioned in Table 7 below and Figure 3.

<table>
<thead>
<tr>
<th></th>
<th>$Q^2 = 1 - \text{SSE/SSO}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>0.263</td>
</tr>
<tr>
<td>ST</td>
<td>0.417</td>
</tr>
</tbody>
</table>

*Note: ABS = absenteeism, ST = stress*
5. Conclusion

In this era of intense competition, organizations can compete with each other at the local and international market by reduction of cost. The cost of operations is increased in case of employee absenteeism from the workplace. This study was conducted to assess the effect of role conflict, role ambiguity and work overload on stress which in turn force the employees to remain absent from the workplace. The study was conducted in the electronic industry of Indonesia. The findings of the study confirm the direct impact of role conflict, role ambiguity, and work overload on stress. Moreover, mediation impact of stress is also confirmed from the findings of the study.

The results of the study show that organizations should have clarity regarding the role an employee has to play in the production process. The job description must clearly define the expected outcomes and SOP’s to be followed to achieve these goals. Moreover, job role must not conflict as well. It’s better than the employee must report to one supervisor at a time with a single goal to achieve (Koloba, 2020; Kusnanto et al., 2020; Dlalisa & Govender, 2020; Govender & Govender, 2020; Tsaurai & Nyoka, 2019; Tsunga et al., 2020). Moreover, the organization should provide appropriate resources to achieve these goals as well. In the end, organizations must distribute the work according to the work capacity and skills of the employee. The goals must be designed in a way that employee can complete those in normal time. If these three aspects are not taken care of by the organization, it will lead to the development of stress among employees. The stress has the capability to damage employee psychologically and physiologically. As a result, employees want to remain away from organizations and prefer absenteeism (Janssen, 2020; Hornung, 2020; Mhlanga & Dunga, Mokwena et al., 2020; Kasalak & Dagyar, 2020; Kengatharan, 2020).

There are a few limitations in the present study. The impact of job burnout should be assessed in future studies. Moreover, the direct impact of work overload, role conflict and ambiguity should be assessed on absenteeism. In the end, this model should also be tested with the moderation effect of employee satisfaction. Results of the study are important for the academicians of HR to engage the employee at the workplace.
References


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THE RELATIONSHIP BETWEEN OIL PRICES AND THE REAL EFFECTIVE EXCHANGE RATE IN THAILAND

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Abstract. This research article aims at examining the nature of the relationship between the real effective exchange rate and oil prices in Thailand for the period 1997 to 2019. It is expected that bilateral exchange rates have more fluctuation under a floating exchange rate than under a fixed exchange rate. The monthly data of real oil prices and real effective exchange rate have been employed for the analysis. The results indicate that these two series do not have co-integration and causality connections. However, a raise in the instability in oil prices brings to a raise in rate of exchange instability. These findings have important policy implications for the government.

Keywords: Oil-Price Volatility; Real Effective Exchange Rate; Volatility-Spillover; Bi-variate Generalized Autoregressive Conditional Hetero-scedastic analysis

Reference to this paper should be made as follows: Tancho, N., Jermsittiparsert, K. 2020. The relationship between oil prices and the real effective exchange rate in Thailand. Journal of Security and Sustainability Issues, 10(2), 835-845.
http://doi.org/10.9770/jssi.2020.10.2(36)

JEL Codes: E3

1. Introduction

In the literature of economics, it is broadly renowned that shocks in oil-prices can inflict economic influences on oil importing economies and on oil exporting economies (Plenkina, Andronova, Deberdieva, Lenkova & Osinovskaya, 2018; Masood, Tvaronavičienė, & Javaria, 2019; Godil, Sarwat, Sharif, & Jermsittiparsert, 2020). Moreover, due to an increase in the price of oil, there will be money send from oil importing economy’s to oil exporting economy’s (Krugman, 1980; Humbatova, Tanriverdiev, Mammadov, & Hajiyev, 2020; Alkhathlan, Alkhateeb, Mahmoud, & Bindabel, 2020). Many researches have concentrated on the consequence of real-oil-prices on real-exchange-rate, empirically (Ustiuzehanin, Liman, Kiselitsa, Shilova, & Leyman, 2019; Humbatova, Garayev, Tanriverdiev, & Hajiyev, 2019).

However, earlier outcomes on the association between the crude-oil price and exchange rate emerge to be confusing. Amano and Van Norden (1998) estimate that there prevails a constant relation among oil prices shock and the “real effective exchange rate” of the United State for the duration of the post-Bretton-Wood span. They find that oil-prices can be the main base of consistent shocks’ of the exchange rate. Chaudhuri and Chaudhuri and Daniel (1998) indicate that oil price is the foremost basis of the fluctuations in US real rates of exchange. Akram (2004) presents a nonlinear inverse association among oil-prices and the exchange-rates in Norway. A rise in the prices of oil brings to a rise in the rate of exchange. Chen and Chen (2007) identify a relation among
real-oil-prices and real-exchange-rates in the group of seven (G7) economy’s. A raise in the prices of oil brings to a real ‘reduction. Moreover, real-oil-prices can predict the upcoming real-exchange-rates fluctuations. Huang and Feng (2007) identify that a big Asian economy that is reliant on oil-importing, and they finds that real prices of oil shocks bring to little appreciations of the durable real-exchange rates in China. Lizardo and Mollick (2010) present that prices of oil take a vital part in the exchange-rates monetary-model, for example, oil-prices define fluctuations in the United State dollar value’s towards main currencies’, significantly. Their findings specify that an increase in the real oil-prices’ causes appreciations of oil-importing countries’ currencies; however, cause is a depreciation of the United State dollar towards net oil-exporting economies currency’s. Hasanov and Samadova (2010) use ECM model and tests of co-integration to analyze the influence of real-oil prices on real-exchange rates in Azerbaijan and identify that, in the long term, real-oil prices inflict a direct impact on the real rates of exchange. Reboredo (2012) tests co movements among oil-price and exchange-rates and he observe that co movements among price of oil and a currencies’ range are usually feeble. Ghosh (2011) investigates the association among crude-oil prices and exchange-rates employing everyday data in India. The findings of his research specify that a rise in oil-prices variations cause’s rupee depreciation against US-dollar. Turhan, Hacihasanoglu, and Soytas (2013) identify an increase in prices of oil cause’s a currency’s appreciations of rising countries towards the dollar of U.S. Beckman and Beckmann and Czudaj (2013) study the association among “trade-weighted effective exchange rate” of United State and the prices of oil. They employ “Markov-switching” VECM to analysis the relationship among prices oil and real-effective exchange rates and nominal effective-exchange rates. They find that real-effective exchange rates and nominal-effective-exchange rates shown an identical format to shocks in the oil-prices, for example, an expansion in real prices of oil brings to appreciations of the rate of exchange. (Zhang, 2013) show the subsistence of long term equilibrium association among real-oil-prices and real-effective-exchange rates of the U.S$ when breaks in structure are capture in to relation by using monthly data. A small number of empirical researches have concentrate on the effect of instability in oil-prices on exchange-rates. Rickne (2009) using list of thirty three oil exporting’s economies are restricted on politico and official institution’s and he determine that the co movement’s among oil-prices and real-exchange rates. Particularly, country’s currencies with powerful bureaucracies’ are not as much of influenced by variation in price of oil. Englama, Duke, Ogunleye, and Isma’il (2010) study the linkage among oil-prices and instability in exchange-rates in Nigeria. The findings of their research indicate that instability in rate of exchange is directly affected by instability in price of oil. Ghosh (2011) identify the results representing that negative and positive shock’s have comparable impacts on instability in rate of exchange. Since July 1997, Thailand has changed from regime of fixed rates of exchange to floating rates of exchange. The acceptance of flexible exchange-rates regime has causes movements in bi-lateral nominal-exchange-rates that are traded in the nation. Consequently, the real-effective-exchange rates and the index of “trade-weighted”, has been significantly influenced. For that reason, it should be predictable that volatility of real oil-prices of may not influence the real-effective exchange rates, but might subsist instability spillover from oil to markets of Foreign Exchange’s (Martin-moya et al., 2020; Missaglia & Sanchez, 2020; Morantes Quintana et al., 2020).

The major goal of this research is to examine whether prices of oil improbability influenced the real-effective exchange rates within the regime of flexible rates of exchange. The data of months for the real-effective-exchange-rates and real-oil-prices of between January 1995 and July 2020 are employed. The 2-stage methodology is applied, which includes a bi-variate GARCH method and the usual “Granger-Causality test”. The key findings are that uncertainty of real-oil-prices does not cause depreciation or appreciation of real-effective-exchange-rates, but uncertainty (instability) of real ‘prices of oil does cause’s volatility (uncertainty) of the real ‘rates of exchange to raise. Un-certainty of the real ‘rates of exchange can inflict a significant and inverse effect on the state exports and influence deficits in trade. The current research is planned as follows’: 2nd part explains the data and estimation technique, which presents a causality test and bivariate GARCH model. 3rd part shows results and discussion. The final part presents concluding explanation.
2. Methodology

This part of the paper explains the data and technique for estimation are employed in this research.

2.1. Data

The data of Months are employed in this research for CPI “Consumer Price Index”, the index of the real-effective-rates-of-exchange, and crude-oil-prices. The series of prices of Brent crude oil measured in per-barrel dollar is collected from EIA “Energy Information Administration”. The CPI “Consumer Price Index” and the real-effective-rates-of-exchange indexes are collected from Thailand’s Bank. The data contains the period between January 1995 and July 2020 with 295 observation’s. The real prices of oil are computed by multiplying the prices of crude-oil by the rate of exchange dollar and diminishing by CPI. Fluctuations in real-effective rates-of-exchange \( r^{RE} \) and real-prices-of-oil \( r^{PO} \) are the changing rates in the proportion of real-effective-rates-of-exchange indexes and real-prices-of-crude-oil.

Table (1) shows the descriptive statistic of real-oil fluctuations and changes in the real-effective-rates-of-exchange. The average monthly changing rate in price of oil is 1.343 where’s the monthly average changing rate in the real-rates of exchange is \(-0.049\). The normality test of Jarque Bera rejected the null hypothesis of a “normal distribution” of these 2 sequences; representing that OLS method is never appropriate.

Table 1. Summary statistic’s and unit ’roots test

<table>
<thead>
<tr>
<th></th>
<th>( r^{RE} )</th>
<th>( r^{PO} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>-0.049</td>
<td>1.343</td>
</tr>
<tr>
<td>Std. Dev</td>
<td>2.734</td>
<td>8.090</td>
</tr>
<tr>
<td>Skewness</td>
<td>-1.107</td>
<td>-0.228</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>17.782</td>
<td>4.672</td>
</tr>
<tr>
<td>Jarque Bera statistics</td>
<td>2150.056 (Pro=0.000)</td>
<td>5.502 (Pro=0.046)</td>
</tr>
<tr>
<td>DF.GLS with constant</td>
<td>-6,215 (0) (Pro=0.000)</td>
<td>-7,188 (0) (Pro=0.000)</td>
</tr>
</tbody>
</table>

\( r^{RE} \) the stand’s for the changing rate in real-effective rates of exchange, and \( r^{PO} \) the stand’s for the changing rate in real prices of oil. The possibility of accepting the null-hypothesis of normality is shown in parenthesis.

2.2. Estimation Technique

To analysis the relationship among real effective rate’s of exchange and real price’s of oil, there are three processes can be employed. They are as follows:

2.2.1. Co-Integration Test

The prices of oil sufficiently capture the overriding source of consistent real-rates of exchange fluctuations due to the presence of co-integration among real-rates-of-exchange and the prices-of-oil. The alternative procedure for co integration testing presented via Pesaran, Shin, and Smith (2001) which is called a conditional ARDL “auto regressive distributed-lag” methodology and ECM “Error-Correction-Mechanism”. The ARDL \((p,q)\) methodology is established as:
where $\Delta$ represent 1st-differences, $LREER$ shows the logarithm of real-effective rates of exchange index’, $LOP$ is the logarithm of real’ prices of oil. The “lags orders” are $p$ and $q$, correspondingly. These are possibly similar or dissimilar. The gridiron investigate can be employed to choose a parsimonious model that is without of serial’-co-relation, to find out the most favorable number’s of lagged 1st-differences in the particular autoregressive distributed lag model. The computed $F^*$ statistics for detection of co-integration can be accomplished, by addition of the two variable’s lagged level into equation (1) as revealed in equation. (2).

$$
\Delta L_{t}^{RERE} = \mu + \sum_{i=1}^{p} a_i \Delta L_{t-i}^{RERE} + \sum_{j=1}^{q} \beta_j \Delta L_{t-j}^{PO} + e_t
$$

$$
\Delta L_{t}^{PO} = \mu + \gamma_1 L_{t-1}^{PO} + \gamma_2 L_{t-1}^{RERE} + \sum_{i=1}^{p} a_i \Delta L_{t-i}^{RERE} + \sum_{j=1}^{q} \beta_j \Delta L_{t-j}^{PO} + e_t
$$

The estimated $F^*$ statistics are contrasted through “critical values”. The co-integration exits, if the estimated $F^*$ statistics is higher then the critical $F^*$ statistics of upper-bound. Co-integration does not exist, if the estimated $F^*$ statistics is lower then the $F^*$ statistics of lower-bound. The finding is uncertain if the estimated $F^*$ statistics is between the upper and lower bounds $F^*$ statistics. Different other methods that can be employed for co-integration test, repareaterization of the method in to the correspondent VEC “vector error correction” are nope essential. Moreover, the testing of bound’s can be employed to the varied order of integration resulted from test’s of unit’root, except for I (2) series. Table (1) shows that the outcomes from the integration order of the 2 series do not beat 1.

2.2.2. Non Causality Test

The test for causative association among variables’ develops by Toda and Yamamoto (1995) as a substitute to the usual Granger (1969) Causality tests. In a bi-variate VAR (Vector-Auto Regressive) model, this non-causality-test get in with 'k' lag can be implemented on those series which are stationary at level. The k’ “optimal lag length” can be established via SIC “Schwartz information criterion”. The examination is conducted in a VAR method of sort $k^* = k + d_{maxi}$, where $d_{maxi}$ is the maxi-mum expected series integration order’. Ram-baldi and Doran (1996) shows that the test effectiveness, by employing the modified-wald statistic’s for non-linear and linear constraints does not based on the series integration order’, particularly the series sequence is I(0), I(1) or I(2). The variables’ included in the model whether or not Granger causes one another are tested, where all of these coefficient’s are zero jointly. For non causality test, the VAR model is stated as:

$$
L_{t}^{RERE} = \alpha_0 + \sum_{i=1}^{k} \alpha_i L_{t-i}^{RERE} + \sum_{j=k+1}^{k+d_{maxi}} \alpha_j L_{t-j}^{RERE} + \sum_{i=1}^{k} \beta_i L_{t-i}^{PO} + \sum_{j=k+1}^{k+d_{maxi}} \beta_j L_{t-j}^{PO} + \mu_{1t}
$$

$$
L_{t}^{PO} = \alpha_1 + \sum_{i=1}^{k} \gamma_i L_{t-i}^{PO} + \sum_{j=k+1}^{k+d_{maxi}} \gamma_j L_{t-j}^{PO} + \sum_{i=1}^{k} \delta_i L_{t-i}^{RERE} + \sum_{j=k+1}^{k+d_{maxi}} \delta_j L_{t-j}^{RERE} + \mu_{2t}
$$

In the VAR-model, the stochastic term is presumed to be “white noise”. Subsequently, the more lag variable’s are integrated into the model and the causality test is carried out as a result of testing for zero coefficients constraints of every lagged variable’s—equation (3) is applied to check whether real-prices-of-oil ($L^{PO}$) granger cause’s real’ effective rates of exchange ($L^{RERE}$) whereas the equation (4) is applied to check whether the real-effective-rate-of-exchange ($L^{RERE}$) Granger cause’s real-prices of oil ($L^{PO}$). The major benefit of this examination is that one does not require recognizing a theory whether the variables are co-integrated as much as the series integration’s order doesn’t surpasses the lagged length’s of the specific VAR method.
2.2.3. Two Step’s Estimation

The two-step’s estimation is applied to describe the association among the prices of oil and the real-rate of exchange instabilities. In the 1st step, a bi-variate Generalized-auto regressive hetero-skedastic model with CCC-GARCH “Constant Conditional Correlation” model projected via Bollerslev (1990) is applied to create real-rates-of-exchange instability and prices-of-oil instability. In the 2nd step, this constructed series’ in addition to changing-rate in the real-effective-rates-of-exchange and the changing rate in real prices of oil series applied in the usual Granger (1969) causality tests. Pagan (1984) critiques’ this estimation for the reason that it makes the generated series’ of uncertainty or volatility. The model may be miss specified when these constructed sequence are applied as a regressors in Granger Causality test. However, major benefit of the two-step estimation is that it allows the capacity to set up causative relation among variable’s.

The system equation’s in a $\text{CCC - GARCH (1,1)}$ model contains the 5 equation’s and these specified as:

\begin{align*}
r_t^{RERE} &= \alpha_{1,0} + \sum_{i=1}^{p} \alpha_{1,i} r_{t-i}^{RERE} + \sum_{i=1}^{p} b_{1,i} r_{t-i}^{PO} + \epsilon_{1,t} \\
r_t^{PO} &= \alpha_{2,0} + \sum_{i=1}^{p} \alpha_{2,i} r_{t-i}^{PO} + \epsilon_{2,t} \\
 h_t^{RERE} &= \mu_1 + \alpha_{1,1} r_{t-1}^{RERE} + \beta_{1,1} h_{t-1}^{RERE} \\
 h_t^{PO} &= \mu_2 + \alpha_{2,1} r_{t-1}^{PO} + \beta_{2,1} h_{t-1}^{PO} \\
 h_t^{RERE,PO} &= \rho_{12} (h_t^{RERE})^{1/2} (h_t^{PO})^{1/2}
\end{align*}

Here, $r_t^{RERE}$ indicates the percentage of changes in the real-effective-rates-of-exchange, and $r_t^{PO}$ denotes the percentage of changes in real-prices-of-oil, $h_t^{RERE}$ is the “Conditional variance” of the real-effective-rates-of-exchange, $h_t^{PO}$ indicates the “Conditional variance” of real-prices-of-oil, and $h_t^{RERE,PO}$ denotes the Conditional co-variance of these variables. The stable Conditional cor-relation is $\rho_{12}$. The “system equations” can be evaluated simultaneously.

The test of normal granger causality is specified as:

\begin{equation}
y_t = \alpha + \sum_{i=1}^{k} \alpha_i y_{t-i} + \sum_{i=1}^{k} \beta_i x_{1,t-i} + \sum_{i=1}^{k} \gamma_i x_{2,t-i} + \sum_{i=1}^{k} \phi_i x_{3,t-i} + \mu_t
\end{equation}

Here, the dependent variable is denoted by "$y_t$", and independent variables are denoted by $x_1$, $x_2$, and $x_3$. At-least single coefficient should be significant of that lag in-dependent variable’ if any regressor causes the depen-dent variable’, and this also shows that the $F$ statistic’s into the normal Causality test’s should prove significant for all duo of variables. In the current research, the series of variable’s that will penetrate a Vector Auto Regression is ($r_t^{RERE}$, $r_t^{PO}$, $h_t^{RERE}$, $h_t^{PO}$), ($r_{t-1}^{RERE}$, $r_{t-1}^{PO}$, $h_{t-1}^{RERE}$, $h_{t-1}^{PO}$), ($h_t^{RERE}$, $r_t^{RERE}$, $r_t^{PO}$, $h_t^{PO}$) and ($r_t^{PO}$, $r_t^{RERE}$, $r_t^{PO}$, $h_t^{RERE}$). The SIC is determined optimal-lag length’s. It must be indicated that the complete list of regressors’ in the tests should be stationary. An un-restricted $VAR$ method is employed to identify the signs of lag variables.
3. Findings and Discussion

The lattice investigates for the model of parsimonious ARDL \((p,q)\) determines that the ARDL\((1,1)\) is without of serialized correlation, because of applying LM (Lagrange multiplier) test of serialized correlation. The chi-square statistics \((\chi^2_{(2)})\) of the \(L.M\)-test = 2.175 with Prob. =0.572 brings to the outcome that, in the residuals, the null-hypothesis of no serialized cor-relation is accepted. The determined \(F\) statistic’s resultant as of testing Equation.2 opposed Equation.1 is 2.081, by addition of the lag level of a couple of variable’s \((LRERE,LPO)\) to the ARDL\((1,1)\) model. In Table CI(iii) case III, this determined \(F\) statistic’s is less then the critical value in lower-bound at the level of five % of 4.94 presented via (Pesaran et al., 2001). Thus, the null-hypothesis of co-integration not exists is accepted; as a result, here is never long-term association among the real-effective-rates-of-exchange and real-prices of stock (Hussain et al., 2020).

The Non-Causality test of Equations (3) and (4) in a \(VAR\) model employing a level of the 2 series is conducted with the two most favorable lags, decided by \(SIC\) plus the expected one integration’s order. The lag’s \((k + d_{max})\) is 3, and the findings are presented in table’ (2).

Table’ (2) findings indicate that there are bi-directional direct causation’s among the real-prices-of-oil and real-effective-rates-of-exchange, but the significance level is just at ten%. Furthermore, tests are executed to study the misspecification of the model of Augmented \(VAR(3)\) employed in the investigation. The \(L.M\) test’ statistics show the null-hypothesis that there is no serialized correlation in the errors up to the 3rd lags-order is accepted. Moreover, the \(W.H\) test’s indicates that the null-hypothesis rejection of the occurrence of \(ARCH\) impact at the one per cent significance level. Though, the \(J.B\) statistics indicate that the errors are never normal multi-variate. Thus, the model of Augmented \(VAR(3)\) is never appropriate for Non-Causality test. This means that the findings of Table.2 are not consistent. At this point, there is un-reliable Non-Causality test in the level series, and here is no ‘long term association among real-effective-rates-of-exchange and real-prices-of-oil (Haseeb et al., 2020).

Thus, it can be finalized that co-integration and Non-Causality test’s cannot identify the influence of real-prices-of-oil on the real-effective-rates-of-exchange. However, the 2-steps method can identify a few facets of the linkage among real prices of oil and real-effective-rates-of-exchange. The findings of the bi-variate \(GARCH(1’1)\) method in the “system equations”, Equation’s five to nine, are presented in Table. (3).

Presumptuous the conditional correlation \(\rho_{12}\) is stable; the performance of the model is good\(^4\). The expected Conditional correlation is \(-0.215\) which is statistical significance at the level of five per cent. This correlation shows that the 2 variables’ are interdependent with the inverse association. Thus, the Standard-Granger Causality test’s is conducted on 4 ‘series’ of stationary. The findings are presented in Table.4.

Table (4) findings indicate that variation in the real-prices of oil tend to causes the real-effective-rates-of-exchange to appreciate (decreases), but tend to causes its instability to rise. Additionally, real-prices-of-oil instability has a tendency to causes the real-effective-rates-of-exchange to appreciate (decreases). However, such 3 findings are insignificant statistically. Lastly, real-prices-of-oil instability positively causes real-effective-rates-of-exchange instability. This finding is statistical significance at a level of five per cent. Thus, it can be finalized that throughout the floating rate of exchange regime there is instability trans-mission from real-prices-of-oil to real-effective-rates-of-exchange. This means that an expansion in the real-prices-of-oil risk can cause a rise in the real-rates-of-exchange risk’s and vice-versa.

The “impulses response” in figure’ (2) indicate that real-rates of exchange instability react depressingly to real-prices of oil instability in five months’ and react positively to real-prices of oil instability after that and not ever disperse. In the situation of increasing real-rates-of-exchange instability cause by real-prices of oil instability, the trade-balances of a country’s can be influenced. In the situation of increasing real-rates-of-exchange instability cause by real-prices-of-oil instability, the trade balances of a country can be influenced. If the real-rates-of-exchange instability negatively influences the imports and exports, the trade balances will be better when the extent of the effect of instability on “imports” is comparatively lesser then the extent of the effect of instability on “imports”. In another way, the “trade balances” will be debilitated.

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Although, the central ‘bank can execute measures of “sound monetary policy” to stabilize various main currency’s, for example, the Japanese yen, US dollar, and euro currency’s, instabilities of nominal prices of oil can-not be restricted. Consequently, it appears to be essential that policy-makers must motivate firm’s to base more on latest energy (wind-power and hydro-electric) so that price of crude oil will not be the major reason of the real-rate-of-exchange instability. Additionally, a few measures’ that will increase the competitiveness of exporting-firms’ might consider required. Promoting efficiencies of energy as a substitute of energy-intensity can decrease the cost of production. Di-versification of export should also be applied (Table 2).

### Table 2. Outcomes of Non-Causality tests are between $l^{\text{RERE}}$ and $l^{\text{PO}}$

<table>
<thead>
<tr>
<th>Null hypothesis</th>
<th>Modified Wald statistics</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$l^{\text{PO}}$ does not cause’s $l^{\text{RERE}}$</td>
<td>5.273 (+)</td>
<td>0.083</td>
</tr>
<tr>
<td>$l^{\text{RERE}}$ does not cause’s $l^{\text{PO}}$</td>
<td>5.732 (+)</td>
<td>0.073</td>
</tr>
</tbody>
</table>

Mis-specification test’s for the VAR-model

<table>
<thead>
<tr>
<th>Test-statistics</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$L.M$</td>
<td>2.175</td>
</tr>
<tr>
<td>$J.B$</td>
<td>11.571</td>
</tr>
<tr>
<td>$W.H$</td>
<td>164.005</td>
</tr>
</tbody>
</table>

$l^{\text{RERE}}$ is a logarithm of real-effective rates of exchange, and $l^{\text{PO}}$ is a logarithm of real-prices-of-oil. (+) shows the coefficients positive total of lag variable’s, which is a positive causal relation. The Lag-range multiplier test’s for serialized cor-relation up to the 3rd order in the residual’s shows by L.M, J.B indicates the Jarque’Bera statistics for the null hypo-thesis test that the residual’s are normal multi-variate, and W.H shows the white hetero-skedasti-city test of the residual’s (Table 3).

### Table 3. Findings from the bi-variate GARCH (1,1) evaluation

Mean-equations:

$r_t^{\text{RERE}} = 0.211 + 0.331 r_{t-1}^{\text{RERE}} - 0.335 r_{t-2}^{\text{RERE}} - 0.021 r_{t-1}^{\text{PO}}$

$(1.348) (5.652) (-3.618) (-1.146)$

$r_t^{\text{PO}} = 0.580 + 0.233 r_{t-1}^{\text{PO}}$

$(0.376)(1.813)$

(T-statistic in paren-thesis)

Co-variance and Variance equations’:

$h_t^{\text{RERE}} = 0.485 + 0.516 \epsilon_{t-1}^{\text{RERE}} + 0.148 h_{t-1}^{\text{RERE}}$

$(3.323) (2.302) (2.723)$

$h_t^{\text{PO}} = 2.213 + 0.226 \epsilon_{t-1}^{\text{PO}} + 0.742 h_{t-1}^{\text{RERE}}$

$(0.741) (2.104) (13.371)$

$h_t^{\text{RERE}, \text{PO}} = -0.215 (h_t^{\text{RERE}})^{1/2} (h_t^{\text{PO}})^{1/2}$

$(-1.783)$

(T Statistics in paren-thesis)

System-Diagnostic test:

$Q (6) = 29.343 (P = 0.261)$
$r_{REER}$ and $r_{OP}$ are the changing rate’s in real effective rates-of-exchange and real-prices-of-oil correspondingly. The “conditional variances”, $h_{REER}$ for real effective rates-of-exchange and $h_{PO}$ for real-prices-of-oil. The “conditional covariance” is, $h_{REER}, h_{PO}$. *** and * shows the level of significance at one %, five % and ten%, correspondingly. The residual getting from system residual Port-manteau tests for auto correlations is Box Pierce statistics test denotes by $Q(k)$ (Table 4).

Table 4. Granger-Causality test’s outcomes

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>$F^*$ statistics</th>
<th>prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$r_{PO}$ does not cause $r_{REER}$</td>
<td>1.737 (-)</td>
<td>0.153</td>
</tr>
<tr>
<td>$r_{PO}$ does not cause $h_{REER}$</td>
<td>2.156 (+)</td>
<td>0.127</td>
</tr>
<tr>
<td>$h_{PO}$ does not cause $r_{REER}$</td>
<td>1.176 (-1)</td>
<td>0.209</td>
</tr>
<tr>
<td>$h_{PO}$ does not cause $h_{REER}$</td>
<td>3.211**(+).</td>
<td>0.035</td>
</tr>
</tbody>
</table>

$r_{REER}$ and $r_{OP}$ are the changing rates in real-effective rate of exchange and price of oil, correspondingly. The Conditional-Variance, $h_{REER}$ for real-effective-rates-of-exchange and $h_{PO}$ for real-prices-of-oil. **indicates the level of significance at the five per cent (see Figure 1).

![Response to Cholesky One S.D. Innovations](image)

**Figure 1.** Response of real effective-rates-of-exchange instability to prices-of-oil instability

4. Conclusion

This research applied three methods of ‘time-series’ investigation to study the association among real-prices of oil and real-effective-rates-of-exchange in Thailand, and Thailand economy is a rising market-economy. The findings from co-integration tests in a framework of bi-variate indicate that the association among the real-prices-of-oil and the real-effective-rates-of-exchange does not exist in the long term. The Non Causality test that depends on an augment-ted VAR methodology is another method to investigate the causative association among real-prices-of-oil and real-effective-rates-of-exchange (Kusel et al., 2020; Lawrence, 2020; Ghozali et al., 2020; Helmi et al., 2020; Hotar, 2020; Matthews & Mokoena, 2020; Antoni et al., 2020; Berejena et al., 2020). This method approves for determining causal relationships among the level of variables. However, the findings obtained from non-causality test fail to passes “diagnostic tests”, then, the findings should not be consistent. The findings getting from the 2-steps method indicate that Causality does not exist from changes in real-prices-of-oil to changes in real-effective-rates-of-exchange. In addition, real’ prices of oil instability do not causes
real’ effective rates of exchange to appreciate as establish in earlier experiential researches. The essential result is that a raise in real-prices of oil instability cause is a raise in real-rate of exchange instability which can damage the country’s balance of trade. The Government officials must be conscious of the un-certainty (instability) in the foreign markets of exchange causes by instability in the prices of oil (Janseen, 2020; Sabela, 2020; Msimanga & Sekhampu, 2020; Kobayashi & Farrington, 2020; Ozcan & Vural, 2020). It’s may-be essential to apply various measure’s that promote firm’s to depend more on latest energy (wind-power and hydro-electric) so that prices of crude oil will not be the major causes of real-rates-of-exchange uncertainty. Additionally, various-measures that will increase the competitive-ness of exporting is firms might consider required. Promoting energy-efficiency as a substitute of energy-intensity can decrease the production-cost. In the future, diversification of export must also be applied to avoid the balances of trade to depreciate.

References


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