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Selected Issues of socio-economic development in Poland and Ukraine

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Scientific editing
Marlena Piekut
Nataliia Smentyna

Płock -2020

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Selected issues of socio-economic development in Poland and Ukraine

Wybrane aspekty rozwoju społeczno-gospodarczego w Polsce i Ukrainie

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Contents

Introduction

Every country in the world strives for socio-economic development that provides real growth of life quality, that is the main indicator of country development and its competitiveness in the world markets. It is important to solve this question in the conditions of changing both internal and external country environment. In view of this, scientific schools and research institutes try to identify the fundamental factors and components ensuring economic growth and stabilization of further economic development. Researching the problems of socio-economic development of one country is relevant in the context of its comparison with other European countries.

Ukraine and Poland have a lot in common. Both countries gained their independence relatively recently, both have a common Slavic origin, a similar lifestyle and similar languages. However, despite the similarities, for example in cultural and historical terms, both countries have been developing for a long time in almost opposite directions. Today, the Republic of Poland is an example of a country where effective economic and socio-political reforms have led to rapid socio-economic growth. For a short time, the country was able to carry out many social and economic reforms and it is being characterized as one of the most stable countries in Europe. Instead, Ukraine has been moving down its development path for a long time. At the same time, adopting the experience of its neighbor, Ukraine is trying to create real preconditions for the country to become a full member of the European Union.

The monograph is devoted to the study of certain issues of socio-economic development in Poland and Ukraine. The proposed publication is a collection of analytical materials (in the format of author's chapters) that are the result of the research cooperation of Polish and Ukrainian researchers.

The publication focused on such problematic issues as economic development in the framework of decentralization reform in Ukraine, main determinants of local economic development, the coronavirus effect on Global Value Chains, activities of households in the field of sustainable development in the area of used energy sources, ethics in entrepreneurial activities, food industry enterprises competitiveness and online sales among entrepreneurs. All these issues have been considered on the example of Poland and Ukraine, as well as have been compared to other European countries.

The monograph will be useful for a wide range of readers: scientists, representatives of the public sector, managers of enterprises and organizations, teachers of higher education institutions, graduate students and students.

The scientific co-editors hope that the opinions, proposals, decisions and directions of socio-economic development expressed in this publication will find their practical implementation and become a source of development for Poland and Ukraine.

Wprowadzenie

Każdy kraj dąży do rozwoju społeczno-gospodarczego zapewniającego wzrost jakości życia, co stanowi główny wyznacznik rozwoju kraju oraz jego konkurencyjności na rynkach światowych. Istotne jest rozwiązanie tego problemu w warunkach zmieniającego się otoczenia kraju, zarówno wewnętrznego, jak i zewnętrznego. W związku z tym uczelnie i instytuty badawcze starają się zidentyfikować podstawowe czynniki i komponenty zapewniające wzrost gospodarczy i stabilizację dalszego rozwoju gospodarczego. Badanie problemów rozwoju społeczno-gospodarczego jednego kraju jest ciekawe w kontekście jego porównań z innymi krajami.

Ukraina i Polska mają ze sobą wiele wspólnego. Oba kraje uzyskały stosunkowo niedawno niepodległość, oba mają wspólne słowiańskie pochodzenie, podobny styl życia i podobne języki. Jednak pomimo wielu podobieństw kraje od pewnego czasu rozwijają się odmiennie. Dziś Rzeczpospolita Polska jest przykładem kraju, w którym reformy gospodarcze i społeczno-polityczne doprowadziły do szybszego rozwoju społeczno-gospodarczego. Polska przez stosunkowo krótki czas była w stanie przeprowadzić wiele reform społeczno-gospodarczych i jest określana jako jeden ze stabilniejszych krajów w Europie. Z kolei Ukraina od dłuższego czasu podąża ścieżką rozwoju korzystając z doświadczeń sąsiada. Ukraina stara się też stworzyć realne warunki umożliwiające uzyskanie członkostwa w Unii Europejskiej.

Monografia poświęcona jest badaniu wybranych zagadnień rozwoju społeczno-gospodarczego Polski i Ukrainy. Proponowana publikacja jest zbiorem materiałów analitycznych (w formie rozdziałów), które są wynikiem współpracy naukowej polskich i ukraińskich badaczy.

W publikacji skoncentrowano się na takich problematycznych zagadnieniach, jak rozwój gospodarczy w ramach reformy decentralizacyjnej w Ukrainie, główne determinanty lokalnego rozwoju gospodarczego, wpływ koronawirusa na globalne łańcuchy wartości, działania gospodarstw domowych w zakresie zrównoważonego rozwoju w obszarze wykorzystywanych źródeł energii, etyka w działaniach przedsiębiorczych, konkurencyjność przedsiębiorstw przemysłu spożywczego oraz rozwój sprzedaży internetowej wśród przedsiębiorców. Wszystkie te kwestie zostały

rozważone na przykładzie Polski i Ukrainy, a także porównane z innymi krajami europejskimi.

Monografia skierowana jest do szerokiego grona czytelników: naukowców, przedstawicieli sektora publicznego, menedżerów przedsiębiorstw i organizacji, nauczycieli szkół wyższych, doktorantów i studentów.

Redaktorzy naukowi mają nadzieję, że wyrażone w niniejszej publikacji opinie, propozycje i kierunki rozwoju społeczno-gospodarczego znajdą swoją praktyczną realizację i staną się źródłem rozwoju dla Polski i Ukrainy.

Chapter 1

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IMPACT OF DECENTRALIZATION ON ECONOMIC DEVELOPMENT IN CRISIS (by THE EXAMPLE OF UKRAINE)

Abstract. The purpose of the study is to substantiate the features of the implementation of decentralization for the development of the Ukrainian economy in times of crisis. For this purpose the following tasks were solved: the study of the implementation of decentralization policy in the countries of Central and Eastern Europe and to identify the possibilities of applying this experience in Ukraine; definition of the concept of decentralization on the basis of various economic and legal interpretations of this process, in accordance with modern requirements; analysis of foreign practice of implementing decentralization reforms and its consequences; analysis and evaluation of budget decentralization; Identification of the crisis situation of Ukrainian regions and formation of stabilization of development through implementation of the principles of decentralization.

As a result of the conducted researches it is proposed to use the model of the crisis state detection of territories in the conditions of decentralization, which is based on taking into account the existing potential and features of development process. Based on the level of factor macroeconomic indicators and the considered coefficients of the proposed model, a rating of possible configurations was constructed and clusters were created for the regions of Ukraine. The calculations show that all clusters of the country are characterized by a minimal and insignificant degree of decentralization, which indicates a slow movement in this direction. The use of certain type of anti-crisis strategies that are specific to each of the selected clusters is justified. The necessity of forming a mechanism of anti-crisis management of the national economy with involvement of the principles of decentralization, which is based on the system of principles of sustainable development, attraction of provisions of independence and responsibility in making economic decisions, has been proved; creating effective conditions for implementing the principles of decentralization.

Keywords: decentralization, economic development, crisis situations, anti-crisis measures, GDP deflator; anti-crisis management.

JEL: O110, O570, D780

INTRODUCTION

A decentralization process with the development of democracy and preservation of legal institutions is an instrument of transferring the amount of power and administrative responsibilities by competent authorities and other structural units assigned with necessary resources, rights and responsibilities. Decentralization implies an increase activation of territorial development on the principles of democracy, and the indicator of such efficiency and activation is full protection of rights, legitimate interests and responsibilities of local population, structured in the united communities. Under certain circumstances, risks and dangers are inherent in decentralization. In this case, some areas of public and social life cannot be decentralized. The European science of optimizing public administration outlines the following disadvantages of government decentralization (Kharytonchuk, 2000):

– autonomy of goals. There is risk of specifying partial goals that do not cover general administration goals and may even contradict them;

– risk of realizing individual ambitions;

– threat of monolithic nature of the state's policy in respective spheres;

– disintegration of activities of public administration in the provision of public services and taking management decisions;

– complications of coordination, complications in coordinating goals;

– increase in the risk of influence on decision-making of the inappropriate qualification of officials, since their decision-making freedom is quite significant. In some cases, the responsibility of senior officials may be attributed to unqualified or inappropriate actions by even other entities in the relevant industry (sphere), although the influence of such entities on senior officials is notably limited.

Decentralization reform implies development of territorial units at the expense of certain approaches. Namely, the criteria for the national economy development under decentralization are the following levels:

– economic and financial capacity of the region;

– social and human development of the region;

– environmental sustainability of the region.

To address these issues, Ukraine has changed the vector of development by applying decentralization reform with the focus on the experience of Central and Eastern

European countries. In view of the above, the purpose of the study is to substantiate the features of the implementation of decentralization for the development of the Ukrainian economy in times of crisis. For this purpose the following tasks were solved: the study of the implementation of decentralization policy in the countries of Central and Eastern Europe and to identify the possibilities of applying this experience in Ukraine; definition of the concept of decentralization on the basis of various economic and legal interpretations of this process, in accordance with modern requirements; analysis of foreign practice of implementing decentralization reforms and its consequences; analysis and evaluation of budget decentralization; Identification of the crisis situation of Ukrainian regions and formation of stabilization of development through implementation of the principles of decentralization. Cluster analysis with an advanced parameter system was chosen as the methodology; indicators of formation of financially sustainable budgets were used, which made it possible to trace the significant impact of reforms on individual local budgets and to identify the complexities of regions dominated by territorial communities with rural budgets.

MATERIALS AND METHODS

The methodology of the research is based on analytical methods, namely: cluster analysis with an improved system of parameters and statistical approaches to study the development of regions, as well as a method of economic and mathematical modeling, which aims to form a rational choice when making the decisions.

The decentralization reform is typically aimed at modernizing the state economy, its stabilization, creating the conditions for enhancing the competitiveness of the regions, ensuring their sustainable development, developing labor and industrial potential, improving infrastructure and responsibility for local decisions. A compulsory tool in this case is the use of modern approaches to improving the effectiveness of intergovernmental fiscal relations as an important component of budgetary regulation. To choose a methodological toolkit, we will use the approaches that allow us to identify trends and patterns in the formation of budgets, taking into account changes in the legal framework, specific characteristics of economic development, as well as historical features of the region and state. We have improved the indicator framework for selecting methodical tools, namely by including here:

– indicators that characterize the ability of the budget to cover its liabilities with revenues (coefficient of budgetary coverage, coefficient of subsidy);

– indicators that characterize the structure of budget revenues (coefficient of financial autonomy and coefficient of financial dependence);

– indicators that characterize the security of expenditures by the own and fixed income (ratio of current and capital expenditures to own revenues);

– indicators of tax burden (level of tax burden of the region, share of tax revenues in the income structure).

The inputs are based on indicators provided by the World Bank and the State Statistics Service of Ukraine; results of obtaining annual regional indicators and performance indicators of the budget of Ukraine for 2017-2018. The baseline data for the formation of financially stable budgets allow us to track the significant impact of reforms on local budgets and to identify the situation in individual regions.

LITERATURE REVIEW

The concept of decentralization is mentioned for the first time in Ukraine in the Constitution of the Ukrainian People's Republic (UNR) Art. 5 of April 29, 1918: "Without violating the unity of power, the UNR grants its lands, parishes and communities the right of broad self-government, adhering to the principle of decentralization" (Constitution of the Ukrainian People's Republic, 1992). In 1991, after independence had been declared, the country faced considerable economic and social difficulties, which prompted the need for reform in the system of public administration and introducing decentralization policies, which led to the adoption of a series of legislative instruments. Currently, the key approach is the principle of decentralization in the functioning of state power, and there is a need to amend the current Constitution of Ukraine, based on the provisions of the European Charter of local self-government, best practices of the Constitutional Assembly and the Constitutional Commission of the Supreme Council (Verkhovna Rada), and expert groups in the field of constitutional law and local self-government.

Interpretation of "decentralization" concept has been widely discussed in the research cycles. B. Gourne refers to decentralization as to a method of organizing power in a certain territory, when the state transfers the rights to solve problems and make decisions in various spheres to the structures of the local or regional level that do not

belong to the executive power and are partly independent of it (Gourne, 1993). J.M. Bess views decentralization as an indivisible simple system of governance under which the local authorities have the power to make decisions coordinated with the central authority (Besse, 1995). G. Breban refers to decentralization as to the mechanism of delegating power from one legal entity to another or from the state to the territorial community (Breban, 1988). N. Kavashima views decentralization as the art of governance, which involves increasing resources in the territory via the use of available resources in the center, and dividing it into financial, cultural and political components (Kavashima, 2004). A. Rosenbaum notes that decentralization contributes to strengthening non-central government structures; it is an effective mechanism of counterbalancing and containment in the midst of power; is a tool used to support citizens' ambition to govern and influence of public communities; the process of effective management of local self-government bodies and intermediate-level power structures; the ground for democracy and life principles in practice (Rosenbaum, 1998). I.F. Liapin sees decentralization as a constitutional method of dispersing power which implies efficient transfer of powers from the national to another level of authority, which has historically developed in a particular country, in the prescribed manner and within the prescribed limits, scopes and forms (Liapin, 2015). There are also meaningful approaches to defining decentralization among Ukrainian scholars. Thus, V.L. Andrushchenko and O.P. Kyrylenko define it as a more effective model in comparison with centralization in terms of democratization of a public organization and creating conditions for self-organization in the state where some main functions of local government is within the competence of associations of citizens living in a certain territory, as well as bodies and officials that are not appointed “from above” but are elected by the population within territorial communities (Andrushchenko, 2010). M.O. Bahmet and T.M. Lychko study decentralization in the context of expanding the authorities of local self-government and local executive bodies at the expense of the powers of the central executive bodies to optimize and improve the effectiveness of managing socially important issues and full implementation of regional and local interests (Bahmet, Lichko, 2009). This category is evaluated by M.L. Bratkovsky as a complex process that implies a chain reaction of changes in the state organism: a significant redistribution of powers at all levels of top-down command structure (Bratkovskyi, 2010). According to S.V. Demydenko, decentralization is a leading principle of European and world policy which influences the growing importance of multilevel territorial

development management (Demydenko, 2009). M.O. Lendel characterizes decentralization as an important requirement to ensure such political criteria as independence, transparency, accountability and efficiency of public institutions (Lendiel, 2008). O. Obolensky defines decentralization as transference of some state administration functions from central executive bodies to local executive authorities and local self-government bodies, extension of powers of the bodies at lower level at the expense of those at higher levels (Obolenskyi, 2005). V. Malinovsky emphasizes the fact that decentralization is the process of delegating some functions and powers from higher levels of government (from central executive bodies to local executive authorities and local governments); in the broad sense, it is weakening or elimination of centralization (Malinovskyi, 2005). A.I. Pobochny states that decentralization is a top-down movement, transferring some of the functions of central government to local self-government bodies (Pobochnyi, 2013). Decentralization as a phenomenon from the sphere of modern public administration, conditioned by objective and subjective factors of distributing the administrative functions and powers between executive bodies of different organizational and legal levels is determined by A.F. Melnyk with co-authors (Melnyk, Vasina, Dudkina, 2014). According to the definition given by N. Meltiukhova and Ya. Vanina, decentralization is a purposeful process of expanding the powers of local self-government bodies in order to optimize and improve the efficiency of managing socially important affairs (Meltiukhova, Vanina, 2011). Profound interpretation of decentralization is done by H.S. Odintsova, H.I. Mostovy, O.Yu. Amosov et al., who define it as independence in approaches to public management, taking into account the diversity of local features while maintaining unity in the basic and essential characteristics (Odintsova, Mostovyi, Amosov et al., 2002). O.L. Kremena defines decentralization as a process of redistribution of functions, powers, people, or objects from central government, aimed at solving political and legal problems of local self-government, primarily by empowering the territorial communities, in particular in financial capacities, and, accordingly, their representative bodies with the transformation of local self-government to a financially viable, efficient and responsible institute of public authority (Kremena, 2014). According to the approach of K. O. Liniov, decentralization is a necessary component of the state democratization process, which characterizes the transition from structures and institutions of authoritarian and totalitarian societies not focused on active and real

participation of citizens in state government to the societies based on initiative and responsibility of the community and an individual (Liniov, 2004).

Different approaches to interpreting the concept of decentralization are due to the authors' use of different approaches to the study of its nature and forms. Research studies of a decentralization theory are different in terms of the object and characterized by numerous aspects, which predetermine the existence of different types of decentralization. That is why researchers' views on the category of "decentralization" differ and cannot be brought together to a single universally recognized view. The analysis of research publications shows that the meaning of the term is ambiguous. Scholars define decentralization as a mechanism, method, process, system, phenomenon, model, and also point out at the impact of transmission, demand, rights, political characteristics, and a set of principles and tools, etc. A corresponding inconsistency necessitates generalization of existing definitions. In our view, decentralization cannot be defined as a mechanism as it is a collection or a system of certain components that are interconnected in action). It is not an instrument, with the only exception of an instrument in the hands of the authorities. There are numerous other definitions in the research literature which are also controversial in comments. In our view, decentralization is a process, so it is appropriate to agree with a clear and concise definition provided by D.T. Zhovtun (Zhovtun, 2017); still, it does not trace stability or take into account peculiarities of the national economy of Ukraine.

On the basis of studying foreign and national definitions, we consider it appropriate to improve the interpretation of decentralization, which unlike the existing ones, is viewed as a process which through the transfer of rights and powers from central to local authorities allows to improve the level of management, determine the prospects of development on the basis of anti-crisis management and rational use of available resources, identify local needs and ensure stable and cost-effective activity of economic agents in the state, which is made possible through a system of mechanisms, approaches, and tools that are developed, implemented and realized in the course of functioning of the power.

RESULTS

Different countries have their particular approaches to resolving the issues of stabilization and economic development, in some cases focusing on sustainable

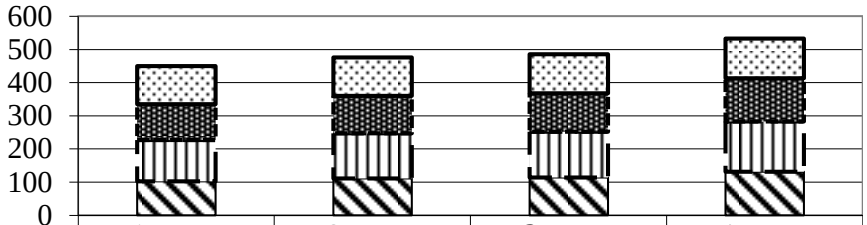
development with a combination of social, economic and environmental components in the legislative and regulatory framework. In the anti-crisis policy, it is crucial to have reliable information about the real situation in the economy, which is described by a number of indicators. Gross domestic product (GDP) is used to estimate the economic status of a country. According to the data from the International Monetary Fund, in the last years, the top ten countries with the highest GDP are: the USA, China, Japan, Germany, Great Britain, France, India, Italy, Brazil and Canada. In 2017, Ukraine was the 65th on the list (International Monetary Fund, 2017). The main indicators for the countries with the highest GDP and Ukraine are presented in Table 1.

TABLE 1. ECONOMIC GROWTH OF THE COUNTRIES WITH THE HIGHEST GDP AND UKRAINE IN 2015-2017

State	Growth rate, %	Average annual growth rate, %	Increase to the base year, mln. $
The USA	2,91	0,96	525
Republic of China	13,54	0,49	166
Japan	7,95	2,58	3483
Germany	3,86	1,27	1299
Great Britain	-7,44	-2,55	-2131
France	2,82	0,93	683
India	7,81	2,54	1630
Italy	1,45	0,48	265
Brazil	-1,74	-0,58	-314
Canada	-1,33	-0,45	-207
Ukraine	-1,33	0,22	55

Source: estimated by authors on the basis of materials (Anti-crisis policy of developed countries).

The estimations demonstrate that not all high-GDP countries are at the growth phase. The UK, Brazil, and Canada have negative growth rates. The same situation is typical for Ukraine. This is indicative of a fall and recession in the economy. The average annual economic growth rate is the highest in Japan, India and Germany. Negative indicators are noted in the same countries which are indicated in the growth rate calculations. However, Ukraine has a positive average annual growth rate of the economy. The same situation is observed in determining an absolute indicator - an increase to the base year, taken as 2017. The GDP deflator is calculated for Ukraine on the basis of the quarterly ratio of nominal GDP to real GDP in the period 2016-2019, the value of which is in bringing the numbers from different periods to a form that would allow comparing them with each other.



	1 quarter	2 quarter	3 quarter	4 quarter
2019	114,86	115,73	118,06	120,01
2018	107,6	113,03	115,11	130,05
2017	124,74	135,81	138,17	151,52
2016	102,23	111,47	114,23	131,78

GRAPH 1. GDP DEFLATOR DYNAMICS IN UKRAINE IN THE PERIOD 2016-2019 (%)

Source: compiled by the authors on the basis of (GDP deflator; Antoniuk, 2019)

The results of calculations (more than 100%) indicate an increase in the level of inflation in the country, with the highest values being observed in 2017 in all quarters. In addition, the fourth quarter in all years has a heightened index. The need for the calculations is subject to the need of bringing the GDP indices of different years to the form that allows comparison. The carried out comparison does not demonstrate the benefits of the state economy. Therefore, we consider it appropriate in further studies to learn the experience of developed countries with a tendency to economic growth, which will allow introduction of radical anti-crisis measures. Each country has its priorities in anti-crisis policy. In Austria, for example, they were government lending and direct financial investments in real sectors of economy; in the Czech Republic is was the support for priority sectors: agriculture and forestry; in Germany, it was stimulating demand and increasing the investments (primarily in education and infrastructure); in Spain, they were attracting investments and supporting the construction industry (Golovin, 2013). Germany has long been ranked first among the EU countries in terms of economic development, and it has occupied the leading position among the countries of the world. Economic reforms of the country that lost in World War II were suggested by L. Ehrhardt. Then there were reforms of the tax system, decentralization, and transition to new administration relations in the sphere of economic management. They stimulated entrepreneurship, stabilized the purchasing power of the national currency, and adjusted political approaches to the economy. The characteristic features of post-war economic reforms were consideration of regional peculiarities of the country, facilitated by clear division of responsibilities between district, federal and municipal structures. District

administration manages the areas of social protection of population, emergencies, development of transport, education, ecology and land management, geodesy and cadastre, as well as general principles of economic development. The social sphere is left for the level of communities and population. Insurance medicine is developed. There is financial autonomy for communities. Only 15% of personal income tax remains in the local budget, and this tax is the second largest in gross income. At the same time, the main tax of the communities is the tax on business; therefore, small and medium-sized business is a decisive factor in municipal development (Semeko, 2017). Therefore, it goes about cooperation between business and local authorities as well as determining the funding of innovative projects. A significant influence on the development of modern France was made by the reform of S. de Gaulle. New doctrines, including economic ones, were introduced, with the purpose of: searching for an optimal economic model that takes into account the national specificity of development, namely: rigid strategic planning; tight tax policy; expansion of the public sector in basic promising sectors; increasing the share of state sector in the economy; activation of budget investment policy; including all groups of population in the economic processes; monetary policy. Stabilization in the country was also facilitated by the completion in the 1960s of the economy modernization. A significant role in this process was played by the state, which assumed all the expenditures needed for forming the newest industries and defining strategic directions of development. In the course of many years, France has accumulated considerable experience in public administration through the extension of powers and responsibilities of local governments. In 1982, the Law on the Rights and Freedoms of Communes, Departments and Regions was adopted in the country to initiate the process of decentralization of government and introduced the norm of fundamental importance for decentralization: territorial units can “freely do self-management through the elected councils”.

Henceforth, the regions had their own budget and powers in the areas of land improvement and infrastructure development, education, vocational training, regional transport, and initial vocational training for young people. Economic breakthrough in Italy took place in the 50s and 70s of the twentieth century. It is subject to several factors: joining to the Marshall Plan and receiving financial support from the US; joining the European Coal and Steel Union and subsequently to the European Economic Community; land reform that contributed to the formation of agricultural commodity production. The

next series of reforms took place in Italy in the 1990s to consist of three stages: intensive reforms aimed at restoring the financial balance of the economy; decelerated reforms: improvement of the tax reform, modernization of the sphere of social services, arrangement of legal conditions for business activity, decentralization of regional administration; anti-crisis "shock therapy" reforms: tax reform, intensification of measures to combat tax evasion, reform of the institutional power at all levels, reduction in the number of provinces, revision of the competences of local authorities and budgets to reduce them; pension reform; updated labor market (Avilova, Kvashnin, 2015).

Weaknesses of the public administration system in Poland, which remained after the first wave of reforms in the early 1990s, pushed the country to the reform of 1997. These reforms (one of which was an administrative reform) aimed to transform Poland into a modern competitive state capable of meeting the political and economic challenges of modern Europe and becoming its integrated part. The public administration reform consisted of two components carried out simultaneously - the territorial system reform and the reform of local self-government (decentralization). In addition, certain reform was carried out later in the central government. One of the stabilization mechanisms for preventing the financial crisis was the interest rate policy in accordance with the European Economic Recovery Plan, approved in December 2008. It was followed with the document entitled "Driving Economic Recovery Facilitation" endorsed by the European Council, which aimed to strengthen coordination of actions between member states and enforce the movement to the stage of economic recovery.

The document contains a broad program for reforming the financial sector; clarifies and adjusts the methods to support consumer demand, increase investments, retain or create jobs. In order to reduce the budget deficit, the government of Poland took important political measures: since early 2010, the pensions of nearly 40,000 former workers of the communist-era law enforcement agencies have been reduced in half (Stepaniuk, 2013).

The stabilization factor in Poland was a result of economic policy and investments of the previous years, which resulted in the creation of low-cost industrial centers successfully integrated into the industrial chains of the leading EU countries, most notably Germany. In addition, the leading factors were: presence of a competitive industry (up to 40% of Polish export is the engineering production); strong position of the National Bank and the banking system as a whole; cautious lending that helped to keep

the construction industry from falling and save citizens' savings; low debt of total financial liabilities of Polish financial institutions (at the end of 2008, this amount was only 15,7%), presence of a floating exchange rate of the Polish zloty; orientation of the Polish economy towards domestic demand, indexation of pensions, tax cuts and other measures (Ministry of Finance of Ukraine).

An important area of foreign economic regulation is participation of Poland in GATT (efforts to change quantitative obligations with tariffs; signing GATT codes on anti-dumping and import licenses, customs valuation of goods, subsidies); WTO - since 1995. Entrance of Poland to the WTO led to the stabilization of customs tariffs, liberalization of restrictions on imports of agricultural products, guarantee of equivalence in the competitiveness of Polish and imported goods, and certain liberalization in trading agricultural products, medicine, wooden products, opening new markets for clothing and textiles.

Therefore, the experience of Poland in economic reforms is important for Ukraine, in particular, in terms of association with the European Union and concluding a free trade agreement, increasing the exports of goods and services and improving their structure (increased share of final processing products - machinery, transport equipment).

The experience of foreign countries, which have already worked their way up to decentralization, testifies the complexity of this process and needs constant improvement in terms of making economic decisions to ensure economic growth.

The following analysis uses formation indicators of financially sound budgets. The financial dependency ratio of local budgets in 2015 and 2016 increased respectively to 55 and 56%, whereas in previous years it was estimated as 22 -25%, while the regulatory value should be less than or equal to 40%.

The budget coverage coefficient in the period of 2010–2014 was stable and stayed within regulatory limits; in 2015, it increased significantly, and in 2016, it fell below the recommended value. This coefficient shows correspondence of the own revenues of local budgets and powers assigned to local authorities, the ability of the regional budgets to cover the expenditures at the expense of their own revenues; thus, the decrease of this coefficient in 2018 indicates a negative tendency and a decrease due to the fact that the budget expenditures grow dynamically every year with the decline in their own revenues.

TABLE 2. RESULTS OF CALCULATING COEFFICIENTS OF FINANCIALLY STABLE BUDGETS OF THE NATIONAL ECONOMY OF UKRAINE

Coefficient	Years								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
financial dependence	0,22	0,25	0,24	0,25	0,22	0,55	0,56	0,59	0,58
budget coverage	1,00	1,01	1,03	1,01	1,07	3,08	0,87	0,90	0,89
provision of income with tax revenues	0,81	0,82	0,83	0,82	0,84	0,82	0,86	0,92	0,95
financial autonomy	0,30	1,52	0,26	0,27	0,25	0,23	0,28	0,29	0,27
provision of current and capital expenditures with own and fixed revenues	0,47	0,51	0,40	0,42	0,40	0,44	0,05	0,03	0,04
tax burden	0,42	0,38	0,42	0,43	0,56	1,08	1,57	1,58	1,57

Source: calculated by the authors on the basis of the materials from: Baldzhy, Dobrova 2018; Mokiy et al., 2018.

The coefficient of provision of income with tax revenues is within the normal range for all years under research.

The financial autonomy coefficient indicates the ability of local budgets to ensure funding at the expense of their own capital. Virtually all years (with the exception of 2011), it was less than the statutory value; it means that local budgets could finance only from 23 to 30% at the expense of their own revenues. The coefficient indicates the need to raise additional funds for the implementation of development at the meso-level.

The coefficient of providing current and capital expenditures with the own and fixed revenues is less than the normative one for over all years. This can be due to two factors: either failure to disclose their own resources by local budgets and expecting state support, or really low provision levels, which require a revision of development strategies and active involvement of investment resources.

The coefficient of tax burden and excessive norms since 2014 requires adjustments to the existing tax system in terms of local budgets. Reducing of the tax burden is a necessary condition for economic crisis recovery of Ukraine which will lead to a number of positive consequences in the economic and social spheres.

Excessive tax burden in the country adversely affects the development of the national economy, hinders business activity of economic entities, creates an atmosphere of mistrust to financial institutions, leads to "shadowing" of the economy, outflow of

national capital abroad, slows down the growth of gross domestic product and is one of the causes of social tension.

The scope of subsidies (as a share of GDP) has tripled - from 3% of GDP in 2010 to 9% in 2015. A high share of subsidies in local budget expenditures indicates that they need to be reviewed between the state and local budgets (Bridgman, 2001). Therefore, a significant impact of reforms on individual local budgets can be traced. Economically active communities will receive an expansion of the resource base since most of the revenue will remain in local budgets.

DISCUSSIONS

To determine the rationality in adopting the tasks and processing the results obtained, in our opinion, it is appropriate to use the principles of modeling, which will allow us to build a model for detecting the crisis situation of territories in the context of decentralization.

Modeling is based on the principles of similarity and mathematical analogy that compose a foundation for the theories, having the same name. In the studies related to crisis phenomena in the national economy in the context of decentralization, it is appropriate to use dimensionless quantities, since their values do not depend on the choice of the disparate unit system.

The rationale for this reasoning is the so-called Buckingham pi-theorem, according to which the relation between n dimensional quantities, independent from the choice of the system of units, can be given in the form n – k of dimensionless combinations of dimensional quantities, where k is the number of independent dimensions (Fedosieiev, et al., 2002).

In the proposed study, we suggest analyzing the developmental process of macro- and meso-level objects from the perspective of the national economy development as a whole. Therefore, we consider it appropriate to analyze the location of objects using cluster analysis. In this case, clusters of territorial entities of the country, which should be constructed on the basis of available statistics, will serve as objects of analysis.

Cluster analysis methodology, based on the concepts of object similarity, allows building clusters based on partial and common integral indicators of object functioning and the their ability to escape from the crisis due to the targeted orientation.

The k-means method implies detecting groupings in the data. The quality of such separation is then iteratively optimized, which allows minimizing the costs of crisis management by reducing the impact of serious risks at the early stage of anti-crisis management. Thus, k-partitioning allows splitting a set of n objects into a set of k-clusters with the following sequence:

1. A centroid is selected based on the k-data array.
2. In a cycle, it performs the following actions until it reaches the convergence criterion: a selection of k-clusters is formed by assigning each point to the nearest centroid; centroids are redefined; this algorithm can use different measures of distance (Yakymets, 2016).

In order to ensure correct determination of the aggregate (performance ratio) of the capacity utilization (E^y_s), it is appropriate to use the following equation:

$$E_s^y = \frac{P_p^y}{V_s^y} = E_n \bullet d_n + E_l \bullet d_l + E_k \bullet d_k, \qquad \text{Formula 1}$$

where d_n, d_l, d_k – respectively, are the relative shares of natural, labor and stock potentials in the aggregate potential;

E_n, E_l, E_k– respectively, are the potential of natural resources, the potential of labor resources, and the potential of fixed assets.

Indicator N can take the values of favorable, optimal, negligible, minimal and lowest decentralization degree. Depending on the obtained value of an indicator, a different approach to the development and implementation of territorial development strategies is applied.

For each territorial entity, the efficiency standard will have a differentiated character due to structural differences in the component composition of the aggregate potential of the territory. It allows substantiating the sources of cluster differentiation in the costs of social work and methodological conditions for conducting cluster comparisons. The latter can be carried out when bringing a component of the assessment to a single structural basis, which is advisable to be used as the structure of the overall potential of the state economy.

To identify the crisis situation of territories under decentralization, we propose to supplement the model with a risk factor that characterizes the ratio of a probable magnitude of the maximum possible loss ($З_{max}$) to the normative value of a socio-ecological and economic component of the territories calculated according to the formula (K_P):

$$K_p = \frac{3_{max}}{K_{oj}} 100\%$$

Formula 2

Along with this, it is appropriate to take into account an overall coefficient of decentralization in decision-making (K_d), which allows estimating the degree of decentralization in a specific management system and it is calculated according to the formula:

$$K_d = \frac{r_i}{R_i} 100\%$$

Formula 3

where r_i – the number of decisions taken at the lower levels of the hierarchy for the i-th period; R_i is the total number of decisions for the i-th period.

As a result of the conducted research, we propose a model for identifying the crisis situation of territories in the context of decentralization, taking into account the availability of potential (resource, labor), social, environmental and economic components of the development of territories, the risk factor of the crisis and the overall coefficient of decentralization. Eventually, it can be presented in the following form:

$$N = E_s^{\gamma} \bullet d_i \bullet K_p \bullet K_d .$$

Formula 4

where N – identification of the crisis situation of territories under the conditions of decentralization;

d_i – taxonomic index of the studied cluster configuration;

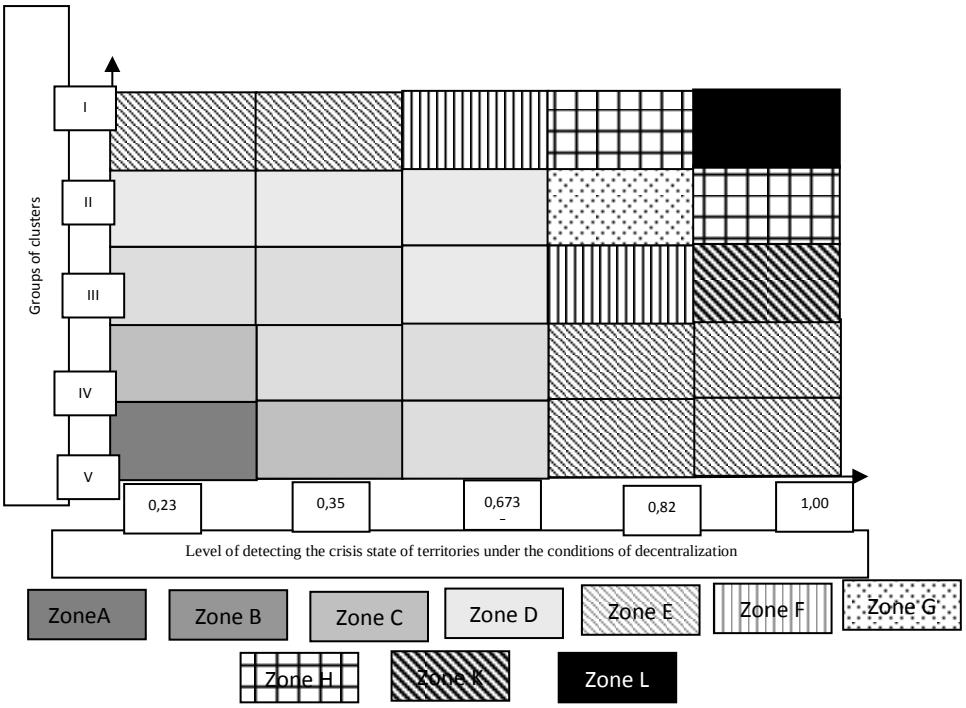
K_p – risk factor;

K_d – overall coefficient of decentralization in decision-making.

The results of calculating indicators were the base for ratings of possible configurations and clusters were made for the territory of Ukraine. As a result of cluster ranking by the level of factor macroeconomic indicators and factors taken into account, the administrative regions of cluster I, with the belonging Dnipropetrovsk and Zaporizhzhya regions, are the closest to the standard; their indicator of a crisis state of territories in terms of decentralization is the lowest among all administrative regions of Ukraine.

Cluster II includes eight administrative regions. Cluster III comprises four regions. Clusters IV and V clusters include five regions. The risk factor for the onset of crises or the onset of crisis phenomena is determined within the limits of favorable and optimal

states. Moreover, all clusters of the country are characterized by a minimal and insignificant degree of decentralization, which indicates slow movement in this direction. The results of calculations made it possible to move on to determining the type of anti-crisis strategy that is appropriate for each of the selected clusters. It was done using a graphical zoning method. As a result of calculations, a rating of possible configurations for the designated clusters was constructed.



GRAPH 3. GRAPHICAL MATRIX FOR DETERMINING THE TYPE OF ANTI-CRISIS STRATEGY

Source: composed on the basis of the calculations made by the authors.

All of the above requires the need to create a mechanism for crisis management of the national economy in the context of decentralization, highlighting the set of elements that have established links. The work of this mechanism will be based on the principles of improvement of relations between the state, entrepreneurs and territorial communities, on the basis of which the anti-crisis policy of the country will be formed, which will allow to make changes in the system of anti-crisis management, which will help to improve and solve problems of implementation of the principles of sustainable development and crisis avoidance.

The organizational-economic mechanism of improving the crisis management of the national economy in the context of decentralization is based on the system of provisions for sustainable development, as well as the involvement of dominants of autonomy and responsibility in making economic decisions; creating conditions that will ensure its effectiveness and lead to the formation and development of an effective economic system. The logical construction of the mechanism of crisis management of the national economy in the context of decentralization allows proposing concrete steps for the implementation, evaluation and control of management measures. In addition, the mechanism is aimed at improving approaches to economic decision-making, which will allow, in the implementation of decentralization policy, the development of the national economy in times of crisis.

CONCLUSIONS

Thus, the conducted study of the rationale for implementing decentralization for the development of Ukraine's economy in crisis situations allowed us to determine:

– peculiarities of the implementation of decentralization policy in the countries of Central and Eastern Europe, which allows to attract elements of this experience in Ukraine;

– the concepts of decentralization based on various economic and legal interpretations of the process, which made it possible to provide our own vision of the definition in accordance with current requirements;

– differences of analysis of foreign practice in implementation of decentralization reforms and its consequences, which made it possible to use it in forming the mechanism of crisis management of the national economy in the conditions of decentralization;

– analysis and evaluation of budget decentralization, on the basis of which the crisis situation of the regions of Ukraine;

– elements of modeling and improvement of the model of detection of the crisis state of territories in the conditions of decentralization, which allowed to take into account the unobserved parameters in the rational choice of decision-making for individual regions.

The scientific significance of the study is to identify the implications of decentralization for the development of Ukraine's economy and the features of its application in crisis situations. When implementing the principles of decentralization, part

of the anti-crisis measures is redistributed to the fate of territorial communities, taking into account the peculiarities of regional conditions, the potential and the choice of priorities in their implementation.

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ВЛИЯНИЕ ДЕЦЕНТРАЛИЗАЦИИ НА ЭКОНОМИЧЕСКОЕ РАЗВИТИЕ В УСЛОВИЯХ КРИЗИСА (НА ПРИМЕРЕ УКРАИНЫ)

Аннотация. Цель исследования - обосновать особенности реализации децентрализации для развития экономики Украины в период кризиса. Для этого были решены следующие задачи: изучение реализации политики децентрализации в странах Центральной и Восточной Европы и определение возможностей применения этого опыта в Украине; определение концепции децентрализации на основе различных экономических и юридических интерпретаций этого процесса в соответствии с современными требованиями; анализ зарубежной практики проведения реформ децентрализации и ее последствий; анализ и оценка бюджетной децентрализации; выявление кризисной ситуации регионов Украины и формирование стабилизации развития за счет внедрения принципов децентрализации. В результате проведенных исследований предлагается использовать модель выявления кризисного состояния территорий в условиях децентрализации, которая основана на учете имеющегося потенциала и особенностей процесса разработки. На основе уровня факторных макроэкономических показателей и рассмотренных коэффициентов предложенной модели был построен рейтинг возможных конфигураций и созданы кластеры по регионам Украины. Расчеты показывают, что все кластеры страны характеризуются минимальной и незначительной степенью децентрализации, что свидетельствует о медленном движении в этом направлении. Обосновано использование определенного типа антикризисных стратегий, специфичных для каждого из выделенных кластеров. Обоснована необходимость формирования механизма антикризисного управления национальной экономикой с привлечением принципов децентрализации, в основе которого лежит система принципов устойчивого развития, привлечения положений независимости и ответственности при принятии экономических решений; создание эффективных условий для реализации принципов децентрализации.

Ключевые слова: децентрализация, экономическое развитие, кризисные ситуации, антикризисные меры, дефлятор ВВП, антикризисное управление.

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Chapter 2

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THE CORONAVIRUS EFFECT ON GVC: IS AUTOMATION REDUCING THE OFFSHORING POTENTIAL OF LOW-COSTS LOCATIONS? CASE FOR EAST EUROPE COUNTRIES

Abstract: The coronavirus pandemic that emerged in early 2020 caused a global economic shock. A long-term reaction may be the acceleration of the automation process, which may lead to a decrease in demand for simple work and to an increase in income differentiation. East European countries due to coronavirus pandemic are endangered by reshoring labour-intensive manufacturing activities back to high-income economies. Increasing automation which has already enabled some leading firms to do so is now accelerated due to problems in coordination in GVC during COVID-19 pandemic. Therefore, the aim of this paper is to make an attempt to answer the question whether automation, due to coronavirus pandemic, in established manufacturing centres may reverse process of offshoring by reducing it. The analysis is based on statistical data from Eurostat and OECD . Using data on the flow of FDI to individual industries in 2008-2018 and the level of hourly labour costs in the same period, a cluster analysis was conducted. The results showed that participation in GVC of low labour costs countries of East Europe is connected with reducing costs of production by international companies and offshoring tasks which do not require high skills. This means, that those tasks could be easily swapped by robots. There are also some recommendations made for minimizing the risk of outflow of FDI from East Europe countries.

Key words: GVC, coronavirus, labour costs, automation

JEL classification: F1, F6, J3, O3

INDRODUCTION

Global Value Chains (GVC) is the complex network structure of flows of goods, services, capital and technology across national borders. GVC encompass every stage of production, starting from conception, through middle stages such as: acquiring raw materials, intermediate age of assembly, distribution, service, final assembly and post-sale service (De Backer, Miroudot, 2015). In contrast to classic trade theories, specialization do not consider specific products but rather tasks and functions. This is called trade in tasks. Historically, new technologies and changing trade patterns have tended to widen

the circle of countries benefiting from expanding production. As countries' costs rise, production tends to move into more capital-intensive goods, with the more labour-intensive tasks moving to lower-cost locations offshore. This model of industrialization and trade has been observed for several decades, as the more labour-intensive tasks have shifted from developed economies to the newly industrialized economies of East Europe (for example Poland and Ukraine), Asia and China.

The unexpected COVID-19 coronavirus pandemic that emerged in early 2020 caused a global economic shock. The closure of many markets and borders has triggered an economic crisis that will affect all countries. The labour market reacted sharply to this situation. The immediate reaction was the mass sending of employees to remotely controlled work, and the reduction of employment and wage cuts in the sectors of the economy most affected by the crisis. On the other hand, a long-term reaction may be the acceleration of the automation process, which may lead to a decrease in demand for simple work and to an increase in income differentiation. Another important consequence of the pandemic may be a different view on both the role of the state in the economy and the international division of labour and global supply chains. Therefore, the aim of this paper is to make an attempt to answer the question whether automation, due to coronavirus pandemic, in established manufacturing centres may reverse process of offshoring by reducing it.

THE ESSENCE OF THE PROBLEM – GENERAL VIEW

Due to the fact that the COVID-19 pandemic is an unprecedented and extremely dynamic situation, economic forecasts are subject to high uncertainty and a margin of error. However, the first opinions of economists regarding the modification of the existing assumptions of the theory of economics and economic policy have already appeared.

The coronavirus pandemic has caused a sudden economic downturn. To reduce costs, companies decide to cut wages. This may seem like a cautious short-term move, but it could have a negative effect on economic recovery. Huge wage cuts were last seen more than ten years ago during the global financial crisis that started in 2008. The idea is that instead of laying off all employees, companies can save on labor costs, but keep business going by lowering wages and shortening working hours. With the coronavirus outbreak continuing, many countries are taking action to slow the spread of the virus, which could be argued in favor of wage cuts. On the one hand, companies keep workers

on the job, who in most cases receive benefits. Even if workers earn less money, the hope is that when the economy reopens, companies can reverse wage cuts quickly. On the other hand, economists are not sure what will the economic recovery look like? While some have hope for a quick bounce or a V-shaped recovery, many say it can take much longer for people to feel comfortable again, they tend to the "U shape" or even the letter "W" (in the case of the second "epidemic wave", i.e. a slight increase is followed by a recession). Should the latter scenario unfold, experts expect the negative effects of wage cuts to persist. J. Song (Business Insider, 2020) states that "In the longer term, it will result in lower expenses. That's where the scarcity appears, which could lead to a slower recovery.

L. Tyson (2020) believes that the pandemic and the subsequent recovery will accelerate the current digitization and automation of work, trends that have eroded medium-skill jobs, increased the number of high-skilled jobs over the past two decades, and contributed to stagnation of medium-sized wages and increasing income inequality. According to the economist, many low-wage, low-skilled, private services, especially those provided by small businesses, will not recover from the crisis. However, workers providing basic services such as police, fire fighting, healthcare, logistics, public transport and food will be sought, adding to pressure to raise wages and increase benefits in these traditionally low-paid sectors. According to Tyson, the crisis will accelerate the growth of non-standard precarious employment of employees half part time. New low-cost training programs, delivered digitally, will be required to provide the skills required for new jobs. The sudden dependence of so many people on the ability to work remotely is a reminder that a significant and inclusive expansion of broadband and other infrastructure will be needed to accelerate the digitization of business.

J. Moshi (2020) believes that in order to create long-term resilience to economic shocks, there will likely be further work automation and the use of artificial intelligence (AI) in supply chains. Technologies these reduce physical intervention, reducing the risk of viral transmission and reducing dependence on the human factor. They can also allow you to scale and reduce production in response to a sudden demand.

J.E. Stiglitz (2020) found that in a globalized world where borders do not matter, there was a belief among developed countries that there is always the possibility of turning to other countries should something happen. The food or energy security policy played a secondary role. The coronavirus crisis provides a strong reminder that a fundamental political entity and economic is still the nation state. Stiglitz says that in

order to build seemingly efficient supply chains, the cheapest manufacturer of each link in the chain was searched worldwide. COVID-19 showed that it found building a system that is simply not resilient, insufficiently diverse, and prone to disturbance to be short-sighted. Production and distribution on time, with low headroom or no inventory, may be able to absorb small problems, but now it has shown how the system has been crushed by unexpected disruptions. Stiglitz emphasizes that states will have to strive for a better balance between the use of globalization and the necessary degree of independence.

Supply chain networks are another channel through which COVID-19 adversely affects the global economy. As evidenced by evidence from various markets, the functioning of global supply chains has been disrupted by the current crisis. This generates side effects at different levels of the supplier network. Car companies are shutting down due to parts shortage. This is also the case in most industrial sectors. Even for luxury goods like Swiss watches, manufacturers struggle with part supply disruptions (Fernandes, 2020). A compromise between performance and resilience has become obvious to many managers. Understandably, some companies prefer to have plants (or suppliers) dispersed in different countries as a risk minimization strategy, even if this means a slightly above average cost.

There are two main channels for the side effects of disrupting the global supply chain. The first are production shocks, and the second are shocks in trade flows due to transport and logistics disruptions. Chinese factories are not only affected by blockades and quarantines, but also a slowdown in production facilities in other countries due to production shortages from China, such as raw materials, manufactured materials, and machinery and equipment (Barua, 2020, str. 12). The COVID-19 pandemic has therefore revived the discussion about the future importance of China in global supply chains and the transfer of part of production from China to other countries.

G. Gereffi (2020) writes that offshore production networks have different geographies. Nearshoring, or the regionalization of supply chains, is often considered to have security advantages compared to optimized supply chains in distant locations. The search for resiliency encourages MNE lead firms to diversify their supply chains in multiple ways in order to retain scale economies, reasonable costs, and innovation opportunities. Strategic options could include the following measures: (1) bolster capacity in the home country to address security concerns for products deemed essential; (2) expand the number of international production sites to avoid overreliance or dependence

on one or two loca-tions1; (3) seek large and growing end markets that can be served from an international production network; and (4) nurture production, research and marketing partnerships with firms in related industries.

The report published by the Polish Economic Institute (2020) envisages four scenarios according to which production could be transferred from China. In the first, India and the countries of Southeast Asia become the "Asian factory". The second scenario assumes that all countries will reduce Chinese imports to the benefit of domestic economies. In the third scenario, EU countries reduce imports from China to the benefit of the new member states: Poland, the Czech Republic, Hungary, Slovakia, Romania and Bulgaria. In this case, the countries of Central Europe would become the "factory of Europe". In the fourth scenario, EU countries reduce production from China by 20 percent, of which 10 percent. replaced with domestic production, and another 10 percent. comes from the countries of Central Europe.

Research connected to relationship between robots and offshoring gave evidence on how increased automation has already enabled some leading firms to reshore labour-intensive manufacturing activities back to high-income economies (Lewis, 2014). This is also manifested in emerging FDI flows from high-income countries to low- and middle-income countries (Inomata i Taglioni, 2019). The relationship between robots and offshoring, however, varies across sectors. Hallward-Driemeier and Nayyar (2017) show that the use of robots in high-income countries has increased steadily over the past two decades, with the steepest increases in motor vehicles and other transport equipment, and electrical machinery and electronics.

EAST EUROPEAN COUNTRIES AS THE SUBJECT OF INVESTIGATION

To present if low-cost East European countries are endangered by automation of production accelerated by coronavirus pandemic there will be conducted analysis on the base of statistical data from Eurostat and OECD. Using data on the flow of FDI to individual industries in 2008-2018 and the level of hourly labour costs in the same period, a cluster analysis was performed, which is a tool for exploratory data analysis. The aim of the analysis is to arrange the objects into groups in such a way that the degree of connection of objects with objects belonging to the same group is as high as possible, and with objects from other groups as small as possible. In other words, the cluster analysis will show groups of countries that will be characterized by a similar course of the studied

variables (FDI and labour costs). Data on FDI in individual industries of the EU countries are kept by Eurostat and UNCTADstat. Unfortunately, the information on the inflow of foreign capital to specific sectors of the economy is lacking. The availability of data allows for the analysis of the period 2008-2018. Data gaps in individual countries resulted in the need to exclude some countries from the observation, thus reducing the number of variables studied. Data on the level of hourly labor costs come from Eurostat. For the purposes of the study, FDI was analyzed according to the previously adopted industry classification in terms of the degree of technological advancement. The cumulative value of FDI inflow to individual branches was calculated and on this basis the percentage share of FDI in high and medium-high technologies in total FDI was determined in each country.

RESULTS

Most of East Europe countries are characterized by low labour costs in comparison to developed West Europe countries. In 2019, the average level of hourly labour costs of manual workers for the EU-28 was 22.83 EUR/h (Eurostat). In Poland, it was more than two times lower (10.7 EUR/h). Lower labour costs than in Poland were recorded only in Bulgaria, Romania, Lithuania, Latvia and Hungary, where their level did not exceed 10 EUR/h. Denmark, Luxembourg and Belgium are the countries with the highest hourly labour costs in Europe, where the average labour cost is over 40 EUR/h. Ukraine with 2.16 EUR/h in 2019 (State Statistics Service of Ukraine, 2020) had one of the lowest ratio of average hourly labour costs in European countries. The reasons for the low level of labour costs in those countries can be attributed to several factors. It is impossible not to notice the correlation between the level of labour costs and GDP per capita and the level of labour productivity. The reasons for the low level of labour productivity can be traced to several factors. Among them, the most frequently mentioned are: low level of technical equipment for work and small capital resources, outdated economic structure, domination of small and medium-sized enterprises in the economy, and liberal policy favoring entrepreneurs, enabling the achievement of satisfactory profits without the need to introduce new technological and organizational solutions.

The decisive factor attracting foreign capital to the low-cost countries of Eastern Europe is the location advantage resulting from lower production costs. Capital is

invested in industries of consumer goods intended for export, on average in medium-high or medium-low tech industries, which was characteristic also for Poland (Table 1).

TABLE 1. FDI INFLOWS TO INDUSTRY SECTIONS IN 1996-2018 IN POLAND (MLN EUR)

Section	1996-2000	2001-2006	2007-2012	2013-2018	Cumulated FDI 1996-2018	Average gross wage 2018 1999=100
Manufacture of food products, and tobacco products	2043,6	1473,9	2066,2	2645,7	8229,4	236,8
Manufacture of textiles and clothing	90,8	16,8	77,1	383,0	567,7	267,8
Production of wood, paper; polygraphy and reproduction	887,2	1283,5	-913,4	1813,8	3071,1	268,1
Production of coke and refined petroleum products	9,4	79,9	-327,6	-85,6	-323,9	276,1
Manufacture of chemicals and chemical products	832,7	1368,4	2846,9	677,5	5725,5	233,8
Manufacture of pharmaceutical products	:	:	436,1	550,9	987,0	:
Manufacture of rubber and plastic products	543,7	1454,2	1654,7	982,4	4635,0	264,6
Production of metals and finished metal products, except machines and devices	423,1	2054,6	3703,7	2541,5	8722,9	252,9
Manufacture of computers, electronic and optical products	0,0	0,0	-265,8	350,8	85,0	175,5
Manufacture of computers and peripherals	30,8	153,8	254,4	9,8	448,8	:
Manufacture of telecommunications equipment and consumer electronics	251,2	605,9	347,1	283,2	1487,4	269,4
Production of measuring, navigation, precision and optical instruments, clocks and watches as well as medical apparatus	:	:	-249,6	73,5	-176,1	:
Manufacture of machinery and equipment not elsewhere classified	299,7	802,3	855,5	1735,5	3693,0	191,7
Manufacture of motor vehicles, trailers and semi-trailers	1425,3	2928,7	2720,5	4747,8	11822,3	277,1
Manufacture of other transport equipment	40,6	280,8	958,0	985,8	2265,2	289,5
Manufacture of aircraft and spacecraft and related equipment	:	:	610,9	518,0	1128,9	
Other manufacturing sectors (total)	:	:	1479,1	2297,8	3776,9	

Source: own study based on: (NBP, 2003-2018)

In 1996-2018 in Poland, the greatest number of foreign direct investments flowed into the sector of motor vehicles, trailers and semi-trailers (EUR 11 822 million),

production of metals and finished metal products, excluding machinery and equipment (EUR 8 722 million), and the production of food, beverages and products tobacco products (EUR 8 229 million). Investments in these three sectors alone accounted for over half of all foreign investments in Poland in the analyzed period. Investments in high technology sectors accounted for 6% of the total value of FDI. It is precisely in more technologically advanced sectors, such as electronics, car production, computers, FDI are focused more on assembling assemblies manufactured abroad than on production. Foreign investors rarely develop their research and development facilities. New technologies are mainly imported from parent companies located abroad, while entrusting the development of new technologies to domestic institutions and enterprises is very rare. It is not surprising, however, due to the lower level of technology and expenditure allocated by Polish companies and institutions to R&D compared to the countries from which investments come.

The predominance of foreign investments in the low and low-intermediate technology industry in Poland may mean that the main determinant of FDI inflow are relatively low labour costs compared to other European countries. In order to verify whether the situation in other EU countries is similar, the structure of FDI in these countries was analyzed in order to compare it with the level of labour costs. Using data on the flow of FDI to individual industries in 2008-2018 and the shaping of the level of hourly labour costs in the same period, a cluster analysis was performed, which is a tool for exploratory data analysis. The calculations of the cluster analysis are presented below.

Affiliation to clusters

Observation number	Country	Centre	Distance
1	Italy	1	6.092
2	Czech Republic	2	4.696
3	Estonia	2	12.821
4	Finland	1	4.668
5	France	1	19.644
6	Hungary	2	13.839
7	Ireland	1	22.222
8	Latvia	2	10.449
9	Poland	2	12.511
10	Slovakia	2	24.908
11	Slovenia	2	18.222

Observation number	Country	Centre	Distance
12	Spain	1	26.540
13	Sweden	1	19.131

Initial cluster centres

	Cluster	
	1	2
Share of FDI in the high and medium-high technology industry	92.63%	0.00%
Hourly labour costs in EUR (2018)	21.2	10.9

The course of iteration

	Change in cluster centers	
Iteration	1	2
1	26.540	24.908
2	.000	.000

Ultimate Cluster Centers

	Cluster	
	1	2
Share of FDI in the high and medium-high technology industry	67.99%	24.91%
Hourly labour costs in EUR (2018)	31.1	11.1

The distances between the ultimate cluster centres

Cluster	1	2
1		47.469
2	47.469	

Analysis of variance

	Cluster		Bias		
	The mean square	df	The mean square	df	F
Share of FDI in the high and medium-high technology industry	5996.027	1	306.215	11	19.581
Hourly labour costs in EUR (2018)	1284.013	1	21.520	11	59.665

Analysis of variance

	Relevance
Share of FDI in the high and medium-high technology industry	.001
Hourly labour costs in EUR (2018)	.000

Source: own study.

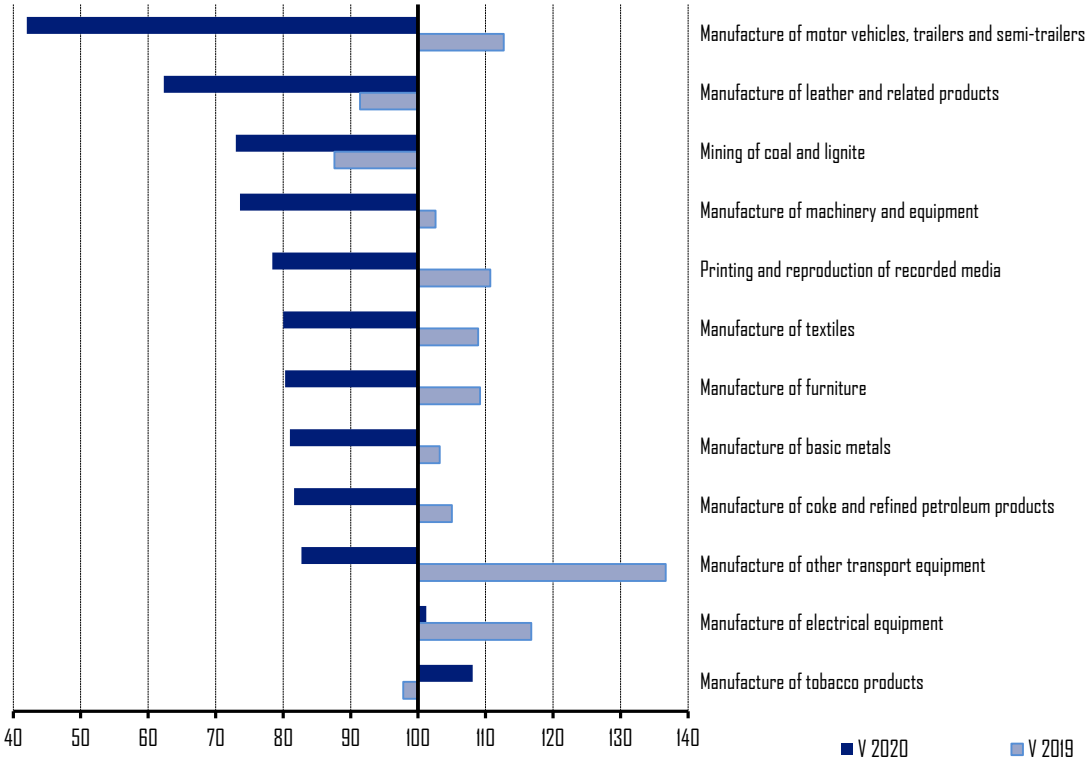
The cluster analysis confirmed that countries with higher relative labour costs have a dominant share of FDI in high and medium-tech industries, while countries with lower relative labour costs have a greater share of FDI in medium-low and low-tech industries. The first group includes: Italy, France, Ireland, Finland, Spain and Sweden, while the second group includes the Czech Republic, Estonia, Hungary, Latvia, Poland, Slovakia, Slovenia.

The above grouping has shown that countries with low labour costs, such as Poland, are also characterized by the inflow of a dominant amount of foreign direct investment in low and medium-low technology industries, and the FDI structure coincides with the structure of the country's national production in terms of technological advancement.

The biggest GVC in which Poland take part is manufacture of motor vehicles, trailers and semi-trailers. Car sales collapsed around the world due to the COVID-19 pandemic. The automotive crisis began when many factories in China were closed. This disrupted the global supply chain. Production downtime and a severe drop in demand completed the problem. Car companies are liquidating some jobs (Money.pl, 2020). The decline in sales in Germany is particularly worrying as it is the most important European market for the automotive sector. Also, a longer suspension of production in China will result in a lack of supply of parts to the markets and may seriously harm the automotive sector around the world, including Poland. The motor vehicle production sector in Poland is one of the most jobs and attracts the most FDI. The collapse of this market may therefore turn out to be extremely severe for the Polish economy. Due to the strong links of the Polish economy within global value chains and foreign trade, the situation in other countries, and especially Poland's largest trade partner, i.e. Germany, will significantly affect the economic situation in the domestic economy.

In Poland, in May 2020 (GUS, Dynamics of sold industrial production in May 2020) Sold industrial production was lower by 17.0% compared to May last year, when an increase was recorded by 7.7% compared to the analogical period of the previous year,

while compared to April br. increased by 10.1%. In the period January - May this year. sold industrial production was lower by 7.9% compared to the corresponding period of the previous year, when an increase by 7.0% was recorded. In all major industrial groupings in May this year. there was a decrease in production on an annual basis. Production of capital goods decreased by 38.4%, durable consumer goods - by 13.7%, intermediate goods - by 13.5%, energy-related goods - by 10.0%, and non-durable consumer goods - by 8.7% . Changes in the production of individual sectors are presented in Graph 1.



GRAPH 1. DYNAMICS OF SOLD PRODUCTION OF INDUSTRY BY SELECTED PKD DIVISIONS (FIXED PROCES; PREVIOUS YEAR=100)
Source: (GUS)

According to preliminary data, in May 2020, compared to May last year, a decline in sold production (in constant prices) was recorded in 30 (out of 34) industrial sectors, incl. in the production of motor vehicles, trailers and semi-trailers - by 58.0%. Due to the prediction of one of the largest economic collapses in years, governments of many countries decided to introduce assistance programs in order to minimize the negative consequences of the pandemic. In Poland, the government has prepared the so-called

"Anti-crisis shield" - a package of assistance benefits for entrepreneurs and the self-employed. However, these solutions serve so far to protect jobs. There are no programs supporting changes in the introduction of new technology and long-term solutions aimed at reforming the economic structure.

DISSCUSION

The results showed that participation in GVC of low labour costs countries of East Europe is connected with reducing costs of production by international companies and offshoring tasks which do not require high skills. This means, that those tasks could be easily swapped by robots. Now, when pandemic showed that high internalization is connected with risk of breaking the production chain, high income countries has two scenarios of handling with that problem. First one is to invest in automation of production which will allow to shift back labour-intensive tasks to high developed countries. Second one is shifting production from China to European countries and increasing the diversification of production and the number of participants in the chain.

The question is how East Europe countries can minimize the risk of outflow of FDI in case of the first scenario. Entering and upgrading in GVCs is possible mainly by leveraging global technology ecosystems and by responding rapidly to changes in market demands and consumer tastes. However, the important message is that entry into GVCs alone does not translate automatically into technological upgrading. To move up to high value-added tasks in technologically advanced value chains requires additional and complementary efforts by local economic entity. First of all, there should be done some important relationships between foreign core technology providers and local manufacturers. The role of goverments in developing countries is to reform the domestic investment environment in a manner to stimulate and rationalize technological transfer. Secondly, manufacturing can no longer thrive with unskilled workers alone, and many tradable services are skill intensive. Therefore, there should be an emphasis on education in the fields such as digitization, automation and robotization. Moreover, the development of legal/institutional bases should be overtaken. This implies changes not only in physical infrastructure, trade policies competition policies, wage levels, workers' educational attainment, and so on, but also reform of intellectual property rights in less developed countries.

CONCLUSION

East European countries due to coronavirus pandemic are endangered by reshoring labour-intensive manufacturing activities back to high-income economies. Increasing automation which has already enabled some leading firms to do so is now accelerated due to problems in coordination in GVC during COVID-19 pandemic. To prevent and minimize losses there should be some actions overtake by local actors. While international connectivity is a key for entering GVCs, domestic governance matters for upgrading therein. The advice for seeking to upgrade toward the global technology frontier is to prioritize measures that encourage firms to be full partners in global technology systems.

Automation does not pose immediate risks to labour intensive exports from developing countries, but governments need to develop a comprehensive digital strategy. Automation is irreversible process which now sped up significantly. Policy makers will have a strong incentive to encourage and enable rapid adoption of automation technologies in order to capture the full productivity boost necessary to support economic growth targets. At the same time, they will need to think through how to support the redeployment. One of the challenges of the new era will be to ensure that wages are high enough for the new types of employment that will be created, to prevent continuing erosion of the wage share of GDP.

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Chapter 3

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THE DETERMINANTS OF LOCAL ECONOMIC DEVELOPMENT: THE EXPERIENCE OF UKRAINE AND POLAND

Abstract: The problem of ensuring local economic development based on rational using community potential has been studied. The dominance among scientists of one-sided approach to interpretation of the category "potential" economic essence has been noted. The components of the potential, which are its different varieties, have been identified. In the paper we have been talking about the awareness of the need for publicity of information about the potential of society and indicates the feasibility of presenting for this promotional video about the local potential and resources, as well as the feasibility of forming an economic profile as a kind of specific advertising brochure of the community. In the paper the attention has been focused on state support for those types of activities, the development of which on the basis of mobilizing local resources can provide the maximum effect in the form of economic and social consequences for the local economy. The examples of state support for the cooperative move in Ukraine and Poland have been given. The experience of Poland in such instruments of local economic development as the creation of territories of business presence, the construction of a municipal sports and recreation center for people with disabilities, the creation of a multifunctional public area based on local potential have been considered. The benefits of the introduction of inter-municipal cooperation in Ukraine as a tool for ensuring local economic development of communities have been analyzed. The proposals regarding the choice of one of the local economic development tool based on the existing potential of municipalities have been given.

Key words: community, potential, public sector, social economic development, cooperation, inter-municipal cooperation.

JEL classification: R10, R50

INTRODUCTION

An important guarantee of the territorial community's well-being is its economic development, which ensures proper employment of the able-bodied population, an increase in revenues to the local budget, appropriate improvement of the community and development of its infrastructure and service system. The ability of territorial communities to achieve development is primarily due to their own potential. Certainly,

not all communities have the same potential for development, in particular, the size of the territory, the availability of natural resources, skilled labor, an extensive transport network, energy resources, elements of landscaping, etc. However, the effective use of even limited potential can bring significant benefits to the community.

In turn, the efficiency of using an existing potential determined by the ability of local governments to implement local economic development (LED) policy. The basis of this policy is formed by a qualitatively conducted socio-economic analysis of the available resources, which helps to identify and analyze the potential in all its varieties, to make a decision on the mobilization and involvement of its components in economic circulation; identify basic problems and key vectors of development, introduce effective incentives and levers aimed at stimulating economic growth in communities.

The problem of ensuring local economic development based on rational using community potential is relevant, in our opinion, from two aspects. On the one hand, from the point of theoretical and methodological approaches to its solution, on the other hand from the point of researching practical tools of local economic development which have been used in Ukraine and abroad and can be recognized as best practices of local government.

The aim of the article is to analyze the existing practices of implementing LED tools in Ukraine and Poland from the perspective of the rational use of the existing potential of local communities, as well as to identify the factors of their success.

LITERATURE REVIEW

Potential questions have been widely covered in the works of Ukrainian and foreign scientists. The overwhelming majority of them concern the potential of large territorial entities, for example, a country as a whole or a region in particular. At the same time, the reform of the territorial organization of authority, which started in Ukraine in 2014, shifted the focus to low-level territorial entities, that led to the emergence of a number of works that concern of the potential at the community level. Thus, the author's team under the leadership of O. Yu. Bobrovskaya rethought the meaningful interpretation of the concept of "resource potential of local government" and its intangible components (Bobrovskaya, Krushelnytska, Latinin, et al., 2017). The problem of analyzing individual components of the potential and the feasibility of ensuring transparency and openness of this information for all stakeholders of local economic development has been raised by

scientists studying the problem of strategic planning of local economic development. Such foreign scientists as N. Albert, J. Bryson, J. L. Gordon, S. Gofer, K. Andrews, D. Harrison, F. Haywood, A. Chandler, D. Shendel, E. Blakely and N. Leigh have been devoted their work to research above-mentioned problem. Later they were joined by Ukrainian scientists, such as G. Vasylchenko, I. Parasyuk, N. Yeremenko, S. Bila and many others.

Paying tribute to the theoretical developments of the above mentioned scientific problems of ensuring local economic development on the basis of the rational using the potential of community is not solved in a complex The attention of some researchers is attracted by the issue of potential and its components, while others – by possible tools for enhancing local economic development. At the same time, the complexity of the problem, taking into account the two aspects mentioned above (theoretical and methodological, practical), requires its research in terms of the essential understanding of the territorial community's potential, determining its components, justifying the expediency of conducting an inventory, identifying the most priority components of the potential for a certain stage of the economic development of the community and those that will set the vector for making management decisions in the long term perspective, as well as the analysis of real practical examples of enhancing local economic development, taking into account the priority components of the potential.

MATERIALS AND METHODS

The methodological research toolkit, used in the paper, is a set of general and special methods of scientific cognition, such as: the method of scientific abstraction and concretization – when formulating the conceptual-categorical apparatus of scientific research; observation, comparative analysis and analogy – in determining the components of the community's potential, justifying the feasibility of forming an economic profile, researching possible instruments for ensuring local economic development based on the rational use of the existing potential; systematization – when highlighting the reserves for increasing the efficiency of managing the community's potential; methodological techniques of tabular and graphical presentation of research results, groupings.

RESULTS

In the scientific literature there is no single essential understanding of the category of "potential", as well as its variety – potential of the territorial community. O. Yu. Bobrovska and T.O Savostenko are right about the existing in scientific circles definitions of the category. Scientists (Bobrovskaya, Krushelnytska, Latinin, et al., 2017) note the dominance of a one-sided approach to the economic essence of potential: either as a set of resources, or as the ability of the economic system to produce products, or as the ability of productive forces to achieve a certain effect.

When it comes to local self-government, scientists (Kuzmin, Susyak, 2015) usually use the approach from the theory of management when the understanding of the organization potential is adapted to the potential of the local community as a socio-economic system. According to this approach, the potential is the funds, stocks, resources that are available and can be mobilized, putted into action or used to achieve a certain goal, plan implementation and solution of any task.

In our understanding, the category of "potential" is the opportunities that can be realized in future. Such opportunities are provided by the ability of available resources to meet the needs of society at a certain stage of its development. Basically, this ability is determined by the strategy of local economic development, taking into account the influence of a number of endogenous and exogenous factors. Accordingly, the source of local economic development is the inventory of all resources available in the community. It is necessary in order to have information about resources owned by the community and in what quantity in order to make management decisions regarding their possible use, rational and effective involvement in business, taking into account the strategic priorities of local economic development. Only according to the inventory data, it becomes possible to determine the priority directions of community development for the long-term perspective and to select tools for intensifying local economic development taking into account the rational use of existing potential.

Since we are talking about a certain set of resources, respectively, a potential is a system consisting of certain subsystems, which are individual types or varieties of potential. Usually, the potential of a municipal entities divided into the following components: natural resource, economic, labor, financial, tourist, spatial, infrastructural, scientific, technical, informational, etc. (Vakhovych, Zabedyuk, 2010, p. 43).

Recently, information on the individual components of the community's potential can be found in free access, for example, on the official websites of local communities. Some communities have promotional videos about their potential and resources. These videos tell about the features of each community, show their attractiveness for tourists and reliability for investors.

At the same time, it is necessary to note that in Ukraine not so long ago communities realized that the promotion of their potential is one of the tools to ensure local economic development. This understanding is a consequence of the implementation in Ukraine of a number of projects and programs of international technical assistance that allow Ukrainian public sector representatives to familiarize themselves with international best practices in managing local economic development. Such programs include the USAID “Competitive Economy of Ukraine”, the Swiss-Ukrainian DESPRO Project "Supporting Decentralization in Ukraine", and the International Technical Assistance Project "Partnership for Urban Development" (PROMIS Project).

The simplest step in communicating information about the components of community's potential to the society is, in our opinion, drawing up an economic profile of the community. The document contains information on the components of the local economy potential, its competitive position, prospects for development. It allows perceiving this document as a basis for improving the "ecosystem", establishing new businesses and promoting economic activity in the community. The profile serves as a kind of the community advertising booklet and is an information basis for making a management business decision by potential market players. Thus, according to the economic profile, a business may be interested in certain objects that are available in the community for business activities; it can see the prospects for development and areas or industries that deserve government support. In turn, it will encourage businesses to make plans for the future in accordance with the approaches and strategic goals declared by the public sector.

Promoting community potential through video or economic data is one of the passive tools for local economic development. At the same time, local governments, having information about different components of the community’s potential and making, based on it, plans for the prospects of community development, have active tools of local economic development. One of such tools is state supporting or state stimulation of those activities the development of which based on mobilization of local resources is able to

provide the maximum effect in the form of economic and social consequences for the local economy. So, state supporting or stimulating certain activities certainly should be based on data from the analysis of the available community's potential.

An example of state support for such activity as cooperation is given below. The application of such tool of local economic development as cooperation can be observed not only in Ukraine, but also in our closest neighbor – Poland, where have been organized many study tours to share the experiences of local governments in the framework of international technical assistance projects. Cooperation as a powerful tool of local economic development, on the one hand, meets the needs of members of cooperatives as consumers; on the other hand, it increases on this basis economic activity at the local or even regional level and welfare of community residents (including farmers, small producers, small businesses, and self-employed people).

Most communities in Ukraine have the necessary potential to develop cooperation. First, the amalgamated territorial communities have attractive conditions for agricultural production (availability of fertile lands, temperate-continental climate, availability of pastures for cattle grazing, etc.). Secondly, the community inhabitants are engaged in the cultivation of crop products or the production of livestock products; land plots of households occupy a considerable area. At the same time, one of the greatest problems of the amalgamated territorial communities especially of rural types is the lack of industrial enterprises and industrial production. Therefore, there is a problem of lack of jobs. For the employable population this problem is solving by migration or through self-employment. If you look at the way of employment through self-employment, in most cases for those who wish to start a business there is an obstacle to buy the equipment for tillage or processing of manufactured products due to its high cost and lack of funds (unavailability of loans) and economic inexpediency of its use in small areas. But, if the community will not specialize in the production and sales of raw materials but will establish its processing, it will provide additional revenue and leave added value for the members of the cooperative and community residents.

Therefore, the creation of cooperatives will create conditions for the formation of large batches of products, improving its quality indicators, creation of new jobs, increasing local budget, ensuring the sustainable development of an amalgamated territorial community. Thus, the cooperative move is one of the instruments to increase employment through direct job creation.

Depending on the specialization of the amalgamated territorial communities formed in Ukraine, many of them have opportunities to establish cooperatives of various specializations. It can be meat and dairy processing cooperatives, cooperatives for the processing of grain for feed, cooperatives for the collection, drying and processing of berries and fruits, cooperatives for processing of vegetable and fruit and vegetable crops, cooperatives for growing of garlic, blueberries, on the cultivation and processing of medicinal and essential oil plants, cooperatives of beekeepers, etc.

On January 1, 2019 there are 1286 cooperatives were established in Ukraine. The largest number of them is in Ivano-Frankivsk region (76), Cherkasy (67) and Kyiv region (58). The smallest number of them is in the southern regions of Ukraine, in Odessa and Nikolayev area (Bezus, Kurbatskaya, Kadyrus, 2019, p. 5). At the same time, the establishment of cooperatives requires considerable effort in terms of convincing residents about the feasibility of establishing this type of business. Today, most citizens are accustomed to working without any obligations to the budget, fellow villagers. Association in a cooperative imposes on them the burden of organizational work to create a cooperative, certain obligations for state registration of a business entity, work in a team, planning joint activities.

One of the example of the government's interest in developing cooperation between residents is the experience of one of the communes of Poland – Raciechowice from Myslenytsia district of Malopolska voivodeship. The commune has about 6,000 inhabitants. All business in the commune is small business. The main type of economic activity is horticulture. It involves more than 50% of the working population of the commune. The Grodzisko cooperative operates there. The development of the cooperative was facilitated by local authorities. The commune authorities initiated and conducted training for local residents at the initial stage. It is noteworthy that it took 3 years to prepare (through practical training, education and visits) future members of the cooperative. Among all participant of study process, only 50 persons completed their studies and 11 of them formed a cooperative (11.01.2018). Authorities also helped with the premise. Now the members of the cooperative have a privilege from the local budget to pay real estate tax (the total tax for the company is about 120 thousand euros per year). This is a real example of promoting local economic development from the standpoint of local governments.

Another example is the Owoci lacki producer group (Owoc Łącki). The cooperative is located in the south of Poland, in the largest horticultural area. There are six such groups in the district, but only Owoci Laski has a cycle from production to sorting, packaging, juice production and delivery to retail chains. The cooperative has two enterprises: for sorting and packaging of apples and since 2013 for the production of juices. Investments in both companies is about 10 million euros. The European Union invested 70% of this amount in first enterprise and 50% in the second one. It is important to note that it was the commune authorities that helped with organization and selection of people.

Nowadays, the potential of agricultural cooperation remains insufficiently realized in Ukraine. Although there are many examples of successful cooperatives in different regions of the country. For example (Councilor elders, 2019), there is the dairy cooperative in Lviv region ("Pokrova") and Dnipropetrovsk region ("Dobrobut Andriyivka" and "Molocharske"), berry cooperative in Dnipropetrovsk region ("First berry") and in Ternopil region ("Generous land"), bee cooperative (for example "Rukshinsky") and many others.

Some communities adopt appropriate programs to support the cooperative move that allow encouraging villagers to create them. Presenting these programs it is extremely important to convey the benefits of supporting the population in villages (settlements) by establishing cooperatives. In particular, it is employment, local economic development and community attractiveness for donors and, of course, increasing revenues to the local budget in the form of taxes. Inhabitants must understand why they need to create a cooperative, how they benefit from its creation and whether they have local government or state supporting their business. This policy largely determines the success of future cooperative activities.

An effective tool for local economic development is the creation of areas of business presence. This becomes possible when the community has first vacant land plots, which can be allocated for the arrangement of various warehouses, logistics centers, service stations for trucks, etc., and secondly, most importantly there is a demand for services for the provision of which it is planned to allocate the relevant territory.

An example of investing in community development is the experience of the town of Gorlice in the Lesser Poland Voivodeship. The outskirts of a small town located in a valley between two mountains built up with modern workshops of enterprises with

foreign investment. This is a special economic zone created by the Government of Gorlice Commune to stimulate investment in the city. There are eight new enterprises operating in the economic zone, which provide almost 500 new jobs.

The secret of the city commune success in attracting investors is a long-term program that implies preparation of the territory and creation of the special space for the development of capital imports into industry. The impetus for the development of this initiative was closing of two large "city-forming" industrial enterprises in the field of production of heavy technological equipment for mining. The community faced three problems: the emergence of a large number of unemployed in the local labor market; a sharp decrease in local budget revenues due to the closure of the largest taxpayers; the need to choose a new path of the commune development.

To shape a new vision of the community life the city government held a conference in 2002 on the development of former mining areas. An expert that implemented a similar program in the UK, representatives of local government, national and regional authorities, and potential businesses were invited. To resolve the problem of the community it was decided to create a special economic zone. At that time, the Government of Poland launched a program of supporting such areas of economic development assistance. The region was able to reduce income tax by 50%.

In addition, the city government has determined the territory in which the zone would be created by allocating the territories of old enterprises and buying land from private landowners that allow creating an integrated land bank. As well, the city has invested its own funds in the creating special infrastructure: constructed the exits from the highway, built internal communications and installed lighting.

Another important step in the project development was an active information campaign regarding attracting investors for the construction of industrial enterprises in the economic zone. Elements of the promotion were participation in business forums, presentations of the information materials at exhibitions, negotiations with representatives of medium and large businesses. Today, in the economic zone there are heavy industry enterprises that produce elements for mine cranes, build logistics centers, enterprises for painting car bodies, and even a candy factory.

Another example of using such local economic development tool in Poland is the Mielec Industrial Park (Podkarpackie and Lubelskie Voivodeships). At the same time it

should be noted, that the most part of the communities of the Republic of Poland compete with each other in attracting investors for the development of territories.

According to the Ministry of Economic Development, Trade and Agriculture, a number of special (free) economic zones and priority development territories with a special regime of investment activity also function on the territory of Ukraine. These are "Azov", "Donetsk", "Transcarpathia", "Interport Kovel", "Resort Truskavets", "Nikolaev", "Porto-Franco", "Port of Crimea", "Reni", "Slavutich", "Yavoriv" (The main indicators for FEZ). They began to appear in 1998. Most special economic zones in Ukraine are zones of foreign trade type, production type or complex type. However, unlike the above-mentioned example of Poland these areas cannot be a tool of local economic development, as the purpose of their creation is introduction of preferential tax treatment in the country. They are rather an instrument of state regional policy that are using for overcome depressive manifestations in the regions. Therefore, the experience of Poland is extremely useful for the Ukrainian communities.

The experience of Poland in building a municipal sports and health center for people with disabilities in Ptaszkowa is also interesting for the communities of Ukraine. The center was created due to the available potential of the community and established traditions for winter sports. Its functioning helps to attract investment to the community providing jobs for local residents and building public confidence in government. The investment is a clear example of prudent actions of the local authorities of Poland, which taking care of the residents of the commune responded in a timely manner to the possibility of preparing for the implementation of the rehabilitation center project. Currently, the center has 1,600 existing routes, paved and artificially snow-covered paths. There is a well-equipped test track for skiing. The routes of the municipal sports and health center are approved by the ski association, which allows organizing cross-country skiing competitions not only at the local but also at the regional level. There is a hotel in the center that can accommodate a large number of tourists and a spa. There are technical and sanitary facilities. In fact, there is everything you need for sports and recreation. In the future, the construction of a swimming pool is planned, which will help extend the stay of tourists. Landscaping of the center and tourist flows are favorable for business in the immediate vicinity of the sports and wellness center. A striking example of this is the construction of a private hospital on the initiative and funding of a private entrepreneur-doctor.

Based on the existing potential of the Dworski National Park in Poreba Wielka, which need to be renewed in the future, a project of creation of a multifunctional public area has been implemented. The purpose of the local program is to create a point of growth of economic development of the community based on construction of a rehabilitation complex, which will include a number of unique facilities, diverse in purpose, cost and complexity of implementation. In particular, these are the recreation and valeology center, thermal baths, amphitheater, recreation area, a park with historic buildings, later a number of hotels and restaurants and more others. In addition to the potential of the National Park, an important element is a thermal well, the water of which has a surface temperature of 40 degrees and unique healing properties, and its location in the center of the complex will form the basis of the future health center with thermal baths. Undoubted benefit for the residents of the community will be access to services of this Center for all of them including children who come in the summer for rehabilitation. As the construction of the Center is financed by the development of investments of the district budget, in particular Powiat Limanovski, it is a communal property, but it is planned that later the object will be leased for management.

Unlike neighboring Poland Ukraine has not yet developed similar local economic development projects. But the authorities have practice in using such tools as inter-municipal cooperation due to limited local potential, mostly because of lack of local funds.

It should be noted that the emergence and expediency of cooperation of local governments is the result of the modern world evolution. A separate territory is not a place where “the whole life of a family takes place (Tolkovanov, 2011). Enterprises that employ citizens can be in one place (in one community) and their homes, favorite cultural and health institutions, schools, where their children are studying, can be in another place (Tolkovanov, 2011, p. 255).

Some scientists point out that the potential of cooperation between local governments allows to improve the quality of services provided to the local inhabitants due to the effect of scale: "the more of citizens use certain services (or how large these services are) the lower the costs associated with their provision” (Demchyshyn, Tolkovanov, 2010). The benefits of such cooperation are obvious: it is possible to combine the resources of local governments of different communities if it helps them to improve the efficiency of management, to share their own experience in providing certain

services (Tolkovanov, Hertsoh, Huk, et al., 2011, p. 8-9). This form of cooperation is especially relevant when the public sector is unable to fulfill its powers and obligations due to limited resources of local budgets.

As of August 10, 2020, the Ministry of Development of Communities and Territories of Ukraine registered 619 agreements of territorial community's cooperation (Ministry of Development of Communities and Territories of Ukraine, 2019). Despite the annual increase in the number of such agreements, the potential of the mechanism of cooperation of territorial communities in Ukraine is poorly used. Practices of cooperation in many areas are not widespread. They do not exist at all in almost half of the regions. Communities that cooperate prefer simpler forms of cooperation, such as the implementation of joint projects, delegation of tasks, joint financing of enterprises. At the same time, the practice of creating joint ventures, institutions, organizations or infrastructure objects is almost non-existent.

TABLE 1. COMPONENTS OF THE COMMUNITY POTENTIAL THAT DETERMINE EXPRESSIVENESS OF INTRODUCING SOME OF LOCAL ECONOMIC DEVELOPMENT TOOLS

LED tool	Local potential components
Agricultural cooperation	Features of the territory for activities according to the cooperative specialization: - available land resources, high soil fertility, favorable climate for crop production; - availability of pastures for grazing cattle; - community specialization in production of raw materials and their sale; Availability of labor resources that want to work
Areas of business presence	Availability of land Rich resource potential depending on the type of special economic zones, such as natural resources, tourist or recreational potential Decline of priority areas of community economic development
Centers of business support	The predominance of small and medium-sized businesses in the community Lack of skilled workers and low level of education of the working population Weak competitiveness and attractiveness of local business for investors Inefficient using of available resources (significant resource consumption, high energy dependence) Significant impact of business on the environment
Intermunicipal cooperation	Lack of resources needed to perform the direct local authority's powers, as a result a low quality of services such as medical, educational, landscaping, cleaning and recycling, etc. Unsatisfactory condition of infrastructure facilities Lack of local budget funds for the implementation of infrastructure projects

Source: suggestions of the author.

The analysis of practical experience of ensuring local economic development in Ukrainian and Poland communities allows improving the theoretical and methodological aspects of strategic management at the local level in part of choosing possible instruments

of local economic development based on existing potential of municipalities. The information is given in table 1.

The analysis shows that Ukraine has real examples of practical using various tools of local economic development that can be used by other communities as an example of successful experience of local self-government. At the same time, such examples are rare but their advantage is that they are realized due the joint efforts of representatives of three sectors of the local economy: government, business and the public. However, the potential of the newly formed communities is not being used successfully. The authorities of the newly formed communities are not interested in community further development, in social mobilization of its inhabitants. The community residents and business have no desire to work for local economic development benefit. It is useful to have the experience of neighboring countries, which thanks to local authority's support, through the initiation and implementation of explanatory and educational activities by the authorities, through participation in the financing of local economic development projects can act as a model for Ukrainian government and business entities. Businesses need to make sure that, with the support of the authorities, better conditions for their development will be created and at the same time, the social needs of the community's residents will be met.

DISSCUSION

Such issues as better tools for territorial communities' economic development, international experience of local economic development, promotion of cooperation between communities and business have being discussed at the annual Local Government Forums, in particular within the United Community Forums. Regional administrations and local governments together with the Chamber of Commerce and Industry, Regional and Local Development Agencies organize such events. The participants of the Forums, namely representatives of local self-government, all-Ukrainian associations of local self-government bodies, people's deputies, representatives of the Government, the international donor community and the expert community determine the priorities of local self-government reform and territorial organization. Within the framework of the forum there are thematic discussion panels on the implementation of decentralization reform, inter-municipal cooperation and inter-regional cooperation, tourism development and others. Diplomats, representatives of state authorities, territorial communities, business owners, Ukrainian and foreign investors, top managers, experts, representatives of

international technical assistance projects, business associations are invited to the discussion. Such activities are intended to help communities to choose right path of development, strengthen the local economy, and to find new opportunities and implement successful projects for business.

CONCLUSION

Territorial community potential is a set of resources that determine the prospects for socio-economic development of the municipality in the relevant scenarios of a number of internal and external conditions impact on the possibility of their using. Given the existing potential of territorial community, local authorities should initiate the appropriate tool of local economic development for community residents with further co-financing of the project.

The success of local economic development projects, which are the result of relevant tool of local economic development, depends on determination of the actions of local governments and using specific tools to support entrepreneurship in the community (training, information, encouragement to work together, co-financing, preferential taxation, etc.).

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ДЕТЕРМИНАНТЫ МЕСТНОГО ЭКОНОМИЧЕСКОГО РАЗВИТИЯ: ОПЫТ УКРАИНЫ И ПОЛЬШИ

Аннотация. Исследуется проблема обеспечения местного экономического развития на основе рационального использования потенциала громады. Отмечается доминирование одностороннего подхода к трактовке экономической сущности категории «потенциал». Определены составляющие потенциала, представляющие собой различные его разновидности. Отмечается осознание необходимости публичности информации о потенциале громады и указывается целесообразность использования в этих целях рекламных видео о местном потенциале, а также целесообразность составления экономического профиля как своего рода рекламного буклета громады. Сосредоточено внимание на государственной поддержке тех видов деятельности, развитие которых на основе мобилизации местных ресурсов, способно обеспечить максимальный эффект в виде экономических и социальных выгод для местной экономики. Приведены примеры государственной поддержки сельскохозяйственных кооператив. Рассмотрен опыт Польши по таким инструментам местного экономического развития как создание территорий присутствия бизнеса, строительство муниципального спортивно-оздоровительного центра для людей с ограниченными возможностями, создание многофункциональной территории общего пользования базируясь на местном потенциале. Проанализированы выгоды от внедрения межмуниципального сотрудничества в Украине как инструмента обеспечения местного экономического развития. Систематизированы предложения относительно выбора одного из инструментов местного экономического развития основываясь на имеющемся потенциале муниципальных образований.

Ключевые слова: община, потенциал, местное экономическое развитие, кооперация, сотрудничество.

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Chapter 4

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ŹRÓDŁA ENERGII W GOSPODARSTWACH DOMOWYCH Z POLSKI I UKRAINY NA TLE INNYCH KRAJÓW EUROPEJSKICH

ENERGY SOURCES IN HOUSEHOLDS FROM POLAND AND UKRAINE COMPARED TO OTHER EUROPEAN COUNTRIES

Abstract: The scientific aim is to present the specificity of energy carriers used in households from Poland and Ukraine. The aim is also to show the similarities of Polish and Ukrainian households to other European countries in terms of the structure of the use of energy carriers. The research methods used include method clustering. In Poland, the basic energy carriers in households are solid fossil fuels, as well as natural gas and heat. Natural gas is the main source of energy in Ukrainian households. Seven groups of European countries were distinguished according to the use of energy carriers in households. Polish households with high use of solid fossil fuels have formed a separate cluster. Ukrainian households had the most similar structure of energy use to households in Great Britain and the Netherlands.

Key words: energy, consumption, households, Poland, Ukraine.
JEL: I14, Q30, Q40, R20

WSTĘP

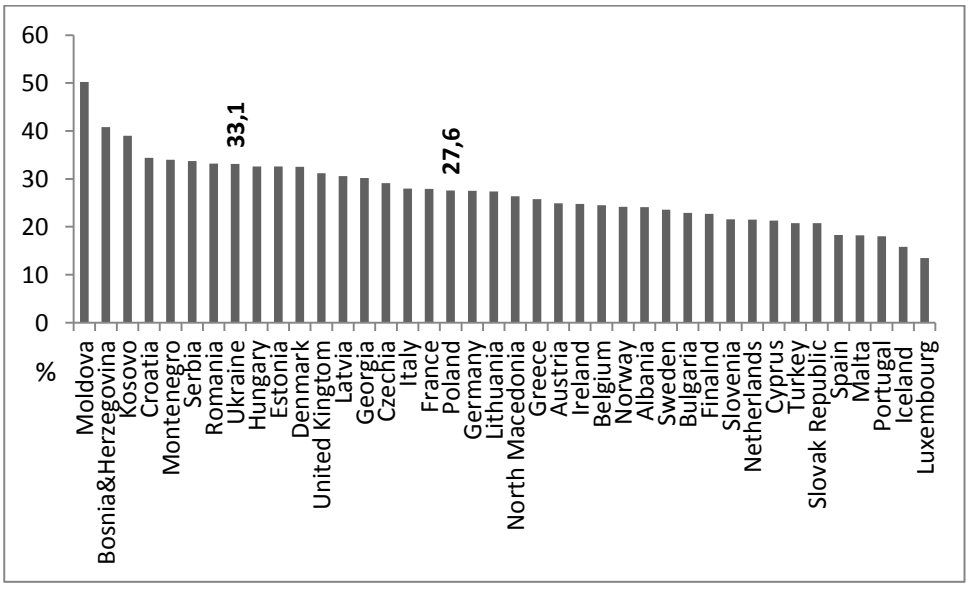
W 2015 r. społeczność międzynarodowa z ponad 150 krajów uzgodniła 17 Celów Zrównoważonego Rozwoju ONZ. Jednym z głównych obszarów działań w zakresie zrównoważonego rozwoju jest energia. W Agendzie na rzecz Zrównoważonego Rozwoju przyjęto m.in. takie zadania, jak: zapewnienie powszechnego dostępu do przystępnych cenowo, niezawodnych i nowoczesnych usług energetycznych, zwiększenie udział odnawialnych źródeł energii w globalnym miksie energetycznym, zwiększenie wskaźnika wzrostu globalnej efektywności zużycia energii, zintensyfikowanie międzynarodowej współpracy ułatwiającej dostęp do badań nad czystą energią i technologii w obszarze energii odnawialnej, efektywności energetycznej oraz zaawansowanych i czystszych technologii paliw kopalnych, a także promowanie inwestycji w infrastrukturę

energetyczną i czyste technologie energetyczne, rozbudowa infrastruktury i zmodernizowanie technologii umożliwiających dostęp do nowoczesnych i zrównoważonych usług energetycznych dla wszystkich mieszkańców krajów rozwijających się.

W przypadku Unii Europejskiej realizacja celów zrównoważonego rozwoju w zakresie energii jest reprezentowana w pakiecie klimatyczno-energetycznym i wspierana finansowo z funduszy unijnych. Działania na rzecz poprawy charakterystyki energetycznej są szczególnie istotne w państwach członkowskich, które znajdują się w Europie Środkowo-Wschodniej ze względu na wysoki poziom zanieczyszczenia powietrza (Żyromski, et al. 2014). Jedną z przyczyn takiej sytuacji jest stosunkowo późna zmiana mechanizmów systemów rozwoju regionalnego, która pojawiła się w latach 90. XX wieku i wpłynęła na nowe wzorce rozwoju miast (Kazak, Dziezyc, Forys, Szewranski, 2018). Gospodarstwa domowe stanowią jeden z ważnych sektorów w całkowitym zużyciu energii w gospodarkach narodowych. W zależności od kraju sektor gospodarstw domowych zużywa od 13,5% ogólnego zużycia energii w Luksemburgu do ponad 50% w Mołdawii (Graph 1).

WYKRES 1. UDZIAŁ GOSPODARSTW DOMOWYCH W CAŁKOWITYM ZUŻYCIU ENERGII W KRAJACH EUROPEJSKICH W 2018 R.

GRAPH 1. SHARE OF HOUSEHOLDS IN TOTAL ENERGY CONSUMPTION IN EUROPEAN COUNTRIES IN 2018.



Source: own work on the database Eurostat (Energy…http).

Celem rozdziału jest przedstawienie specyfiki wykorzystywanych nośników energetycznych w gospodarstwach domowych z Polski i Ukrainy. Celem jest też ukazanie podobieństw polskich i ukraińskich gospodarstw domowych do innych krajów europejskich pod względem struktury wykorzystania nośników energetycznych.

Realizacja celu badawczego wymagała rozwiązania następujących problemów badawczych:

– przedstawienie struktury zużycia nośników energii w polskich i ukraińskich gospodarstwach domowych.
– identyfikacja zmian, które dokonały się w strukturze nośników energii w gospodarstwach domowych z Polski i Ukrainy.
– wyodrębnienie grup krajów europejskich według struktury wykorzystania nośników energii w gospodarstwach domowych.

Ciągłe monitorowanie zmian w wykorzystaniu nośników energii w poszczególnych sektorach gospodarki jest konieczne ze względu na ochronę zdrowia konsumentów i ochronę środowiska. Informacje o wykorzystaniu nośników energii mogą okazać się pomocne dla rozwoju polityk regionalnych i są ciekawe poznawczo.

Struktura rozdziału jest następująca. Po wstępie przedstawiono główne założenia polityki energetycznej Polski i Ukrainy z uwzględnieniem sektora gospodarstw domowych. Następnie opisano wykorzystywane materiały statystyczne oraz metody badań. W części dotyczącej wyników własnych opisano specyfikę wykorzystywanych nośników energii w polskich i ukraińskich gospodarstwach domowych i przedstawiono grupy krajów europejskich według wykorzystywanych nośników energii. Rozdział zakończono podsumowaniem.

POLITYKA ENERGETYCZNA POLSKI I UKRAINY

Polska będąc członkiem Unii Europejskiej zobowiązana jest uwzględniać kierunki i cele działań wyznaczone w pakiecie klimatyczno-energetycznym. Pakietem tym określa się sześć aktów przyjętych przez Komisję Europejską w latach 2007-2008. Dokumenty te stały się podstawą do tworzenia systemowej strategii działania Unii Europejskiej w zakresie polityki energetycznej i klimatycznej. Wśród założeń polityki klimatyczno-energetycznej są: przeciwdziałanie zmianom klimatycznym, ograniczanie podatności Unii na wpływ czynników zewnętrznych wynikającej z zależności od importu paliw oraz

wspieranie zatrudnienia i wzrostu gospodarczego, co zapewni odbiorcom bezpieczeństwo zaopatrzenia w energię po przystępnych cenach.

W 2014 r. przyjęto ramy nowej europejskiej polityki energetycznej oparte na pakiecie klimatyczno-energetycznym UE. Ustalono, iż do 2030 r. w zakresie klimatu i energii realizowane będą trzy cele (Ramy polityki…http): (1) ograniczenie emisji gazów cieplarnianych o co najmniej 40% w stosunku do poziomu z 1990 r., co stanowi podwojenie wymaganego poziomu określonego w celu wyznaczonym do realizacji do 2020 r., (2) zwiększenie do co najmniej 32% udziału energii ze źródeł odnawialnych w ogólnym bilansie energetycznym, co stanowi wzrost wymaganego udziału o 7 punktów procentowych (p.p.) w stosunku do wcześniej obowiązującego, (3) zwiększenie efektywności energetycznej o co najmniej 32,5%, co stanowi podniesienie wymagań o 7 p.p. w stosunku do celu wyznaczonego na 2020 r.

Państwa członkowskie zostały zobowiązane do zrealizowania wymienionych celów, pozostawiono im jednak swobodę w zakresie ustalania ewentualnie wyższych poziomów celów krajowych. Ustalono też, że do 2050 r. globalne emisje gazów cieplarnianych powinny zostać zredukowane maksymalnie o 80% w stosunku do poziomu z 1990 r., co oznacza, że kraje uprzemysłowione powinny do 2050 r. zredukować emisje o 60–80% (Zajączkowska, 2017).

W listopadzie 2019 roku w Polsce ukazał się zaktualizowany i rozszerzony projekt dokumentu *Polityka energetyczna Polski do 2040 roku – strategia rozwoju sektora paliwowo-energetycznego* (PEP2040) (Zaktualizowany…2019). Wymogi UE zmuszają Polskę do przestawienia się na gospodarkę niskoemisyjną, ale dalsze użytkowanie węgla kamiennego też nie będzie tanie, ze względu na ceny uprawnień do emisji CO_2. W 2016 roku ceny te oscylowały wokół 5 euro za tonę (Olkuski i in. 2018), a w 2019 r. dochodziły do 30 euro za tonę i wykazują tendencję wzrostową (EEX 2019). Wzrost cen energii wpływa na wzrost cen innych towarów, a to z kolei może wywołać inflację i zachwiać rozwijającą się gospodarką. Polska nie jest jedynym państwem europejskim wykorzystującym węgiel jako paliwo w energetyce. Największymi użytkownikami węgla oprócz Polski są Niemcy i Wielka Brytania. Przewiduje się (Graczyk, 2016), że w Polsce do roku 2050 węgiel kamienny będzie odgrywać nadal ważną rolę w wytwarzaniu energii, choć jego udział i rola będą się zmniejszać. Zakłada się, iż udział węgla kamiennego w wytwarzaniu energii elektrycznej zmniejszy się do 2050 r. o prawie 25%, osiągając w bilansie energetycznym poziom około 33%.

W Polsce sektor komunalno-mieszkaniowy od wielu lat jest głównym emitentem pyłów, tlenku siarki (IV), tlenku węgla i niemetanowych lotnych związków organicznych. Stosowane w gospodarstwach domowych oraz lokalnych kotłowniach starej generacji paleniska i kotły, spalanie niskich jakościowo węgli, jak również spalanie wszelkiego rodzaju odpadów komunalnych – w szczególności tworzyw sztucznych – przyczynia się do problemu „niskiej emisji". Wskazuje się, że wymierne efekty w zmniejszaniu emisji zanieczyszczeń do powietrza powinni przynieść stosowanie węgli o wysokiej jakości (wysokiej wartości opałowej i niskiej zawartości siarki) oraz promowanie spalania tzw. kwalifikowanych paliw węglowych (tj. paliw niskozasiarczonych, wysokokalorycznych, o powtarzalnych parametrach jakościowych) w wysokosprawnych kotłach. Korzyści powinna także przynieść wymiana wysokoemisyjnych kotłów na nowoczesne (np. opalane biopaliwami, gazem) czy na pojedyncze lub zintegrowane systemy ogrzewania – oparte na paleniskach spalających paliwa stałe w połączeniu z wykorzystaniem odnawialnych źródeł energii (np. pomp ciepła, kolektorów słonecznych), co przyczyni się do zmniejszenia niskiej emisji (Stala-Szlugaj, 2011).

W Polsce funkcjonują programy UE, w ramach których gospodarstwa domowe mogą uzyskać dofinansowanie do inwestycji związanych z wymianą przestarzałych systemów grzewczych na nowe korzystniejsze dla środowiska. Program Czyste Powietrze jest **o**gólnopolskim programem wsparcia finansowego na wymianę źródeł ciepła. Program skierowany jest do właścicieli i współwłaścicieli domów jednorodzinnych oferujący dotację na wymianę źródła ciepła oraz prace związane z termomodernizacją. W ramach programu dofinansowane są wymiany starych i nieefektywnych źródeł ciepła na paliwo stałe na nowoczesne źródła ciepła spełniające najwyższe normy, oraz przeprowadzenia niezbędnych prac termomodernizacyjnych budynku (Czyste powietrze…2020). Innym rządowym programem jest Stop Smog. W ramach programu dofinansowywana jest wymiana lub likwidacja źródeł ciepła i termomodernizacja w budynkach mieszkalnych jednorodzinnych osób ubogich energetycznie. Wnioskodawcą w Programie jest gmina, która uzyskuje z budżetu państwa do 70% dofinansowania kosztów inwestycji (Stop…2020). Od 2019 r. funkcjonuje też w Polsce ulga termomodernizacyjna, czyli możliwość odliczenia od podstawy obliczenia podatku wydatków na materiały budowlane, urządzenia i usługi, związane z realizacją przedsięwzięcia

termomodernizacyjnego w jednorodzinnym budynku mieszkalnym (Ulga…2020; Ustawa z dn. 9 listopada 2018).

Przechodząc do polityki energetycznej Ukrainy, 30 września 2019 r. prezydent Ukrainy podpisał dekret „O celach zrównoważonego rozwoju Ukrainy do 2030 r.". Jednym z siedemnastu celów zrównoważonego rozwoju Ukrainy do 2030 roku jest „zapewnienie wszystkim dostępu do niedrogich, niezawodnych, trwałych i nowoczesnych źródeł energii". Cel ten stanowi wskazówkę przy określaniu obszarów poprawy polityki energetycznej państwa Ukrainy w kontekście opracowywania odpowiednich projektów prognoz i dokumentów programowych, projektów ustaw i rozporządzeń zapewniających zrównoważony rozwój ukraińskiej energetyki (Moskaliuk, 2020). Jest to szczególnie istotne w kontekście potrzeby reformy ukraińskiego przemysłu węglowego. Ministerstwo Energii i Ochrony Środowiska Ukrainy prowadzi reformę przemysłu węglowego, która ma na celu zlikwidować nierentowne państwowe przedsiębiorstwa węglowe. Ukraińska energetyka to branża wymagająca inwestycji i budowy infrastruktury innowacyjnej, gdyż większość jej obiektów jest projektowana w oparciu o technologie z lat 60. XX wieku, a zużycie sprzętu sięga 70 - 80% (Yefimov, 2019). W związku z tym polityka energetyczna państwa skupia się na modernizacji sektora energetycznego zgodnie z aktualnymi wyzwaniami uwzględniającymi trendy w rozwoju energetyki.

Kwestia potencjału oszczędności energii elektrycznej przez gospodarstwa domowe powinna być wspierana, jako jeden z priorytetów w politykach energetycznych państw. Poprawa wydajności energetycznej przynosi znaczne korzyści zarówno środowisku naturalnemu, jak i wpływa na bezpieczeństwo energetyczne. W polskich dokumentach strategicznych odnawialne źródła energii nie mają tak ważnej roli w produkcji energii elektrycznej, jak w dokumentach unijnych. Konieczne wydaje się stworzenie w Polsce przejrzystej polityki energetycznej, która będzie aktywatorem inwestycji niezbędnych do inwestowania w technologie niskoemisyjne. Strategia energetyczna powinna sprzyjać zwiększeniu konkurencyjności gospodarki i zwiększeniu jakości życia mieszkańców dzięki obniżeniu kosztów energii (Graczyk, 2016). Wydaje się, że te same zadania stoją przed Ukrainą.

ŹRÓDŁA DANYCH I METODA BADAWCZA

Informacje o wykorzystaniu paliw w gospodarstwach domowych pozyskano z baz danych Głównego Urzędu Statystycznego oraz Eurostat. W badaniu uwzględniono 40

krajów europejskich. Przedmiotem badań była struktura zużycia nośników energii w gospodarstwach domowych.

Zakresem analizy objęto siedem stosowanych w gospodarstwach domowych nośników energii: paliwa stałe kopalne, torf i produkty torfowe, ropa i produkty ropopochodne, gaz ziemny, odnawialne źródła energii i biopaliwa, ciepło oraz energia elektryczna. Poziomy zużycia nośników energii w sposób ciągły badane są przez Departament Produkcji Głównego Urzędu Statystycznego i Departament Energetyki Ministerstwa Gospodarki, w oparciu o przedmiotowe sprawozdania, zbierane w ramach programu badań statystycznych statystyki publicznej (GUS 2006).

Zastosowano następujące metody badawcze: metodę porównawczą oraz metody statystyczne: analizę trendu liniowego, analizę skupień. Linia trendu to funkcja prostoliniowa opisująca zmiany zjawiska w czasie (Formula 1):

$$y=a\cdot t+b$$ Formula 1

gdzie y to wartość zjawiska w kolejnym okresie t (Formula 2)

$$a = \frac{\sum_{i=1}^{n}\left(t_i-\bar{t}\right)\left(y_i-\bar{y}\right)}{\sum_{i=1}^{n}\left(t_i-\bar{t}\right)^2}$$

$$b = \bar{y}-a\bar{t}$$ Formula 2

Do pogrupowania krajów według wykorzystywanych nośników energii w gospodarstwach domowych wykorzystano analizę skupień metodą Warda. W metodzie tej do oszacowania odległości między grupami (skupieniami) wykorzystuje się podejście analizy wariancji (Sokołowski, 2004). Na początku grupowania każdy obiekt stanowi osobną grupę, następnie łączy się grupy najbardziej do siebie podobne, aż do uzyskania jednej zawierającego wszystkie obserwacje. Metoda uznana jest za efektywną ze względu na zapewnienie homogeniczności obiektów wewnątrz grup, a jednocześnie ich heterogeniczność między grupami. Zasada metody nie polega na optymalizacji, ale na minimalizacji niejednorodności celem znalezienia największego podobieństwa. Badania wskazują (Grabiński, Sokołowski, 1980; Sokołowski, 2004; Gubu, Rosadi, Abdurakhman, 2019), iż efektywność wykrywania prawdziwej struktury danych jest w

metodzie Warda lepsza w porównaniu do następnej w kolejności hierarchicznej metody grupowania, tzw. analizie najdalszego sąsiedztwa.

Do porządkowania nieliniowego krajów w postaci dendrogramu wykorzystano siedem zmiennych, tj. poziom wykorzystania: (1) paliw stałych kopalnych, (2) torfu i produktów torfowych, (3) ropy i produktów ropopochodnych, (4) gazu ziemnego, (5) odnawialnych źródeł energii i biopaliw, (6) ciepła oraz (7) energii elektrycznej. Zmienne znajdowały się na jednej skali (wyrażone były w procentach). Przeprowadzono standaryzację danych. Wykorzystano metodę standaryzacji w wyniku, której przekształcone wartości mają rozkład o średniej 0 i odchyleniu standardowym 1. Zabieg ten umożliwia porównywanie wartości wielu zmiennych (niezależnie od ich oryginalnego rozkładu). Standaryzacja danych wejściowych powoduje też, że wyniki analiz statystycznych są całkowicie niezależnymi od jednostek pomiaru poszczególnych zmiennych (Młodak, 2006; Zeliaś, 2002). Wartości każdej ze zmiennych (X_j) przekształcono w następujący sposób (Formula 3):

$$Z_j = \frac{X_j - \overline{X}_j}{S_j} \qquad \text{Formula 3}$$

gdzie:

X_j – wartość zmiennej przed normalizacją (zmienna w postaci stymulanty),

Z_j – wartość zmiennej po normalizacji,

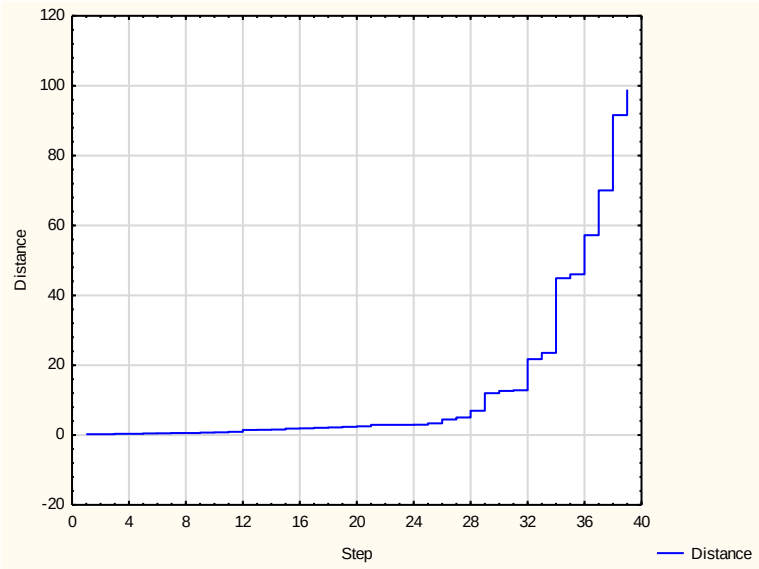
S_j – odchylenie standardowe zmiennej.

Do grupowania wykorzystano kwadrat odległości euklidesowej.

Istotną kwestią przy wykorzystaniu analizy skupień metodą Warda jest wybór liczby grup. Wyboru takiego dokonano na podstawie wykresu odległości wiązania względem etapów wiązania. Wyraźnie zauważalny skokowy wzrost poziomu krzywej na ogół wskazuje na optymalny wybór (Graph 2). Optymalną liczbę skupień otrzymuje się odcinając ramiona dendrogramu tam, gdzie zaczynają się robić dłuższe, czyli tam, gdzie odległości między skupieniami robią się istotnie większe. Dendrogram przecięto na wysokości 25.

WYKRES 2. KRZYWA ODLEGŁOŚCI WIĄZANIA WZGLĘDEM ETAPÓW WIĄZANIA

GRAPH 2. CURVE OF THE BOND DISTANCE RELATIVE TO THE BONDING STEPS.



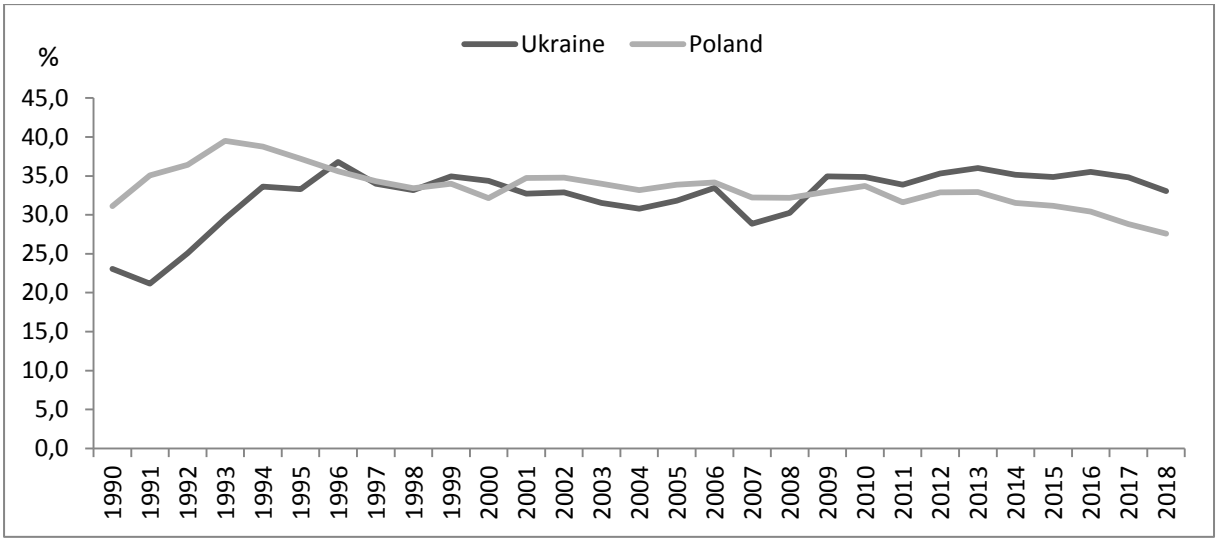
Source: own calculation on the database Eurostat (Energy…http).

CHARAKTERYSTYKA ZUŻYCIA NOŚNIKÓW ENERGII W GOSPODARSTWACH DOMOWYCH W POLSCE I UKRAINIE

W 2018 r. w ogólnym zużyciu energii w Polsce na sektor gospodarstw domowych przypadło około 28% całkowitego zużycia energii, a w Ukrainie – ponad 33% (Graph 3). Dwadzieścia osiem lat wcześniej w 1990 r. zużycie energii w sektorze gospodarstw domowych stanowiło ponad 31% w Polsce i 23% w Ukrainie. Zauważono, że udział gospodarstw domowych w całkowitym zużyciu energii w Polsce w latach 1990-2018 ulegał istotnie statystycznemu zmniejszeniu (średniorocznie o 0,23%), a w Ukrainie w tym samym czasie uległ zwiększeniu (średniorocznie o 0,25%).

WYKRES 3. UDZIAŁ GOSPODARSTW DOMOWYCH W CAŁKOWITYM WYKORZYSTANIU ENERGII W POLSCE I UKRAINIE W LATACH 1990-2018

GRAPH 3. THE SHARE OF ENERGY USED BY HOUSEHOLDS IN THE TOTAL ENERGY CONSUMPTION IN POLAND AND UKRAINE IN 1990-2018.



(1) Poland – the slope of the trend line = -0,225, R^2=0,546, p=0,00000, alpha=0,05.

(2) Ukraine – the slope of the trend line =0,252, R^2=0,325, p=0,0012, alpha=0,05.

Source: own work on the database Eurostat (Energy…http).

W strukturze zużycia nośników energii w polskich gospodarstwach domowych dominuje pięć kategorii, tj. węgiel kamienny, ciepło sieciowe, gaz ziemny, energia elektryczna oraz biomasa stała. Blisko 1/3 stanowią stałe paliwa kopalne, a pozostałe cztery pozycje wynoszą od 13 do 19% całkowitego zużycia paliw w gospodarstwach domowych. Węgiel kamienny stanowi dominujący nośnik energii w polskich gospodarstwach domowych. Energia pochodząca z odnawialnych źródeł oraz z biopaliw w polskich gospodarstwach domowych stanowi 13,9% ogólnego zużycia energii w gospodarstwach domowych (Graph 4).

Przechodząc do Ukrainy, w strukturze zużycia nośników energii w ukraińskich gospodarstw domowych dominuje gaz ziemny (ponad 53% ogólnego zużycia paliw w gospodarstwach domowych). Na kolejnych pozycjach plasują się energia elektryczna, ciepło sieciowe oraz biomasa stała. Energia pochodząca z odnawialnych źródeł oraz z biopaliw w gospodarstwach domowych stanowi 11,3% ogólnego zużycia energii w ukraińskich gospodarstwach domowych, czyli nieco mniej niż w Polsce. Jak podaje Radchenko (2018) w Ukrainie 87% ludności zużywa gaz ziemny na potrzeby swoich

gospodarstw domowych, 10% gospodarstw domowych wykorzystuje biopaliwa i odpady do ogrzewania, a 3% domów jest ogrzewanych węglem i torfem.

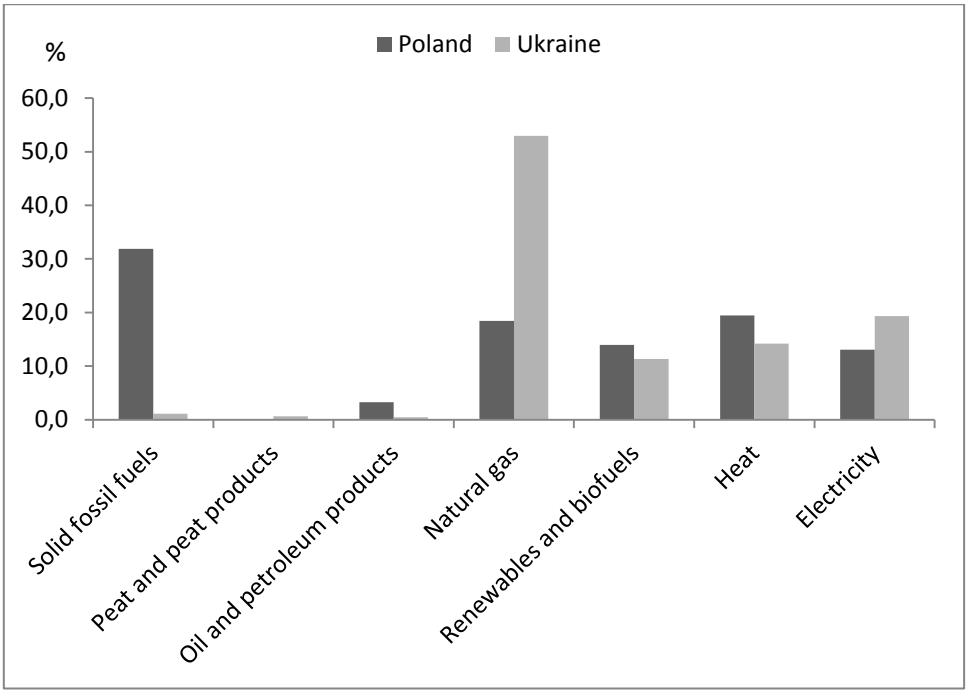
Podstawowymi różnicami w strukturze wykorzystania nośników energii w gospodarstwach domowych w Polsce i Ukrainie jest udział paliw stałych oraz gazu ziemnego. W Polsce zdecydowanie więcej wykorzystuje się węgla kamiennego. W Ukrainie zużycie stałych paliw kopalnych w gospodarstwach domowych wynosiło około 1,1%. Należy zauważyć, że węgiel kamienny przez wiele lat stanowił postument polskiej gospodarki, będąc paliwem wykorzystywanym w energetyce, przemyśle, sektorze publicznym i właśnie w gospodarstwach domowych (Stala-Szlugaj, 2017). Węgiel kamienny zapewnia komfort cieplny wielu mieszkańcom Polski, a w szczególności tym w trudnej sytuacji dochodowej, gdyż jest to paliwo relatywnie tanie w stosunku do uzyskiwanego efektu cieplnego. Z badań (Lewandowska, Kiełczewska, Ziółkowska, 2018) wynika, że ponad 70% gospodarstw domowych dotkniętych ubóstwem energetycznym do ogrzewania stosuje węgiel, mimo że niejednokrotnie posiada dostęp do alternatyw w postaci gazu i ciepła sieciowego. Wykorzystanie węgla kamiennego powinno jednak zostać ograniczane ze względu na ocieplenie klimatyczne i problem smogu. Podkreśla się (Rogus, Mazanek, Maczuga, Cebo, 2019) jednak, że wdrożenie radykalnych rozwiązań może się okazać trudne, gdyż polskie gospodarstwa domowe są silnie uzależnione od wykorzystania tego paliwa. Badania (Rogus, Mazanek, Maczuga, Cebo, 2019) sygnalizują znaczące zmiany w udziałach poszczególnych sortymentów węgla w całkowitym jego zapotrzebowaniu, tj. sortymenty grube będą stopniowo wypierane przez sortymenty średnie. Nie prognozuje się natomiast gwałtownego załamania w wielkości wolumenu krajowego zapotrzebowania na węgiel do ogrzewania pomieszczeń. Natomiast będzie on sukcesywnie ulegał zmniejszeniu na skutek regulacji ograniczających stosowanie paliw o najniższej jakości oraz przestarzałych kotłów o niskiej sprawności.

W ukraińskich gospodarstwach domowych w odróżnieniu od polskich wykorzystuje się do ogrzewania domów torf i produkty torfowe, w ogólnej konsumpcji energii w ukraińskich gospodarstwach domowych paliwo to stanowi 1,2%, węgiel drzewny – 0,2% oraz węgiel subbitumiczny – 0,1%. W polskich gospodarstwach domowych nie odnotowano wykorzystania tych paliw. Z kolei w Ukrainie nie wykorzystywano w gospodarstwach domowych takich paliw, jak węgiel brunatny, koks, olej gazowy i napędowy, a także odnawialnych źródeł energii w postaci energii

słonecznej i geotermalnej oraz energii pozyskiwanej z pomp ciepła. Podczas gdy w Polsce w ogólnej konsumpcji paliw w gospodarstwach domowych wykorzystanie węgla brunatnego wynosiło 0,3%, koksu z koksowni – 0,4%, olej gazowego i napędowego – 0,4%, energii słonecznej – 0,3%, energii geotermalnej – 0,1%, a energii pozyskiwanej z pomp ciepła – 0,2% (Energy balance…2020).

WYKRES 4. UDZIAŁY RODZAJÓW ENERGII WYKORZYSTANEJ PRZEZ GOSPODARSTWA DOMOWE W CAŁKOWITEJ KONSUMPCJI ENERGII W POLSKICH I UKRAIŃSKICH GOSPODARSTWACH DOMOWYCH W 2018 R.

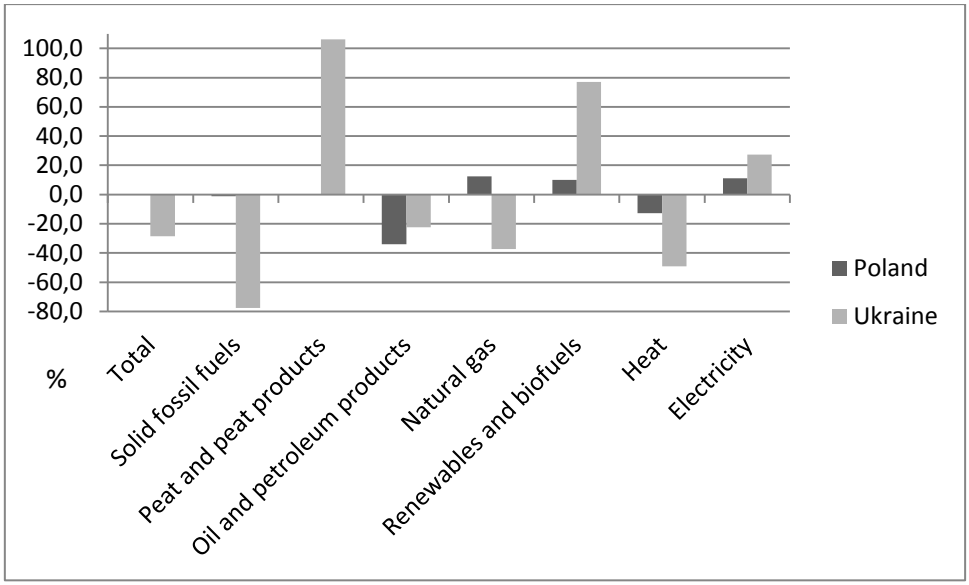
GRAPH 4. THE SHARE OF TYPE OF ENERGY USED BY HOUSEHOLDS IN THE TOTAL ENERGY CONSUMPTION OF POLISH AND UKRAINIAN HOUSEHOLDS IN 2018.



Source: own work on the database Eurostat (Energy…http).

W latach 2007-2018 w Polsce istotnie statystycznie ($p<0,05$, $\alpha=0,05$) zwiększyło się zużycie energii elektrycznej oraz gazu ziemnego i odnawialnych źródeł energii. Zmniejszeniu natomiast uległo wykorzystanie ropy i produktów ropopochodnych oraz ciepła z sieci. Z kolei w Ukrainie w tym samym okresie istotnie statystycznie zmniejszyło się zużycie gazu zimnego, ciepła sieciowego, stałych paliw kopalnych, a zwiększyło się wykorzystanie odnawialnych źródeł energii i bipaliw oraz torfu i produktów torfowych (Graph 5).

WYKRES 5. ZMIANY W KONSUMPCJI NOŚNIKÓW ENERGII W POLSKICH I UKRAIŃSKICH GOSPODARSTWACH DOMOWYCH W LATACH 2007-2018.
GRAPH 5. CHANGES IN THE CONSUMPTION OF ENERGY CARRIERS IN POLISH AND UKRAINIAN HOUSEHOLDS IN 2007-2018.



Source: own calculation on the database Eurostat (Energy…http).

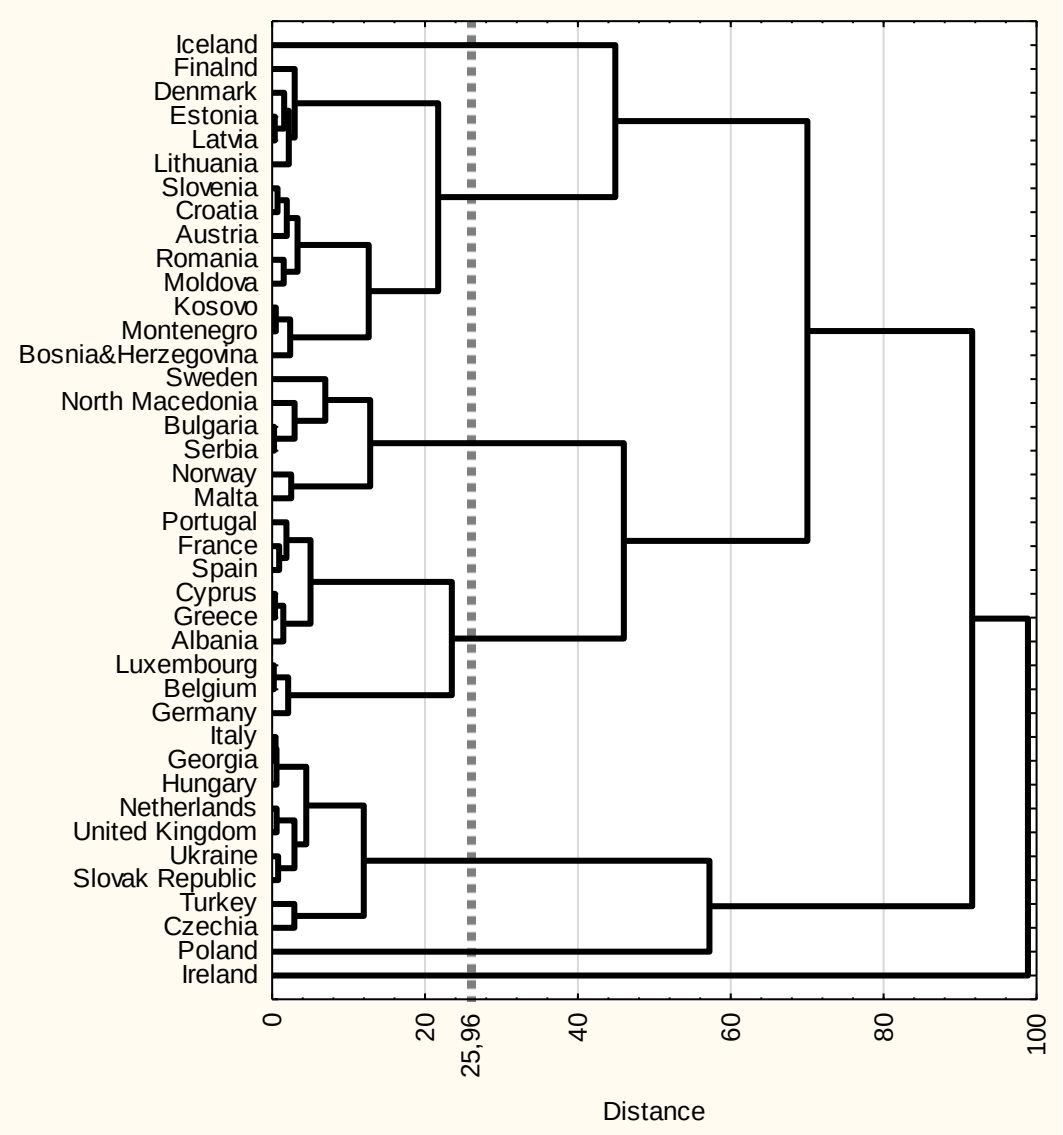
KRAJE EUROPEJSKIE WEDŁUG STRUKTURY WYKORZYSTANIA NOSNIKÓW ENERGII W GOSPODARSTWACH DOMOWYCH

Zastosowanie analizy skupień z wykorzystaniem algorytmu Warda doprowadziło do wyodrębnienia siedmiu grup gospodarstw domowych z charakterystyczną i właściwą jedynie sobie strukturą zużycia nośników energii (Graph 6).

Po jednej stronie dendrogramu znalazły się 4 skupiska państw (w tym dwa jednoelementowe), a po drugiej stronie – 3 (w tym jedno jednoelementowe). Polska i Ukraina znalazły się po jednej stronie dendrogramu, co świadczy o pewnym podobieństwie w strukturze wykorzystania nośników energii w gospodarstwach domowych obu krajów (Graph 6).

WYKRES 6. GRUPY KRAJÓW WEDŁUG STRUKTURY WYKORZYSTANIA NOŚNIKÓW ENERGII W GOSPODARSTWACH DOMOWYCH W 2018 R.

GRAPH 6. GROUPS OF COUNTRIES ACCORDING TO THE STRUCTURE OF ENERGY USE IN HOUSEHOLDS IN 2018.



Source: own calculation on the database Eurostat (Energy…http).

Irlandzkie gospodarstwa domowe utworzyły jednoelementowe skupienie. Irlandia wyróżniała się na tle innych krajów europejskich wysokim udziałem wykorzystania ropy i produktów ropopochodnych, tj. blisko 39% końcowego zużycia surowców energetycznych w irlandzkich gospodarstwach domowych pochłaniał ten nośnik energii. Relatywnie wysoki odsetek w nośnikach energetycznych wykorzystywanych w gospodarstwach domowych z Irlandii zauważono także względem torfu i produktów

torfowych – 7,1%. Natomiast niskie odsetki dotyczyły takich źródeł energii, jak ciepło z sieci (0,0%) oraz odnawialne źródła energii i biopaliwa (2,5%) (Table 1).

Kolejnym skupiskiem jednoelementowym były polskie gospodarstwa domowe. Polska swój bilans energetyczny opiera na własnych naturalnych źródłach paliw kopalnych, czyli na węglu kamiennym, wykorzystywanym także w gospodarstwach domowych. Na tle innych krajów europejskich polskie gospodarstwa domowe wyróżniało wysokie zużycie stałych paliw kopalnych, blisko 1/3 energii w gospodarstwach domowych pochodziła właśnie z tego surowca energetycznego. Polska posiada najbardziej zbliżoną strukturę konsumpcji paliw w gospodarstwach domowych do kolejnego skupienia obejmującego m.in. Ukrainę. Podstawową różnicą jest bardzo wysoki udział kopalnych paliw stałych w ogólnym zużyciu energii polskich gospodarstw domowych w porównaniu do gospodarstw domowych skupienia obejmującego m.in. Ukrainę. W Polsce obok stałych paliw kopalnych, na kolejnych pozycjach wśród nośników energetycznych w gospodarstwach domowych znalazły się: ciepło z sieci (19,4%) oraz gaz ziemny (18,4%). Relatywnie niski udział wśród źródeł energii w polskich gospodarstwach domowych stanowiła energia elektryczna (13,0%). Z odnawialnych źródeł energii pochodziło natomiast blisko 14% ogólnego zużycia energii w polskich gospodarstwach domowych (Table 1).

Kolejne skupienie objęło oprócz ukraińskich gospodarstw domowych, także gospodarstwa domowe z Włoch, Holandii, Gruzji, Wielkiej Brytanii, Słowacji, Węgier, Turcji i Czech. Skupienie to wyróżniało wysokie wykorzystanie w gospodarstwach domowych gazu ziemnego (ponad 53%). Blisko 20% w strukturze zużycia nośników energii w gospodarstwach domowych przypadało na energię elektryczną, a najmniejszy odsetek dotyczył takich surowców, jak torf i produkty torfowe (0,1%), ropa i produkty ropopochodne (2,1%) oraz stałe paliwa kopalne (2,8%).

Po drugiej stronie dendrogramu znalazły się następujące kraje. Islandia, która ze względu na swoją specyfikę nie została połączona z innymi krajami. Islandzkie gospodarstwa domowe wyróżniało bardzo wysokie wykorzystanie ciepła pochodzącego z sieci (blisko 83%).

TABELA 1. GRUPY EUROPEJSKICH GOSPODARSTW DOMOWYCH WEDŁUG STRUKTURY WYKORZYSTANIA NOŚNIKÓW ENERGII W 2018 R.

TABLE 1. GROUPS OF EUROPEAN HOUSEHOLDS BY STRUCTURE OF ENERGY CARRIERS USE IN 2018.

Specification	Solid fossil fuels	Peat and peat products	Oil and petroleum products	Natural gas	Renewables and biofuels	Heat	Electricity
The left side of the dendrogram							
"PEAT"CLUSTER Ireland	4,7	**7,1**	**38,9**	21,7	2,5	0,0	25,3
„CARBON" CLUSTER Poland	**31,9**	0,0	3,3	18,4	13,9	19,4	13,0
"GAS" CLUSTER Italy, Netherlands, Georgia, Ukraine, United Kingdom, Slovak Republic, Hungary, Turkey, Czechia	2,8	0,1	2,1	**53,1**	15,1	7,2	19,8
The right side of the dendrogram							
"HEAT" CLUSTER Iceland	0,0	0,0	0,5	0,0	2,4	**82,7**	14,4
"ELECTRIC" CLUSTER Sweden, Norway, Malta, North Macedonia, Bulgaria, Serbia	2,1	0,0	4,1	1,8	24,5	12,1	**55,4**
"ENERGY SUSTAINABLE" CLUSTER Finland, Denmark, Slovenia, Estonia, Croatia, Austria, Romania, Kosovo, Latvia, Montenegro, Moldova, Lithuania, Bosnia&Herzegovina	1,0	0,1	4,9	11,2	**43,6**	16,2	23,1
"ENERGETICALLY MIXED" CLUSTER Portugal, Cyprus, Albania, Luxembourg, France, Greece, Spain, Belgium, Germany	0,3	0,0	22,2	21,5	20,9	1,3	33,9

Source: own calculations based on the Eurostat database

Szwecję, Norwegię, Maltę, Północną Macedonię, Bułgarię i Serbię tworzące kolejne skupienie wyróżniało wysokie zużycie energii elektrycznej w gospodarstwach domowych (ponad 55% całkowitego zużycia nośników energii w gospodarstwach domowych), a relatywnie niskie wykorzystanie gazu ziemnego (1,8%). Średnio 25% energii wykorzystywanej w gospodarstwach domowych z tych krajów czerpane było z odnawialnych źródeł energii lub z biopaliw.

Największe skupienie obejmujące 13 krajów, w tym Finlandię, Danię, Słowenię, Estonię, Chorwację, Austrię, Rumunię, Kosowo, Łotwę, Montenegro, Mołdawię, Litwę oraz Bośnię i Hercegowinę wyróżniało wysokie zużycie w gospodarstwach domowych odnawialnych źródeł energii i biopaliw, średnio około 44% ogólnego zużycia energii w gospodarstwach domowych. Gospodarstwa domowe z Bośni i Hercegowiny oraz Kosowa w 2018 r. posiadały największy udział energii pochodzący z odnawialnych źródeł wśród krajów europejskich - ponad 60% w całkowitym zużyciu energii gospodarstw domowych. A w takich krajach, jak Montenegro i Mołdawia odnawialne źródła energii w całkowitym wykorzystaniu energii gospodarstw domowych stanowiły ponad 54%. Źródła energii znajdujące się na kolejnych pozycjach pod względem wykorzystania w gospodarstwach domowych z wymienionych krajów to: energia elektryczna – ponad 23%, ciepło z sieci – ponad 16% oraz gaz ziemny – ponad 11%.

W gospodarstwach domowych z pozostałych krajów, tj. Portugalia, Cypr, Albania, Luksemburg, Francja, Grecja, Hiszpania, Belgia i Niemcy, najwięcej wykorzystywano energii elektrycznej (blisko 34%). Ropa i produkty ropopochodne, gaz ziemny oraz odnawialne źródła energii stanowiły w tych gospodarstwach domowych po ponad 20% surowców energetycznych.

Gospodarstwa domowe w Polsce i Ukrainie zużywają około 1/3 energii ogółem wykorzystywanej we wszystkich sektorach gospodarki (Energy balance…2020). Energia odnawialna stanowi sposób na złagodzenie wpływu emisji dwutlenku węgla na środowisko przy jednoczesnym zaspokojeniu potrzeb energetycznych gospodarstw domowych. Stąd też w ostatnich latach coraz większa uwaga poświęcana jest energii odnawialnej, tak w Polsce (Rajchel, Walawender 2018; Sowa 2018; Siedlecka, Graszko, 2016), jak i Ukrainie (Галько, Галько, Жарков, Жарков, 2019; Сотник, Сотник, Кріпак, 2018).

Rozwój energetyki odnawialnej (OZE) w Ukrainie, ze względu na niedobór własnych tradycyjnych zasobów energetycznych oraz międzynarodowe zaangażowanie w rozwój odnawialnych źródeł energii (OZE), stanowi kierunek państwa w polityce energetycznej. W Ukrainie sektor ten rozwija się jednak dość wolno, biorąc pod uwagę porównanie

osiągniętego udziału OZE w bilansie energetycznym w 2017 r. (1,47%) z celem (11%) w 2020 r. Jedną z przyczyn niezadowalającego tempa rozwoju energetyki odnawialnej są niedoskonałe zachęty ekonomiczne Obecnie jednym z głównych narzędzi ekonomicznych wspierających rozwój sektora OZE jest „zielona" taryfa. Jest ona skierowana do producentów energii elektrycznej z OZE i zapewnia im dodatkowe zyski w porównaniu z producentami energii elektrycznej w tradycyjnych technologiach. „Zielona" taryfa może być wykorzystywana zarówno przez przedsiębiorstwa, jak i gospodarstwa domowe. W Ukrainie nie jest jednak rozpowszechnione korzystanie z tego typu technologii. Na początku 2015 roku 40 rodzin w Ukrainie zainwestowało w OZE, a pod koniec I półrocza 2018 roku 4660 gospodarstw domowych zainstalowało panele słoneczne (Сотник, Сотник, Кріпак, 2018). Niskie dochody i ubóstwo jest jednym z głównych powodów, które uniemożliwiają ukraińskim rodzinom korzystanie z dobrodziejstw OZE. Duże inwestycje w budowę prywatnych elektrowni OZE i wysoki koszt środków kredytowych prowadzą do długich okresów zwrotu takich działań, które często przekraczają cykl życia projektów, czyniąc je nieopłacalnymi.

Aby zmniejszyć wydobycie węgla, konieczne jest znalezienie alternatywnych źródeł energii, aby wypełnić bilans energetyczny Ukrainy. Źródła te obejmują m.in. uprawę roślin energetycznych. W Ukrainie wiele gospodarstw rolnych słabo prosperuje, a uprawa roślin energetycznych mogłaby okazać się rentowna dla tych rolników. Ponadto plantacje biomasy energetycznej zapobiegają erozji gleby i przyczyniają się do poprawy stanu środowiska. Wskazuje się, że system dopłat dla ukraińskich producentów roślin energetycznych powinien przyczynić się do zwiększenia powierzchni upraw energetycznych na Ukrainie. Taki program może być podobny do państwowego programu pomocy rolnikom w rozwoju ogrodnictwa, który będzie sprzyjał rozwojowi odnawialnych źródeł energii w kraju (Енергетичними …2019, Moskaliuk 2020).

PODSUMOWANIE

Cele Zrównoważonego Rozwoju wyznaczone przez ONZ i związane z tym regulacje unijne powodują, iż rozwój energetyki w krajach UE będzie wymagał coraz większego udziału technologii niskoemisyjnych. W latach 1990-2018 w Polsce doszło do obniżenia wykorzystania nośników energii w ogólnym bilansie energetycznym kraju, podczas gdy w Ukrainie sytuacja przedstawiła się odwrotnie. W Polsce podstawowymi nośnikami energii w gospodarstwach domowych są kopalne paliwa stałe, czyli przede wszystkim węgiel kamienny, a także gaz ziemny i ciepło z sieci. W ukraińskich gospodarstwach domowych

podstawą jest gaz ziemny. W ostatnich latach w polskich gospodarstwach domowych doszło do zmniejszenia zużycia ropy i produktów ropopochodnych oraz ciepła z sieci, a do zwiększenia gazu ziemnego, energii elektrycznej oraz odnawialnych źródeł energii. W Ukrainie w tym samym okresie w gospodarstwach domowych doszło do zmniejszenia udziału kopalnych paliw stałych i ciepła z sieci, a do zwiększenia wykorzystania odnawialnych źródeł energii oraz torfu i produktów torfowych.

Zastosowanie analizy skupień doprowadziło do wyodrębnienia siedmiu grup krajów europejskich według wykorzystania nośników energii w gospodarstwach domowych. Specyfika wykorzystania nośników energii w polskich gospodarstwach domowych, obok irlandzkich i islandzkich, przesądziła o utworzeniu przez te trzy kraje odrębnych jednoelementowych skupisk. Ukraińskie gospodarstwa domowe posiadały najbardziej podobną strukturę wykorzystania nośników energii do gospodarstw domowych z Wielkiej Brytanii i Holandii. Polska na tle innych krajów europejskich wyróżniła się wysokim wykorzystaniem kopalnych stałych źródeł energii, przy relatywnie niskim wykorzystaniu energii elektrycznej. Skupienie obejmujące ukraińskie gospodarstwa domowe wyróżniło wysokie zużycie gazu ziemnego w całkowitej konsumpcji nośników energii w gospodarstwach domowych. W Polsce wykorzystywano nieco więcej niż w skupieniu obejmującym Ukrainę odnawialnych źródeł energii, których zwiększenie stanowi jeden z celów zrównoważonego rozwoju ONZ.

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ИСТОЧНИКИ ЭНЕРГИИ В ДОМАШНИХ ДОМАХ ИЗ ПОЛЬШИ И УКРАИНЫ ПО СРАВНЕНИЮ С ДРУГИМИ СТРАНАМИ ЕВРОПЫ

Аннотация. Научная цель - представить специфику энергоносителей, используемых в домохозяйствах из Польши и Украины. Цель также состоит в том, чтобы показать сходство польских и украинских домохозяйств с другими европейскими странами с точки зрения структуры использования энергоносителей. Используемые методы исследования включают метод кластеризации. В Польше основными энергоносителями в домохозяйствах являются твердое ископаемое топливо, а также природный газ и тепло. Природный газ - основной источник энергии в домохозяйствах Украины. По уровню использования энергоносителей в домашнем хозяйстве было выделено семь групп европейских стран. Польские домохозяйства с высоким потреблением твердого ископаемого топлива сформировали отдельный кластер. Структура энергопотребления украинских домохозяйств наиболее схожа с домохозяйствами Великобритании и Нидерландов. Развитие возобновляемых источников энергии (ВИЭ) в Польше и Украине из-за нехватки собственных традиционных энергоресурсов и международного участия в развитии возобновляемых источников энергии является направлением государственной энергетической политики.

Ключевые слова: энергия, потребление, домохозяйства, Польша, Украина.

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Chapter 5

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BUSINESS ETHICS IN UKRAINE AND POLAND: COMPARATIVE ANALYSIS

Abstract. The purpose of the article is to conduct a comparative analysis of the introduction of business ethics in Ukraine and Poland to prove that the involvement of business ethics in business processes has a positive effect on business and trade and leads to increased responsibility of entrepreneurs to society, deepening economic ties, cooperation, sharing experiences. The subject of scientific research is the study of the system of norms and rules of behavior of business entities, their interaction and communication. Theoretical perspectives include patterns of the relationship between economic and moral issues; analysis and evaluation of the involvement of business ethics in the business process to identify the relationship of goals and means of entrepreneurship, the impact of the entrepreneur's actions on the position of the company and its employees, as well as society as a whole. Based on the methodology of assessing the state of economic ethics, the current situation on the selected issue at Polish and Ukrainian enterprises has been tested. Through the use of quality methods of evaluation, development and conduct of questionnaires and mathematical processing of information, the analysis was conducted on the implementation of business ethics and the need to train employees in business ethics, the relationship between ethics and company image, the presence of moral standards in the enterprise. Questionnaires of employees of Polish and Ukrainian companies on the implementation of business ethics have highlighted the existing advantages in this process, due to the practical effect of increased interest in the general problems of entrepreneurship. Owners and managers of companies who have undergone special training understand the benefits of adhering to moral norms in business. The analysis proved the interest in the implementation of business ethics of Polish and Ukrainian entrepreneurs, who thus show their responsibility to employees, colleagues and society as a whole.

Keywords: business ethics, analysis, questionnaire, Ukraine, Poland, enterprises, ethical standards, ethical documents, training, control.

JEL: Z 100

INDRODUCTION

In the current conditions of the economy, there is a growing need to study the provisions of business ethics, which allow to form business relationships between partners in the domestic and global markets. The formation of ethics in professional activities is well traced in the field

of entrepreneurship, trade and exchange activities, where the need for the formation of moral rules of people behaviour or organizations is clearly defined. In conditions of fierce competition, issues of business ethics become extremely important, as they shape the image of the entrepreneurs, whether you trust them or their brusiness, feedback and, in general, affect the development of the country's economy. Moral rules of conduct become the basis of market relations through the establishment of economic relations, negotiations, management relations and communication, universal consciousness and communication.

The urgency of the problem determined the purpose of the study, which was a comparative analysis of business ethics in Ukraine and Poland to deepen economic ties, cooperation in the field of entrepreneurship and trade, exchange of experience.

As a scientific hypothesis, it has been suggested that the involvement of business ethics in business processes has a positive effect on entrepreneurship and trade, leads to increased responsibility of entrepreneurs to society.

The subject of "business ethics" K. Homan and F. Blome-Dres (1992) define as follows: "Entrepreneurial ethics thematizes the relationship between morality and profit in enterprise management and deals with the question of how moral norms and ideals can be implemented by the enterprise in today's economy" (Homann, K., Blome-Drees, F., 1992). Therefore, the subject of scientific research is the study of the system of norms and rules of business entities conduct, their interaction and communication, as well as increasing the level of responsibility both at the level of individual enterprises and at the state level.

Theoretical perspectives of the study include the patterns of the relationship between economic and moral issues; analysis and evaluation of the involvement of business ethics in the business process to identify the relationship between goals and means of entrepreneurship, the impact of the entrepreneur's actions on the position of the company and its employees, as well as society as a whole.

LITERATURE REVIEW AND PROBLEM STATEMENT

The ethical problems of economics are based on the traditions of Aristotelian practical philosophy, which considered the problems of politics, ethics and economics in conjunction. Modern scientific research of these relations is based on a constructive approach, focus on the practical implementation of moral values.

K. Homan and P. Kozlovsky (2007), given the ambiguity of perception of business ethics in the business environment and among economists, propose a definition: "Economic ethics (or business ethics) deals with the question of what moral norms or ideals could mean

(for enterprises) in the modern economy and society" (Nomann, Koslowski, 2007). W. Beck (2000), M. Porter and M. Kramer (2011) insist that the well-being of enterprises was made dependent on social progress, raising social standards for the whole population. Yes, the latter put forward the idea of values that are common to business and society. The authors believe that business assigns social problems, at best, only the third place. If the priority for business is economic efficiency and profit, then the priority for society and the state is social order and social peace, because without the social world, there is no need to talk about any efficiency and profitability. And one of the means of ensuring the social world is social justice, observance of moral norms and principles (Beck, 2000; Weber, 2018). Modern business ethics is an attempt to restore the lost value, semantic unity of the world of economics and the world of culture.

In the conditions of deficit of legal norms the businessman if necessary is compelled to act at own risk and take responsibility. And the choice of a solution in business is due not only to considerations of expediency, but also values and moral constraints, which the businessman determines for himself. However, the existence of laws that embody moral values and requirements do not exempt from moral reflection: morality is always critical of existing law and public order, not everything that exists and is allowed by law is approved in terms of morality, legal and legitimate actions often do not match.

G. M. Thomas and R. J. Klonoski (1986) consider business ethics as the relationship of goals and means of entrepreneurship and human values, emphasizing that it studies the impact of individual actions on the position of the individual, firm, economic structure and society as a whole, emphasizing the study of accepted moral norms in business (Thomas, Richard, 1986, p. 165-172).

Business ethics, according to Polish authors, is both a descriptive discipline and a normative one. Descriptive – as its task is to identify and describe those phenomena of economic life in which moral aspects are especially manifested and which can be assessed from the standpoint of moral values. Normative because its purpose is to build a system of norms that determine the behavior in business, what is needed and what should not be done in business based on moral criteria (Lewicka-Strzalecka, 2007, p. 60).

Business ethics explores the peculiarities of the functioning and development of morality in the field of business, commercial activity and formulates appropriate recommendations for this area. The difficulty of performing these tasks is that moral and utilitarian relations are most incompatible, because the former are focused on the good, and the latter – is focused on benefit.

In the field of business relations, contradictions and conflicts often arise on this basis, the prevention or elimination of which are the focus of business ethics. But much of the contradictions and conflicts can be resolved at the request of the conflicting parties. Business relations cover not only the production, organizational and legal spheres, but also social, because often close people or relatives are their subjects. In general, business ethics examines the impersonal, practical and utilitarian relations of people in order to harmonize them, humanize them, fill them with moral requirements, which positively affects the course of economic activity and positive attitudes and relationships in the workforce and society.

METHODS AND METHODOLOGY

The methodological basis of the study of business ethics is based on the interdisciplinary integration of modern philosophical, ethical, economic, sociological and psychological concepts; use of scientific methods and modern methods. M. Weber (2018) formulates the ethical capital of the company – as a cost estimate of the total resource of cooperation with business partners, if its use contributes to the growth of business efficiency and additional income at the current level of resource provision. The amount of ethical capital is defined as the sum of the total annual effect formed by strengthening trust in business partners, honesty and job satisfaction of the company, moderation of requests of its owners and savings in transaction costs and costs of compensation for damage caused to anyone (Weber, 2018).

The basis of further research is the publication of O.M. Gugnin and G. Ostash "Business Ethics in Poland: Theory and Practice" (2009), which contains a method of assessing the state of economic ethics, which has been tested in Polish enterprises (Gugnin, Ostash, 2009, p. 55-56). The methodology is based on the application of qualitative methods of evaluation, development and conduct of questionnaires and mathematical processing of the information obtained.

RESEARCH RESULTS

Modern entrepreneurial activity is based on the principles of cooperation, integration and globalization, so its effective development is impossible without a system of ethical norms, principles and rules.

As J. Rybak and W. Shapoval (2009) emphasize, modern Polish business is characterized by a tendency to pay more attention to issues of social responsibility and corporate ethics (Rybak, Shapoval, 2009). These aspects have long been an integral part of the

image of modern Polish companies and success in competition. The idea that financial well-being and ethical standards are incompatible has long been refuted by real practice, which has proven that proper ethics is a successful business. Otherwise, a negative reaction from consumers, partners, investors, competitors and other stakeholders will inevitably lead to a loss of reputation and, ultimately, to a significant reduction in the company's profitability. Thus, social responsibility has become one of the priorities of Polish companies' strategies. In addition, it is not only an opportunity to form a stable business, significantly increasing its value and reputation, but also to actively influence the formation of civil society. So, it's not just a tribute to market trends, it's a matter of strategic importance". For Ukraine, this path is just opening up and how the state will pass it will depend on its future relations in domestic and foreign markets.

Acceptance for realization of the long-term purpose of activity of the enterprise is connected, first of all, with necessity of formation of its moral image. And this requirement is determined by public approval of the firm. In Poland, adherence to moral factors (rules of fair play with competitors, choice of means of economic growth, responsible attitude to employees and the environment) led entrepreneurs to the need to form an appropriate culture of organization and implementation of ethical principles. Scientists from the Institute of Philosophy and Sociology of the Polish Academy of Sciences studied the situation at 800 Polish companies and calculated the probable accuracy of the results, which amounted to 0,95 (ABR SESTA). Employees received questionnaires developed by the Institute, which contained the following groups of questions:

1. training of employees in the field of business ethics;
2. the ratio of ethics and image of the firm;
3. moral standards in the enterprise.

The results of the survey allowed us to draw the following conclusions:

1. More than two thirds of enterprises operating on the Polish market have not conducted training on business ethics. Such trainings were conducted by 30% of firms, of which 11% – several times a year, 12% – annually, and 7% – less than once a year.

Firms that cooperate with foreign partners conducted such training more often (34%) than those that did not cooperate and no longer plan such cooperation (27%).

Large companies more often organize such training: in firms with more than 250 employees, the percentage of training is higher (43%) than in firms with up to 100 employees (24%). A positive correlation is also observed in the ratio of the number of ethics courses

conducted: 37% of enterprises conducting development training, 31% – stable, 17% – with deteriorating market position.

2. Slightly more than half (56%) of firms publish information on the state of morality in information and advertising materials, and more often it is firms that conduct training in business ethics (74%), compared with firms where such training is not conducted (48 %).

Most often, materials affecting business ethics are submitted by large enterprises (61%), as well as enterprises that cooperate with other EU countries (61%). The covered materials most often publish data on the company's mission – 62,2%, its social responsibility – 55,4%, moral codes – 45%, the rest – 7,1%. Information and promotional materials published by 41% of Polish companies that do not contain elements of ethics.

Around 88,5% of firms do not participate in competitions related to the ethical dimension of entrepreneurial activity. Only 1% of them plan to take part in one of these competitions in the future. Every tenth firm takes an active part in such competitions (Gugnin O.M., Ostash G., 2009, p. 56-57):

– in "Fair Play" – 4,6%,
– in the "Reliable Partner" – 1,5%,
– in the "Investor of human capital" – 1,1%,
– in other competitions – 4,3%.

3. Studies have shown that 49.8% of firms declare compliance with ethical standards in their environment, but in most of them, i.e. 78%, these standards are established by custom, and only half of them are documented.

Ethical standards are presented not only in special codes or codes of exemplary behavior (14,6%), but also in internal regulations (63%), company charters (32,9%) or other documents (11%). And again, as in previous cases, such documents are more often accepted in firms which carried out training in rules of ethics of economic activity.

Compliance with the Labor Code and the impact of this factor on the financial success of the firm is on the border between ethics and law. Respondents were divided into three groups, which differ slightly: 38% believe that strict compliance with the Labor Code has a positive effect, 30% – negatively, and 32% believe that it does not affect the company's profits.

A significant number of Polish firms (83%) declare their readiness to help the local community, and only 3% of enterprises provided such assistance under pressure "from above", 13% did not help at all.

Around 51% of firms participated voluntarily in promoting environmental protection, 11% under external influence, and 37% did not participate. 66% of firms were voluntary sponsors, 4% were "forced", and 29% of firms did not sponsor.

Respondents noted the existence of sanctions for misdemeanors: for "unethical behavior" in 57% of companies employees were punished (up to dismissal). Most often punished for alcohol abuse – 32,1%; fraud – 23,3%; theft – 21,8%; profanity – 12,2%; lies – 10,1%; abuse of office – 11,1%; bribery – 2,2%; other moral violations – 8,6%. Moreover, the same trend is observed as in previous studies: the percentage of penalties is higher in enterprises where staff have learned the basics of business ethics.

Relevant research was conducted by us at Ukrainian small and medium business enterprises. 450 companies took part in the survey. The probability of accuracy of the results was 0,75.

The main blocks of questions included similar to Polish interpretations:

1. the availability of employee training in business ethics; at what cost the training was conducted and at what time; the existence of motivation for such training;
2. compliance with the ethics and image of the company; openness of information about the ethical behavior of the company in domestic and foreign markets and in relation to social problems;
3. the presence of internal documents that ensure moral and ethical standards, compliance with the rights of employees; open information about penalties for ethical violations of all employees of the company, without exception.

The results of the survey at Ukrainian enterprises led to the following conclusions:

1. More than 70% of small and medium enterprises did not receive training in ethics. Such trainings were conducted by 16% of firms, of which 1% – several times a year, 6% – annually, and 93% – less than once a year.

Enterprises that cooperate with foreign partners conducted such training more often (84%) than those that did not cooperate and do not plan such activities in the future (16%).

Medium-sized companies are more likely to organize business ethics training. In enterprises with 50 to 250 employees, the percentage of training is higher (63%) than in firms with up to 50 employees (37%). A positive trend is also observed in the ratio of the number of ethics courses: 87% of companies that conduct training are companies that are constantly developing and have a stable profit, 13% – companies that have an unstable market position.

Employees of the companies noted that 56% of training was conducted at the expense of enterprises and 78% were trained outside working hours.

As motivation quality for training in business ethics are: promotion with increased pay (36%); increase in payment (27%); trips abroad (18%); mandatory condition for all employees (10%), other (9%).

2. Small and medium-sized enterprises publish information on the state of morality in the media, on professional websites, in social networks (72%). Typically, this is done by companies that provide training in business ethics (76%).

Most often, materials related to business ethics and social issues are provided by companies that cooperate with foreign countries (68%). The submitted information most often publishes data on the strategy and mission of the company – 82%, its social responsibility – 14%, moral codes – 2%, the rest – 2%. Information and promotional materials published by enterprises about their activities, as a rule, do not contain elements of ethics (98%), and the other 2% contain similar information for commercial purposes. 50% of respondents said that there is a mismatch between the ethics and the image of the company; there is concealment of existing unethical facts; there are no penalties for moral violations; sheltering other troubles; non-observance of employees' rights, etc. 23% of employees answered about the openness of information on ethical violations in the company.

3. Processing of existing information showed that 52% of firms declare compliance with ethical standards in their environment, but in most of them, i.e. 87%, these norms are established by customs, mentality, traditions, only 67% are documented, (i.e. enterprises have its statute, code of ethics, rules of procedure or similar documents). As a rule, medium-sized enterprises have a charter, while small and micro enterprises do not. 87% of respondents noted the availability of relevant documents, but stressed their incapacity.

Some companies already have some experience in organizing ethical and psychological support for employees (37%): some ethical services (6%), and others (31%) – protocol services that ensure compliance with etiquette when working with foreigners, especially during the establishment contacts and formal negotiations. However, such experience is still being implemented slowly.

Respondents mentioned the widespread practice of implementing a video surveillance system (76%) or checking corporate mail (18%), in order to verify compliance with quality and integrity during working hours.

Ukrainian law notes that when misconduct is recorded, individuals, rarely, are able to use information such as evidence in court due to legal restrictions. Thus, according to the Civil Procedure Code of Ukraine, when considering a dispute, the court does not accept evidence if it was obtained in violation of the law. As stated in Art. 307 of the Civil code of

Ukraine, in most cases video surveillance of the person is allowed only if it agrees to it. However, there are no exceptions to this rule for employers or employment relationships in general, which companies do not always remember, so usually monitoring the work of staff can not be used for what it was originally implemented. And often it has only a psychological effect.

In addition, there are no clear rules in Ukrainian law on the permissible interference with the privacy of employees at work. In contrast to the rules on the investigation and prevention of tax criminal offenses, where the permitted measures are quite clearly defined, for the field of labor algorithms must be derived from the general rules of law. Therefore, you can use the correspondence with the consent of not only the sender but also the recipient and other people, if it contains information about their personal lives. Yes, the employee has the right to secrecy of correspondence and telephone conversations – it is guaranteed by Art. 31 of the Constitution of Ukraine. And it can be during working hours and at the workplace, because it has a constitutional right to do so. With correspondence is not only paper letters in the traditional sense, but also any electronic messages. In addition, under the law, everyone has the right to secrecy of their personal life. Their disclosure is possible only in a limited number of cases, in particular with the consent of the person. It is logical that an employee who received corporate equipment at work (computer, telephone) is not deprived of his personal rights. The employer has no grounds to freely view or listen to his telephone calls at his own discretion. Moreover, this applies to cases where the correspondence is personal or conducted through personal mail or social network accounts. When reading personal messages, the employer may violate the secrecy of correspondence and personal life not only of its employees, but also of those people to whom the messages were sent or they appeared in the correspondence (Article 306 of the Civil Code of Ukraine). The ethics of employee correspondence analysis raises questions and controversies – but interception is widely used. The main task in this case is to protect the company's confidential data from insider threats; Internal communications analysis is often used to identify disloyal employees.

However, legal restrictions do not mean that companies cannot control the work of employees at all. It's just that the line between managing one's personal life and performing one's job functions is very thin. For example, both personal and corporate mailboxes can contain both personal and work correspondence. The key is whether the employee knew about the control and agreed to it. In particular, the need to report on-the-job monitoring is a generally accepted standard in the field of human rights protection. It is confirmed by the case

law of the European Court of Human Rights. 62% of respondents say they are aware of the presence of video surveillance in the workplace.

82% of employees stated that they were aware of the company's internal instructions or control provisions, and 37% read such documents. As a rule, all this happens when hiring, and the new employee is asked to give his written consent on this issue. If the control was introduced after the employee started working in the company, he was still warned about it (52%) and received his official confirmation (48%). Here it is necessary to pay attention, to what extent such planned control concerns work and work process. 89% of workers indicated 100% control over the workers at the firm.

Depending on the specific circumstances, the existence of clearly defined control rules may give the employer the right to use the received materials as evidence of violations. There is a plus for the employee: if the forms of control are clearly spelled out, the person, if he is accused of something, will be able to prove that it is not true.

Employee control is necessary for both the manager and the employee. Employee control encourages staff to work better, improves work discipline, helps to systematize the data of working time and correctly calculate wages. However, excessive control of employees can negatively affect motivation. This requires a competent combination of loyal control of employees and tangible and intangible motivation, so only 28% of employees noted the positivity of such control.

52% of the company voluntarily participated in promoting environmental protection, 12% under external influence, and 17% did not participate. 16% of firms were voluntary sponsors, 74% were "forced", and 10% of firms did not sponsor.

Respondents noted the existence of sanctions for misconduct: for "unethical behavior" in 62% of firms, employees were punished (up to dismissal). Most often punished for alcohol abuse – 35%; fraud – 25%; theft – 26%; profanity – 12%; lies – 1%; other moral violations – 1%. Moreover, the same trend is observed as in previous studies: the percentage of penalties is higher in enterprises where staff have learned the basics of business ethics.

58% reported abuse of office at work; 27% of the survey participants indicated the absence of indications for some employees of the company.

Thus, the survey of employees of Polish and Ukrainian companies on the implementation of business ethics allows us to point out the advantages in this process, due to the practical effect of increased interest in the general problems of entrepreneurship. Owners and managers of companies who have undergone special training understand the benefits of adhering to moral norms in business. The analysis shows a gradual interest in business ethics

in both Poland and Ukraine, as entrepreneurs thus in practice show their responsibility to society. An important stimulus for the introduction of ethical documents in companies in Poland was the country's accession to the European Union and the inclusion of the Polish economy in a single European market. In Ukraine, special attention is paid to moral norms by enterprises cooperating with foreign partners.

An important element in the institutionalization of business ethics in Ukraine was the signing by leading Ukrainian and international companies, associations and non-governmental organizations of the UN Global Compact, which was presented on April 25, 2006, with the support of leading Ukrainian and international companies. The signatories of the Global Compact in Ukraine have stated their desire to create a network and principles of the Global Compact in Ukraine, which is a platform for promoting corporate social responsibility, the sources of which are the Universal Declaration of Human Rights, the Declaration of Fundamental Principles and Workplace Rights, labor organizations, "Rio Declaration on Environment and Development", "UN Convention against Corruption". The most important domestic source of business ethics for entrepreneurs is the Constitution of Ukraine, Codes of Ukraine, laws and national regulations governing moral and ethical relations in the economic sphere, corporate documents, as well as generally accepted norms and principles of international law and international treaties of Ukraine.

In Ukraine, the current law "On Entrepreneurship", in Art. 4 which specifies the restrictions in carrying out business activities; in St. 9 the rights of employment of employees and social guarantees at use of their work are specified; in St. 10 indicates the provisions of liability of business entities. The last article states that “an entrepreneur is obliged not to harm the environment, not to violate the rights and interests of citizens, enterprises, institutions, organizations and the state, protected by law. For the caused damages and losses the businessman bears property and other responsibility established by the law". Moreover, in Art. 16 outlines the activities of foreign entrepreneurs who "enjoy the same rights and have the same responsibilities as citizens of Ukraine". In the Law of Ukraine "On Protection against Unfair Competition", in Art. 33 "Rules of professional ethics", states the ability of economic entities to "develop rules of professional ethics in competition for the relevant areas of economic activity, as well as for certain sectors of the economy." These rules must be approved by the Antimonopoly Committee of Ukraine and "may be used in concluding agreements, developing constituent and other documents of economic entities." The Law of Ukraine "On Consumer Protection" regulates "relations between consumers of goods, works and services and producers and sellers of goods, contractors and service providers".

The International Business Ethics Institute has formulated four areas in which companies must operate to establish their reputation:

– first, it is honest work with investors and consumers;

– secondly, improving the situation within the team – increasing the responsibility and motivation of employees, reducing staff turnover, increasing productivity, etc.;

– thirdly, professional work on the reputation, as its deterioration will inevitably affect the results of the company;

– fourth, competent work with regulations and finances – only strict adherence to the "spirit" and "letter" of the law allows you to create a long-term future for the company.

The presence of a convincing business ethic is not yet an absolute prerequisite for perfect legislation in business, high morale of entrepreneurs. However, it can play a significant role in curbing inhumane, unjust economic passions, humanizing the state's economic policy, forming civilized humane norms in the field of entrepreneurship, establishing rational principles of business organization, management, distribution and use of its results. Otherwise, it is doomed to the exploitation of demagogic phrases, empty speculations that cover the thirst for wealth and the pursuit of profit, extortion, economic exploitation, destruction of nature, appropriation of national wealth by a limited number of people, neglect of socio-economic and other human rights, immoral behavior seller of goods and services.

The formation of high entrepreneurial morale involves the subordination of individual actions to the universal standard of relations in the field of business, the use of national traditions of business interaction.

CONCLUSION

The following interpretations of the hypothesis of increasing the responsibility of entrepreneurs to society by involving the provisions of business ethics in the processes of management and positively affecting business and trade may be:

– there is a certain mentality of the country, which is difficult to change and therefore have to adapt to the peculiarities of management and relationships;

– conservative approaches to the management and organization of the production process in enterprises require strictly established rules and regulations, so the introduction of ethical criteria can lead to a violation of the established process;

– comparison of the attitude to business ethics at the enterprises of the two countries by means of questionnaires is not enough; you need to use other methods.

As a result of the conducted research the urgency of introduction of principles of business ethics at the enterprises is proved; comparative analysis of the introduction of business ethics in Ukraine and Poland confirms the scientific hypothesis on the significant role of the impact of business ethics on positive changes in business and trade, which leads to increased responsibility of entrepreneurs to society, deepening economic ties, cooperation in business and trade .

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Chapter 6

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THE ATTRACTION OF INNOVATIONS IN ORDER TO IDENTIFY RESERVES THAT CAN INCREASE COMPETITIVENESS IN UKRAINIAN AND POLISH FOOD INDUSTRY ENTERPRISES

Abstract: The purpose of this article is to explore the possibilities of attracting innovations to identify reserves that can increase the competitiveness of enterprises on the example of Ukrainian and Polish enterprises. It was chosen as a scientific hypothesis that innovations can help identify reserves to increase the competitiveness of enterprises. The subject of scientific research was, that probable innovations that can be involved in the confectionery industry in order to identify various reserves as untapped opportunities. The calculations are based on economic and statistical methods that allowed for a comparative analysis of the enterprises of the two countries and to determine indicators for evaluating innovations. It was determined that innovations can help identify reserves to increase the competitiveness of enterprises. This thesis is based on a review of the scientific literature on the topic, and to verify it, the study was based on the method of calculating the economic efficiency of innovation. A comparative analysis of the selected coefficients for calculating the definition of innovation activity showed a close relationship between innovation and the identification of reserves. The experience of Poland confirms this statement. The proposed scientific hypothesis that innovations can help identify reserves to increase the competitiveness of enterprises needs further confirmation. But there are positive arguments that innovation has a significant impact on the identification of reserves. On the example of Poland, this is manifested in the reduction of the number of people working in production and the stable state of the average number of employees in research and development departments with a larger than in Ukraine, the volume of sold innovative products of the food industry.

Keywords: innovations, reserves, competitiveness, coefficient of product development, coefficient of product renewal, coefficient of personnel employed in research and development, sales volume, food industry enterprises, innovative products.

JEL: O 310

INDRODUCTION

The study is based on the thesis, that deals with the attraction of innovation to identify reserves that can increase the competitiveness of enterprises. On the example of the activity of Ukrainian and Polish enterprises, a comparative analysis of attracting innovations to find

reserves was conducted. The urgency of this issue is to find untapped opportunities in enterprises, which will increase their level of competitiveness, using innovative approaches in various fields – management, organizational, personnel, production, resources, and so on. The article considers the peculiarities of the confectionery industry, namely, cocoa, chocolate and sugar confectionery. After all, these companies, both in Ukraine and in Poland, work on imported raw materials, which is due to the problems of the world cocoa market. Therefore, the invention of reserves can increase the competitiveness of these enterprises.

Based on the described situation, the aim of the article is to study innovations to identify reserves that can increase the competitiveness of enterprises on the example of Ukrainian and Polish enterprises.

As a scientific hypothesis, it was chosen that innovations can help identify reserves to increase the competitiveness of enterprises.

The subject of scientific research is the probable innovations that can be involved in the confectionery industry, namely, production and sale of cocoa, chocolate and sugar confectionery, and will contribute to the invention of untapped opportunities for efficiency and competitiveness and depend on the development of science and technology, as well as management in enterprises.

Theoretical perspectives of the study include the patterns of the relationship between innovation and reserves of enterprises; assessment of the involvement of innovation processes to identify potential reserves to increase the competitiveness of enterprises.

LITERATURE REVIEW AND PROBLEM STATEMENT

The study is based on scientific works of Ukrainian, Polish and other specialists. The interpretation of "innovation" is based on the definitions of J. Schumpeter and F. Kotler and co-authors. J. Schumpeter in his work "Theory of Economic Development" considered the impact of innovation on further economic development and proposed a definition of the innovation process. The definition of "innovation" was seen by the scientist as a change that is the main source of profit and which is the result of the introduction of innovations and derived a close, inverse relationship between development and profit. In this case, the innovation J. Schumpeter meant a change in order to introduce and use new types of goods, tools, markets and forms of organization (Schumpeter, 2007). F. Kotler, G. Armstrong, J. Saunders and W. Wong in "Fundamentals of Marketing", considering the content and role of marketing, emphasize the importance of innovation for enterprise development and define them as an idea, product or technology launched into mass production and presented at market, which the

consumer perceives as completely new or one that has certain unique properties (Kotler, Armstrong, Saunders, Wong, 2000, p. 589). In modern science, the concept of "innovation" has acquired a newer definition and reference to the economy as a whole or to individual areas of activity or enterprises. Thus, D. Sikora and A. Uziblo, considering innovations in the enterprise, emphasize the close interaction between innovations and "improvement and modernization of production procedures, increasing efficiency, production capacity and quality of work, improving the form and value of goods and their competitiveness, development and improvement in operational skills and efficiency, elimination of restrictions and mobilization of resources..". In the study "Innowacja w przedsiębiorstwie – próba zdefiniowania" the authors note the specificity of innovative activities of enterprises and a narrow understanding of innovation in business practitioners, which requires more meticulous research, taking into account the significant differences between scientific considerations and business approach (Sikora, Uziębło, 2013). A. Shpynek, based on the analysis of interpretations of the concept of "innovation" in the publication "Innowacyjność - definicja, ogólne informacje o innowacyjności w regionie", emphasizes the use of the term as "innovation, discovery" for further development and emphasizes that at the enterprise level innovations are an important factor in the formation of competitive advantage, helping to improve processes and products and, as a result, help strengthen the market position and increase the value of the company (Śpionek).

Shvatska-Mokrychka J. (2017) identifies the most important factors influencing the competitiveness of food industry enterprises: the number and differentiation of enterprises, product differentiation, saturation of food needs, technological progress. The author considers the possibility of introducing innovations to create a competitive position of the food industry, taking into account the leading factors to increase competitiveness (Szwacka-Mokrzycka J., 2017, p. 208–210).

M. Krashevska and K. Pucher (2017) emphasize that companies looking for sources of competitive advantage should try to adapt traditional and new concepts of competitiveness for a particular business and economic sector, as well as take into account the current operating conditions in this market (Kraszewska, Pujer, 2017, p. 16).

Juchniewicz M. (2008), based on the analysis of food industry enterprises in Poland, notes that they most often use a strategy of competition for value, which is the result of access to relatively cheap factors of production. Such a competitive position is strategically unfavorable and one of the important tools of competition can be the quality of products (Juchniewicz, 2008).

In today's highly competitive environment, it is extremely important to identify possible reserves that will identify ways to develop enterprises and are closely linked to the implementation of innovations. In this approach, A.M. Omarov interprets reserves as untapped opportunities to improve production and improve performance as a result of scientific and technological progress, advanced organization of production and labor, dissemination of experience of the best teams, as well as eliminating losses of production resources (Omarov, 1985). L.V. Hrynevetska in the article "Reserves to increase the competitiveness of the enterprise" emphasizes that such reserves are considered as untapped opportunities for development, through the use of effective economic methods, and it is appropriate to divide the set of reserves of enterprise competitiveness into losses due to irrational use of its own potential and foreign market environment and new opportunities for advanced development of equipment, technology, best practices, management methods, market and non-market conditions" (Grinevetskaya, 2010, p. 249). Sometimes the reserves of competitiveness of the enterprise are combined with reserves – stocks of inventory necessary for the production of competitive products. We believe that this is an inappropriate comparison. The fact is that the same company with the same stock of inventory, similar qualities and composition, can create products of completely different degree of competitiveness. And this will be determined not only and not so much by the quantity and quality of stocks of raw materials, semi-finished products and the like, but by how effectively and adequately in the market situation the internal potential of the enterprise is used.

I.M. Kirchata and O.M. Shershenyuk "understands reserves as fully untapped opportunities of the enterprise, related to the reduction of production costs and ensuring activities in a competitive market. The composition of reserves may change: innovations related to production, organization and management of the enterprise cause the emergence of new types of reserves" (Kirchata, Shershenyuk, p. 69). One cannot but agree with the statement: “the main factor of potential internal reserves of the enterprise, which affects the level of competitiveness, is the degree of technical and technological perfection of production. To solve the problems of increasing competitiveness through resource conservation in the spheres of production and consumption within the production system of the enterprise it is necessary to constantly modernize and introduce new technologies as priority areas in the field of production" (Kirchata, Shershenyuk, p. 72).

The connection between innovations and reserves at enterprises is also traced by OS Malyutin and Yu.G. Nikiforov in the publication "Innovation - a condition for the formation and use of efficiency reserves", noting that innovation, on the one hand, is due to the presence

of reserves, on the other - it contributes to their formation and thus becomes a condition for long-term sustainable development, i.e. the following logical chain: reserves – innovations – resource conservation – innovations – reserves" (Malyutin, Nikiforov, 2013, p. 362).

Thus, the point of view is widespread in the scientific literature, when reserves are considered as a potential opportunity for more efficient use of resources (Komov, 2009, p. 42) or attracting untapped opportunities, which is possible through the introduction of innovations. Thus, to solve this goal in further research we will rely on the second approach.

It is especially important to consider increasing competitiveness from the standpoint of finding reserves for the food industry, due to the specifics of production, short-term properties of the final product, its quality and so on.

METHODS AND METHODOLOGY

Innovative activity is able to increase the competitiveness of enterprises by identifying reserves. But, at the same time, the introduction of innovations requires significant costs and a high degree of risk. Therefore, there is a need to assess the economic efficiency of innovation in enterprises. It is based on methods of calculating the economic efficiency of innovation, which are proposed by scientists, but often preference is given to industrial enterprises that produce their own innovative products, have special departments and staff performing research and development work. Based on the elaboration of existing methods (Karmazina, 2015; Zhukovich, Prilipko, Bilokon, 2014), selected individual parameters and coefficients that allow to determine the existing situation regarding the attraction of innovations in the food industry:

– the ratio of personnel employed in research and development, which characterizes the professional staff of the enterprise and shows the share of personnel directly involved in the development of new products and technologies, production and engineering design, other types of technological preparation for production or introduction of new products or implementation of new services, relative to the average list of all permanent and temporary employees of the enterprise. This ratio is determined by the formula:

$$K_{np} = \frac{Ч_{і}}{Ч_{п}}, \qquad \text{Formula 1}$$

where $Ч_i$ – number of persons employed in the field of research and development, persons;

$Ч_{П}$ – the total number of employees of the enterprise, persons;

– the product renewal ratio – reflects the share of new products in total sales of the enterprise. Based on this indicator, it is appropriate to draw a conclusion about the feasibility

of financing innovation, because new products are usually competitive and usually, there are no problems with its sale, considering that the marketing service works effectively. It is calculated by the formula:

$$K_{ОП} = \frac{O_{ВНП}}{O_{ЗОП}},$$ Formula 2

where: $K_{ОП}$ – product renewal rate;

$O_{ВНП}$ – quantity of new product types, units;

$O_{ЗОП}$ – total number of marketable product, units;

– the coefficient of development of new products makes it possible to assess the ability of the enterprise to implement innovative or subjected to technological change products and is calculated by the formula:

$$K_{НП} = \frac{BP_{НТ}}{BP_{З}},$$ Formula 3

where: $BP_{НТ}$ – profit from the sale of new or improved products and products manufactured using new or improved technologies, UAH;

$BP_{З}$ – profit from the sale of all products of the enterprise, UAH;

The use of the outlined coefficients for the evaluation of innovation allows to take into account more accurately all the results and consequences that are expected from its implementation in enterprises, and to make rational decisions about the feasibility of implementation.

Resource assessment was conducted to identify reserves based on the involvement of innovations. It is carried out in order to determine the impact of innovation on the consumption of a particular type of resource and to overcome the problem of scarcity (important in the case of scarce or non-renewable resources, especially those that are imported).

RESEARCH RESULTS

Ukraine and Poland are two Central-Eastern European countries that are very close in terms of geographical location. In addition, both countries have a well-developed transit network. The economic development of both countries, natural resources and the current economic structure open wide prospects for cooperation and trade. Therefore, it is appropriate to compare the activities and implementation of innovations in Ukrainian and Polish food companies in order to share experiences and identify untapped opportunities. However, Poland has been a member of the European Union since 2004, which has had a significant

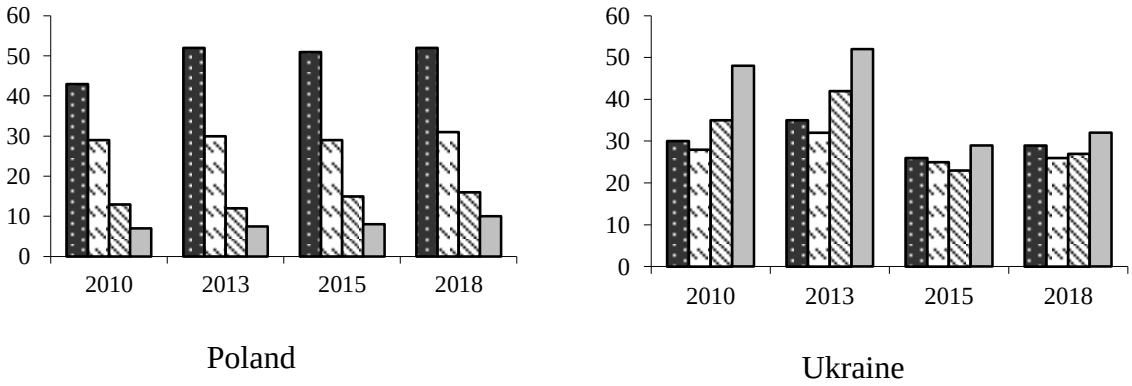
impact on the further development of the country's economy, including restructuring and modernization in the food industry, and this has had a major impact on the competitiveness of enterprises. Therefore, having studied the experience of Poland, Ukrainian producers can borrow already developed innovations and implement them in their activities, attracting foreign investment.

The food industry has a complex structure and contains more than 20 industries, the leading ones in Ukraine are: sugar, meat, dairy, oil and animal fat, fruit and vegetable canning, confectionery, alcohol, wine, etc. The share of the food industry, which includes the production of food, beverages and tobacco products, in the sales structure of Polish industry as a whole is about 20%. It employs almost 17% of the total number of people employed in the industry. More than 30 thousand entities declare activities in the field of processing, agricultural products, but only almost fifteen hundred entreprises employ 50 or more people. The rest are small organizations that operate in a very narrow range and sell goods in local markets. In Poland, the food industry is overwhelmingly private. Cocoa, chocolate and sugar confectionery products are usually produced by foreign enterprises or imported. The Polish confectionery market is dominated by products of international companies such as Nestle, Ferrero, Mars, Storck, Haribo, Lindt & Sprungli, Bahlsen Sweet, Perfetti Van Melle and their combined market share is 65%. The goods of Polish brands are represented in the minority, for example, such companies as Jutrzenka, Wawel, Mieszko, Solidarnosc, Wedel, the remaining 18% of the market is occupied by small producers (News & Analysis on Chocolate, Candy and Biscuit).

The largest sector of the confectionery industry is occupied by the chocolate segment, which in value terms accounts for 60% of the sweets market in Poland. According to marketing company AC Nielsen, sales of chocolate products reached 1.05 billion euros. Compared to the previous year, there was an increase in volume by almost 7% and an increase in value by 15.3% (News & Analysis on Chocolate, Candy and Biscuit). In Ukraine, in terms of production of cocoa, chocolate and sugar confectionery, due to the introduction of innovations at enterprises such as Roshen Corporation and CJSC AVK, this industry ranks third in terms of technological innovation costs, their products are increasingly exported to various countries of the world. Unfortunately, the historically traditional for Ukraine sugar industry is declining more and more and the funding for innovation is significantly reduced every year. This is due to the fact that the production of sugar from beets is expensive and the existing production capacity needs to be transferred to other types of raw materials, such as

raw cane. In addition, Russia was the main importer of Ukrainian sugar, and events in the east and the annexation of Crimea led to the cessation of these trade relations.

In the confectionery market, chocolate is presented in different forms, the sales of which are not the same. The percentage of sales of chocolate products in Poland and Ukraine is shown in Graph 1.



GRAPH 1. DYNAMICS OF SALES OF VARIOUS CHOCOLATE PRODUCTS: CHOCOLATE IN TILES, CHOCOLATE BARS, CANDY BOXES, CANDY BY WEIGHT, 2010-2018, %

Source: calculated according to Statistics of Ukraine.

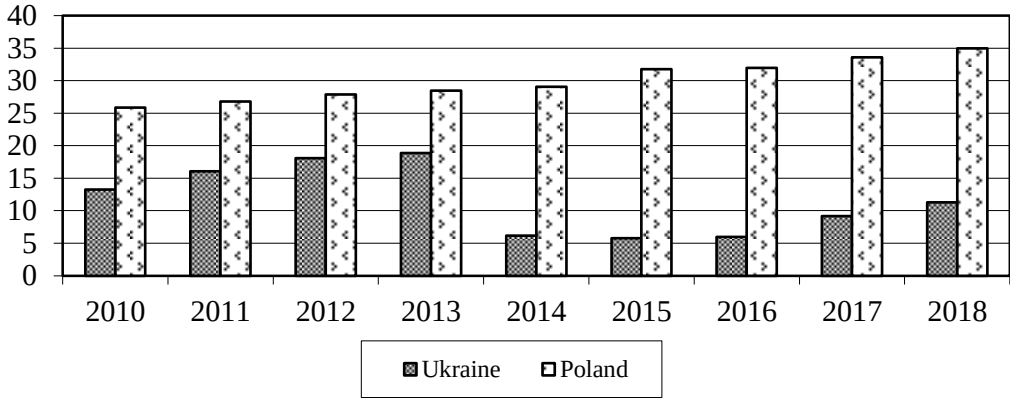
As you can see from Figure 1, both the composition and sales in different countries and over the years are different, due to many factors: economic development, traditions, and so on.

The introduction of the latest machinery and production technology in the food industry contributes to improving the quality of industrial products and increasing its level of competitiveness in both domestic and foreign markets. Active investment and innovation policy of the food industry includes technical re-equipment, modernization, optimization of existing production facilities for the production of modern competitive products and more.

Analyzing the volume of sold innovative products of the food industry of Ukraine and Poland for the period from 2010 to 2018, we use the coefficient development of new products, which allows to assess the ability of individual industries to implement innovative or technological products (Graph 2).

As for the production of oil and animal fat, since 2010 the coefficient of development of new products is reduced, and in 2013 it reached its lowest level (in Poland), and in Ukraine – in 2014. Then gradually, not rapidly, this graph is growing in both countries. This suggests that in this area of the food industry there have been no significant innovative changes in products, as most of the products are sold as raw materials to other countries. Investigating

sugar production, we see a tendency to significantly reduce innovation in this area, especially in recent years. In the production of bread and bakery products we note a similar trend, in 2014 the rate of development of new products was very low compared to previous years. The confectionery industry (especially the production of rusks, cookies and cakes) is marked by some positive changes: in recent years, the development of new products has doubled.



GRAPH 2. SALE VOLUME OF INNOVATIVE PRODUCTS OF FOOD INDUSTRY OF UKRAINE AND POLAND, 2010-2018, %

Source: calculated according to Statistics of Ukraine,

For further research, there were performed calculations of the ratio of personnel employed in research and development work (Table 1).

TABLE 1. DYNAMICS OF THE AVERAGE NUMBER OF EMPLOYEES EMPLOYED IN THE FOOD INDUSTRY OF UKRAINE AND POLAND, 2010-2018.

Indicators	2010	2013	2014	2015	2017	2018
The average number of full-time employees, persons	651531	623753	608845	561207	575880	603836
	14500	10456	9853	9500	8966	9527
The average number of employees in research and design departments, individuals	1870	1772	1385	761	582	240
	4836	3485	3284	3166	2988	3176
K_{np}	0,003	0,003	0,002	0,001	0,001	0,0004
	0,334	0,333	0,333	0,333	0,333	0,333

Source: calculated according to Statistics of Ukraine

As we can see, with the growth of the average number of full-time employees in Ukraine (data of the upper line), the number of employees engaged in research and design

work decreases, which critically affects the dynamics of the indicator. The reason for this trend is the outflow of highly qualified personnel and scientists abroad and the need for large investments in innovation and, consequently, the high risk of innovation. This means that in the economy of Ukraine there is no tendency to develop in the direction of innovation, often outdated equipment and technologies are used, no attention is paid to the fundamental implementation of innovations. In Poland, there has been a decrease in the number of employees in production (lower-line data), but the average number of employees in research and design departments, according to the calculated coefficient, remains stable.

The results of calculations of the coefficient in development of new products in the food industry are presented in table 2.

TABLE 2. SALE VOLUME OF INNOVATIVE PRODUCTS OF FOOD INDUSTRY IN UKRAINE AND POLAND, 2010-2018.

Indicators	2010	2013	2014	2015	2017	2018
Volume of shipped products (goods & services), thousand UAH	33121780,5	41655693,2	48244716,1	61193769,4	79052351,8	91359878,6
	38265780,6	46855367,3	52338873,3	73267826,8	86275323,3	96279926,5
Volume of shipped innovative products (goods & services), thousand UAH	20549524,6	24937648,4	27079032,8	1621251,5	2385983,1	3331863,4
	32565728,4	33266542,3	33289763,2	34256241,5	34729756,2	35266723,8
$K_{НП}$	0,62042	0,59866	0,56128	0,02649	0,03018	0,03647
	0,85104	0,79891	0,69002	0,46755	0,40255	0,38602

Source: calculated according to Statistics of Ukraine.

The coefficient of development of new products in the food industry indicates a tendency to a gradual decrease, which demonstrates the inability of the enterprise to implement innovative or subject to technological change products.

Calculations of the coefficient of product renewal in Ukraine are given in table 3.

TABLE 3. VOLUME OF IMPLEMENTED INNOVATIVE PRODUCTS OF UKRAINE FOOD INDUSTRY, 2010-2018

Indicators	2010	2013	2014	2015	2017	2018
Total quantity of marketable products, thousand UAH	202348872,2	255274009,5	316284177,0	378060053,4	463259615,2	487035010,0
Introduction of innovative products, thousand UAH	404697,7	510548,02	632568,4	756120,1	926519,2	974070,0
$K_{ОП}$	0,001	0,002	0,002	0,001	0,001	0,002

Source: calculated according to Statistics of Ukraine.

The coefficient of renewal of new products in the food industry in Ukraine indicates stable and insignificant data, which may be due to several factors: companies do not finance innovation, because they are actively selling well-known goods or do not have the funds to innovate. For Poland, the initial data for the calculation were not found, so this ratio could not be compared.

Thus, speaking separately about the food industry, it should be noted that on average in recent years the highest rate of development of new products – in the production of beverages, dairy products and ice cream and for the production of bread and bakery products; the smallest - in the production of ready-made animal feed, sugar, confectionery, grain processing, starch production. The food industry in both Ukraine and Poland has extremely favorable conditions for its effective development, and is one of the leading structural components of the national economy, and its functioning is a leading factor in economic and social growth, the main condition for improving living standards. In Ukraine, the food industries that are most developing in the innovative direction are confectionery and beverage production. Despite this, domestic enterprises need to introduce the latest technologies, actively implement innovations, which is possible through the implementation of research and development work; The involvement of highly professional staff, in turn, will help identify reserves to increase competitiveness in the world market and the opportunity to move from the country – producer of raw materials to the country – producer of final products. And in this situation, the experience of Poland is useful.

Due to the introduction of innovations, there can be invented internal reserves of the enterprise, namely:

– increase in volumes used in the production of resources (labor resources, fixed assets, materials);

– increasing the use-time for labor resources and fixed assets;
– elimination of the causes of unproductive use of all these types of resources.

In addition, the company can produce products with fewer resources involved, or with a constant number of resources involved to produce more products, as can be seen in table 2 and graph 2.

Due to the introduction of innovations, the location of reserves leads to the improvement of fixed assets, materials, staff improvement, increasing the level of technology, the degree of mechanization and automation of production processes, production organization, improving product quality, increasing technical and energy equipment and more. These types of internal reserves can take place in the activities of food industry enterprises. It is these reserves and ways to mobilize them, that are reflected in the long-term plans of organizational and technical measures.

For enterprises producing cocoa, chocolate and sugar confectionery, the formation of reserves, as a stock of resources, is an extremely important element of existence, because the presence of risky situations with the supply of raw materials can lead to loss of consumers and stop production. Considering stocks and reserves as separate concepts, we emphasize the latter as uncertain opportunities to identify promising ways for further development of enterprises. These can be: upgrades of special equipment for storage and transportation of goods; re-equipment of premises for new goods; rational use of available resources; improvement of loading and unloading works; equipment modification; reconstruction of warehouses; modernization of the general process of wholesale trade; introduction of upgrades, etc. All these improvements in the operation of wholesale trade are aimed at improving efficiency and competitiveness in the market. Our attention was drawn to the upgrade, as one of the areas of equipment improvement. Along with this definition, the concept of "human upgrade" has appeared and can be applied in work, but it needs more meticulous elaboration and will be covered in further research.

CONCLUSION

As a result of the conducted research the expediency of introduction of innovations at the enterprises of the food industry is proved. A comparative analysis of the selected coefficients for calculating the definition of innovation activity showed a close relationship between innovation and the identification of reserves, and the experience of Poland confirms this statement.

The proposed scientific hypothesis that innovations can help identify reserves to increase the competitiveness of enterprises needs further confirmation. But there are positive arguments that innovation has a significant impact on the identification of reserves. On the example of Poland, this is manifested in the reduction of the number of people working in production and the stable state of the average number of employees in research and development departments with a larger than in Ukraine, volume of sold innovative products of the food industry.

Both the chosen methods for research and the interpretation of the obtained results can be debatable. The main disadvantage of this work is the lack of primary information. In this case, it would be interesting to work together with Polish scientists and further develop the proposed hypothesis.

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Chapter 7

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ROZWÓJ SPRZEDAŻY INTERNETOWEJ WŚRÓD PRZEDSIĘBIORCÓW W POLSCE I UKRAINIE

DEVELOPMENT OF ONLINE SALES AMONG ENTREPRENEURS IN POLAND AND UKRAINE

Abstract. The development of electronic services is particularly visible though the example of electronic shopping. The main aim of this work is to present the development of online sales among Polish entrepreneurs. The study contains existing definitions of e-commerce in the literature and presents its advantages. Then research was conducted on the secondary data, concerning the increase in use of online sales among Polish enterprises, according to the size of companies and the voivodeship in which the company is located. The results clearly indicate a significant increase in popularity of e-commerce among Polish e-entrepreneurs.

Key words: online sales, entrepreneur, business
JEL: L26, O18

WSTĘP

W dobie rozwoju informatyzacji usługi elektroniczne stają się coraz bardziej popularne. Przemiany dotyczące nowych form handlu są w ostatnich latach silnie widoczne, a tradycyjne formy handlu stają przed konkurencją w postaci usług elektronicznych, stanowiących rozwiązanie wygodniejsze dla konsumenta i efektywne dla przedsiębiorcy. Przedmiotem niniejszej pracy jest tematyka handlu elektronicznego oraz wzrostu jego popularności wśród przedsiębiorców w obecnym systemie społeczno-gospodarczym.

Wymiana handlowa jest obecna w życiu społeczeństw od bardzo dawna. W ciągu ostatnich dziesięcioleci obserwuje się jednak silne zmiany w tym obszarze. Szczególnie widocznym zjawiskiem jest rozwój handlu elektronicznego, który zaczyna mieć coraz większe znaczenie dla współczesnych społeczeństw. Celem opracowania jest ukazanie rozwoju handlu elektronicznego wśród polskich przedsiębiorców oraz zalet handlu elektronicznego, determinujących ten rozwój. W szczególności zwrócono uwagę na wzrost znaczenia e-handlu w różnych typach jednostek gospodarczych oraz różnych regionach

Polski. Zwrócono również uwagę na korzyści płynące z włączenia Polski w system zasad Jednolitego Rynku Cyfrowego. Postawiono hipotezę badawczą: *Współczesny rozwój gospodarczy w coraz większym stopniu opiera się na transakcjach e-commerce, czemu sprzyja włączenie Polski w system zasad Jednolitego Rynku Cyfrowego.*

W pracy przedstawiono definicję handlu elektronicznego, wskazano na jego główne zalety i wady. Przedstawiono istotne wydarzenia wpływające na europejski e-handel wskazując na konsekwencje utworzenia Jednolitego Rynku Cyfrowego. W rozdziale badawczym przeprowadzono analizy z wykorzystaniem danych wtórnych GUS i Eurostatu. Zweryfikowano zmiany i różnice w wykorzystaniu handlu elektronicznego w przedsiębiorstwach w Polsce w latach 2008-2018 z podziałem na województwa oraz wielkość tych firm.

ISTOTA I GENEZA E-COMMERCE

Handel elektroniczny (ang. *electronic commerce)* to (Bartczak, 2016) proces prowadzący do wymiany towarów drogą elektroniczną, w szczególności przez Internet, lecz także poprzez telewizję, telefon, sieć Ekstranet oraz system EDI, czyli system elektronicznej wymiany danych bezpośrednio pomiędzy partnerami biznesowymi. Powstanie tego pojęcia datuje się na połowę lat 90. XX wieku i jest konsekwencją komercyjnego użycia usług internetowych. Mimo że funkcjonuje od wielu lat, to nadal nie została określona jednolita definicja e-handlu. Pojęcie to stale zmienia się, ewoluuje, wraz z rozwojem społecznym i technologicznym. W literaturze przedmiotu znajduje się wiele prób wyjaśnienia tego zagadnienia. Zarówno badacze, korporacje i różnorakie instytucje podejmują się próby zdefiniowania pojęcia handel elektroniczny. Według Międzynarodowej Organizacji Normalizacyjnej (ISO) e-commerce to forma wymiany informacji pomiędzy przedsiębiorstwami oraz pomiędzy przedsiębiorstwami i klientami. Według Głównego Urzędu Statystycznego (GUS, 2020) e-handel to t*ransakcje przeprowadzone przez sieci, oparte na protokole IP i przez inne sieci komputerowe.* Przy czym, zamówienia telefoniczne i e-mailowe nie należą do *electronic commerce*. Według Eurostat (Eurostat, 2019) e-commerce to *sprzedaż dóbr i usług, pomiędzy biznesem, gospodarstwami domowymi oraz prywatnymi organizacjami, poprzez elektroniczne transakcje przeprowadzane internetowo lub przez inną sieć komputerową.* Międzynarodowe korporacje w różny sposób pojmują e-handel (Qin, 2009), m.in. dla przedsiębiorstwa Intel e-commerce jest połączeniem rynku elektronicznego, wymiany elektronicznej oraz usługi elektronicznej, dla IBM jest to połączenie technologii informacyjnych z siecią WEB oraz biznesem, a dla HP e-commerce to udoskonalenie biznesu

poprzez zastosowanie środków elektronicznych. Na potrzeby mniejszego opracowania formułuje się następującą definicję e-commerce: *E-commerce to wymiana dóbr i usług pomiędzy co najmniej dwoma podmiotami, umożliwiona i zrealizowana za pomocą technologii cyfrowych w globalnej sieci. Jest to proces zautomatyzowany oraz zintegrowany pomiędzy wszystkimi stronami transakcji.*

W literaturze wyróżnia się kilka klasyfikacji handlu elektronicznego. Jedną z nich jest rozróżnienie ze względu na naturę transakcji oraz relacja pomiędzy uczestnikami. Są to:

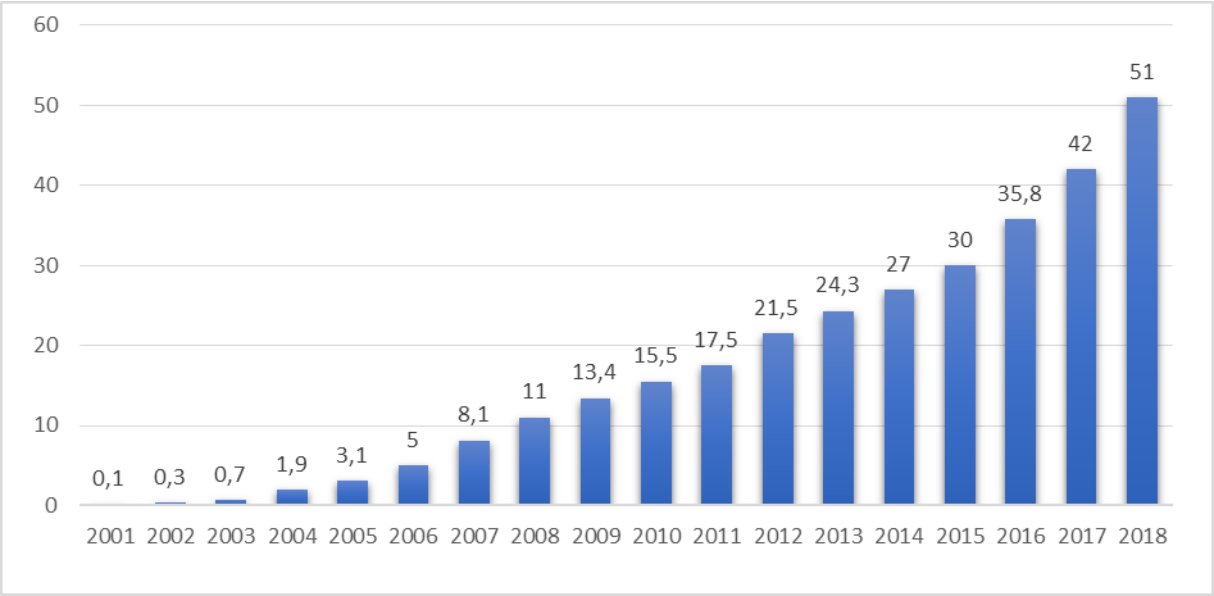
- Business-to-bussiness (B2B) czyli handel elektroniczny pomiędzy przedsiębiorstwami. B2B to głównie sprzedaż hurtowa online, w której firmy sprzedają produkty, materiały i usługi innym firmom.
- Business-to-customer (B2C), także e-tailing, czyli internetowy handel detaliczny. Ta forma zawiera interakcję pomiędzy przedsiębiorstwem a konsumentem, który zakupuje produkt lub usługę przez Internet.
- Consumer-to-consumer (C2C) gdzie transakcje są zawieranie pomiędzy osobami fizycznymi, najczęściej na portalach umożliwiających wymianę dóbr i informacji.
- Business-to-goverment (B2G) są to transakcje pomiędzy administracją rządową a przedsiębiorstwami, np. zamówienia publiczne czy przetargi.

Można mówić o dowolnej kombinacji pomiędzy konsumentem (obywatelem), przedsiębiorcą oraz administracją państwową, jednak wymienione typy transakcji są szczególnie warte uwagi, gdyż występują najczęściej (Nanehkaran, 2013; Ohene-Djan, 2008; Turban, et al., 2018). I tak na przykład w roku 2019 wartość B2B eCommerce wynosiła 12.2 bilionów dolarów i była ponad 6 krotnie większa niż wartość B2C (Statista, 2019).

Elektroniczna wymiana handlowa zyskuje coraz szybciej na popularności dzięki płynących z niej wymiernym korzyściom. Przedsiębiorcy mogą czerpać z rozwoju e-biznesu poprzez ograniczenie kosztów oraz wzrost efektywności pracy. Ograniczenie kosztów następuje dzięki możliwości współpracy z wieloma firmami oraz łatwą dostępnością. Dzięki globalnej sieci, przedsiębiorca może oszczędzać poprzez outsourcing, czyli delegowanie pewnych czynności do firm zewnętrznych, na przykład korzystanie z usług IT i księgowych. Sieć udostępnia wachlarz możliwości znalezienia firmy, która będzie optymalna. Globalna sieć ułatwia także pozyskanie pracowników, oszczędności poprzez zatrudnianie pracowników zdalnie i internetowo. Oszczędność następuje także poprzez zmniejszenie nakładów na reklamę, która w Internecie jest tańsza oraz bardziej efektywna. Zarówno reklama jak i produkt może trafić do większej liczby klientów, bez ograniczeń geograficznych. Biznes

elektroniczny posiada niską barierę wejścia. Dla przykładu model biznesowy B2B2C, w którym firma nieposiadająca towaru dopiero w momencie zakupu przez konsumenta pozyskuje towar od innej firmy i dostarcza konsumentowi. Wymagany jest minimalny wkład własny, a dużą zaletą jest brak konieczności posiadania magazynów. Kolejną zaletą dla przedsiębiorcy jest wzrost efektywności pracy. Następuje on dzięki stosowanym systemom internetowym. Prowadzenie biznesu staje się prostsze dzięki zastosowanej technologii. Elektroniczny biznes staje się bardziej elastyczny, nowoczesne programy i statystyki dają wgląd do pojawiających się w danym czasie trendów. Analiza, prognozowanie, zarządzanie ryzykiem staje się łatwiejsze (Misztal, 2018). Z kolei dla konsumenta e-commerce oferuje dostępność i łatwość zakupu. Zamówienie można składać o każdej porze dnia i nocy, co stanowi dużą przewagę nad sklepami tradycyjnymi. Internet pozwala na szeroki wybór, wszystkie sklepy są w jednym miejscu, dzięki czemu można wybrać ofertę, która jest najkorzystniejsza. Porównywanie cen i ofert stało się łatwe, dzięki możliwości filtrowania i sortowania produktów na stronach sklepów, a także dzięki porównywarkom cenowym, które obejmują dane z wielu sklepów w jednym miejscu. Handel elektroniczny pozwala na ominięcie ograniczeń geograficznych, dzięki czemu łatwiejsze staje się znalezienie produktów niszowych, często nie możliwych do znalezienia w okolicy. Dla ludzi, którzy mieszkają w mniejszych miejscowościach lub na peryferiach pozwala na zrealizowanie dostawy do optymalnego dla nich punktu, bądź na dokonanie zakupu, ograniczając koszty transportu do płatności za kuriera. Każdemu, kto potrzebuje zamówić daną rzecz, która nie jest dostępna na krajowym rynku, e-commerce pozwala na nieskomplikowany zakup zza granicy. Ważną zaletą jest także możliwość zwrotu zakupionego towaru w ciągu 14 dni od otrzymania towaru (Komor, Budzyńska, Domańska, 2015). Jednak poza mnogością zalet handel elektroniczny posiada kilka istotnych wad. W literaturze najczęściej wskazywanym minusem dla konsumentów jest brak fizycznego kontaktu z zakupionym towarem przed zakupem. Brak realnego poznania może prowadzić do zakupu towaru łudząco podobnego do oryginału, który w trakcie użytkowania może okazać się podróbką. Może także się okazać, że zamówiony towar nie będzie trafiać w gusta klienta lub w przypadku ubrań, nie będzie pasować. Istotnym minusem jest także ryzyko otrzymania uszkodzonego produktu lub produktu inny niż zamówiony. W wypadku przesyłek nieubezpieczonych istnieje ryzyko nieotrzymania paczki. Wielu konsumentów obawia się także zakupów w sklepach internetowych, z którymi wiąże się ryzyko przejęcia danych osobowych, w szczególności płatności internetowych, gdzie istnieje ryzyko przejęcia danych kart kredytowych, a w rezultacie utraty oszczędności. Te sytuacje sprawiają kłopot dla klienta i wymagają

poświęcenia czasu, aby odzyskać utraconą wartość (Rudzewicz, 2010). Chociaż koszty uruchomienia sklepu elektronicznego sklepu są mniejsze niż sklepu tradycyjnego, przedsiębiorca musi ponieść koszty utworzenia strony internetowej oraz aplikacji mobilnych, z którymi wiążę się zakup odpowiedniego sprzętu i oprogramowania. W początkowej fazie biznesu rozwiązania te nie są konieczne, lecz zalecane, aby się rozwijać. Wiąże się to także z zatrudnieniem osoby odpowiedzialnej za serwery i utrzymanie strony internetowej. Przedsiębiorca musi wziąć odpowiedzialność za bezpieczeństwo transakcji na jego stronie. Wymaga się spełnienia standardów bezpiecznych płatności oraz zabezpieczenia serwerów na przejęcie z nich danych klientów. W razie utraty danych osobowych klienta z winy przedsiębiorcy przewidziane są dla niego wysokie kary pieniężne, które mogą zachwiać stabilnością finansową firmy. Z tego powodu wymagane są też szkolenia dla pracowników, czyli zakup odpowiednich programów szkoleniowych i wdrożenie ich w firmie lub zatrudnienie osób odpowiedzialnych za procesy bezpieczeństwa danych. Przedsiębiorca doświadcza też ryzyka w postaci niepewności prawa oraz nakładania na niego nowych obowiązków, gdyż dynamicznie rozwijających się sektorach, takich jak sieć Internetowa oraz handel elektroniczny istnieje duże prawdopodobieństwo wprowadzenia nowych przepisów i uregulowań prawnych (Onyusheva, Naranovich, Zhussupova, 2018). Jednak korzyści płynące z użytkowania e-commerce wydają się przewyższać wady, co ma swoje odzwierciedlenie w jego rosnącej wartości (Graph 1). W XXI wieku w Polsce zaobserwowano stały wzrost wartości rynku e-commerce. W 2018 roku rynek polskiego handlu elektronicznego przekroczył barierę 50 mln polskich złotych, co uczyniło go jednym z wiodących rynków w Europie.



WYKRES 1. WARTOŚĆ RYNKU E-COMMERCE (MLD ZŁ) W POLSCE W LATACH 2001-2018

GRAPH 1. VALUE OF THE E-COMMERCE MARKET (BILLION PLN) IN POLAND IN 2001-2018

Own study based on: Kołata, Jak ugryźć e-commerce w magazynie.

W Ukrainie również rozwija się e-commerce. Z Internetu korzysta 21,6 mln Ukraińców. Wśród nich najbardziej aktywne są takie grupy, jak: uczniowie / studenci, właściciele lub dyrektorzy dużych i średnich przedsiębiorstw oraz wojskowi (poziom wykorzystania internetu przez te grupy wynosi 100%) (Internet Asotsiatsiia…2020), a także osoby z dochodami powyżej średniej oraz w wieku 15-45 lat (poziom wykorzystania internetu wynosi prawie 100%) (The Statistics…2020). Wzrost liczby aktywnych użytkowników Internetu prowadzi do wzrostu obrotów w handlu elektronicznym, gdyż różni aktorzy postrzegają Internet jako naturalne środowisko, w którym odpowiednio zaspokajane są ich potrzeby. Tempo wzrostu handlu elektronicznego w Ukrainie w drugiej dekadzie XXI wieku znacznie przekroczyło tempo wzrostu w Europie. Wynika to przede wszystkim z gwałtownego wzrostu poziomu penetracji Internetu w Ukrainie (Bebenko, Syniawska, 2018). Ukraina jest atrakcyjnym rynkiem dla rozwoju e-commerce, posiada duży potencjał dla e-biznesu i związanych z nim działań. W 2018 roku Ukraina zajęła drugie miejsce pod względem wzrostu obrotów korzystania z internetu wśród krajów europejskich. Głównym czynnikiem stymulującym rozwój Internetu była znacząca poprawa infrastruktury telekomunikacyjnej w kraju (Lipych, Mokhniuk, 2020).

JEDNOLITY RYNEK CYFROWY

Bodźcem stymulującym wzrost znaczenia wymiany handlowej może być przynależność do organizacji, które ułatwiają wymianę towarów i usług jej członkom. Współpraca pomiędzy jednostkami jest czynnikiem ułatwiającym osiąganie wspólnych celów czy rozwiązywania konfliktów. Unia Europejska, która zrzesza 27 państw, tworzących jeden jednolity rynek jest tego odzwierciedleniem. Koncepcja jednolitego rynku wewnętrznego została zawarta w 1987 roku w Jednolitym Akcie Europejskim (Śliwińska, 2018). Opiera się ona na zniesieniu ograniczeń dotyczących przepływu towarów, usług, osób i kapitału, zwanymi czterema swobodami jednolitego rynku. Została ona wcielona w życie 1 stycznia 1993 roku i obejmowała wówczas 12 państw członkowskich. Aktualnie na wewnętrznym rynku europejskim funkcjonuje 27 państw członkowskich UE.

W maju 2015 roku Komisja Europejska utworzyła strategię jednolitego rynku cyfrowego, mającą na celu ułatwienie sprzedaży i kupna produktów cyfrowych w całej Europie. Utworzenie nowego wspólnego rynku stwarza nowe możliwości aktywizacji poszczególnych dziedzin gospodarek poprzez e-handel. Strategia ta opierała się na trzech filarach: ułatwieniu dostępu do dóbr i usług cyfrowych w całej UE, tworzeniu przyjaznych warunków dla rozwoju usług cyfrowych oraz podejmowaniu działań maksymalizujących wzrost gospodarczy tworzony przez europejską gospodarkę cyfrową (Śledziewska, et al., 2017). Podjęte działania przyczyniły się do zmniejszenia dyskryminacji wirtualnych użytkowników, zwiększenia bezpieczeństwa cyfrowego czy umożliwienia dostępu do informacji o cenach przesyłek transgranicznych. Szczególnie istotne normy prawne zostały wydane w 2018 roku (Rada Europejska, 2020). Przyjęto rozporządzenie zabraniające nieuzasadnionej geoblokady na rynku europejskim, czyli praktyki dyskryminującej część użytkowników ze względu na lokalizacje, obywatelstwo czy miejsce zamieszkania. Następnie uchwalono przepisy o doręczaniu paczek za granicę, przez co łatwiejsze stało się porównywanie cen dostaw paczek transgranicznych. Ceny oferowanych dostaw zaczęły być publikowane w internecie, co pozwoliło na wybranie najkorzystniejszych ofert zarówno konsumentom, jak i przedsiębiorcom. W kolejnym etapie przyjęto rozporządzenie dotyczące stworzenie jednolitego portalu cyfrowego, który ułatwia dostęp do wszystkich procedur i informacji dla osób prywatnych oraz firm. W 2019 roku zostało wprowadzone kolejne rozporządzenie zwiększające bezpieczeństwo użytkowników e-handlu. Uregulowało ono stosunki pomiędzy platformami internetowymi a firmami korzystającymi z ich usług. Przepisy zapewniły firmom systemy dochodzenia roszczeń, większą pewność dotyczącą zasad świadczenia usług oraz ich przejrzystość. W ciągu tych kilku lat zniesione zostały

opłaty roamingowe w UE, zostały uchwalone przepisy, dzięki którym obywatele UE którzy wykupili usługę cyfrową w swoim kraju zachowują dostęp do tych treści w całej UE.

Przynależność do jednolitego rynku przyczynia się do zmniejszenia kosztów transakcji, ułatwienia porównywania ofert, większego wyboru produktów. Istotne też są usprawnienia dotyczące wprowadzania jasnych reguł administracyjnych i biznesowych. Wypracowane rozwiązania sprawiają, że polscy konsumenci czują się coraz bezpieczniej w Internecie, zainteresowanie zakupami online rośnie, a co się z tym wiąże następuje wzrost zainteresowania przedsiębiorców działalnością internetową.

ŹRÓDŁA DANYCH I METODA BADANIA

Dane wykorzystane do przeprowadzenia analiz są danymi wtórnymi i pochodzą z Głównego Urzędu Statystycznego (Statistics Poland) oraz Europejskiego Urzędu Statystycznego (Eurostat). Pierwszy zbiór danych pochodził z badań pt. *Wykorzystanie technologii informacyjno-komunikacyjnych w jednostkach administracji publicznej, przedsiębiorstwach i gospodarstw domowych w 2019 roku* oraz analogicznego wydania z roku 2009. W badaniach o przedsiębiorstwach objęto jednostki gospodarcze o liczbie pracujących co najmniej 10 osób. Drugi zbiór danych pochodził z Eurostatu, z badań pt. *ICT usage in enterprises* które dotyczyły odsetka przedsiębiorstw otrzymujących zamówienia przez Internet w danym roku kalendarzowym. Badania te są uogólnionymi badaniami publikowanymi corocznie przez krajowe urzędy statystyczne w krajach Unii Europejskiej i opierają się na kwestionariuszach zaczerpniętych z Eurostatu.

W badaniach analizom poddano odsetki w poszczególnych latach. Do weryfikacji istotności różnic pomiędzy odsetkami zastosowano test istotności różnic dla wskaźnika struktury. Wynik tego testu mówi o tym czy różnice odsetków są istotnie statystycznie w badanym okresie. Analizy weryfikacji różnic zostały wykonane za pomocą programu Statistica 13.3. Dla wykonanych analiz przyjęto poziom istotności α=0,05. Dla odsetka przedsiębiorstw, które otrzymały zamówienia przez Internet w poszczególnych latach w zostały obliczone indeksy dynamiki zmian w czasie w programie Microsoft Excel. Indeksy dynamiki jednopodstawowe I_j powstały poprzez przyjęcie wartości X_0 z pierwszego roku badania jako wartość bazową, a następnie odniesienia jej do pozostałych wartości (Formula 1).

$$I_j = \frac{X_n}{X_0} * 100 \qquad \text{Formula 1.}$$

Dla indeksów łańcuchowych wartość bazowa ulegała zmianie, czyli wartości z roku n dzielono przez wartości dla roku poprzedniego (Formula 2).

$$I_{ł} = \frac{X_n}{X_{n-1}} * 100 \qquad \text{Formula 2.}$$

Aby stworzyć indeks jako podstawę dla roku bazowego przyjęto liczbę 100, którą należy pomnożyć przez otrzymane ilorazy (Sobczyk, 2007). Następnie określono wartość średniego tempa wzrostu w badanym okresie $I_{śr}$ (Formula 3).

$$I_{śr} = \sqrt[n-1]{\frac{X_n}{X_0}} - 1 \qquad \text{Formula 3.}$$

WYNIKI BADAŃ WŁASNYCH

Analizy rozpoczęto od weryfikacji istotności różnic dla wskaźnika struktury ze względu na odsetek przedsiębiorstw prowadzących sprzedaż przez sieci komputerowe pomiędzy latami 2008 a 2018, z podziałem na wielkość firm oraz według województw (Table 1) na podstawie danych z GUS. W przypadku wszystkich porównań stwierdzono istotny statystycznie wzrost odsetka firm prowadzących sprzedaż przez sieci komputerowe w 2018 roku w porównaniu do roku 2008, przy poziomie istotności p<0,0001. Nie obserwuje się również żadnego województwa, w którym nastąpił spadek odsetka e-sprzedaży. Zauważalny jest również wzrost wartości e-sprzedaży ze względu na wielkość przedsiębiorstw. W 2018 roku 13.6% przedsiębiorstw małych wykorzystało e-sprzedaż, 21.5% średnich oraz 41% dużych. Można więc wysunąć wniosek, że dla jednostek o większym rozmiarze zauważalne jest większe wykorzystanie e-sprzedaży. Największe wykorzystanie e-sprzedaży poprzez strony internetowe, aplikacje mobilne lub wiadomości typu EDI w 2008 obserwowano w województwach: mazowieckim (6,4%), małopolskim (6,1%) oraz pomorskim (5,8%), najmniejsze natomiast w warmińsko-mazurskim (1,8%), lubuskim (2,7%) oraz zachodniopomorskim (2,9%). W 2018 największe wykorzystanie było wciąż w województwie mazowieckim (19,4%), a następnie w dolnośląskim (16,9%) i wielkopolskim (16,5%). Najmniejsze wykorzystanie było w województwie świętokrzyskim (10%), podlaskim (11,1%) oraz kujawsko- pomorskim (12,8%).

TABELA 1. PRZEDSIĘBIORSTWA PROWADZĄCE SPRZEDAŻ PRZEZ SIECI KOMPUTEROWE W 2008 I 2018 ROKU
TABLE 2. ENTERPRISES CONDUCTING SALES THROUGH COMPUTER NETWORKS IN 2008 AND 2018

Specification a - amount b - percentage		**Total number of enterprises**		**Enterprises conducting e-sales through websites, mobile applications or EDI-type messages**		**Statistical significance**
		2008	**2018**	**2008**	**2018**	p
Total	a	96966	106069	4720	16696	p<0,0001
	b	100	100	4,9	15,7	
By size						
Small (10-49)	a	78415	86210	3087	11745	p<0,0001
	b	100	100	3,9	13,6	
Medium (50-249)	a	15375	16324	1060	3502	p<0,0001
	b	100	100	6,9	21,5	
Large (250 +)	a	3176	3534	573	1449	p<0,0001
	b	100	100	18	41	
By voivodeship						
Lower Silesia	b	100	100	5,5	16,9	p<0,0001
Kuyavia-Pomerania	b	100	100	4,4	12,8	p<0,0001
Lublin	b	100	100	3,4	14,1	p<0,0001
Lubusz	b	100	100	2,7	15,5	p<0,0001
Lodzkie	b	100	100	4,3	14,7	p<0,0001
Lesser Poland	b	100	100	6,1	16,2	p<0,0001
Masovia	b	100	100	6,4	19,4	p<0,0001
Opole	b	100	100	5,6	14,9	p<0,0001
Subcarpathia	b	100	100	4,3	14,7	p<0,0001
Podlaskie	b	100	100	4,1	11,1	p<0,0001
Pomerania	b	100	100	5,8	14,7	p<0,0001
Silesia	b	100	100	4,4	15,3	p<0,0001
Swietokrzyskie	b	100	100	3,5	10	p<0,0001
Warmia-Masuria	b	100	100	1,8	13	p<0,0001
Greater Poland	b	100	100	4,9	16,5	p<0,0001
West Pomerania	b	100	100	2,9	15,2	p<0,0001

Source: Own study based on Statistics Poland data.

Takie same analizy wykorzystano do weryfikacji istotności różnic dla wskaźnika struktury ze względu na odsetek wartości netto przychodów ze sprzedaży przez sieci komputerowe pomiędzy latami 2008 a 2018, z podziałem na wielkość firm (Table 2). Analogicznie dla wszystkich porównań stwierdzono istotny statystycznie wzrost odsetka wartości netto przychodów ze sprzedaży przez sieci komputerowe w 2018 roku w porównaniu do roku 2008, przy poziomie istotności p<0,0001 (Table 2).

TABELA 2. WARTOŚĆ NETTO PRZYCHODÓW ZE SPRZEDAŻY OGÓŁEM ORAZ WARTOŚCI NETTO Z E-SPRZEDAŻY (W TYS. ZŁ)
TABLE 3. NET VALUE OF TOTAL SALES REVENUES AND NET VALUE OF E-SALES (IN THOUSAND PLN)

Specification a - amount b - percentage		**Total number of enterprises**		**Net value of total sales revenues**		**Net revenue from sales through websites, mobile applications or EDI messages**		**Statistical significance**
		2008	2018	2008	2018	2008	2018	p
Total	a	96966	106069	2663009932	4112587346	190398143	729102718	p<0,0001
	b	100	100	100	100	7,1	17,7	
Small (10-49)	a	78415	86210	855894927	1042518427	*17285822*	51583812	p<0,0001
	b	100	100	32,1	25	*2*	4,9	
Medium (50-249)	a	15375	16324	629599997	909761075	*44768264*	*103526930*	p<0,0001
	b	100	100	23,6	22	*7,1*	*11,4*	
Large (250 +)	a	3176	3534	1177515008	2160307845	128344057	573991975	p<0,0001
	b	100	100	44,2	53	10,9	26,6	

Source: Own study based on Statistics Poland data.

Następnie została przeprowadzona analiza dynamiki odsetka przedsiębiorstw, które otrzymały zamówienia przez Internet w Polsce w latach 2009-2019 na podstawie danych z Eurostatu (Tab. 4). Analiza wyników pozwala na stwierdzenie, że w oparciu o indeksy dynamiki stałej dla odsetka przedsiębiorstw, które otrzymały zamówienia przez Internet w poszczególnych latach w Polsce w latach 2009-2019 odsetek ten wzrósł o 280%. Prawie wszystkie indeksy o podstawie zmiennej pokazują stały wzrost odsetka tych przedsiębiorstw w stosunku rocznym. W latach 2013 oraz 2015 odsetek nie zmienił się w stosunku do roku poprzedniego, a w roku 2017 zmalał. Była to jedyna sytuacja w badanym okresie, w której indeks dynamiki o postawie zmiennej wyniósł poniżej 100. Bardzo duży wzrost zaobserwowano w roku 2018, gdzie wartość odsetka wzrosła o 3 punkty procentowe, co przełożyło się na 30% wzrost dynamiki. Wzrost ten może wynikać z wprowadzonych w tym roku zmian w europejskim ustawodawstwie. W 2018 roku wprowadzone przepisy przez UE uniemożliwiły dyskryminację kupujących oraz ułatwiły porównanie cen dostaw transgranicznych w UE. Można przypuszczać, iż wprowadzone rozwiązania stanowiły bodziec dynamizujący polski e-commerce, co przełożyło się na duży wzrost ilości zamówień. Zbadano także średniookresowe tempo wzrostu, które w okresie 2009-2019 wyniosło 10.84%. Oznacza to, że każdego roku średnio o 10.84% wzrasta odsetek przedsiębiorstw otrzymujących zamówienia przez Internet. Jest to wartość pozytywna, świadcząca o znacznym rozwoju.

TABELA 4. INDEKSY DYNAMIKI O PODSTAWIE STAŁEJ I ZMIENNEJ DLA ODSETKA PRZEDSIĘBIORSTW, KTÓRE OTRZYMAŁY ZAMÓWIENIA PRZEZ INTERNET W POSZCZEGÓLNYCH LATACH W POLSCE

TABLE 4. FIXED-BASE AND CHAIN GROWTH RATE INDICES FOR THE PERCENTAGE OF ENTERPRISES THAT RECEIVED ORDERS VIA INTERNET IN PARTICULAR YEARS IN POLAND

Year	Percentage %	Index	
2009	5	Fixed-base (2009 = 100)	Chain
2010	8	160	160,0
2011	8	160	100,0
2012	9	180	112,5
2013	9	180	100,0
2014	10	200	111,1
2015	10	200	100,0
2016	11	220	110,0
2017	10	200	90,9
2018	13	260	130,0
2019	14	280	107,7

Source: Own study based on Eurostat data.

Na podstawie powyższych badań stwierdza się, że w Polsce stale wzrasta udział wykorzystania e-commerce w różnych typach jednostek gospodarczych. Zauważalne jest to dla jednostek o każdej wielkości oraz w każdym województwie. Na podstawie danych odnoszących się do struktury można także stwierdzić większy odsetek wykorzystania e-commerce w jednostkach o większej wielkości. Równie istotny jest wzrost przychodów ze sprzedaży osiąganych z użyciem e-commerce. Analiza dynamiki pokazuje, że w Polsce na przestrzeni ostatniej dekady zauważalny jest stały, szybki wzrost przedsiębiorstw otrzymujących zamówienia przez Internet.

W Ukrainie e-commerce jako rodzaj e-biznesu jest na etapie formowania się i zyskuje na znaczeniu w kontekście przemian globalizacyjnych, jednak rozwija się nieco wolniej niż w krajach sąsiednich. Przyczynami tego są niestabilność gospodarcza, społeczna i polityczna, niska siła nabywcza ludności, mniejszy popyt na towary i usługi, dewaluacja hrywny, wahania kursów walut itp. Istnieją też takie przeszkody, jak brak światowych liderów handlu elektronicznego na ukraińskim rynku cyfrowym i luki w ustawodawstwie krajowym. Ekonomiści zajmujący się problematyką Ukrainy przewidują, że znaczenie handlu elektronicznego będzie rosło z roku na rok (Zatonatska, Rozhko, Tkachenko, 2018). Dokładne porównanie wykorzystania internetu i różnych jego funkcji przez przedsiębiorstwa w Ukrainie i Polsce jest niemożliwe ze względu na brak statystyk w tym zakresie. Kwerenda literatury anglo- i ukraińskojęzycznej z ostatnich 5 lat doprowadziła Autorów do wniosku, że

brakuje informacji na temat wykorzystania różnych funkcjonalności internetu w przedsiębiorstwa działających na terenie Ukrainy. W statystkach Eurostat, które stanowią bazę informacji o e-commerce z różnych krajów europejskich, nie są publikowane dane o Ukrainie.

DYSKUSJA NAD WYNIKAMI

Badania postanowiono odnieść do innych prac naukowych, które są bezpośrednio powiązane z uzyskanymi wynikami. Na podstawie przeprowadzonego badania własnego wykazano wzrost użycia e-commerce w różnych typach przedsiębiorstw. Do podobnych wniosków odnoszących się do małych i średnich przedsiębiorstw doszli M. Ratalewska oraz J. Zrobek (2015). Ukazali oni wykorzystanie potencjału e-commerce przez firmy MSP.

Wskazano, że sektor MSP przyjmuje handel elektroniczny w stosunkowo wolnym stopniu. Firmy małe, prowadzące sprzedaż online były w początkowej fazie, a ich potencjał był mało wykorzystany. Do podobnych wniosków można dojść na podstawie wykonanych badań, gdzie w 2008 roku tylko 3.9% przedsiębiorstw w Polsce prowadziło e-sprzedaż, w 2018 nastąpił kilkukrotny wzrost, jednak było to nadal tylko 13.6% firm, co może świadczyć o niskim wykorzystaniu ich możliwości.

W przedstawionym rozdziale zauważono też, że dla jednostek o większym rozmiarze wykorzystanie e-sprzedaży było większe. Autorzy ww. publikacji wskazują na możliwe przyczyny takiego stanu rzeczy. Są nimi koszty generowane przez e-commerce prowadzące do przewagi konkurencyjnej większych jednostek oraz ograniczone możliwości małych jednostek do prowadzenia marketingu i dystrybucji. Zaznaczają jednak, że następuje ciągły wzrost sprzedaży w sektorze MSP za sprawą elastyczności tych firm oraz dopasowaniem się do wymagań rynku. Warte wskazania jest także zestawienie badań M. Lewickiego (2012) który w swojej rozprawie doktorskiej opisał wyjście polskiego e-commerce z fazy ewolucji w roku 2010, mówiącej o rocznych wzrostach rzędu 20%-50% do fazy stabilizacji o wzrostach poniżej 20% rocznie.

Wyniki przeprowadzonych analiz dotyczących dynamiki odsetka przedsiębiorstw otrzymujących zamówienia przez Internet w okresie 2009- 2019 wskazują, że w 2010 roku wzrost wynosił 60%, lecz w następnych latach również spadł do poniżej 20%. Po kilku latach w 2018 znów nastąpił wysoki wzrost, równy 30%, co świadczyć może o tym, że polski rynek handlu elektronicznego wciąż ma bardzo duży potencjał do szybkiego rozwoju. Podobne dane zostały opisane w pracy K. Bartczaka (2016) mówiące o liczbie e-sklepów w Polsce w latach 2006-2012. Wskazano wówczas 5-krotny wzrost liczby e-sklepów w Polsce z poziomu 2762

w 2006 roku do 12117 w roku 2012. Bartczak wskazał na tempo przyrostu liczby sklepów na poziomie 11%, co jest bardzo zbliżonym wynikiem do przeprowadzonych w tej pracy badań z okresu 2009-2019.

PODSUMOWANIE

Rozwój handlu elektronicznego jest zjawiskiem stale postępującym. Związane jest to z dziejącymi się zmianami technologicznymi i społecznymi. Przedsiębiorcy coraz chętniej korzystają z tej formy handlu oferującej większą efektywność sprzedaży.

Celem pracy było ukazanie rozwoju handlu elektronicznego wśród przedsiębiorców w Polsce oraz ukazanie głównych zalet determinujących jego rozwój. Została postawiona hipoteza zakładająca, że *współczesny rozwój gospodarczy w coraz większym stopniu opiera się na transakcjach e-commerce, czemu sprzyja włączenie Polski w system zasad Jednolitego Rynku Cyfrowego*. Hipoteza ta została potwierdzona. Wykonane porównania odsetka przedsiębiorców korzystających z elektronicznej sprzedaży wykazały istotny wzrost dla małych, średnich oraz dużych przedsiębiorstw. W toku analiz stwierdzono, że jednostki o większym rozmiarze częściej korzystają z sprzedaży elektronicznej. Analogiczna sytuacja zaszła dla wszystkich województw w Polsce, gdzie w każdym z województw odnotowano statystycznie istotny wzrost odsetka firm używających e-sprzedaży. Każdego roku odsetek przedsiębiorstw otrzymujący zamówienia przez Internet wzrastał średnio o 10.84%, co przekłada się na prawie 3-krotny wzrost ilości e-przedsiębiorstw w ciągu dekady. Przepisy wprowadzone przez UE w 2018 r. odnośnie Jednolitego Rynku Cyfrowego mogły się przyczynić do wzrostu wykorzystania sprzedaży internetowej wśród przedsiębiorców. Należy jednak mieć na uwadze, że wzrost ten następuje w wyniku zmian technologicznych i społecznych.

Przeprowadzone badania pokazują jak jednoznaczne są zmiany związane z e-commerce. Istotny rozwój tego typu handlu zaszedł we wszystkich badanych obszarach. Zalety oferowane przez nowy typ handlu powodują ciągłe utrzymanie się trendów wzrostowych. E-commerce jest domeną osób młodych, więc dziejące się zmiany mogą w przyszłości zmienić oblicze znanego dzisiaj handlu na stałe. Mimo pewnych obaw, które może budzić ta zmiana, należy oceniać ją pozytywnie. Oszczędność czasu, większa dostępność produktów, efektywność kosztów, rozwój nowych dziedzin gospodarki to tylko niektóre z korzyści, które sprzyjają rozwojowi tej formy handlu.

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РАЗВИТИЕ ОНЛАЙН-ПРОДАЖ СРЕДИ ПРЕДПРИНИМАТЕЛЕЙ В ПОЛЬШЕ И УКРАИНЕ

Аннотация. Развитие электронных услуг особенно заметно на примере электронных покупок. Основная цель данной работы - представить развитие онлайн-продаж среди польских предпринимателей. В исследовании содержатся существующие определения электронной коммерции в литературе и представлены ее преимущества. Было проведено исследование вторичных данных, касающихся увеличения использования онлайн-продаж среди польских предприятий в зависимости от размера

компаний и воеводства, в котором они расположены. Результаты однозначно указывают на значительный рост популярности электронной коммерции среди польских электронных предпринимателей.
Ключевые слова: интернет-продажи, предприниматель, бизнес.

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