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ЗМІСТ / CONTENTS

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Forecasting effectiveness of government measures regarding the economic development of Ukraine

Abstract. The protracted COVID-19 pandemic and Russia's invasion of Ukraine have caused a severe and profound crisis in Ukraine and colossal physical destruction. The restoration of the country, its economy, and the entire socio-economic system determine the urgency of providing predictive indicators to identify the fastest results. The purpose of the article was to forecast the effectiveness of the government's economic policy based on the Mandel-Fleming model for the development of Ukraine's economy. The paper used the method of analysis and synthesis and the system approach, the method of economic modeling, economic forecasting, mathematical and vector analysis, the graphic method, as well as the main provisions of the Mandel-Fleming macroeconomic model for open economics in the short term. The article proposes to forecast the effectiveness of government measures under the condition of using multipliers of the Mandela-Fleming model for Ukraine's economic development after the deep socio-economic crisis caused by the war. In predict applied, chain schemes are presented that show the effectiveness of specific monetary and fiscal policy measures. An approach was proposed to forecast the effectiveness of implementing the government's monetary and fiscal policy measures, taking into account positive or negative multiplicative coefficients according to the Mandel-Fleming model, depending on the exchange rate regime for the recovery of the economy and economic development of Ukraine. The research has an applied aspect and is suitable for use in the decision-making process by the government regarding the implemented economic policy

Keywords: economic policy, economic forecasting, monetary policy, fiscal policy, multiplier, the Mandel-Fleming model, multiplier effect

INTRODUCTION

The current political, and socio-economic situation in Ukraine: Russia's invasion of Ukraine and the protracted COVID-19 pandemic shows that the economy needs a speedy and urgent recovery and further development. Its scale must be grand because Ukraine has faced an unexpectedly deep socio-economic crisis due to political unrest and hostilities in Ukraine. The severity and depth of the crisis caused by the war cannot be predicted. However, Ukraine will likely face a large budget deficit with a significant increase in government spending on reconstruction and further economic development of the country. Therefore, it seems essential to set forecast indicators to identify the fastest results. Economic forecasting is of great importance for determining working practices of economic recovery. Forecasting economic variables is a very complex process. Forecasts are particularly problematic at a time when they are most needed, namely: economic variables are very volatile, the economic situation needs to be corrected as soon as possible, and information is lacking. Therefore, the urgent need for timely and comprehensive action proves the urgency of the use of defined and tested models and forecasting the effectiveness of their use.

Economists worldwide [1-3] have fundamental controversies over how to regulate the economy during a crisis or rapid growth. Specific consequences await global business after the COVID-19 pandemic [4]. Equally important is

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the extent of intervention in the economy during the crisis for its recovery and economic growth, namely: the policy should be conducted according to the established rules; it is necessary to use new theoretical achievements; rely on the judgment of the greater of the government, etc. Many scholars of the neo-Keynesian school consider crises and fluctuations in the business cycle, in general, to be negative for the socio-economic development of the country, therefore, according to the neo-Keynesian school, the state should try to smooth out any fluctuations and shocks in the cyclical existence of the economy [5]. Otherwise, the state must intervene in cyclical development and stimulate the economy during the recession and depression and restrain during the rapid recovery. Other economists, such as followers of M. Friedman [6; 7], believe that the state cannot take specific measures to get out of the crisis as soon as possible, and one of the reasons is that the stabilization measures used are not succeeding due to the backlog [8], and potential misconduct by the government on economic policy is likely to exacerbate crisis fluctuations. Therefore, the neoclassicists [9; 10] assume that in most cases the behavior of abstinence from economic policy measures stabilizes the economy. Thus, Ukrainian scientist V. Zakharchenko [11] considers basic modeling in the context of reforming the economies of different types, based on theories of neoclassical synthesis. I. Nazarkevich [1] considers the application of the levers of program-target management in ensuring structural transformations in the branches of the real sector of the economy. Many other Ukrainian and foreign scholars consider the crisis economy and its regulation. But the issue of forecasting the effectiveness of the implementation of outstanding models, namely the Mandel-Fleming model, in the economy of Ukraine has not sufficiently worked out for the speedy recovery and development of the state economy. The scientific novelty of this article is precisely the proposed approach of forecasting the effectiveness of the implementation of the government's monetary and fiscal policy measures, taking into account positive or negative multiplicative coefficients according to the Mandel-Fleming model, depending on the exchange rate regime for the recovery of the economy and economic development of Ukraine.

The purpose of the article was to analyze the forecasting effectiveness of the implementation of the government's monetary and fiscal policy measures, taking into account multipliers according to the Mandel-Fleming model depending on the exchange rate regime for the economic development of Ukraine.

MATERIALS AND METHODS

The research conducted was based on the study of the peculiarities of the use of the economic policy in Ukraine. These features relate to the implementation of this policy in different regimes of the exchange rate – flexible or fixed. The article uses the main provisions of the Mandel-Fleming macroeconomic model for small open economies in the short term [6; 7; 9].

The first stage of the research was the determination of the direction of the Mandel-Fleming model. In general, the Mandel-Fleming model has many directions and, in this regard, needs to be carefully specified. The Ukrainian economy is open because it has a proactive integration character and high capital mobility, and it is small because it does not have a significant impact on the world economy. Ukraine's contribution to world GDP is comparatively small. Therefore, the author's choice was modeling for small open economies. The Mandel-Fleming model has proven very well in applied research [2]. In addition, to determine the efficiency of the economy's response to economic policy measures, it is not necessary to collect a cumbersome database. It is enough to decide on the currency regime.

Therefore, the second stage of the research was an argumentative proof of the choice of the exchange rate regime. Creating a system of equations based on the Mandel-Fleming model requires a clear orientation of the state government to a flexible exchange rate or a fixed exchange rate. This is explained by the fact that an open economy actively responds to exogenous variables. Exogenous variables are the basis of the economic policies carried out by the governments of developed countries [6]. For Ukraine, this is also fair and necessary for economic development and increased integration activity. The authors believe it is impossible to use the Mandel-Fleming model without reasoned proof of the consequences of the implementation of certain economic policy measures.

Therefore, at the third stage, the authors formed a chain of specific measures of monetary and fiscal policies under a flexible exchange rate regime to provide reasoned proof of the advantages of a flexible exchange rate regime. With the help of economic modeling, the advantages of the monetary policy compared to the fiscal policy under given specific conditions are presented. That is why chain circuits were created.

So, in the next stage, after justifying the choice of a flexible currency regime and monetary policy measures, a system of equations is created precisely in the direction of the Mandel-Fleming model for small open economies with high capital mobility. The solution of the developed system of equations according to the selected model and the defined currency regime needs substantiation. According to mathematical and vector analysis [8], the influence of the multiplier effect from the introduction of fiscal policy tools on the gross output of goods and services was mathematically substantiated. The multiplicative effect is justified based on the multiplicative coefficient, which can be both positive and negative. A positive multiplier indicates an increase in gross output; a negative one indicates a decrease. It is the increase or decrease in the gross output of goods and services that allows to draw conclusions and create forecasts regarding the effectiveness of the government's economic policy measures.

RESULTS AND DISCUSSION

Fiscal and monetary policies of the state are vital tools for stabilizing the economy and further socio-economic growth. Both fiscal, or budget and tax policy, and monetary policy are policies that have an indirect effect on the economy [12; 13]. Government actions regarding these types of policies remain invisible to the public. Fiscal policy uses two main instruments, namely, taxes and government spending, including transfers. There are three such instruments in monetary policy. This is the refinancing rate, national bank reserves, and open market operations [14; 15].

And that is why all the changes occurring in the world market play a crucial role in an open economy. That is, exogenous variables are of great importance for government measures.

The process of modeling monetary and fiscal policy is described by the effectiveness of the economic response to economic policy measures. The focus is on exogenous variables, which are most taken into account in economic policy. It is appropriate to use the mechanism of regulation of small national economies with high capital mobility according to the well-known Mandel-Fleming model. It should be noted that the modeling mechanism differs depending on the regime of capital fixation conducted by the government. If the Mandel-Fleming model is accepted as a working model for Ukraine, then it should be taken into account that different indicators of the exchange rate require different measures to restore the economy. Thus, with a floating exchange rate, monetary policy is more effective, and with a fixed – fiscal policy.

Let's prove it. Lowering interest rates in an open economy with a flexible exchange rate leads to the devaluation of the currency. In this case, the following chain is very clearly traced: due to the devaluation of the national currency, the country's exports to the international market become cheaper; as a result, net exports are growing; net exports increase GDP, there is an increase in business activity and economic growth; interest rates rise again to equilibrium; the economy is recovering. Thus, the main goal of achieving economic recovery is reached. The author's vision of this process is shown in Figure 1. The figure shows that a decrease in the price of exports on the world market will lead to an increase in the demand for goods and services, other things being equal. As a result of increased demand, the volume of exports is increasing. Under the conditions of keeping imports in the same volume, the value of net exports increases, which indicates an automatic increase in GDP. If under the condition of depreciation of the national currency, the volume of imports decreases, the amount of net export will be even greater and the GDP will increase by a larger amount. At the same time, the increase in the volume of export stimulates business activity and economic growth is observed. The dotted line shows the applied results, inseparable from each other.
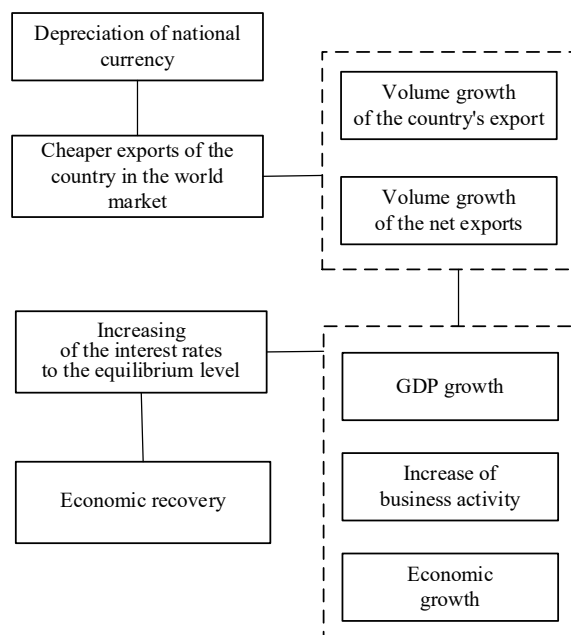
Figure 1. Use of monetary policy measures to restore the economy under a flexible exchange rate regime
Source: developed by the authors

At the same time, it is impossible to predict an effective fiscal policy with the chosen flexible exchange rate regime. As mentioned above flexible fiscal policy can be considered ineffective. Let's prove it. Fiscal policy is based on changes in government spending or taxes. Rising government spending increases the demand for money. This, in turn, will cause an increase in interest rates, which are the price of money for business activity. The rising price of money in the country is expected to inflow foreign capital which will strengthen the exchange rate to the level when exporting becomes unprofitable and its volume decreases. In turn, the decline in export will nullify the effect of increased government spending. The author's vision of this process is shown in Figure 2. The figure shows that strengthening the national currency will mechanically make national goods and services more expensive in the world market. Therefore, it is possible to predict a decrease in demand for these goods or services. As a result of the decrease in demand, the volume of exports decreases. Under the condition of keeping imports in the same volume, the value of net exports decreases, which indicates an automatic decrease in GDP. If the volume of imports increases along with the national currency appreciation, the volume of net export will be even smaller, and the GDP will decrease greatly. At the same time, a decrease in the volume of exports will lead to a drop in business activity, and economic growth will subsequently slow down. The dotted line shows the applied results, inseparable from each other.
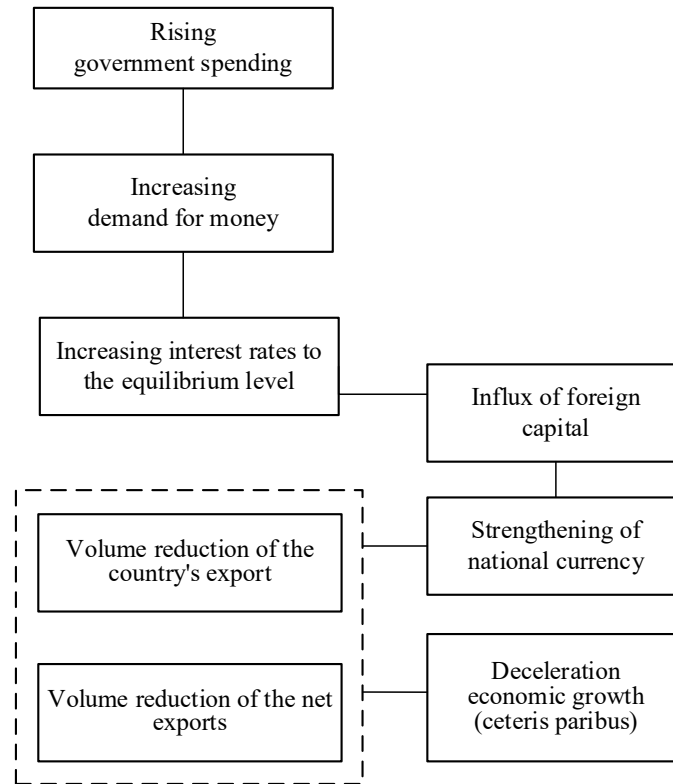
Figure 2. Ineffective use of fiscal policy measures to restore the economy under a flexible exchange rate regime
Source: developed by the authors

A special place in forecasting the effectiveness of certain applied practices is taking into account the multiplier effect, which is a mandatory attribute of fiscal or monetary policy pursued by the government. The multiplier effect mathematically proves the effectiveness of the use of economic policy instruments. Let's take one of the powerful tools of fiscal policy, namely, taxes. Most often, government measures involve an increase in taxes for many reasons, including filling the budget.

Consider the practice of using the model in the example of estimating the short-term impact of tax increases on gross output and interest rates in the country. To identify such a dependence, it is expedient to use the Mandel-Fleming equation. The equations of the model assume a simultaneous equilibrium of the goods and services market and the money market. This is the situation that the economy strives for. The first equation is formed as equilibrium is established in the market of goods and services. On the one hand, this is GDP, and on the other hand, all expenses of all economic entities. In turn, the costs of economic entities depend on GDP, taxes, interest rates, and the exchange rate of the national currency. The second equation is formed under the condition of equilibrium of the money market. Therefore, on the one hand, in the second equation, there is a supply of money on the money market in real terms. On the other hand, the liquidity of money in the money market depends on the real interest rate and the output. Thus, both equations are combined into a system based on variable indicators. Variable indicators are the interest rate, the amount of taxes, and the exchange rate of the national currency. Based on this model, income sources and

real money supply multipliers will be found to search for dependence and evaluate it. Notably, since the assessment is conducted in general, the result will be obtained as a negative or positive impact on gross output and the money market. Identification of variables is achieved by modeling all relevant processes in the form of equations or a set of equations in the models.

So, the equation will be established according to the Mandel-Fleming model, where defined through *Y* – gross output, *C(Y-T)* – household expenditure on disposable income, *I(r)* – business expenses, *NEX(e)* – net exports of goods and services, *M/P* – money supply in the money market in real terms, *L(Y, r)* – liquidity of money in the money market depending on the real interest rate and output:

$$Y = C(Y - T) + I(r) + G + NEX(e) \quad (1)$$

$$\frac{M}{P} = L(Y, r) \quad (2)$$

when differentiating these equations the following system is obtained:

$$(1 - C_{(Y-T)})dY - I_r dr = -C_{(Y-T)}dT + dG \quad (3)$$

$$L_Y dY + L_r dr = d(M/P) \quad (4)$$

Let's look at this equation using Cramer's rule:

$$\begin{pmatrix} 1 - C(Y - T) & -Ir \\ LY & Lr \end{pmatrix}\begin{pmatrix} dY \\ dr \end{pmatrix} = \begin{pmatrix} -C(Y - T)dT + dG \\ d(\frac{M}{P}) \end{pmatrix} \quad (5)$$

At the same time a negative determinant is available:

$$det \begin{bmatrix} 1 - C(Y-T) & -Ir \\ LY & Lr \end{bmatrix} = (1 - C_{(Y-T)})L_r + L_Y I_r < 0 \quad (6)$$

$$dY = \frac{-Lr\,C(Y-T)dT}{(1-C(Y-T))Lr + LY(Ir)} \quad (7)$$

$$\frac{dY}{dT} = \frac{-Lr\,C(Y-T)\,(>0)}{(1-C(Y-T))Lr + LY(Ir)\,(<0)} \quad (<0) \quad (8)$$

As can be seen from the resulting formula (8), the multiplier effect will be negative. This example of using the Mandela-Fleming model demonstrates the impossibility of the government raising taxes because, in the short term, it will lead to catastrophic results in gross production. This small segment of the general model shows how to use modeling to provide timely forecast data for economic policy actions.

Substitution of real data in the model, in this case, does not make sense, since the negative multiplicative effect makes it possible to conclude the further worsening of the situation in the economy. But it will make it possible to calculate the losses that such economic policy measures will lead to.

In the real economy, modeling the multiplier effect of the government's actions regarding fiscal or monetary policy measures is reduced to determining the result (< 0) or (> 0), and even a small positive effect makes it possible to talk about the effectiveness of the fiscal or monetary policy. In Ukraine, methods that take into account multipliers in economic modeling are practically not used. This especially applies to individual multipliers of indirect economic policy: fiscal and monetary. In general, by using the multiplier effect, it is possible to study the interdependence of many economic variables, which is very useful in macroeconomic modeling. Thus, Jonathan M. Harris in his research takes into account the multiplier effect in forecasting macroeconomic troubles. His current research focuses on the implications of large-scale environmental problems,

especially global climate change, for macroeconomic theory and policy [16]. These crucial findings show the possibility of using multipliers even for more global issues than those, considered in this study. However, it provides a positive example of implementing the theory of multipliers in the economy of Ukraine. Alejandro Royce calculates estimated values of current household income inequality and uses multipliers to reveal the impact of discrimination in education and employment on the current income gap [17]. The goals of his study are already much closer to the objective of this study. And they provide great inspiration for the spread of the theory of multipliers in real applied economics and practice. Therefore, if the National Bank deems it appropriate to introduce a fixed exchange rate regime, the government can confidently predict the effectiveness of the fiscal policy, in which net exports do not change due to a lack of capital inflows from abroad. These conclusions are confirmed by the world experience of countries that have been developing rapidly in recent decades [18; 19]. For example, in the last few years, China has been pursuing fiscal policies to grow its economy. Herewith the yuan's exchange rate is regulated so that it can be considered fixed. The above-mentioned allows the government to support economic growth through large-scale public investment. These investments under the floating exchange rate would not have a tangible effect because the strengthening of the yuan would cause a rise in the price of Chinese goods and the loss of existing positions in the world market [11].

Ukraine strives for quick restoration and development of the economy, so it is necessary to address the experience of countries with developed economies. The experience of developed economies proves the effectiveness of various measures that can be manipulated for stabilization purposes. Table 1 on the example of the United States shows the results of fiscal expansion measures carried out during the economic recession in 1987. The table shows the results of the multiplier effect in percentage terms regarding the implementation of the fiscal policy measures [20].

Table 1. The effectiveness of fiscal expansion measures in the United States during the economic recession in 1987

Types of activities	The effect (%)	A group of people who benefit from the implementation of measures
Reduction of tax rates from 15% to 10%	134	Middle-income working population
Equalizing transfers	124	Middle-income working population
Tax-free benefits for children	104	Low- and middle-income families
Extension of the unemployment benefit period	173	Long unemployed
Joint taxation of spouses	74	Middle- and high-income families
Reduction of the maximum tax rate	67	High-income working population
Reduction of tax rates	59	High-income working population
Increase in depreciation deductions	24	Only for businesses
Reduction of dividend taxes and capital gains	9	Only for businesses
Reduction of inheritance	0	Only for businesses

Source: [20]

As can be seen in the table, the greatest effects are observed for those fiscal measures that affect low- and middle-income people. The authors proposed a similar approach, but the author's research goals differ in a more comprehensive approach. However, concerning the use of the theory of multipliers, it is also possible to obtain applied results according to the author's research.

CONCLUSIONS

To restore the economy, when forecasting the effectiveness of the introduced monetary or fiscal policy, it is necessary to take into account the policy of the National Bank according to exchange rate regimes, namely: flexible or fixed. If the National Bank deems it necessary to introduce a floating exchange rate regime, the government can forecast the effective operation of monetary policy to recover the economy and further economic growth. In this situation, it makes sense to influence the volume of exports, obtain a sufficient amount of international currency, and increase GDP.

Under a flexible exchange rate regime, fiscal policy measures are ineffective. Forecasting the effectiveness of monetary and fiscal policy measures is realized mathematically using a multiplier effect. The flexible exchange rate regime is a priority for the policy of the National Bank of Ukraine, so the study is presented for the floating exchange rate.

The studies presented in this paper have an applied aspect and are suitable for use in government decision-making regarding the implemented economic policy. However, certain conditions are necessary for the practical implementation of these studies. First, such a grand evaluation analysis can be conducted only based on state institutions. Secondly, it is necessary to take into account the consequences of the internal coherence of all components of the large model. Thirdly, the results of modeling require a clear response to small changes in the model and need the intervention of economists with a high level of qualification. All these require further analysis of the data to create a working model, structuring variables into appropriate groups and other types of research.

REFERENCES

[1] Nazarkevich, I. (2020). State strategic planning and targeted programming of structural changes in the development of the real sector of the economy. *Ukrainian Journal of Applied Economics*, 5(2), 251-259.

[2] Hayo, B., & Mierzwa, S. (2021). Legislative tax announcements and GDP: Evidence from the United States, Germany, and the United Kingdom. *MAGKS Joint Discussion Paper Series in Economics*, 34, article number 202134.

[3] Rudevska, V.I., & Khlan, Y.V. (2019). The relationship between the development of the banking sector and the economic growth of the country. *Financial and Credit Activity Problems of Theory and Practice*, 2(29), 440-453. doi: 10.18371/fcaptp.v2i29.171868.

[4] Saeudy, M., Gerged, A., & Albitar, K., (2022). Accounting perspectives on the business value of big data during and beyond the COVID-19 pandemic. *Jornal of Accounting and Management Information Systems*, 21(2), 174-199. doi: 10.24818/jamis.2022.02002.

[5] Shtan, M. (2021). Theoretical conceptualization of structural policy of the state. *Ekonomika ta Derzhava*, 10, 59-63. doi: 10.32702/2306-6806.2021.10.59.

[6] Hayo, B., & Uhl, M. (2014). The macroeconomic effects of legislated tax changes in Germany. *Oxford Economic Papers*, 66, 397-418.

[7] Clausen, V., & Hayo, B. (2005). Monetary policy in the Euro Area. *International Economics and Economic Policy*, 1, 349-364. doi: 10.1007/s10368-004-0024-7.

[8] Klimenko, O. (2022). Features of the loss of intensity of state economic regulation in the crisis period. *Efektyvna Ekonomika*, 2, 1-6. doi: 10.32702/2307-2105-2022.2.99.

[9] Barro, R., & Redlick, C.J. (2011). Macroeconomic effects from government purchases and taxes. *The Quarterly Journal of Economics*, 126(1), 51-102.

[10] Mountford, A., & Uhlig, H. (2009). What are the effects of fiscal policy shocks? *Journal of Applied Econometrics*, 24, 960-992.

[11] Zakharchenko, V. (2018). Basic models of economic reforms: Foreign experience. *Zbirnyk Naukovykh Pratc Cherkas'kogo Derzhavnogo Tekhnologichnogo Universitetu. Serija "Economichni Nauki"*, 49, 5-16. doi: 10.24025/2306-4420.0.49.2018.136141.

[12] Shvets, S. (2021). How far fiscal dominance matter for a developing economy. *Financial and Credit Activity Problems of Theory and Practice*, 3(38), 214-221. doi: 10.18371/fcaptp.v3i38.237449.

[13] Reuss, A. (2020). *The power of capital: An introduction to class, domination, and conflict.* Retrieved from https://www.bu.edu/eci/files/2020/06/A.-Reuss-Power-of-Capital.pdf.

[14] Makohon, V. (2021). Influence of budget policy on economic growth of the country. *Financial and Credit Activity Problems of Theory and Practice*, 1(36), 243-249. doi: 10.18371/fcaptp.v1i36.227771.

[15] Ramey, V.A. (2021). The macroeconomic consequences of infrastructure investment. In E. Glaeser, J. Poterba, *Economic analysis and infrastructure investment* (pp. 1-67). Chicago: NBER University of Chicago Press.

[16] Goodwin, N., Harris, J.M., Nelson, J.A., Rajkarnikar, P.R., Roach, B., & Torras, M. (2019). *Macroeconomics in context* (part 3). Milton Park: Routledge.

[17] Nakamura, E., & Steinsson, J. (2014). Fiscal stimulus in a monetary union: Evidence from US regions. *American Economic Review*, 104, 753-792.

[18] Kovalenko, V., Sheludko, S., Slatvinska, M., Sergeeva, O., & Kulikova, Ye. (2020). Monetary regulation in the economic growth of a state. *Financial and Credit Activity Problems of Theory and Practice*, 3(34), 72-82. doi: 10.18371/fcaptp.v3i34.215411.

[19] Ramey, V.A. (2011). Identifying government spending shocks: It's all in the timing. *Quarterly Journal of Economics*, 126(1), 1-50.

[20] Blanchard, O., & Perotti, R. (2002). An empirical characterization of the dynamic effects of changes in government spending and taxes on output. *Quarterly Journal of Economics*, 117, 1329-1368.

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Прогнозування ефективності урядових заходів щодо економічного розвитку України

Анотація. Затяжна пандемія COVID-19 та вторгнення Росії в Україну викликали жорстку та глибоку кризу в Україні та колосальні фізичні руйнування. Відновлення країни, її економіки та всій соціально-економічної системи обумовлює актуальність надання прогнозних показників щодо виявлення найскоріших результатів. Метою статті був прогноз ефективності економічної політики уряду за моделлю Мандела-Флемінга для розвитку економіки України. В статті було використано метод аналізу і синтезу та системного підходу, метод економічного моделювання, економічне прогнозування, метод математичного та векторного аналізу, графічний метод, а також основні положення макроекономічної моделі Мандела-Флемінга для малих відкритих економік у короткостроковому періоді. Для можливості прогнозування прикладних практик подано розроблені авторами ланцюжкові схеми, що показують результативність конкретних заходів монетарної та фіскальної політик. Запропоновано підхід прогнозування ефективності втілення заходів монетарної та фіскальної політики уряду з урахуванням позитивного або негативного мультиплікативного коефіцієнтів за моделлю Мандела-Флемінга залежно від режиму валютного курсу для відновлення економіки та економічного розвитку України. Дослідження мають прикладний аспект та придатні для використання в прийнятті рішень урядом стосовно запроваджуваної економічної політики

Ключові слова: економічна політика, економічне прогнозування, монетарна політика, фіскальна політика, мультиплікатор, модель Мандела-Флемінга, мультиплікативний ефект

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Framing as a tool of influencer marketing in the management of marketing communications and brand representation

Abstract. Topicality of the selected issue is due to the change in the orientation of brand communications in the information space from rational economic goals and values to behavioral economic ones, as well as the probability of incorrect decoding of the information message by the recipient of the information. The aim was to create a model of representative marketing communications transition from the formation of meanings to the formation of trends by using framing as an impact marketing tool. To accomplish the tasks set, the work uses the selection of general scientific and special methods and techniques of scientific research, such as the method of semantic, morphological, comparative and critical analysis, the ontology construction method, system-structural and functional approaches, simulation modeling, etc. The brand phenomenon is considered from the point of view of social constructivism, as a result of which seven principles of brand existence in the concept of communications with society have been identified. Two types of frameworks, which are used when building a narrative in the context of representative brand actions, have been substantiated theoretically. The methodology for using these frameworks is considered from the position of marketing, logical, communicative and social metrics included extensional and intensional equalities, as a result of which a model, that allows determining the transformation of brand communications into meanings or trends and its trendy potential, has been built. The following framing tools have been analyzed and adapted for marketing purposes: Overton Window, Hallin's Spheres, Opinion Corridor, Spiral of Silence, Echo Chamber and Epistemic Bubble. Reframing is considered from the point of view of culture, namely the processes of inculturation. The difference of approaches has been revealed and a model of the transition of using framing tools from constructing meanings to constructing trends has been built. This model allows to minimize the problem of incorrect decoding of information during representative and communicative actions of the brand

Keywords: branding, consumer experience, framing model, trend meaning building, digital brand capitalization

INTRODUCTION

The retrospective of the development of the information society and informatization as a whole has led to the fact that today the information component of economic processes is at the peak of its importance and relevance. The ecosystem, which serves as an area for the existence of both economic entities and economic relations (production, distribution, exchange or consumption of economic goods), is being transformed and expanded [1]. E-commerce, digitalization of consumption, cryptocurrency, non-fungible token (NFT), the metaverse and much more are just a small manifestation of the future consequences of the processes have been already launched. However, today it could be definitely said with confidence that the key to brand capitalization (forming its value) is and will be its informational component.

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This statement follows from an integral approach to brand interpretation. On the one hand, the brand is analyzed from the point of view of the ideas and goals of the company, on the other hand, it considers the consumer as a set of impressions, images formed in their mind and the result of consumer experience [2].

Neoclassical economic theory, in which the object of study is the behavior of an economic person (Homo economicus), in conjunction with psychological methods, sets the task for the brand, which is to represent and influence consumer behavior simultaneously. In addition to the obvious use of economic factors, the brand cannot exist separately from the social, cognitive, emotional and a number of other factors that determine the making of economic decisions by society and individuals based on the formation of an integrated marketing communications system in digital marketing macrosystems [3].

Digital transformations of communication processes, deepening of omnichannel integration in the hypermedia space requires an understanding of behavioral and informational trends in society in order to build an effective influencer marketing strategy [4].

Management of marketing communications, along with brand products or services, allows to influence the effect of the representative actions of the brand.

The Cambridge Explanatory Dictionary defines representation as 'the way that someone or something is shown or described; a sign, picture, model, etc. of something' [5].

Thus, speaking about the representation and management of marketing communications, it is clear that the informational processes determine the image of the brand in the context of behavioral economics.

New determinants of market development require new approaches and methods for implementing interactive networking opportunities, which significantly transform the traditional complex of marketing communications. The dynamism of the development of digital marketing tools, the features of modern omnichannel interactions, a personalized approach to the formation of effective partner networks as part of a common marketing strategy necessitate deeper research in this direction [6].

The problem a brand faces when building a communication strategy is the risk of the consumer decoding information incorrectly, which would lead to the unintended effect of representative actions. "Incorrectly" in this case means not corresponding to the meaning originally laid down by the brand. Thus, the brand is forced to influence consumers of information.

Since communication is impossible without the use of narratives, it makes sense to talk about brand representation from the point of view of storytelling. One of the constituent components of this approach, which is connected with influencer marketing, is expressed in the theory of frames.

Frame theory is a set of science-intensive concepts of perception (of phenomena, objects, people, ideas, etc.), which has found practical application in various fields of activity: psychology, pedagogy, sociology, political science, economics, communications, linguistics, etc. The basic concept of the theory is frame. It has many definitions that differ slightly depending on the field of application,

however, in all cases, the frame is an informational model, according to which the perception and interpretation of a specific context of events takes place.

This definition was introduced by the American cognitive scientist Marvin Lee Minsky [7]. He defines a frame as a data structure for representing a stereotypical situation. The information that is encoded in a particular frame answers three questions:
- In what situations and how should a frame be used?
- What is expected as a result of the execution of the frame?
- What actions will follow if the expectations from the frame are not confirmed?

In informational engineering, frames are actively used to automate processes and build artificial intelligence algorithms. In social engineering, "framing is a schema of interpretation, a collection of anecdotes and stereotypes, that individuals rely on to understand and respond to events" [8]. Based on this explanation, Erving Goffman assigns to the frame an understanding of the structural unit for organizing human experience.

The existence of a brand is impossible without consumers, and consumer behavior is determined by their consumer experience. The last one is the object of impact of influencer marketing tools [9].

The purpose of the paper was to build a model for the transition of representative marketing communications from the formation of meanings to the formation of trends through the use of framing as an influence marketing tool.

LITERATURE REVIEW

In the literature, the marketing potential of framing technologies is described for specific marketing tasks: creating a favorable image of an enterprise in the field of hotel and restaurant business [10], a cognitive approach to the formation of an enterprise strategy [11], attracting support for crowdfunding projects [12], territory branding management [13], response management consumers on brand actions based on their self-interpretation[14], promotion of sustainable development ideas [15], ensuring involvement and consumer interaction for the purpose of long-term financial well-being [16], etc.

S. Tanford has developed the principles of effective social media marketing strategies (using Instagram as the main platform) for the sustainable promotion of the hotel and restaurant business. By adding tools such as affective priming and framing to the hotel booking scenario models, the author came to the conclusion that hints could be added to the online hotel booking service, which the consumer would be guided by when making decisions. It was determined that for a specific marketing task, positively emotionally colored frames have more weight than negative ones [10].

O. Kovtun has proposed and substantiated an interpretation of the company's strategy as a framework of a long-term behavioral pattern in a dynamic market environment. The strategy is depicted as a holistic decision-making support system, in which all its possible discrete components are organically synthesized and cognitively combined, describing (determining) core issues of the future functioning and development of the enterprise and possible ways of solving them [11].

Y.-F. Kuo identified the connection between the narratives used to describe crowdfunding projects and the intention to support them. The results turned out to be contradictory to Tanford's work, since it is precisely negative frames that cause a greater level of support. This provides an opportunity to redesign the approach concerning the representation of projects [12].

O. Chukurna, using framing methods, carried out a clustering of Odessa residents, on the basis of which she formulated the fundamental principles of sustainable development for territory branding. The division of people into clusters occurred depending on the frames they used when perceiving the branded territory [13].

S. Lee in the work about consumer self-interpretation through framing and narrative, draws a dividing line between internal and external consumer goals. The frames through which the consumer evaluates and defines themself can be both a deterrent and a motivational factor in making consumer decisions and forming consumer habits. The results of the paper have practical application in communication strategies with consumers [14].

J.A. Kemper considers two frames of marketing processes. The first is aimed at stimulating consumption, while the main idea of the second is sustainable development. The author explains the background and consequences of the frame change at the individual and global levels. This work is of conceptual importance, but there are no practical application algorithms [15].

W. Eberhardt describes the benefits of formulating marketing messages based on reframing. By laying particular frames during the process of marketing communications with the help of narratives broadcast through a communication channel (the article gives an example with email-marketing), consumer behavior will be changed. This approach stimulates behavioral interaction, which is expressed in an increase of the level of involvement of participants. Moreover, it has a greater influence than the usual system of investment and incentives. The potential of this approach is not limited to the problems of long-term financial well-being presented in the article [16].

A systematic description of the use of framing in business communications was presented by O. Klaff [17]. He identified five principles of framing:

1. Everyone, consciously or not, uses frames.
2. During social interaction, different frames collide.
3. Frames cannot coexist for a long time in the same time and space. They collide and one of them takes control.
4. Only one frame survives. The rest are destroyed or absorbed. Stronger frames always absorb weaker ones.
5. The winning frame determines the social interaction. In this case, frame control appears.

O. Klaff identifies three antagonistic frames: the frame of power; the frame of time; the frame of analytics and opposes them with three response frames: a frame that undermines power; a time limit frame and an intrigue frame. He also highlights a separate frame, which is the representation of a personalized brand as a prize or award.

Despite the fact that the purpose of using the mentioned technologies may be brand representation, the author talks more about framing in sales, attracting investments and negotiations, and not about brand communications with the consumer.

The problem of using framing in representative marketing communications aimed at consumers of goods or services remains unsolved. The marketing potential, which lies in the manipulation of consumer experience through frame technologies, although widely used, does not have a full methodological justification in the context of influencer marketing.

MATERIALS AND METHODS

To accomplish the tasks set in the work, a combination of general scientific and special methods and techniques of scientific research had been used. The method of semantic, morphological, comparative and critical analysis was used to create and refine the conceptual and categorical apparatus of marketing frame technologies, as well as to integrate concepts from the sphere of narratology, culture, psychology, etc. into communication models that serve as influence marketing tools. Ontology building method, contextual and cause-and-effect analysis were used to identify the state of branding strategies that could be used to influence consumers. The method of institutional and system-structural analysis was used to determine the prerequisites and goals of the development of communication and information ecosystem, to study the dynamics and structural shifts of its individual components. The factor analysis method was used to develop tools for assessing the probability of optimal use of specific frame technologies.

The system-structural and functional approaches were used in the study of methodological support for the management of marketing communications and narratives that should be used in the construction of content, meanings and trends. The logical-comparative method was used to substantiate an adaptive approach to the formation of influencer marketing strategies focused on creating meanings or trends in the information space of society and, in particular, in the minds of consumers of a specific brand. The diagnostic approach was used to form a conceptual basis and methodological dominant on the issues of framing in marketing management. The empirical method was used to develop scientific and methodological support and the formation of influencer marketing strategies, taking into account the characteristics of society and the corresponding frame toolkit. The classification-analytical method and simulation modeling were used to develop a flowchart for transforming a brand message into a trend or meaning for the audience, as well as other models of information and communication processes that can be used to generate an influencer marketing strategy.

Also, the simulation method was used to build a model of conflicting frames, which complemented the existing concept of the Spiral of Silence and adapted it for the brand's marketing purposes. The methods of the logical-content approach and economic-mathematical modeling were used to develop conceptual models for the formation of collaborative interaction between members of social groups formed around the brand and the system model of framing presented in the article. The method of abstractions of equivalence and functional synthesis was used to form the methodological principles of the agent-dynamic approach to managing marketing strategies in the context of the stated goals, tools and technologies.

RESULTS

The interconnection between branding and framing

Frames as informational nodes that can be accessed are perfectly combined with the ideas of non-linear narrative, which corresponds to the features of modern naratology, namely, storytelling in cyberspace – a hypertext format. Brand communications constantly address the consumer and/or user experience of the audience through existing frames. Like a textual narrative on electronic carrier with a series of hyperlinks that can be activated, brand representation takes place in the context of already existing information in the minds of the audience. Often it is that these frames color the perception of information and affect the decoding of representative messages.

One of the classic brand definitions was formulated by K.L. Keller and reads as follows: 'a brand is a set of mental associations, held by the consumer, which add to the perceived value of a product or service' [18]. Thus, it makes sense to consider the phenomenon of a particular brand from the point of view of social constructivism. Since a brand is not a material object, but a set of mental associations, its representation is reflected in thought processes based on general ideas about the world. It is important to note that in this case the focus of the frame is not on specific individuals, preferring instead the whole society. A brand is a social construction. "A social construct or construction is the meaning, notion, or connotation placed on an object or event by a society, and adopted by that society with respect to how they view or deal with the object or event" [19].

As a result of communication studies of social constructivism, seven principles were formulated [20]:

1. Communication is the process through which we construct and reconstruct social worlds.

2. Communication is constitutive; communication makes things.

3. Every action is consequential.

4. We make things together. We construct the social worlds we share with others as relational beings.

5. We perceive many social worlds existing simultaneously, and we continue to shape them; Other people's social worlds may be different from ours; What we inherit is not our identity.

6. No behavior conveys meaning in and of itself; contexts afford and constrain meanings.

7. Ethical implications and consequences derive from Principles 1-6.

Given that a brand is a social construct, these principles also apply to brand marketing communications and brand representation. A special case of communication principles from the point of view of social constructivism, adapted to representative brand marketing communications, look like this:

1. A brand is a separate universe described by narratives that are encoded in brand communications with consumers.

2. The brand is not a full-fledged social phenomenon without communicative and representative actions.

3. Each participation (narrative), and sometimes even non-participation of the brand in communications with consumers forms meanings.

4. The original brand message, encoded in marketing communications, is kept or transformed through the social interactions of consumers of information.

5. Brand perception differs between communities, groups or individual consumers due to their different frames and experiences. A different attitude to the brand is possible not only at different times by the same individual, but also at the same time by different individuals. Brand image is formed through communications and social interactions, it is not inherited.

6. Brand actions that are not supported by information and communications components do not make sense. Meanings are formed within the context and its interpretation due to the frames that make up the consumer experience.

7. Narratives in communications and brand representation cannot exist outside of ethical issues.

Today, narrative psychology is actively studying the dependence of the quality of human life on the narratives that a person uses or receives in the process of communication. The scale of such dependence extends from the formation of a meaning on a particular issue to the global self-identification of a person. This once again confirms the relevance of using frames when building marketing communications narratives. An individual not only forms an opinion about the brand based on their own experience, but also identifies themself as a consumer (for example, they refer themself to a certain price segment).

It should be noted that frames are formed both on the basis of consumer experience, which is acquired as a result of interaction with the brand, and on the basis of user experience when the brand uses particular information systems in communications. However, a number of scholars, including Erving Hoffman, 'emphasize the role of cultural context as a shaper of frames'. According to him, 'the meaning of a frame has implicit cultural roots' [8].

Thus, marketing is inseparable from the culture of society, that is, the culture of the majority, that is, mass culture, that is, pop culture.

Two marketing strategy frameworks

When integrating frames into marketing communications, a brand builds a strategy based on one of two frameworks: frame building or frame setting. In the first case, the brand interacts with frames, which remain dependent variables. Such frames are built under the impact of both the brand, and the social interaction. In this case, the future experience of the consumer is formed. In the second case, the frame is the independent variable, because its acceptance has already taken place in the past and is the part of the past experience. Frame building directly depends on the cultural context and its interpretation (cultural frame).

To determine what frames of society a brand will face with when decoding the narratives embedded in marketing communications, it is worth paying attention to existence of a frame in a certain context and to its binary indicator of applicability to the modern conditions of the marketing environment. If the frame remains applicable and the experience of the past is relevant, then the category of such frame is an independent variable. Using such categories, the brand is able to form meanings regarding its products with minimal risks of incorrect decoding of information or rejection of the brand representation as a phenomenon.

It is worth noting that the applicability of a frame has a stronger influence than its availability. Newly formed consumer experience is more susceptible to reframing because it is easier to refer to.

Provided that the rules of the system of social interaction have changed, and the experience of the past, which still goes on influencing the construction of new frames, is not applicable in its original form, the brand is faced with dependent variables that are characterized by an extreme degree of instability. On the other hand, such frames are super-relevant, and the meanings that are encoded in brand marketing communications can become trendy. The risk of incorrect decoding of information increases.

Two additional concepts of equality to explain the influence of frames on the formation of trends are introduced in this paper:

Extensionality or extensional equality is the same assessment of different objects in terms of their external manifestations or the consequences of their activation.

Intensionality or intensional equality is the identity between the internal components of values, their properties, structures, and so on.

Creating new original meanings while building new frames, the brand is faced with the choice of interpreting intensionally equal narratives. Despite the stability of facts, ideas, products and services, the meanings that a brand generates in the minds of the audience may differ. Thus, there is the violation of the extensionality. The conflict of extensional equality in society gives rise to a trending newsbreak that could be used both for the benefit and to the detriment of the company's activities and the existence of the brand. The logical decline of the trend will be the resolution of such conflict. This is in line with the framing principles of O. Klaff, as well as the fifth principle of frame communications that we highlighted above.

Creating a trend in conditions of frame setting is also possible, but only when rethinking existing frames in society. Reframing is the replacement of the existing informational model of perception and interpretation of the context with a new one. In this case, the task of the brand is to break the intensionality. Similar to the conflict of extensional equality, the violation of the intensionality also generates a trendy newsbreak. Rethinking frames is inseparable from the de-relevance of the indicator of applicability. Here the trend becomes a trend when the intension is transformed, and it loses its trendiness when this transformation is completed. The duration of the trend will be equal to the time interval from the moment when the indicator of applicability has lost its relevance until the moment when society realizes it.

The technology of the violation of the extensionality is feasible only when manipulating intensionally equal frames. An equivalence frame appears, which implies the use of a logically equivalent narrative, but which will cause a different reaction from the audience. This effect is achieved by shifting the focus from negative to positive consequences (or vice versa). "Good" and "Bad" frames are the easiest filters to perceive and therefore it is easier to use them. A classic example of an equivalence frame is described in an experiment by Amos Tversky and Daniel Kahneman [21]. The essence of the experiment was the hypothetically decision making during a pandemic that could claim the lives of six hundred people. In the first option, two hundred people will be saved, in the second, everyone will be saved with a probability of one-third, and no one will be saved with a probability of two-thirds. The first option was preferred by 72% of the respondents, and the second by only 28%. After replacing the narrative "will be saved" with "perish", the results changed. The first option, in which four hundred people will perish, was chosen by only 22% of respondents. The second option, in which everyone will perish with a two-thirds probability, or no one will perish with a one-third probability, was preferred by 78%. Thus, with logically equal intensions and the use of the equivalence frame, the violation of the extensionality was achieved. A new meaning has been formed.

When forming a trend based on reframing, the brand will use an accent frame. The violation of the intensionality technique is not identical to the approach described above, because the potential decision making would not be carried out in unfamiliar conditions. Society would not be able to accept a new frame without replacing the existing experience with it. This is possible only with the restructuring of the intension which is shifting the focus of marketing communications from one narrative to another. A classic example of an accent frame was presented in an experiment conducted by T. Nelson, R. Clawson and Z. Oxley [22]. Respondents were required to agree or disagree with a potential Ku Klux Klan rally. Those for whom communications took place through the safeness frame expressed intolerance towards such rally. Those, for whom the freedom of speech frame was used to communicate, showed greater tolerance. Thus, due to the shift in emphasis, the intension was changed.

The logical visual chain with which it is possible to determine the trend potential of marketing communications is presented in the form of a flowchart (Fig. 1).
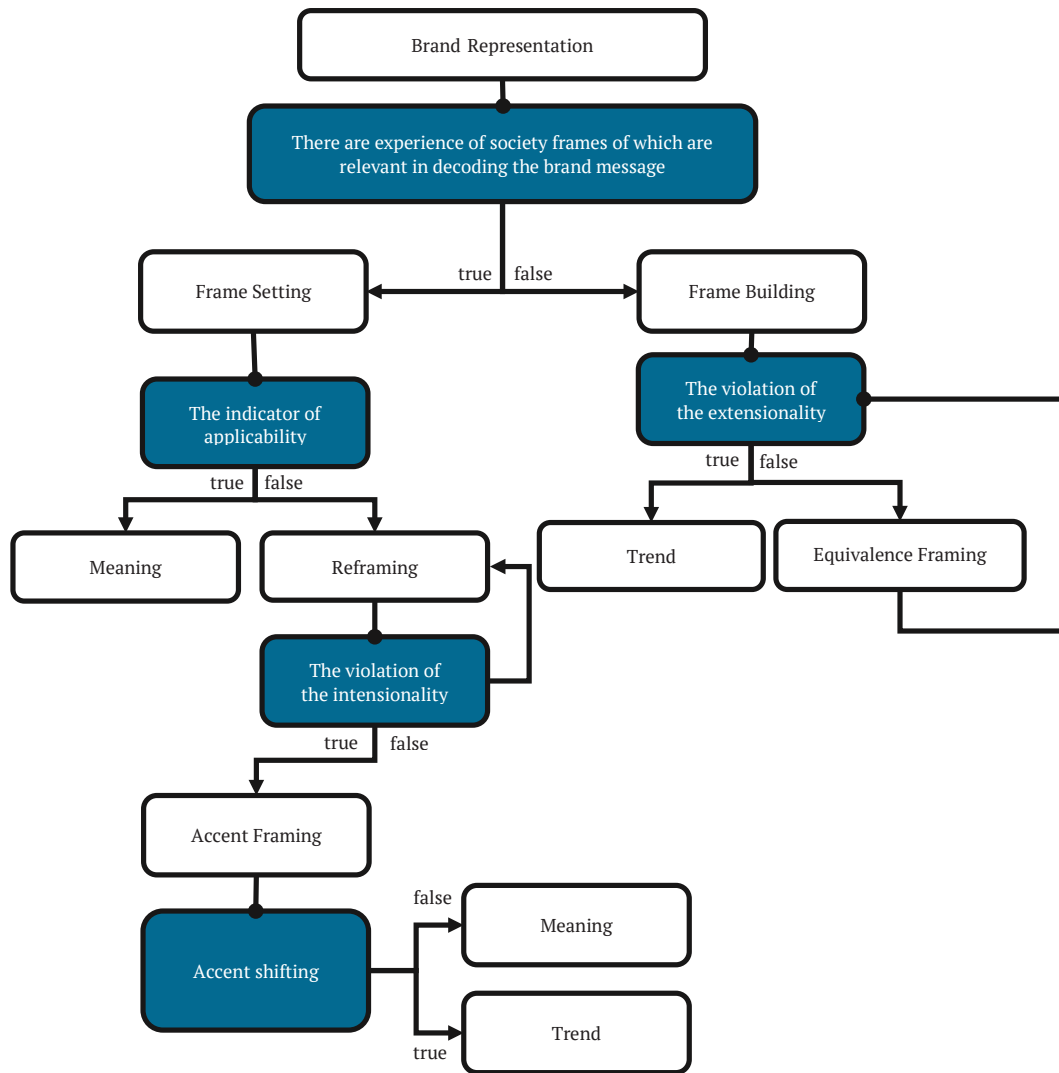
Figure 1. Flowchart for transforming a brand message into a trend/meaning for the audience
Source: compiled by O. Shkeda

It is important to understand that in case of violation of extensionality, the brand can act as an initiator, and in case of violation of intensionality, the initiator should be exclusively society. The brand in this case only reflects those values and ideas that have changed. This distinguishes marketing communications from propaganda.

Trendy representativeness
The tools could be used to build trendy representative marketing communications are considered below. The Overton Window is a gradation of the spectrum of society's frames within which the messages that are contained in communications are admissible. The author of the model is Joseph Overton [22], but the methodology for its practical application belongs to Joshua Trevino. He developed Overton's ideas into a six-step model of the acceptability scale for content categories in public relations.

These categories expand or constrict the degree of freedom allowed in society. Thus, a deviation from the current norm can have two vectors of development, allowing to expand the Overton window both to increase freedoms and to reduce them (Fig. 2).
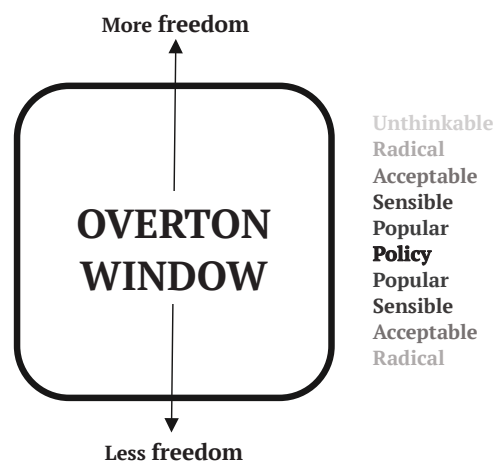
Figure 2. Overton Window
Source: [22]

Today, the Overton Window model is widely used in political representation, generating meanings in the minds of voters.

Remaining within the Overton Window, the brand retains the status of stability and predictability, and communication frames work in accordance with the current norms of society. The further away the brand message encoded in marketing communications is from the Policy category, the more likely it is that meaning becomes trendy. At the same time, the further the communication stage of the Overton Window is from the Policy category, the more likely it is that society takes such a trend in a negative spectrum. An exception would be the violation of intensionality by society, which generates a request for a rethinking of the existing frame.

Another tool for determining the legitimacy of communication meanings that complements the Overton window model is Hallin's Spheres. The model presented by D. C. Hallin divides media messages into three semantic subgroups called spheres [23]. By its logic and structure, this approach also takes place when building a representative brand strategy. Based on the frames adopted by society, the following areas should be identified (Fig. 3).

Sphere of Deviance
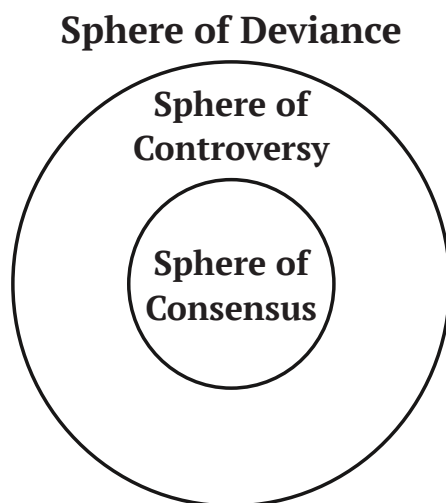
Figure 3. Hallin's spheres

Source: [23]

1. Sphere of consensus. Brand representation through this frame is the safest from the point of view of the perception of marketing communications by society. This is equivalent to the Policy category of the Overton Window. The potential for trending is extremely low, because such communications are likely to exist in a frame setting conditions, where the indicator of applicability remains relevant.

2. Sphere of legitimate controversy. Using this frame, the brand remains without a clear position, taking the side of the observer, which depersonalizes marketing communications. It is the point that distinguishes the Hallin's model from the Overton's model. Despite the fact that this sphere is moving away from the so-called acceptable norm, the likelihood of a trend within it is decreasing. This sphere includes all newsbreaks outside the sphere of consensus, which are not interpreted by society as deviance. Being in a public conflict, such newsbreaks will be in trends. However,

as soon as the brand takes a specific position on a specific issue (frame building), marketing communications will cease to be debatable, occupying an intermediate space of transition to the next sphere.

3. Sphere of deviance. This sphere includes newsbreaks that are considered unimportant, taboo, useless, dangerous, etc. in society. This sphere has the potential for trending. Due to the dynamism of social processes, moods, interaction, the permanent development of society and the world in which it exists, the boundaries between spheres are shifting. This happens all the time. As soon as a brand gets the opportunity to represent itself through a position that was in the Sphere of deviance yesterday, and today the society has a request to change intensionality, the brand becomes a cultural phenomenon, and its communications get into trends.

The concept of the Opinion Corridor, which appeared almost thirty years later, confirms the instability of the Hallin's Sphere. The author of the concept, Henrik Oskarsson, defines the Opinion Corridor as a buffer zone within which it is permissible to have an opinion, to broadcast it even if not everyone agrees with it [24]. This is comparable to Sphere of legitimate controversy. However, the idea of the author's research criticizes the Opinion Corridor existing in society because of its limitations and lack of freedom.

Relying on the position that the Opinion Corridor in society tends to expand, the brand has room for maneuver (the violation of the extensionality or the violation of the intensionality). By expanding the Opinion Corridor of its own marketing communications, the brand representation interacts (including forming) with new relevant frames, in other words, it becomes trendy.

The existence of frameworks that limits the Opinion Corridor is due to another concept of social interaction called the Spiral of Silence. Elisabeth Noelle-Neumann, the author of the model, defines the Spiral of Silence as the dependence of the willingness of individuals to express their opinion on the perception of public opinion (the opinion of the majority) [25]. The model describes the trajectory of development and decay of specific frames that are accepted in society. Depending on the resolution of the social conflict, the Spiral of Silence could be both a frame building tool and a reframing reflector.

The original model is determined by four processes:

1. The desire of people for socialization, which is due to the fear of being locked in social isolation.

2. Opinion, which is inherent in the majority, is spread due to more statements and its public broadcast. A reinforcement effect is created that puts the majority opinion in a stronger position than it actually is.

3. Minority opinion becomes less popular due to restraint on expression and public broadcast. A suppression effect is created that puts the minority opinion in a weaker position than it actually is.

4. As a result of the spiral movement, one opinion becomes predominant, which is perceived as an imitative model. The opposite opinion becomes rejected, the expression of which is replaced by silence due to fear of social isolation.

The place of framing in this model is demonstrated below (Fig. 4).
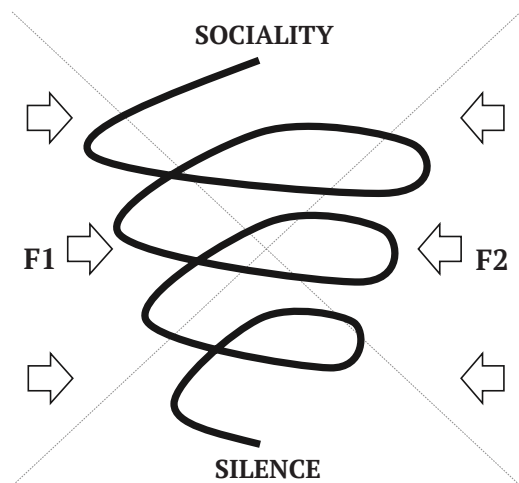
Figure 4. Frame conflict (F1 and F2)
in the Spiral of Silence model

Source: compiled by O. Shkeda

If there are two equivalent versions of the frame in society, marketing communications will be directed to frame building, and the brand will be represented in a social context, not a social conflict. Extensional equality is violated.

When the roles of the frame of the majority and the frame of silence change, the intensional equality is violated, where the brand, reacting to social processes, takes part in the replacement of the intension.

In the concept of the Spiral of Silence, marketing communications become trendy when a new frame is raising to the top of the spiral. The violation of the extensionality is an irreversible phenomenon in the conflict of two frames, which can both provoke such a conflict and be its consequence.

Intensionality is violated when the frame of society moves from the foundation of the spiral to its upper coils. Such a process is complicated by informational barriers, which could be Echo Chamber or Epistemic Bubble.

'Echo chamber refers to situations in which beliefs are amplified or reinforced by communication and repetition inside a closed system and insulated from rebuttal' [26]. Epistemic bubble is different because external sources of information are excluded unintentionally, and not because of the ban. Bubble members are open to new frames, while Echo chamber members respond to new frames with rejection or even aggression.

The opposition to this phenomenon is possible by encouraging society to go beyond. Today, this is manifested in partnerships with informational resources such as start-ups, which activities are aimed at taking society out of Echo chamber.

Since individuals within a closed informational frame are in fear of isolation, the logical manifestation of sociality is the formation of communities. Thus, marketing communications should be aimed at off-line and on-line public institutions. Outside the Internet, the manifestation of such communications could be participation in conferences, exhibitions, festivals of particular sub-cultures. While on the Internet, social networks could be used for the same purposes. Group subcultural interaction is possible within Internet communities (Facebook, Reddit, etc.).

Since in this case the brand's actions are aimed at changing the information structure within society, the brand's task is to provide access to alternative sources of information that are outside Echo chamber or Epistemic bubble. Overcoming the barrier of rejection occurs due to the representative actions of the brand as a source of information. The brand must take the role of an influencer.

With the expansion of existing boundaries, the process of inculturation is launched. It is the change of one frame to another. In terms of marketing communications, inculturation is divided into three types:

1. Vertical – the process of inheriting the informational intension from the subject of communications, which has the highest social status.

2. Horizontal – the formation of a frame among subjects of communication equal in status (consumers of the brand, members of society, agents of a particular social group, etc.).

3. Diagonal – a mix of the previous two where the source of information is a socially status subject that is not directly related to the consumer of information (the brand is such an entity).

Successful reframing is possible only if there is a request to change the intension. When new frames are imposed, society will perceive brand representation not as access to information, but as the actions of an aggressor. Thus, vertical actions form meanings, while horizontal and diagonal actions can form trends. This is due to the desire and informational readiness of society to change the social paradigm.

Framing, like storytelling, is possible in the formation of not only textual meanings or trends. Because a frame is an informational model, it could be represented as a narrative in any informational format. Puzzling out the four-stage system model of visual framing, frames are identified as follows:

1. Denotative system. The semantic core of the concept, which can designate an object.

2. Stylistic-semiotic system. The symbolism of concepts, the transfer meaning from one object to another.

3. Connotative system. The principles of interpretation within which the frame exists.

4. Ideological representation. The fundamental principles of the frame (Fig. 5).
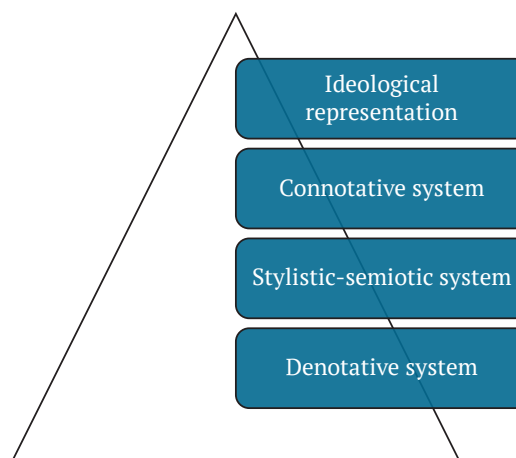
Figure 5. System framing model

Source: compiled by Oleksandr Shkeda

Since each level of the presented framing model builds on the successful implementation of the previous level, it makes sense to talk about a hierarchy of frames.

Based on the above, it becomes possible to determine approaches for using framing in the formation of meanings and the formation of trends (Table 1).

Table 1. Framing tools to create meaning/trend

Framing tool	Meaning	Trend
Overton Window	Policy	Popular – Unthinkable
Hallin's Spheres	Sphere of consensus	On the border between Sphere of legitimate controversy and Sphere of deviance
Spiral of Silence	The upper coils of the spiral	The lower coils of the spiral
Echo chamber/Epistemic bubble	Inside	Outside
Inculturation	Vertical, horizontal	Horizontal, diagonal

It is also worth noting that although the presented model refers to the visualization of frames, it could also be relevant to any other informational format.

DISCUSSION

The problem of incorrect decoding of information contained within the message in the process of marketing communications is raised in the book "Marketing Communications" by Lynne Eagle [27]. The solution proposed by the authors comes down to the differentiation of communication models, as well as all its components (message, communication channel), depending on the recipients of information. This confirms the results obtained during this study about the dependence of the effectiveness of the integrated marketing communications system on the consumer's self-identification. However, this identification refers to the self-positioning of the consumer as a member of a general social group, and not a specific community around the brand. Thus, marketing communications will take place within existing frames without the reframing perspective proposed in this article.

In the works of other authors (A. Krizanova, M. Tairova) this issue is also investigated. However, framing tools are inferior to the ideas of improving the effectiveness of evaluating marketing communications within existing frames [28-29]. The authors support the idea that the Internet space globalizes the dissemination of information, but instead of the frame tools proposed in this paper to influence consumers, they propose to focus on the search for a universal frame within which the message decoding efficiency will be optimal.

The issue of brand intellectualization has also been widely studied. The novelty of the results of this article lies in the external processes of intellectualization associated with the consumer, society and the perception of the brand as a cultural or pop-cultural phenomenon. While in the works of other authors, intellectualization processes are reduced to enterprise management (O. Mezentseva writes about personnel management [30], X. Dong writes about operational management [31], V. Zadorozhniy writes about logistics [32], etc.).

The use of framing in marketing and PR often comes down to analytical models of existing frames in marketing communications and society, and how they fit together. This can be seen in the works of S. Kureshi and M. Saari [33-34]. The results of this study allow not only to obtain information about the effectiveness of framing tools, but also to

influence consumers, create new frames, replace existing ones, and turn them into informational trends. In part, the idea of creating new frames (by positioning the brand's products as a new consumer experience) was explored in the work of I. Gallo [35], the results of which correlate with the results of this study.

The frame technology toolkit outlined in this paper traditionally resonates to a greater extent in political marketing and content broadcasting in the media. O. Karpenko considers the overton window as a manipulative mechanism for the transformation of public values on the part of the government [36], and G.-D. Bobric describes it as an instrument of information warfare [37]. A. Panievsky describes the use of the concept of Hallin's spheres as a reactive tool of journalism against anti-media populism, resulting in a change in political frames [38]. B. Ross, exploring the model of the Spiral of Silence within social media, came to similar results, confirming that the number of acting actors is capable of reframing [39]. M. Duncan, in turn, confirmed the validity of the mechanism of the model, but the prospect of reframing is not covered in [40]. The listed studies have similar results or confirm those described in this article, but do not reveal their marketing potential. This work reveals the potential of these frame technologies in traditional commercial branding.

The results that determine the approach to brand trend formation using frame technologies are not confirmed in the literature due to the novelty of the issue under study. Traditionally, trending correlates with the functioning of social networks, as well as psychological and anthropological mechanisms in the individual and society as a whole. It could be seen in the papers [41-43] of T.C.T. Dinh, R.M. Visconti, A. Hulubei.

CONCLUSIONS

The use of framing is one of the options for solving the problem of incorrect decoding of information in marketing communications and brand representation. Intellectualization of the brand as a social object explains communication processes from the point of view of narratology and social constructivism. With the help of frames, encoded in marketing communications narratives, the consumer of information identifies himself as a consumer of the brand. The choice of the framework (frame building or frame setting) occurs due to the indicator of applicability. The likelihood that a brand will form a trend in the course of communication is much higher if the indicator of applicability

of particular frames is no longer relevant. The framing strategy involves the use of logical methods of intensional and extensional equality, which are violated due to accent frames and equivalence frames, respectively. The difference in the use of framing tools for analyzing the communication environment and formation of meanings/trends is presented. This demonstrates that a higher probability of a newsbreak being trendy corresponds to a lower probability of acceptance of information by the society. Brand representation through frame systems is carried out in stages through any format for presenting narratives.

Having an understanding of the principles and algorithms for using framing tools, it makes sense to focus further development of the work on frame translators and influencer marketing agents. This will deepen received results to specific practical marketing tasks within the organization.

In addition to the vertical development of the ideas outlined, it is also possible to horizontally expand the use of framing in marketing communications in order to influence the consumer. This will manifest itself in the creation of analytical tools that track the dynamics of such interconnected elements as society's frames and popular cultural narratives, as well as what effect this interdependence has on demand and consumer behavior.

REFERENCES

[1] Chaikovska, M.P. (2021). *Conceptual and methodological principles of management of marketing IT-projects in digitally transforming environment*. Odesa: Odesa Mechnikov National University.

[2] Oklander, M., & Kudina, A. (2021). Channels for promotion of fashion brands in the online space. *Baltic Journal of Economic Studies*, 7(2), 179-187.

[3] Robul, Yu.V. (2020). *Theoretical bases of functioning and development of marketing systems in digital marketing*. Dnipro: Journal Fund.

[4] Chaikovska, M., & Shkeda, O. (2022). Analysis of digital indicators of the convergence of behavioral and informational trends of society management in the framework of the societal concept of influencer marketing. *Marketing and Digital Technology*, 6(2), 73-85.

[5] Representation. Cambridge Dictionary. (n.d.). Retrieved from https://dictionary.cambridge.org/.

[6] Yashkina, O., Oklander, M., Oklander, T., Pedko, I., & Chaikovska, M. (2018). Analysis of technological innovations in digital marketing. *Eastern-European Journal of Enterprise Technologies*, 5(3(95)), 80-91.

[7] Minsky, M. (1974). *A framework for representing knowledge.* Retrieved from https://dspace.mit.edu/handle/1721.1/6089.

[8] Goffman, E. (2018). *Frame analysis: An essay on the organization of experience*. Harvard: Harvard University Press.

[9] Shkeda, O.O., & Chaikovska, M.P. (2021). The role of the pop-cultural phenomenon in the management of the reflexive tools of modern influencer marketing strategies in the context of digitalization. In *Innovation economic development: Institutional and organizational dimension* (pp. 158-176). Comrat: A&V Poligraf.

[10] Tanford, S., Kim, M., & Kim, E.J. (2020). Priming social media and framing cause-related marketing to promote sustainable hotel choice. *Journal of Sustainable Tourism*, 28(11), 1762-1781.

[11] Kovtun, O. (2013). Cognitive approach to determining the content, presentation and strategy of modern enterprises. *Technology Audit and Production Reserves*, 1/3(9), 21-25.

[12] Kuo, Y.-F., Lin, C.S., & Liu, L.-T. (2022). The effects of framing messages and cause-related marketing on backing intentions in reward-based crowdfunding. *Journal of Retailing and Consumer Services*, 64, article number 102799.

[13] Chukurna, O., & Nikolaiev, D. (2021). Marketing strategy of territorial branding in the contex of sustainable development. *VUZF Review*, 6(1), 65-78.

[14] Lee, S., & Pounders, K.R. (2019). Intrinsic versus extrinsic goals: The role of self-construal in understanding consumer response to goal framing in social marketing. *Journal of Business Research*, 94, 99-112.

[15] Kemper, J.A., Hall, C.M., & Ballantine, P.W. (2019). Marketing and sustainability: Business as usual or changing worldviews? *Sustainability*, 11(3), 780-787.

[16] Eberhardt, W., Brüggen, E., Post, T., & Hoet, Ch. (2021). Engagement behavior and financial well-being: The effect of message framing in online pension communication. *International Journal of Research in Marketing*, 38(2), 448-471.

[17] Klaff, O. (2011). *Pitch anything: An innovative method for presenting, persuading, and winning the deal*. New York: McGraw-Hill.

[18] Kapferer, J.-N. (2018). *New strategic brand management: creating and sustaining brand equity long term* (5th ed.). London: Kogan Page.

[19] Darity, W.A.Jr. (2003). Racial/ethnic employment discrimination, segregation, and health. *American Journal of Public Health*, 93(2), 226-231.

[20] Galanes, G.J., Leeds-Hurwitz, W. (2009). *Socially constructing communication*. Hampton: Hampton Press.

[21] Tversky, A., & Kahneman, D. (2015). The framing of decisions and the psychology of choice. *Science*, 211(4481), 453-458.

[22] Joseph Overton biography and article index (n.d.). Retrieved from https://www.mackinac.org/about/authors/12?count=50.

[23] Morelli, T., & Linsky, C. (2019). *The power of cognitive marketing: IBM Watson Marketing Insights*. Retrieved from https://www.redbooks.ibm.com/redpapers/pdfs/redp5432.pdf.

[24] Esaiasson, P., Gilljam, M., Oscarsson, H., Towns A., & Wängnerud, L. (2017). *Metodpraktikan. Konsten att studera samhälle, individ och marknad*. Stockholm: Norstedts Juridik.

[25] Shtelmashenko, A.D. (2018). The silence violence cycle as a factor influencing public opinion. *Local Self-Rescue*, 29(68)(3), 119-122.

[26] Oxford Learner's Dictionaries. (n.d.). Retrieved from https://www.oxfordlearnersdictionaries.com/us/definition/english/echo-chamber.

[27] Eagle, L., Czarnecka, B., Dahl, S., & Lloyd, J. (2020). *Marketing communications* (2nd ed.). London: Routledge.

[28] Krizanova, A., Lăzăroiu, G., Gajanova, L., Kliestikova, J., Nadanyiova, M., & Moravcikova, D. (2019). The effectiveness of marketing communication and importance of its evaluation in an online environment. *Sustainability*, 11(24), 7016-7027.

[29] Muhammedrisaevna, T.M., & Sadikovna, S.M. (2022). Development trends in marketing communications in 2020-2022. *European Multidisciplinary Journal of Modern Science*, 4, 819-822.

[30] Mezentseva, O. (2019). Intellectualization of enterprise management using Business Intelligence's instruments. *Technology Audit and Production Reserves*, 4(48), 19-24.

[31] Dong, X., Cao, W., & Bao, Y. (2022). Product intellectualization ecosystem: a framework through grounded theory and case analysis. *International Journal of Emerging Markets*, 17(4), 1030-1048.

[32] Zadorozhniy, V., Chislov, O., Kolesnikov, M., Bakalov, M., & Khan, V. (2022). Methodological principles of modeling and intellectualization of logistic interaction in the "railway station-port" system. *Transportation Research Procedia*, 63, 1690-1699.

[33] Sonal, K., & Sujo, T. (2020). Testing the influence of message framing, donation magnitude, and product category in a cause-related marketing context. *Journal of Marketing Communications*, 26(3), 268-289.

[34] Saari, M., Haapanen, L., & Hurmelinna-Laukkanen, P. (2022). Social media and international business: Views and conceptual framing. *International Marketing Review*, 39(7), 25-45.

[35] Gallo, I., Townsend, C., & Alegre, I. (2019). Experiential product framing and its influence on the creation of consumer reviews. *Journal of Business Research*, 98, 177-190.

[36] Karpenko, O. (2019). The "Overton Window" as manipulative mechanism of public values transformation. *National Academy of Managerial Staff of Culture and Arts Herald*, 1, 51-54.

[37] Bobric, G.-D. (2021). The Overton Window: A tool for information warfare. In *Proceeding of the 16th international conference on cyber warfare and security* (pp. 20-27). Cookeville: Tennessee Tech University.

[38] Panievsky, A. (2022). The strategic bias: How journalists respond to antimedia populism. *International Journal of Press/Politics*, 27(4),808-826.

[39] Ross, B., Pilz, L., Cabrera, B., Brachten, F., Neubaum, G., & Stieglitz, S. (2019). Are social bots a real threat? An agent-based model of the spiral of silence to analyse the impact of manipulative actors in social networks. *European Journal of Information Systems*, 28(4), 394-412.

[40] Duncan, M., Pelled, A., Wise, D., Ghosh, S., Shan, Y., Zheng, M., & McLeod, D. (2020). Staying silent and speaking out in online comment sections: The influence of spiral of silence and corrective action in reaction to news. *Computers in Human Behavior*, 102, 192-205.

[41] Dinh, T.C.T., & Lee, Y. (2022). "I want to be as trendy as influencers" – how "fear of missing out" leads to buying intention for products endorsed by social media influencers. *Journal of Research in Interactive Marketing*, 16(3), 346-364.

[42] Moro Visconti, R. (2020). *The valuation of digital intangibiles. Technology, marketing and internet*. London: Palgrave Macmillan.

[43] Georgescu, A., & Avasilcai, S. (2020). Event-based marketing: A trendy and emotional way to engage with the public. *Marketing and Smart Technologies. Smart Innovation*, 167, 156-165.

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Фреймінг як інструмент маркетингу впливу в управлінні маркетинговими комунікаціями та репрезентативністю бренду

Анотація. Актуальність обраної проблематики обумовлена зміною орієнтира комунікацій бренду в інформаційному просторі від раціонально економічних цілей і цінностей до поведінково економічних, а також вірогідністю неправильного декодування інформаційного меседжу зі сторони реципієнта інформації. Метою була побудова моделі переходу репрезентативних маркетингових комунікацій від формування смислів до формування трендів шляхом використання фреймінгу як інструменту маркетингу впливу. Для виконання поставлених завдань у роботі використовується підбір загальнонаукових та спеціальних методів та прийомів наукового дослідження, таких як метод семантичного, морфологічного, порівняльного та критичного аналізу, метод побудови онтології, системно-структурний та функціональний підходи, імітаційне моделювання та ін. Феномен бренду розглядається з точки зору соціального конструктивізму, в результаті чого виділено принципи існування бренду в концепції комунікацій із суспільством. Теоретично обґрунтовано два типи фреймворків, які використовуються при побудові наративу в контексті репрезентативних дій бренду. Методологія використання цих фреймворків розглядається з позиції маркетингової, логічної, комунікативної та соціальної метрики та охоплює їх екстенсіональні та інтенсіональні відповідності. В результаті створюється модель, яка дозволяє визначити трансформацію комунікацій бренду в значення чи тенденції та їх трендовий потенціал. Були проаналізовані та адаптовані для маркетингових цілей наступні інструменти фреймінгу: «Вікно Овертона», «Сфери Халліна», «Коридор думок», «Спіраль мовчання», «Ехо-камера» та «Епістемічний міхур». Рефреймінг розглядається з точки зору культури, а саме процесів інкультурації. Виявлено різницю підходів та побудовано модель переходу використання інструментів фреймінгу від конструювання смислів до конструювання трендів. Ця модель дозволяє мінімізувати проблему некоректного декодування інформації під час представницьких і комунікативних акцій бренду

Ключові слова: брендинг, споживчий досвід, фреймінг-модель, формування трендів сенсу, цифрова капіталізація бренду

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The impact of sensitivity of economic activities on the economic behaviour of enterprise

Abstract. At the present stage of development of the world economy which is characterized by a high level of instability and chaotic economic processes, the urgent task of enterprise management is to study their market behavior, taking into account existing and hidden links with internal processes and external influences. Since all types of economic activity react differently to the instability of the external environment, it is important to analyze the operating conditions and performance of enterprises in these types of activities. The purpose of the article is to form general recommendations for the development of strategies and tactics for the behavior of enterprises of various types of economic activity on the market, depending on their sensitivity to the influence of external factors. Scientific research methods used in our work are as follows: comparative and content analysis, graphical, structural-dynamic methods, coefficient and cluster analyses. The article proposes an algorithmic model for the formation of the economic behavior of an enterprise, depending on the level of sensitivity of the type of activity. Trends in the development of types of activities are analyzed and an indicator of the sensitivity of types of economic activity to environmental influences is proposed. Clustering was carried out according to the proposed indicator and 3 clusters were identified according to the level of types of economic activity sensitivity to market fluctuations. The portrait of enterprises was formed depending on their expectations and their comparison with actually achieved indicators. The implementation of the proposed model and the developed recommendations will be of interest to company leaders for the formation of a market behavior strategy

Keywords: type of economic activity, the trajectory of the company's development, gross value added, indicator of sensitivity, cluster method, strategy and tactic of market behaviour

INTRODUCTION

The problem of researching the behaviour of an enterprise as a fundamental link of any economic complex is relevant both at the international and national levels. The development of effective market reactions is a complex structured task of enterprise management, the solution of which depends on the influence of external and internal environmental factors and the real and potential resource capabilities of the enterprise.

Among the main problems of the external environment, it is appropriate to single out global geopolitical changes associated with the instability of the development of various regions of the world and affecting national economic systems, global political and economic crises that occur in the XXI century with a certain regularity and have long-lasting consequences, the inadequacy of the functioning of the world financial systems built on the use of virtual funds and the emergence of "financial bubbles". All these are factors of the global systemic crisis that covered the world and national economic systems and significantly determine the behaviour of business entities as well as justify

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the need for careful monitoring of these factors, identification of threats and opportunities for market functioning, development of adaptive and adequate market reactions in order to maintain the competitiveness of the enterprise.

The development of effective economic behaviour of an enterprise should be based on a systematic analysis of the external environment which represents the external environment as a system of synergistic effects of the sectoral, regional, national and international economic environment. At the same time, compliance with a certain type of economic activity which includes the industry environment at the current stage of scientific and technological progress (STP) development, acts as one of the essential factors in the formation of the market behaviour of the enterprise. Different types of economic activity have specific features and respond differently to the instability of the global and national economic environment. In these conditions, the formation of an effective trajectory of the enterprise's development, which includes the development and correction of its economic behaviour, depends not only on the formation of a justified system of economic indicators and the creation of a system of their monitoring and analysis, but also on a permanent study of both existing and latent connections between internal and external processes.

Therefore, the assessment and modeling of the sensitivity of the type of economic activity to disturbances in the national and global market environment have a significant impact on the formation and correction of the adaptive economic behaviour of the enterprise.

The study was based on the following hypotheses:

1. The behaviour of the enterprise is the result of the influence of fluctuations in its internal and complexly structured external environment;

2. The specificity of types of economic activity determines their different sensitivity to economic fluctuations, in particular, crisis ones;

3. Adequate behaviour of the enterprise in the market environment depends on an effective behaviour management mechanism which, as an element, takes into account the sensitivity of the type of economic activity to disturbances in the national and international economic systems.

The purpose of the article was to determine the sensitivity of economic activities to changes, particularly crisis ones, of the external environment and develop recommendations for the formation of adaptive economic behaviour of enterprises belonging to them.

To achieve the goal the following tasks were solved:

1. An algorithmic model for choosing the economic behaviour of an enterprise was developed.

2. The types of economic activity of the country in order to determine the dominant types of activity of the national economic system were analyzed.

3. A cluster grouping of types of economic activity on the basis of the proposed sensitivity indicator was carried out.

4. A comparative analysis of trends in the sensitivity of types of economic activity and business expectations of entrepreneurs in order to form a portrait of business entities was conducted.

5. General recommendations regarding the choice of economic behaviour of enterprises in accordance with the sensitivity of the type of economic activity were developed.

Thus, the novelty of the study lies in the application of a monocausal approach to assessing the sensitivity of the types of economic activity of the country to fluctuations in the external environment, as well as the formation of an adequate economic behavior of an enterprise, taking into account this sensitivity.

LITERATURE REVIEW

Any business entity constantly interacts with the external environment, so the study of the reactions of enterprises in conditions of instability of the external environment is decisive for the formation of their strategy and tactics of economic behaviour. In addition, the behaviour of enterprises depends on the type of economic activity in which it works. The analysis of literary sources made it possible to conclude that the study of the specifics of the market and economic behaviour of enterprises of various types of activity is the focus of many studies.

The behaviour of enterprises is a complex, systemic process that simultaneously affects most subsystems and requires the use of various management methods and models, and also takes into account external and internal factors. The situation is significantly complicated by the fact that unforeseen circumstances arise in the process of activity, which can lead to a partial or fundamental change in the method, procedure and technology of making changes. Therefore, the research object, its components, internal and external connections should be formalized as much as possible so that it is possible to respond quickly to changes in the external environment. The authors of the scientific works [1-3] believe that, on the one hand, behaviour is a structural element of development, and on the other hand, behaviour includes a number of short- and medium-term measures to achieve development goals. Thus, characteristic features of the external environment in which enterprises operate are instability and uncertainty, the basis of which is the existence of a large number of agents of economic relations in the market environment. Some researchers [4; 5] believe that this has an aggressive influence on the behaviour of business entities, disrupting the process of their normal planned functioning, which leads to the need for an unexpected loss of resources and the development of a decision support system in stochastic, fluctuating conditions.

The analysis of literary sources made it possible to conclude that the correspondence of the economic sector, industry or type of economic activity creates the basis for different economic behaviour of enterprises. Thus, in the work [6] it was determined that precisely macroeconomic barometers, dynamics of production and unemployment are the driving forces of the formation of economic policy in the market environment. Researchers believe that as a result of studying the influence of the external environment factors, cycles in the development of economic entities are identified and it is possible to make informed decisions at the stages of growth or decline of their development. The specialists [7] offer a detailed study of the sectoral influence on the development of EU regions, the results of which will contribute to the development of a more effective allocation of the EU budget. The authors found out that spending in the energy, R&D, and transportation sectors drives GDP growth per capita, with persistent effects consistent with

lower production costs, higher affordability and innovation in recipient regions. The work [8] is devoted to the issue of optimizing the behaviour of enterprises in the transport industry, in which it is stated that the strengthening of business processes, when taking into account the factors of the external environment, affects the operational economic efficiency of activities. The report of the Association for Contextual Behavioral Science (ACBS) [9] states that in order to form informed decisions regarding the further development of economic agents, it is necessary to take into account the interests of both producers and consumers, and to generalize the behaviour based on clear observations.

In the works of some scientists [10-12], attention is paid to the formation of enterprises' strategies for responding to the influence of various factors of the external environment. Thus, the authors of the study [10] offer to classify strategies depending on the degree of satisfaction with resources and their use, as well as on the innovative measures that enterprises must take in order to survive and develop their business in both the short and long term . The research [12] is aimed at developing strategies for food industry enterprises that will contribute to increasing the effectiveness of their activities. A.D. Ablo [11] claims that in order to obtain the effect of the developed strategy, a good interaction between all interested parties is necessary, so that the strategy contributes to the joint creation of values, which is the key to its successful implementation, and proves its reasoning after the example of oil and gas industry enterprises. The sensitivity of the influence of endogenous and exogenous factors on the development of farm enterprises is shown in the study [13], where the authors offer to carry out their integrated analysis.

The COVID-19 pandemic acted as an aggressive factor in the external environment, the impact of which on the changes in GDP in economic sector is studied by many scientists. Thus, the work [14] analyzed the sustainability of the four key sectors of the Sri Lankan economy, namely, clothing production, tourism, agriculture, and construction, and studied the factors determining this sustainability. The study aims to develop recommendations for determining

the sensitivity of economic sectors and strengthening their resilience to future pandemics and multi-hazard scenarios involving pandemics. The analysis of the impact of the factors of the COVID-19 pandemic is given in the work [15] which examines the energy, industrial, and transport sectors of the economy and strategies for their recovery and recovery from the crisis caused by the pandemic.

Thus, the analysis of literary sources had shown that in the conditions of the transformation of the country's economy, it is appropriate and relevant to study the influence of external environmental factors on the development of enterprises of various types of economic activity and to take into account the sensitivity of these types of activities to disturbances in the national and international economic environment when forming and/or choosing its market reactions.

MATERIALS AND METHODS

The methodological basis of the research was the concept of economic behaviour of enterprises, which considers behaviour as economically justified reactions of the enterprise aimed at its adaptation to the course of economic processes. As mentioned above, the management of economic and market behaviour is an important task of enterprise management, since in the conditions of the specifics of the development of the global market economy of the 21st century, it should combine the real situation and resource limitations of the enterprise with the possibility of passive or active adaptation to changes in both the internal and external environment. This, in turn, will make it possible to form a management decision-making system aimed at supporting a sustainable attractor of the enterprise's economic development, which is the main factor of its competitiveness on the national and international markets.

The proposed algorithmic model acts as a methodical toolkit for the formation of adaptive economic behaviour of the enterprise.

A meaningful description of the steps of the algorithmic model with the definition of research methods is presented in Table 1.

Table 1. Characteristics and tools of the algorithmic model

The name of the step	Economic content	Incoming data	Research methods	Solution results
Step 1. Formation of the research information space	Selection of an indicator that reflects the economic development of the country	Modern approaches to the systematic assessment of the country's economic development	Monographic, comparative, content analysis	Indicator of the study of economic development of the country by types of economic activity
Step 2. Analysis of trends in the development of types of economic activity in the country	Analysis of types of economic activity of the the country according to the indicator of economic development	Time series of the research indicator by types of economic activity of the country	Graphical method, structural and dynamic analysis, coefficient analysis	Determination of trends in the development of economic activities of the country
Step 3. Determination of sensitivity clusters of types of economic activity	Identifying the types of economic activity most sensitive to the effects of the external environment	Time series of the research indicator by types of economic activity of the country	Cluster analysis	Identification of homogeneous groups of types of economic activity according to the degree of sensitivity to changes in the external environment
Step 4. Portrait of business entities	Research of expectations of enterprises by types of economic activity and their comparison with the actual situation	Business expectations of enterprises, time series of indicators of enterprise activity	Comparative analysis, coefficient analysis	Comparison of the expected behaviour of enterprises by types of economic activity with the real situation

The name of the step	Economic content	Incoming data	Research methods	Solution results
Step 5. Development of recommendations regarding the formation of promising economic behaviour of the enterprise	Analysis of prospective economic behaviour of enterprises by types of economic activity	Business expectations of enterprises	Strategic analysis	Development of recommendations on the formation of promising economic behaviour of enterprises according to the level of sensitivity of types of economic activity

Thus, the model proposed above will allow to form an effective and adaptive economic behaviour of the enterprise as a set of market reactions to disturbances in the external environment in accordance with its branch and species affiliation. A significant difference in the development is that the authors considered the external environment to be a complex structured system consisting of a set of subsystems that influence the market behaviour (international, national, regional, industry markets, belonging to a type of economic activity, etc.) that should be studied and modeled separately. This will significantly improve the quality of management decisions on adjusting, producing strategic and tactical trajectories of the enterprise's economic behaviour and will allow to develop an effective system for monitoring and analyzing trends in changes of the external environment in subsystems and will increase the enterprise's competitiveness in the market space.

RESULTS AND DISCUSSION

Let's consider in detail the proposed algorithmic model of the formation of the economic behaviour of an enterprise, taking into account its affiliation to a certain type of economic activity.

Step 1 – Formation of the research information space. The main goal of the economic development of Ukraine is to improve its level by increasing the economic efficiency of the economic activity of each business entity and of the country as a whole. The practice of making managerial decisions regarding changing the trajectory of the behaviour of enterprises, substantiating directions and instruments of state economic policy in the changing conditions of globalization determines the need for the development of current and new methods of analysis based on the analysis of macroeconomic indicators.

When analyzing the modern studies of foreign scientists [16-18], it was determined that it is appropriate to use GDP or gross value added (GVA) as a key macroeconomic indicator reflecting the development of various sectors of the economy. But recently, scientists and practitioners have identified certain shortcomings of GDP formation. For example, D. Coyle, professor of economics at the University of Manchester and the author of the book "GDP: A Brief but Affectionate History" [19] claims that GDP was a good proxy for the twentieth century, but it is increasingly unsuitable for the economy of the twenty-first century the driving force of which are innovations, services and intangible goods.

In the work of a Ukrainian scientist [20], it is emphasized that the key indicator that characterizes the costs of economic activity is the gross added value, which combines the costs of wages for employees and the profit obtained from the sale of products. Gross added value characterizes the efficiency of the functioning of economic systems at the micro-, meso- and macro-levels, allows to assess the state and dynamics of changes in the parameters of multi-level systems and to determine structural disproportions in their development, cross-sectoral and cross-market income distribution, etc. [21]. Therefore, the indicator of gross added value is one of the main ones in the national and international statistics.

For these reasons, the work proposes using a macroeconomic indicator – gross value added (GVA) to form recommendations on the tactics and strategy of the economic behaviour of enterprises by type of activity, depending on the level of their sensitivity (solving steps 1, 2 of the model) regarding the course of national and international economic processes.

In addition, unlike existing developments, the authors of the work offered to use the tempo type of GVA and put forward the hypothesis that it is the chain growth/fall rates of GVA across the country that characterize the general situation on the market. The authors of the study also introduced an indicator of the sensitivity of activities to the effects of fluctuations in the external environment (task 3 of the model) as the difference between the rate of change in GVA by type of economic activity and the overall rate of GVA in the country. It is the proposed sensitivity indicator that will be used as an information basis for the formation of cluster groups of types of economic activity that react differently to market and crisis fluctuations.

Step 2 – Analysis of trends in the development of the country's economic activities. The analysis of research conducted by Ukrainian scientists on the problem of the influence of external environmental factors on the formation of development strategies of enterprises of various types of economic activity made it possible to conclude that the external environment is a set of variables that are not/poorly controlled by enterprises, are in interaction with each other and have a complex impact on its activities on market reactions. Therefore, it is very important to take into account such impacts when developing scenarios for the behaviour of enterprises of various types of economic activity.

To determine the sensitivity of types of economic activity to the impact of disturbances in the external environment, the trends in the economy from 2010 to 2020 were analyzed. Table 2 shows the chain rate of change of the GVA indicator by types of economic activity and the specific weight of each type of activity in the production of the total GVA in the Ukraine in 2020 [22].

Table 2. Rates of change in GVA by types of economic activity compared to the previous year
and the structure of GVA in 2020, %

Types of economic activity	Code by NACE	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Specific gravity in 2020,%
All over Ukraine		106.32	100.48	99.32	**93.01**	90.48	103.96	103.20	**103.52**	103.58	**103.88**	100.00
Agriculture. forestry and fishing	A	119.47	95.73	113.35	**102.21**	95.40	106.16	97.75	**108.00**	101.16	**105.73**	*11.88*
Mining and quarrying	B	106.97	101.80	100.42	**86.30**	85.80	99.80	94.30	**102.40**	98.40	**86.91**	3.36
Manufacturing	C	107.62	97.96	92.74	**90.70**	87.40	104.30	104.80	**101.10**	100.90	**99.14**	*24.81*
Electricity, gas, steam and air conditioning supply	D	104.86	101.84	98.62	**93.40**	88.00	102.50	93.50	**102.80**	95.60	**99.64**	3.56
Water supply; sewerage, waste management and remediation activities	E	98.86	85.15	92.41	**88.19**	77.65	90.83	95.56	**99.48**	98.26	**110.81**	0.51
Construction	F	103.31	94.64	88.50	**79.60**	87.70	117.40	126.30	**108.50**	123.60	**112.42**	*7.34*
Wholesale and retail trade; repair of motor vehicles and motorcycles	G	104.88	103.72	101.87	**87.50**	86.88	104.61	103.94	**104.56**	103.20	**110.39**	*12.82*
Transportation and storage	H	113.89	99.06	102.12	**90.99**	97.09	103.52	103.62	**101.45**	107.71	**101.98**	*6.34*
Accommodation and food service activities	I	104.38	94.16	96.60	**94.77**	98.95	106.30	100.27	**106.11**	110.72	**83.62**	0.52
Information and communication	J	103.24	107.33	106.53	**99.98**	99.14	106.69	108.24	**106.96**	106.80	**107.05**	3.89
Financial and insurance activities	K	95.90	100.40	105.59	**103.23**	75.98	93.34	107.31	**113.10**	110.72	**109.97**	2.55
Real estate activities	L	104.59	103.06	107.15	**99.25**	107.01	102.69	100.20	**106.63**	107.67	**110.93**	4.26
Professional. scientific and technical activities	M	92.96	132.66	109.68	**91.06**	89.45	109.23	106.21	**104.25**	108.09	**98.20**	2.55
Administrative and support service activities	N	105.21	104.23	106.18	**93.09**	96.22	112.86	100.03	**104.78**	105.67	**96.10**	1.01
Public administration and defence; compulsory social security	O	92.54	105.85	100.59	**116.78**	102.49	99.96	97.31	**98.03**	104.61	**111.26**	3.25
Education	P	96.89	103.30	101.10	**94.23**	94.70	98.93	98.09	**97.80**	100.61	**107.64**	2.21
Human health and social work activities	Q	99.69	104.84	96.87	**93.50**	102.39	95.61	106.05	**108.73**	101.88	**122.78**	2.30
Arts. entertainment and recreation	R	115.24	131.29	108.16	**92.85**	87.68	101.54	100.87	**101.78**	102.76	**94.59**	0.37
Other service activities	S.T	108.97	100.79	102.50	**98.84**	98.15	100.92	110.14	**106.45**	112.47	**91.72**	0.52

As can be seen from Table 2, among 19 types of economic activity considered in 2020, the TOP-5 can be singled out, which (in italics) produce more than 62% of the country's GDP. Thus, the leading sectors of the Ukrainian economy by GVA in 2020 are agriculture, forestry and fishing (11.88%), processing industry (24.81%), construction (7.34%), wholesale and retail trade (12.82%), transport (6.34%). All these types of activities are basic and without them the development of the economy in general is impossible.

The next group of activities under the GVA includes mining and quarrying, supply of electricity, gas, steam and air conditioning, information and telecommunications, real estate operations, public administration and defense; compulsory social insurance. These types of economic activity

occupy almost the same positions in terms of the specific share of GVA in the country as a whole – at the level of 3.25% and above, and accumulate more than 18% of the generated GVA in the country. The activities such as water supply, sewerage, waste management; temporary accommodation and catering; financial and insurance activities; professional, scientific and technical activities; activities in the field of administrative and auxiliary services; education; health care and provision of social assistance; art, sports, entertainment and recreation; provision of other types of services occupy the smallest share of the country's GVA production. Their specific share ranges from 0.37% to 2.55%.

In order to study the sensitivity of types of economic activity to crisis phenomena, the following issues

were analyzed: the change in GVA values according to crisis years for the Ukrainian economy, namely: 2014 (the echo of the political fluctuations of 2013 – the Revolution of Dignity), 2018 (the impact of the global economic crisis of 2017 on the Ukrainian economy) and 2020 (the crisis phenomena of the global COVID-19 pandemic) (Fig. 1) [22].
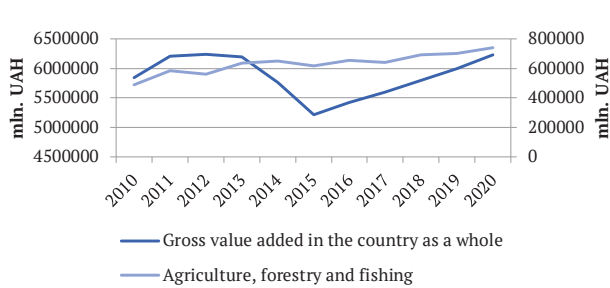
a) agriculture, forestry and fishing (A)
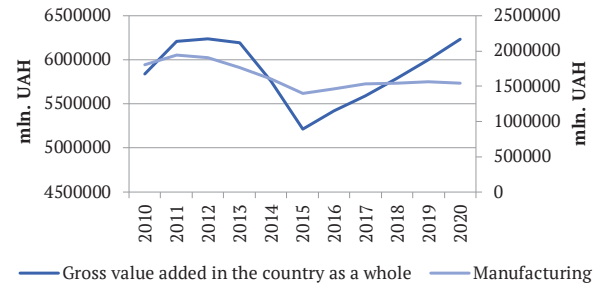
b) manufacturing (C)
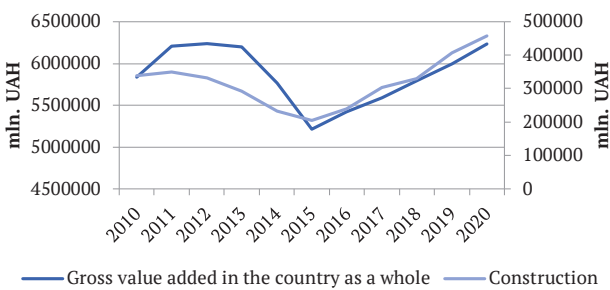
c) construction (F)
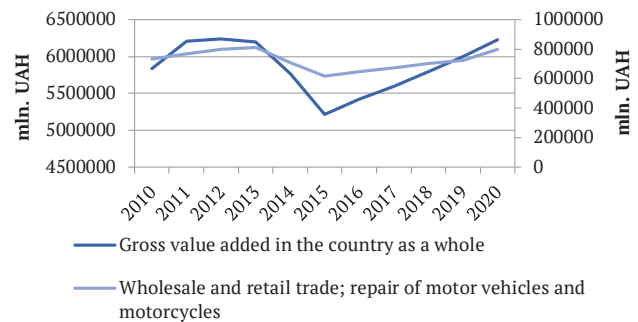
d) wholesale and retail trade; repair of motor vehicles and motorcycles (G)
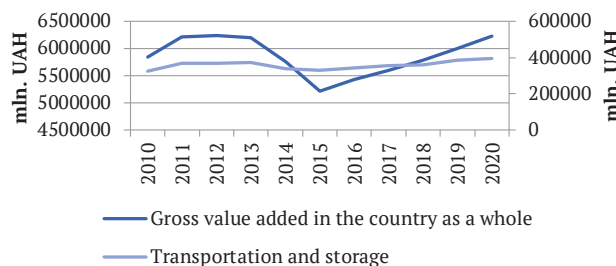
e) transportation and storage (H)

Figure 1. Dynamics of GVA in Ukraine as a whole and by a certain type of economic activity

From Figure 1, it can be seen that the growth rate of GVA in agriculture, forestry and fisheries for all the indicated periods exceeded the similar rate of change in the country as a whole, which indicates the weak sensitivity of this type of activity to crisis phenomena. The growth rate of GVA in the processing industry, transport, warehousing, postal and courier activities in all crisis years is lower than the growth rate of GVA in Ukraine on the whole, which shows their sensitivity to the effects of market crisis phenomena.

As regards construction and wholesale and retail trade, repair of motor vehicles and motorcycles, they are the most sensitive to general changes in the economy, since in 2014 the growth rates of GVA in these types of activities are much lower than in Ukraine on the whole, and in 2018 and 2020 they exceeded them.

That is, enterprises corresponding to different types of economic activity should take into account the sensitivity of the type of activity as a factor of the external environment when developing tactical and strategic market reactions and shaping their economic behaviour. At the same time, belonging to the TOP-5 types of activity shows that ignoring the degree of aggressiveness of the external environment by these enterprises will have a significant negative impact on the economic development of the country.

As shown in Fig. 1, development trends of the TOP-5 types of economic activity, the trend of development by GVA of the types of activity has a non-linear nature. At the same time, the range of differences between the rate of change in GVA in the country and the rate of change in GVA by a certain type of economic activity is also different.

Thus, according to the types of activity A and H, the trajectories of changes in the values of the GVA do not coincide with the trend in Ukraine as a whole, which indicates the weak sensitivity of these types to the crisis fluctuations of the market. The second group in terms of sensitivity can include activities C and G, which have unidirectional trends in the change of the GVA from the country's GVA, but with a lower rate of decline than the market as a whole. F can be attributed to the most sensitive type of economic activity to the impact of crisis processes, according to which the rate of decline is greater than the rate of decline in GVA across the country.

So, based on the analysis of trends in the growth rate of GVA, the following conclusions were drawn:

1) the main factors influencing the economic behaviour of enterprises of various types of economic activity are related to the instability of the external environment, namely, the political situation in the country, global crisis phenomena and the coronavirus pandemic;

2) different types of economic activity react differently to the influence of factors – some are the most sensitive, others are less. Thus, it turned out that the most resistant to the influence of these factors of the external environment were the enterprises of those types of activities that are connected with the satisfaction of the urgent needs of society.

Step 3 – Determination of sensitivity clusters of types of economic activity. At step 1, a sensitivity indicator calculated according to the following formula (1) was proposed as a criterion value of sensitivity to market changes:

$$I_i^{sens} = T_{country}^{GVA} - T_i^{GVA} \tag{1}$$

where $T_{country}^{GVA}$ – the growth rate of the country's GVA; T_i^{GVA} – the growth rate of GVA of the i-type of economic activity; $I = 1 \div 19$

The results of calculating the sensitivity indicator for three crisis years for Ukraine (step 2) are presented in Table 3.

Table 3. Indicator of sensitivity of the type of economic activity by year

Code of the type of economic activity according to NACE [22]	years		
	2014	**2018**	**2020**
A	0.092022	0.044849	-0.06776
B	-0.06709	-0.01118	0.00843
C	-0.02309	-0.02418	-0.02057
D	0.003911	-0.00717	0.029432
E	-0.04821	-0.04039	-0.01824
F	-0.13409	0.049824	0.094428
G	-0.05504	0.010433	0.091276
H	-0.02021	-0.02063	-0.13485
I	0.017623	0.025879	-0.19382
J	0.069737	0.034383	0.05428
K	0.102228	0.095815	0.026439
L	0.062455	0.031095	0.071439
M	-0.01948	0.007301	-0.09097
N	0.000781	0.012657	-0.08238
O	0.237681	-0.05484	0.04128
P	0.012261	-0.05715	0.012012
Q	0.004924	0.05215	0.132568
R	-0.00156	-0.01741	-0.09286
S, T	0.058321	0.029344	-0.15662

*NACE – Nomenclature générale des Activités économiques dans les Communautés Européennes

The data presented in Table 3, can be interpreted as follows:

1) if the value of the indicator $I_i^{sens} > 0$ this indicates that this type of economic activity is weakly sensitive to changes in the market situation;

2) if the value of the indicator $I_i^{sens} \approx 0$, then the type of economic activity has the same sensitivity as the country's economic market;

3) if the value of the indicator $I_i^{sens} < 0$ this indicates that this type of economic activity is more sensitive to crisis and market phenomena than the entire economic market of the country.

The above calculations serve as an information basis for grouping types of economic activity according to the level of sensitivity to disturbances in the external environment. To solve this problem, it is proposed to use cluster analysis, namely, the k-means method. The method has a number of advantages: arrangement of a set of objects into relatively homogeneous groups, simplicity of economic interpretation; flexibility of building clusters; fast convergence of the algorithm; the possibility of checking the statistical significance of the differences between the selected clusters.

The calculations made it possible to distinguish three homogeneous groups of activities based on the sensitivity

of their response to environmental disturbances and to propose three clusters:

1st cluster – weakly sensitive types of economic activity; 2nd cluster – types of economic activity that have the same sensitivity to changes as the country's economic market; 3rd cluster – highly sensitive types of economic activity to market and crisis phenomena. The results of the cluster analysis are presented in Table 4.

Table 4. Clusters of types of economic activity according to the indicator of sensitivity of types of economic activity to the external environment

Cluster number	2014	2018	2020
Cluster 1	Agriculture, forestry and fishing; Information and communication; Financial and insurance activities; Real estate activities; Public administration and defence; compulsory social security; Other service activities	Agriculture, forestry and fishing; Construction; Financial and insurance activities; Human health and social work activities	Construction; Wholesale and retail trade; repair of motor vehicles and motorcycles; Information and communication; Real estate activities; Human health and social work activities; Public administration and defence; compulsory social security
Cluster 2	Manufacturing; Electricity, gas, steam and air conditioning supply; Transportation and storage; Accommodation and food service activities; Professional, scientific and technical activities; Administrative and support service activities; Education; Human health and social work activities; Arts, entertainment and recreation	Wholesale and retail trade; repair of motor vehicles and motorcycles; Accommodation and food service activities; Information and communication; Real estate activities; Professional, scientific and technical activities; Administrative and support service activities; Other service activities	Mining and quarrying; Manufacturing; Electricity, gas, steam and air conditioning supply; Water supply; sewerage, waste management and remediation activities; Financial and insurance activities; Education
Cluster 3	Mining and quarrying; Water supply; sewerage, waste management and remediation activities; Construction; Wholesale and retail trade; repair of motor vehicles and motorcycles	Mining and quarrying; Manufacturing; Electricity, gas, steam and air conditioning supply; Water supply; sewerage, waste management and remediation activities; Transportation and storage; Public administration and defence; compulsory social security; Education; Arts, entertainment and recreation	Agriculture, forestry and fishing; Transportation and storage; Accommodation and food service activities; Professional, scientific and technical activities; Administrative and support service activities; Arts, entertainment and recreation; Other service activities

Basing on the calculations and after analyzing the invariants of the obtained groupings, the following conclusions were made:

– weakly sensitive types of economic activity in 2014, 2018 and 2020 include construction; financial and insurance activities; agriculture, forestry and fisheries;

– the types of activities that respond to environmental disturbances in the same way as the market include: processing industry; supply of electricity, gas, steam and air conditioning; water supply; sanitation, waste management and education;

– highly sensitive types of economic activity include transport, warehousing, postal and courier activities; professional, scientific and technical activities; activities in the field of administrative and auxiliary services; art, sports, entertainment and recreation; provision of other types of services.

To confirm the hypothesis about the stability of the obtained groupings, the analysis of the migration of activities from cluster to cluster was carried out. So, if in 2014

and 2018 there was practically no transition of types of economic activity from cluster to cluster, then 2020 is an exception. For example, agriculture, forestry and fishing, which is weakly sensitive to fluctuations, moved from cluster 1 to cluster 3; Financial and insurance activities moved from cluster 1 to cluster 2; Wholesale and retail trade moved from cluster 3 to cluster 1. That is, when developing their market behaviour, enterprises should also monitor qualitative differences in external fluctuations. For example, the crisis of 2020, caused by the global pandemic of COVID 2019, significantly changed the way enterprises function, orienting most of the business to work in the Internet environment. Therefore, enterprises of certain types of economic activity which were ready to quickly adapt to new business conditions lost their stable positions.

According to the results of the cluster analysis of the types of economic activity (TEA), the ranges of change in growth rates were formed to determine the class of their sensitivity to environmental disturbances (Table 5).

Table 5. Ranges for determining the sensitivity class of a type of economic activity
to disturbances in the external environment

Class of sensitivity of the type of economic activity by year	Weakly sensitive types of economic activity to crisis and market changes	Sensitivity of the type of economic activity which is practically equal to the sensitivity of the market	Economic activities which are very sensitive to changes in the external and internal environment
2014	0.99-1.17	0.91-0.95	0.80-0.88
2018	1.08-1.13	1.04-1.07	0.98-1.03
2020	1.00-1.09	0.94-0.99	0.77-0.89
	Average values of the ranges		
	1.02-1.13	0.96-1.00	0.85-0.93

The calculations made it possible to draw the following conclusions:

1) the ranges of values obtained for each year are non-intersecting, which confirms the expediency of using cluster analysis to solve this task and to further recognize the level of sensitivity of foreign economic activity;

2) the calculated average values of the ranges (growth rates) can be regarded as analogous to the standards that can be used in developing planning guidelines for achieving a certain amount of GVA.

Step 4 – Portrait of business entities. An adaptive economic behaviour of the enterprise is formed depending on the comparative influence of two components: business expectations, which are determined by the opportunities and limitations of the external environment and the actual efforts of the enterprises themselves. It is expedient for the management of enterprises to create a monitoring system for timely observation and correction of the trajectory of its development under the influence of the real situation. In order to form a portrait of business entities and to give general recommendations on the strategy and tactics of their economic behaviour depending on the level of sensitivity of foreign economic activity to external fluctuations, the expectations of industrial enterprises by type of activity in 2020 with the actual situation during this period were analyzed. The information base of the research was the data on business expectations of enterprises and statistical reporting on the main economic indicators [22] (Table 6).

Table 6. Comparative assessment of the expectations of enterprises with the actual situation in the economy

Main industrial groups of enterprises	Code by NACE	Expectations of enterprises at the beginning of 2020	Actual situation in 2020 compared to 2019	The percentage of coincidence of expectations of enterprises with the real situation
Agricultural enterprises	A	– slowing down the rate of reduction in production volumes by agricultural enterprises; – growth of prices for agricultural products; – increase in employment at agricultural enterprises	– the index of the physical volume of agricultural products sold by enterprises was 88.4% against 114.1% in the previous period; – the price index of agricultural products was 119.2%; – the number of employed population decreased by 9.6%	67%
Industrial enterprises	B+C+D+E	– reduction of production volumes; – rise in prices for industrial products; – reduction of the number of workers at industrial enterprises	– the average index of the volume of products produced by industrial enterprises was 99.9%; – the price index of manufacturers of industrial products was 98.4%; – the number of employed population decreased by 4.2%	67%
Construction enterprises	F	– increase in construction volumes; – growth of prices for works of construction enterprises; – decrease in the number of workers at construction works	– the index of construction products was 105.6% – the price index in construction amounted to 103.7%; – the number of employed population decreased by 4.9%	100%
Trade enterprises	G	– decrease in sales volumes in retail trade; – increase in sales prices of goods; – decrease in the number of employees in retail trade	– the index of the physical volume of retail turnover of retail trade enterprises was 107.2%; – consumer price index for goods and services was 102.7%; – the number of employed population decreased by 4%	67%

Table 6, Continued

Main industrial groups of enterprises	Code by NACE	Expectations of enterprises at the beginning of 2020	Actual situation in 2020 compared to 2019	The percentage of coincidence of expectations of enterprises with the real situation
Enterprises of the service sector	H+I+J+K+L+M+N+R+S	– decrease in the volume of services provided by enterprises in the service sector; – rising prices for services; – decrease in employment in the service sector	– the index of the volume of services produced by enterprises in the service sector was 89%; – in the service sector, prices increased by 3.9% on average – among enterprises of the types of economic activity related to the service sector, there was a decrease in the number of employed population by all types from 0.8% to 6.1%, except for the enterprises in the field of financial and insurance activities, where there was a slight increase – by 0.4 %	100%

*NACE – Nomenclature générale des Activités économiques dans les Communautés Européennes

A comparative analysis of the expectations of enterprises by types of economic activity and industrial groups with actual results made it possible to conclude that for construction enterprises and the service sector, the expectations of enterprises coincide with the real actual results that were achieved during the expected period, and for other types of activity, such a coincidence is 67%. In general, almost the same trends regarding the development of enterprises for various types of economic activity were obtained, both according to the forecasts of the entrepreneurs themselves and from the side of the real sector of the economy. This conclusion allows us to use business expectations as recommendations for the further development of clusters of enterprises of certain types of economic activity, taking into account their sensitivity to external factors.

Step 5 – Development of recommendations on the formation of promising economic behaviour of the enterprise. The results of cluster analysis of types of economic activity showed stable clusters for most types of economic activity,

that is, it can be stated that the level of their sensitivity to changes in external factors can be characterized by types of economic activity. The formation of the proposed recommendations on the capabilities of two participants was based on the state of enterprises in the respective spheres of activity. The state provides legal and legislative support for the development of economic processes. The industry affiliation of enterprises acts as an element of the external environment, and it is precisely this issue which must be taken into account when forming and adjusting the strategy and tactics of economic behaviour of a business entity. That is, by combining the obtained results of the sensitivity clustering of types of economic activity and examples of the actual assessment of enterprise activity through comparison with business expectations, it is possible to give general recommendations for the formation of the strategy and tactics of the economic behaviour of the enterprise on the market, taking into account the level of sensitivity of foreign trade to the external environment (Table 7).

Table 7. Recommendations for the development of enterprises by types of economic activity in accordance with the level of their sensitivity to the influence of external environmental factors

Cluster and its characteristics	Recommendations
Cluster 1 – types of economic activity that are weakly sensitive to the influence of external market and crisis fluctuations	The enterprises of the types of economic activity included in this cluster are recommended to maintain the attractor of stable, upward behaviour, which is characterized by stable, low growth rates of the main performance indicators, since the trend of their development is weakly sensitive to fluctuations in the market. Depending on the real and potential capabilities of these enterprises, it is expedient to expand their activities and form tactics and strategies of economic behaviour, focusing on the indicators of leading enterprises in a certain field. The enterprises of the types of economic activity of this cluster should increase business activity in proportion to changes in the business activity of the industry and plan their orientations and expectations in accordance with the indicators of the development of the industry as a whole
Cluster 2 – types of economic activity with medium sensitivity to the effects of external market and crisis fluctuations	The enterprises of the types of economic activity included in this cluster are recommended to form and maintain an attractor of stabilization of economic behaviour taking into account the trends that have developed in the market, since they are characterized by the same sensitivity to fluctuations in the external environment as for the entire market. It is necessary to constantly monitor and model the emergence of crisis phenomena in the economy based on the creation/effective functioning of an operational monitoring system, which will allow timely detection, assessment and correction of the main indicators of the enterprise's activity. It is necessary to develop a system of preventive measures for the localization of disturbances in the external environment, which will allow the enterprise to find resource opportunities in order to reduce the influence of the sensitivity of foreign trade on its functioning. The enterprises of the types of economic activity of this cluster need to increase business activity in proportion to changes in business activity in the country's economy and to plan their orientations and expectations in accordance with the country's socio-economic development indicators

Table 7, Continued

Cluster and its characteristics	Recommendations
Cluster 3 – types of economic activity that are the most sensitive to the influence of external market and crisis fluctuations	The enterprises of the types of economic activity included in this cluster are recommended to take into account deviations of the development of the type of activity from the general development of the country when forming the attractor of their own development. Depending on the size of this deviation, it is advisable to determine reserve funds for repayment of crisis phenomena and forming tactics and strategies of economic behaviour in accordance with the formed resource possibilities. It is necessary to constantly monitor and model the emergence of crisis phenomena in the economy based on the creation/effective functioning of an operational monitoring system, which will allow timely detection, assessment and correction of the main indicators of the enterprise's activity. In order to increase business activity, foreign trade enterprises of this cluster need to plan their orientations and expectations at a higher level than in the country as a whole, which will allow in the future to move to clusters with a more stable position in relation to crises and market fluctuations.

Thus, the proposed algorithmic model of the formation of the economic behaviour of the enterprise is expedient to use by enterprises when developing strategies for development and behaviour on the market in modern business conditions or for maintaining the existing upward trajectory of development.

The conducted studies have led to the conclusion that modern national economic systems of the XXI century are characterized by openness, integration into a single economic space, the presence of a large number of independent agents of economic relations, acting both individually and in coalitions, and producing a huge number of management transactions, the intervention of geopolitical forces in economic processes. These are the sources of the emergence and diffusion of various influences that are periodic and fluctuating in nature and cause such a complex phenomenon as the external environment of the enterprise. In these conditions, the formation of adaptive and adequate management reactions as a response to various influences which constitute the essence of the economic behaviour of the enterprise can be attributed to the "art of management". That is why the mechanisms, approaches, models, technologies of research and adaptation to the fluctuations of the external environment are the focus of research of many scientists and practitioners, and the relevance of this task does not decrease over time. In addition, the research also focuses on such issues as the definition of the phenomenon of the "external environment of the XXI century", a systematic approach to understanding its components/subsystems, the study of the specifics of the behaviour of enterprises in various sectors of the economy, their affiliation to international or national corporations, etc.

The construction of strategies, tactics, trajectories of the economic behaviour of enterprises belonging to various types of economic activity is a difficult task for their management because it requires the study of a number of factors related to the technological structure of the development of society, the life cycle of a type of activity, the level of business activity of enterprises and their import/export orientation, the level of innovativeness of enterprises and the ability to resist crisis phenomena or quickly use the opportunities of the external environment.

The analysis of literary sources showed that there are sufficiently deep studies of the external environment's influence on the enterprise's behavior. Thus, the authors [6; 8; 21] note the need to study the cyclical development of the external environment; the authors [7; 13; 16] emphasize the need to assess the aggressiveness of the external market environment; and the authors [10; 11; 12] emphasize the need to develop strategies to respond to changes in the external environment. Continuing these studies, the article substantiates the need to assess the sensitivity of a type of economic activity to external market fluctuations and recommends taking it into account in order to adjust the economic behavior of an enterprise that relates to this type of economic activity.

The actual issue of any research is the formation of its information space which contains a well-founded system of indicators. This system is the basis of the formation of an effective system of monitoring, evaluation, modeling and analysis of the course of economic processes in the market environment, development of adequate management decisions regarding the correction of the economic behaviour of the enterprise.

Thus, the authors of [18] emphasize that it is advisable to conduct research on changes in the external environment of an enterprise based on the use of the gross domestic product (GDP) since this indicator determines the strength and size of the economy. Worldometer and World Bank [23; 24] recommend using GDP at PPP (GDP at purchasing power parity) for country development studies. The author of [25] suggests using GDP as a reliable indicator of the growth of a country's economy, and the scientists [26] state that GDP is an indicator of achieving a high level of economic development, so all countries try to maximize it.

In contrast to these conclusions, a group of scientists such as Bin Lui, Lei Zhang et al. [16], D. Coyle [19], O.V. Kovalenko [20] criticize the expediency of using GDP and focus on the indicator of gross value added, which characterizes the efficiency of the functioning of economic systems at the micro, meso and macro levels. Supporting the opinion of these scientists, the authors propose investigating the sensitivity of a certain type of economic activity to disturbances in international and national markets, using gross added value as a macroeconomic quantity that reflects the total value of goods/services produced by a type of economic activity during a certain period of time. At the same time, in order to study such sensitivity to crisis phenomena, it is proposed to study the value of this indicator for the period 2010-2020, which includes three points of crisis – 2014 (the impact of the Revolution of Dignity), 2018 (the impact of the global economic crisis of 2017 on the Ukrainian economy) and 2020 (the crisis phenomena of the global COVID-19 pandemic).

Thus, the authors' proposals were to use the rate values of the indicator to study general trends in the development of types of economic activity and to develop a sensitivity indicator as the difference in the rate of change in GDP of a particular type of economic activity compared to the rate of change in GDP in Ukraine in general. This made it possible to form cluster groupings of types of economic activity homogeneous in sensitivity and to offer appropriate recommendations for the formation of strategies and tactics of economic behaviour of enterprises.

Based on the fact that the assessment of any economic phenomenon or phenomena can be carried out on the basis of both mono- and polycausal approaches, the author's proposals are debatable. But the conducted experiments and calculations confirmed the expediency of their use.

CONCLUSIONS

The study analyzed trends in the development of TEA based on the indicator of the growth rate of GDP, and compared them with a similar indicator for Ukraine on the whole. Based on the analysis of trends in the development of TEA, an indicator of TEA sensitivity to environmental influences was proposed as the difference between the growth rates of the GDP of a separate TEA and the GDP of Ukraine as a whole. The TOP-5 TEA, the enterprises of which generate more than 60% of GVA, were determined, their analysis was carried out, and the hypothesis regarding the different sensitivity of TEA to crisis market changes was confirmed.

A comparative analysis of business expectations of enterprises by TEA in 2020 with the actually achieved indicators of these enterprises was carried out. A portrait of business entities was formed, which confirmed the hypothesis about the feasibility of forming adequate behavior of the enterprise depending on the sensitivity of TEA to which it belongs.

Clustering was carried out according to the proposed indicator of sensitivity, as a result of which 3 clusters were selected according to the level of sensitivity to market and crisis fluctuations. For each cluster, general recommendations have been developed regarding the strategy or tactics of the company's behaviour.

Further developments should be aimed at researching the economic behaviour of the enterprise, taking into account changes in the sensitivity of TEA in the conditions of digitalization of society, diffusion of the digital economy, and innovations of the modern technological structure in the practice of Ukrainian enterprises. All this significantly changes the forms and methods of conducting business, determining the priorities of state support for certain foreign enterprises, creating additional opportunities for their development and, as a result, changing the sensitivity of foreign enterprises to disturbances in the national and international market environment. In addition, special attention is paid to the choice of a mono- or polycausal approach to the assessment of the sensitivity of foreign exchange and conducting a number of experiments for the justified selection of indicators of sensitivity assessment in force majeure conditions.

REFERENCES

[1] Karachina, N.P. (2010). *Economic behavior of machine-building enterprises: Theory, methodology, management practice*. Vinnytsia: Book-Vega.

[2] Poltoratska, O.V. (2017). Formation of economic behavior as part of strategic management of industrial enterprises. Retrieved from http://www.economy.nayka.com.ua/?op=1&z=5442.

[3] Tsapenko, V.Yu. (2014). Economic behavior of enterprises as a basis for making managerial decisions. *Biznesinform*, 11, 313-317.

[4] Raevneva, O.V., & Touzani, T. (2021). *Management of enterprise behavior in conditions of non-stationarity of the market environment: conceptual principles and model toolkit*. Kharkiv: FOP L.M. Liburkina.

[5] Rayevnyeva, O., Karpinski, M., Brovko, O., Falat, P., & Aksonova, I. (2021). The diagnostic model for assessing the state of stability of an industrial enterprise. In *13th PLAIS EuroSymposiumon Digital Transformation* (pp. 51-70). Berlin: Springer. doi: 10.1007/978-3-030-85893-3.

[6] Donayre, L. (2022). On the behavior of Okun's law across business cycles. *Economic Modelling*, 112, 1-35. doi: 10.2139/ssrn.3604542.

[7] Scotti, F., Flori, A., & Pammolli, F. (2022). The economic impact of structural and Cohesion Funds across sectors: Immediate, medium-to-long term effects and spillovers. *Economic Modelling*, 111, article number 105833. doi: 10.1016/j.econmod.2022.105833.

[8] Wong, W.P., Sinnandavar, C.M., & Soh, K.-L. (2021). The relationship between supply environment, supply chain integration and operational performance: The role of business process in curbing opportunistic behaviour. *International Journal of Production Economics, Elsevier*, 232(C), article number 107966. doi: 10.1016/j.ijpe.2020.107966.

[9] Hayes, S.C., Merwin, R.M., McHugh, L., Sandoz, E.K., A-Tjak, J.G.L., Ruiz, F.J., Barnes-Holmes, D., Bricker, J.B., Ciarrochi, J. Dixon, M.R., Fung, K.P.L., Gloster, A.T., Gobin, R.L., Gould, E.R., Hofmann, S.G., Kasujja, R., Karekla, M., Luciano, C., & McCracken, L.M. (2021). Report of the ACBS Task Force on the strategies and tactics of contextual behavioral science research. *Journal of Contextual Behavioral Science*, 20, 172-183. doi: 10.1016/j.jcbs.2021.03.007.

[10] Ding, A.W., Li, S. (2021). National response strategies and marketing innovations during the COVID-19 pandemic. *Business Horizons*, 64(2), 295-306. doi: 10.1016/j.bushor.2020.12.005.

[11] Ablo, A.D. (2020). Enterprise development? Local content, corporate social responsibility and disjunctive linkages in Ghana's oil and gas industry. *The Extractive Industries and Society*, 7(2), 321-327. doi: 10.1016/j.exis.2019.09.003.

[12] Civera, C., Cortese, D., Mosca, F., & Murdock, A. (2020). Paradoxes and strategies in social enterprises' dual logics enactment: A csQCA between Italy and the United Kingdom. *Journal of Business Research*, 115, 334-347. doi: 10.1016/j.jbusres.2019.11.004.

[13] Ibáñez, J., Martínez-Valderrama, J., Lavado Contador, J.F., & Fernández, M.P. (2020). Exploring the economic, social and environmental prospects for commercial natural annual grasslands by performing a sensitivity analysis on a multidisciplinary integrated model. *Science of the Total Environment*, 705, article number 135860. doi: 10.1016/j.scitotenv.2019.135860.

[14] Jayasinghe, N., Fernando, S., Haigh, R., Amaratunga, D., Fernando, N., Vithanage, C., Ratnayake, J., Ranawana, C. (2022). Economic resilience in an era of "systemic risk": Insights from four key economic sectors in Sri Lanka. *Progress in Disaster Science*, 14, article number 100231. doi: 10.1016/j.pdisas.2022.100231.

[15] Nundy, S., Ghosh, A., Mesloub, A., Albaqawy, G.A., & Alnaim, M.M. (2021). Impact of COVID-19 pandemic on socio-economic, energy-environment and transport sector globally and sustainable development goal (SDG). *Journal of Cleaner Production*, 312, article number 127705.

[16] Liu, B., Zhang, L., Sun, J., Wang, D., Liu, C., Luther, M., & Xu, Y. (2020). Analysis and comparison of embodied energies in gross exports of the construction sector by means of their value-added origins. *Energy*, 191, article number 116546. doi: 10.1016/j.energy.2019.116546.

[17] Datta, M. (2019). Manufacturing sector in the Indian economy: Output-value added symbiosis *Journal of Asian Economics*, 63, 75-87. doi: 10.1016/j.asieco.2019.04.004.

[18] Agu, S.C., Onu, F.U., Ezemagu, U.K., & Oden, D. (2022). Predicting gross Ukrainian product to macroeconomic indicators. *Intelligent Systems with Applications*, 14, article number 200082. doi: 10.1016/j.iswa.2022.200082.

[19] Coyle, D. (2015). *GDP: A brief but affectionate history*. Princeton: Princeton University Press.

[20] Kovalenko, O.V. (2015). Added value in the context of national food security. *Economy and State*, 4, 98-102.

[21] Motoryn, R.M., & Prykhodko, K.R. (2015). Methodological approaches to measuring global chains of added value in international trade. *Foreign Trade: Economics, Finance, Law. Series: Economic Sciences*, 5-6(82-83), 25-36.

[22] Official website of the State Statistics Service of Ukraine. (n.d.). Retrieved from http://www.ukrstat.gov.ua/.

[23] Worldometer GDP per capita. (2017). Retrieved from https://www.worldometers.info/gdp/gdp-per-capita/#:~:Text=Gross%20Domestic%20Product%20(GDP)%20per,divided%20by%20its%20total%20population.

[24] World Bank. Indicators (n.d). Retrieved from https://data.worldbank.org/indicator?tab=featured.

[25] Picardo, E. (2021). *The importance of GDP*. Retrieved from https://www.investopedia.com/articles/investing/121213/gdp-and-its-importance.asp .

[26] Divya, K.H., & Rama, D.V. (2014). A study on predictors of GDP: Early signals. *Elsevier Journal of Procedia Economics and Finance*, 11, 375-382.

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Вплив чутливості видів економічної діяльності на економічну поведінку підприємства

Анотація. На сучасному етапі розвитку світової економіки, який характеризується високим рівнем нестабільності та випадковості перебігу економічних процесів, актуальним завданням менеджменту підприємств є дослідження їх ринкової поведінки з урахуванням наявних і латентних зв'язків як з внутрішніми процесами, так і з зовнішніми впливами. Оскільки всі види економічної діяльності по різному реагують на нестабільність зовнішнього середовища, то важливим є аналіз умов функціонування та результатів діяльності підприємств за ними. Метою статті є формування загальних рекомендацій щодо розробки стратегії і тактики поведінки підприємств різних видів економічної діяльності на ринку в залежності від їх чутливості до впливу зовнішніх факторів. Наукові методи, які використовувалися у дослідженні: порівняльний та контент-аналіз, графічний, структурний та динамічний методи, коефіцієнтний та кластерний аналіз. У статті запропоновано алгоритмічну модель формування економічної поведінки підприємства залежно від рівня чутливості виду діяльності. Проаналізовано тренди розвитку видів діяльності та запропоновано індикатор чутливості видів економічної діяльності до збурень зовнішнього середовища. Здійснено кластеризацію за запропонованим індикатором та виділено 3 кластери за рівнем чутливості видів економічної діяльності до ринкових флуктуацій. Сформовано портрет підприємств залежно від їх очікувань та їх порівняння з реально досягнутими показниками. Реалізація запропонованої моделі та розроблених рекомендацій буде цікава керівникам підприємств для формування адекватних й адаптивних управлінських реакцій щодо тактичної та стратегічної поведінки субєкта господарювання на ринку

Ключові слова: вид економічної діяльності, траєкторія розвитку підприємства, валова додана вартість, показник чутливості, кластерний метод, стратегія і тактика поведінки на ринку

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Relating stock market performance to macroeconomic variables in developing economies

Abstract. Given the uniqueness of the stock market in Sub-Saharan Africa (SSA) and the fact that empirical conclusions have always been drawn based on more advanced stock markets, it becomes necessary to investigate the nexus between stock market performance and selected macroeconomic variables in SSA countries. With a purpose of unveiling the relationship between stock market performance and selected macroeconomic variables, the uniqueness and relevance of the paper stems from the fact that it looks at developing stock markets in a developing macroeconomic environment, and it covers the period from 1997 to 2018. The Panel-Autoregressive Distributed Lag model supported by a good number of pre- and post-estimation techniques was used as the estimation technique and the datasets which are of secondary nature were drawn from the World Development Indicators. The study's findings revealed that stock market indicators responded relatively to macroeconomic indicators in the long run and were adjusted to the shocks and dynamics of the changing macroeconomic environment. The findings confirmed that the nexus between broad money supply and the dependent variables for the two models was a mixed one. The findings arising from this study shown by the short run adjustment of stock market performance to changes in macroeconomic variables is important for governments to interpret and make policies on contemporaneous effects and forecast of the dynamism of the stock market and macroeconomic linkage

Keywords: economic development, efficient market hypothesis, market capitalization, interest rate, inflation rate

INTRODUCTION

Investors' awareness of equity markets have increased significantly, particularly in sub-Saharan Africa (SSA) and other developing nations in the world [1; 2]. However, this significant economic development owing to stock market activities, has not matched expectations owing to impediments (these include among others, policy uncertainty, high inflation rate, unstable interest rate and exchange rate) arising from the macroeconomic environment, especially in developing economies. African stock markets, in their totality, represent an insignificant share (following IMF Survey, total market capitalization of African stock markets fall below 10%) of the world market capitalization [3]. However, African stock markets have been making

strides in this respect, which is optimistic. Evidence shows that since 1995, there has always been at least one African stock exchange among the top ten stock markets in the world, which reflects certain development of markets in the region [1]. The degree to which this is made possible by an improved macroeconomic environment, remains an issue for investigation.

It is worth noting that the stock market is a topical area in economics and finance, as its performance has attracted significant attention and research interest over time. From the large stock markets such as Nasdaq, the London Stock Exchange and Euronext, to smaller ones in sub-Saharan African countries like Nigeria, Algeria, Kenya, South Africa

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and Ghana, the functions are relatively the same. They are channels that raise funds for corporations, governments, and similar bodies [4]. In addition, individuals are afforded liquidity transmission opportunities from existing securities. Following the second primary function of the stock market, the market's interaction with the macroeconomic environment has remained an area of investigative interest for researchers [2; 5].

Stock market players, participants and regulators alike consider certain variables such as money supply, interest, inflation, and exchange rates to value and measure the stock market performance and macroeconomic linkage. Stock markets in developed and developing economies are arguably affected by these macroeconomic indices. Findings from [5] study affirm that these variables, including industrial production, are reflected in stock prices.

The capital asset pricing model, efficient market hypothesis and arbitrage pricing theory are considered to be theoretical crossing points of stock market performance and macroeconomic indicators [5; 6]. These theories affect the activities of the stock market. [7-9] argue that investors are motivated to hold risky assets if the anticipated returns are high enough to cover the inherent risk. However, some risks are unavoidable, hence risks cannot be diversified, even in the most efficient portfolios. These are systemic risks which result largely from changes in economic activities [5].

There is a dearth of empirical studies in this area, while the few available studies lack solid statistical evidence to back the models that macroeconomic factors affect the stock market [9; 10]. These studies seem to concentrate on the entire market and examine the aggregate market of nations [11; 12].

The study used market capitalization (as the value of the company's paid-up capital). When this is aggregated for all quoted securities, it translates to market capitalization for the entire stock exchange [13]. Market capitalization is a critical component that measures the stock market's efficiency. It is a more robust measure of market performance than the share index.

The link between stock market performance and domestic macroeconomic variables has been overemphasized in literature, while some of the thoughts are purely theoretical, and others emanated from empirical studies. Some of the empirical studies relate to individual countries (e.g., Nigeria – [13]; Cyprus – [14]; Turkey – [15],the US – [16]; Greece – [17]; Iran – [18]; India – [19]; and the US and Japan comparative studies – [20]). Other studies focused on groups of countries that share commonalities (e.g., five Asian countries – [21]; three Baltic states – [22]; and 20 Emerging Market countries – [23]). Though not exhaustive, the foregoing list of extant empirical studies in this area is enough to suggest that there are empirical gaps, which this study should address, as well as variables and aspects of methodology that it must adopt as a matter of convention. For instance, though past studies have focused on countries in sub-Saharan Africa, there is a dearth of group studies within this area.

The study has consciously concentrated on reviewing the literature, which covers the post-1990s period. The reason for this is that some empirical studies, which were conducted before the 2000s, have been well documented. Hence, unless demanded otherwise, it would amount to an unnecessary repetition and doubt the integrity of previous researchers to repeat such reviews. For instance, [20] reviewed the works of [24; 25] concluding that these papers generally attest to the fact that relationships between changes in macroeconomic variables like industrial production, interest rates, inflation, the yield curve, and risk premium have significant relationships with stock market returns.

A review of recent works reveals additional macroeconomic variables that were found to have significantly influenced stock market performance. These include exchange rate, the national output (or GDP), money supply, consumer price index (CPI), unemployment, and government or state debt. For an oil producing country, oil price shocks or volatility are recognized as a relevant variable. Economies where international trade is a major contributor to the economy include export and import or trade balance as relevant local macroeconomic variables [26]. [27] include investor sentiment as one of the key macroeconomic variables that relate to investment. External influence on local stock market performance is captured by factors such as foreign institutional investments [28] or a global index such as the MSCI World Index [19]. In most of the studies that were reviewed, stock market performance was measured by the share index of named stock exchanges.

The foregoing list of macroeconomic variables and stock market performance indicators, therefore, formed the basis for selecting relevant variables for this study. Justification for this selection is owed to [23], who observed the contention on the number of factors that affect equity returns. According to the above mentioned authors, selection of these factors are subject to criticism on the basis of subjectivity and the arbitrary nature of the selection process. However, they recommend that researchers should investigate prior research before deciding on the importance of various factors.

As alluded earlier, this study sought to examine the interplay of stock market performance and macroeconomic variables in sub-Saharan African countries.

The aim of this study is the research of the interplay of stock market performance and macroeconomic variables in sub-Saharan African countries, using annualized panel data from 1997 to 2018. The selection of SSA countries aimed to expose the nexus between macroeconomic variables in developing countries and the performance of an equally less developed stock market. This study is a departure from prior studies that have predominantly focused on more advanced economies and their stock markets, thereby ignoring stock market forces in developing markets/economies.

THEORETICAL FRAMEWORK

Macroeconomic variables. Money supply, or money stock as it is sometimes called, is a common money market variable, which is used in extant literature in this area. It refers to the entirety of money in a given country at a particular time [12]. The narrowest definition of money stock (M_1) incorporates currency, travelers' cheques, demand deposits and other chequable deposits. M_1 is the most liquid form of all other money stocks. This definition of money stock views money purely as a medium of exchange. M_2 incorporates financial assets under M_1 as well as savings and time deposits; therefore, M_2 money stock can easily be converted to M_1 with little or no loss of value. This kind of financial asset reflects a direct function of the level of a country's

financial market development. Countries that have highly developed financial markets can incorporate more financial assets into their broad definitions of money. For instance, in the United States (US), money stock is also defined more broadly as M_3 and L, with the latter containing the least financial assets liquid.

The interest rate is another money market variable, which is often used in related studies. It is the price that is paid to borrow debt capital [13].

D. Tsoukalas [14] identify default risk associated with loans, expected future rate of inflation, and savers' time preferences for current versus future consumption as major interest rate determinants that are the basic returns from production opportunities within the economy. Excessive government borrowing to finance deficit budgets is also believed to lead to high interest rates. By implication, changes in these variables are mainly responsible for observed fluctuations in interest rates within the economy. It is clear that there are different interest rates in a particular economy as opposed to a single representative rate, which is assumed to be a function of the interaction between funds supply (by savers) and forces of funds demand (by borrowers).

Interest rates can be real or nominal. The Fisher equation expresses the nexus between real and nominal interest rates, thus: $i = r + \pi^e$, where "i" is the nominal rate of interest, "r" is the real rate of interest, and π^e is the expected rate of inflation [12]. Sometimes interest rates are expressed as a yield curve [15; 16]. Yield curves show the nexus between interest rates in the short and long term. A typical yield curve slopes upward (from left to right), reflecting the effect of inflationary expectations of interest rates in the long term. When yield curves slope downwards, they show borrowers' preference for short-term funds or expected declines in future rates of inflation. [28] assert that the most important inputs into an investment decision are interest rates and forecasts of their future values.

The gross domestic product (GDP), measured at the current market price, reflects the value of final goods manufactured and services provided within a country at a particular time. It is believed to be the most commonly used measure of nominal aggregate output. A country's GDP can be expressed either in nominal or in real terms. The relationship between nominal output, price level, and real output is expressed mathematically as:

$$Y^* = P \times Y, \qquad (1)$$

where Y^*, P, and Y represent nominal output, price level, and real output, respectively. An upward trend in the real output (defined mathematically as $Y = Y^* / P$) indicates an expanding economy with enormous opportunity for increased sales and investment, while a downward trend shows otherwise (i.e. recession). An economy's output can also be measured by its industrial production [14] (see studies by [17]; [18], for example). In this case, emphasis is on the economy's manufacturing sector. The GDP is disaggregated to measure the growth and contributions of different sectors to the overall GDP. More often than not, the focus of analysts and researchers is on the GDP's growth rate.

Inflation is the persistent increase in general price level, which is often expressed in rates. [12] contend that the inflation rate reflects the rate of change, stated as a percentage change in the price level yearly. Possible proxies for inflation are the GDP Implicit Price Deflator (GDP Deflator), the Consumer Price Index (CPI), or the Producer Price Index (PPI). The GDP deflator reflects all goods and services that a country produces in a weighted average of prices. It is regarded as the most comprehensive measure of the price level. The rate of change in the prices of goods and services of a particular consumer or average household is measured by the CPI. The market basket of goods and services are usually determined on the basis of a survey, which is conducted in the year chosen as the base year. The CPI reports, therefore, show how much more or less expensive the base year representative market basket would be in different years. The CPI is often used to measure an economy's cost of living; a role that makes it the most common used proxy for inflation in studies on macroeconomic variables. Different CPIs can be calculated for urban and rural areas. The PPI measures price changes at a wholesale level.

Initial selection of macroeconomic (explanatory) variables seems to exempt the labour market and the cross-border market. While the study cannot rationalize their exemption at this initial stage, the study intends to introduce some of their common variables as the need arises. The next set of variables relevant to this study, therefore, relates to the security market performance.

Stock market performance indicators. Stock market performance can be measured by using different indices. Some of these indices include value/volume of shares traded, efficiency or turnover ratio, market concentration or capitalization, index of abnormal returns, index of information disclosure, and stock market (price) index. Stock market price index is a composite index which is used to measure the number of shares and changes of companies in the index. It is by far the most commonly used indicator of market performance, and it serves as a barometer to check economy fluctuations. The share price index can be price-weighted or market-value-weighted. It can be computed to capture the entire market stock. Recently, regional and international stock market indices have been computed; examples are the 50-country index and several regional indices computed by Morgan Stanley Capital International (MSCI) used in [29] to represent global "explanatory" factors). The study used market capitalization to measure stock market performance.

MATERIALS AND METHODS

The peculiar feature of this study is the novelty of the estimation technique. Firstly, the stationarity properties of the used longitudinal data are estimated to ensure that the time series elements do not corrupt the stability of the estimates. The study used [30; 31] to ensure test robustness. The next step in the analytic framework was the linear association test (using the correlational matrices) among the variables under study, and the use of descriptive statistical properties. Thirdly, rather than the traditional Pooled Regression in panel estimations, this study used two estimators suggested by [32], which deal with bias in a heterogeneous panel, namely the Mean Group (MG) and Pooled Mean Group (PMG) Models.

To estimate the models and to appraise the significance of the selected macroeconomic variables on the

stock market performance of the selected SSA countries, longitudinal data sets were collected, spanning 1997 to 2018. Justification for the longitudinal series covering six SSA countries, namely Kenya, Mauritius, Namibia, Nigeria, South Africa, and Swaziland, was based on data availability. The World Development Indicators (WDI), a repository of the World Bank data source, was used, as it is considered to be reliable without posing integrity problems.

Theoretical considerations. Equation of exchange/quantity theory of money. One of the fundamental theories upon which this study was based is the Equation of Exchange/Quantity Theory of Money of the classical economists. The theory explains the link between money stock and its velocity. Mathematically, it is defined as:

$$MV = PY \qquad (2)$$

(where M = money stock, V = velocity of money, P = price level, and Y = real output).

Defined in terms of growth rates, it can be stated as:

$$\frac{\Delta M}{M} + \frac{\Delta V}{V} = \frac{\Delta P}{P} + \frac{\Delta Y}{Y} \ or \ gm + gv = \pi + gy, \qquad (3)$$

where the variables are as presented above with the inclusion on the growth terms.

Interpreted as money growth rate plus velocity of money growth rate equals the growth rate of the price level or inflation rate plus real output growth rate. With velocity of money (V) and real output (Y) usually assumed to be stable in the long run (the classical economists' view), the Equation of Exchange transforms to the Quantity Theory of Money, simply expressed as $M = P$ and interpreted as a change in money stock that equals a proportionate change in the price level ultimately. Some economists, however, do not subscribe to the constancy of money velocity; they believe, for instance, that inflationary expectations can increase velocity of money by increasing the rate of money-for-goods swap as a remedy for continuous reduction in the purchasing power of money. [33], therefore they claim that "the quantity theory consolidates all other determinants of aggregate demand into velocity so that changes in taxes, interest rates or tastes are all considered changes in velocity".

Another theory that tends to underpin this study is the Efficient Market Hypothesis (EMH). In its simplest form, the EMH holds that security price reflects information which is publicly available. The prices adjust quickly when new information becomes available. When this happens, the security market is assumed to have achieved informational efficiency [34]. Information on macroeconomic performance indicators are ready inputs in determining the market or systematic risks of securities. It is common for investors, especially foreign portfolio investors, to consider macroeconomic variables such as inflation rate, interest rates, GDP per capita growth rate, GDP growth rate and their likes in their investment decisions. In portfolio management, risks associated with changes in these variables are regarded as market risks, which cannot be reduced through portfolio diversification since they affect every security, irrespective of firm or industry-specific characteristics [34]. The publicly available information on these variables, therefore, helps to adjust security prices either by increasing or decreasing demand for securities quoted at the exchange.

RESULTS

Estimation approach.
Model, statistical properties and linear association of the series. The relationship under study is presented as follows:

$$SPI = f(Macvar), \qquad (4)$$

SPI is Stock Market Performance Indicators, while *Macvar* represents Macroeconomic Variables. For the purposes of this study, the selected macroeconomic variables are those that are monetary in nature and are perceived to be closely associated with the stock market. (5) and (6) decouple the relationship, thus:

$$MC = f(infl,intr,m2), \qquad (5)$$

$$ST = (infl,intr,m2). \qquad (6)$$

MC is the natural logarithm of the absolute value of Market Capitalization; *ST* is the natural logarithm of the Value of Stock Traded; *infl* and *intr* are the Inflation Rate and Interest Rate, respectively; and *m2* is the natural logarithm of Broad Money Supply.

Stationarity properties of the series.
The models for the panel unit root tests follow the form specified below [35]:

$$\Delta Y_{it} = \alpha_i + \rho Y_{it-1} + \sum_{k=1}^{n} \emptyset_k \Delta Y_{it-k} + \delta_i t + \theta_t + u_{it} - LLC \ Model \qquad (7)$$

This is with an H_0: $\rho = 0$ and H_A: $\rho{<}0$ [36]:

$$\Delta Y_{it} = \alpha_i + \rho_i Y_{it-1} + \sum_{k=1}^{n} \emptyset_k \Delta Y_{it-k} + \delta_i t + \theta_t + u_{it} - IPS \ Model. \qquad (8)$$

This is with an H_0: $\rho_i = 0$ for all i and H_A: $\rho{<}0$ for at least one.

Following [37]:

$$\rho = -2 \sum_{t=1}^{N} lnP_i - ADF \ Fisher \ Model, \qquad (9)$$

where: N = the cross-section units or identities; P_i = the cross-section unit root value for the cross section I; and $-2lnP_i$ = Chi-square distribution for 2 degrees of freedom.

The fourth and last panel unit root test follows the PP Fisher model of the form created by [38] which is as follows:

$$y = \frac{1}{\sqrt{N}} i = \sum_{i}^{N} \omega^{-1} (\varphi_i) \cong N(0,1), \qquad (10)$$

where ω^{-1} = the opposite of the normal cumulative distribution function.

The essence of the varied tests is to combine the tests with homogenous D assumption and those with heterogeneous D, where D is the coefficient of Y_i.

Panel estimation methods.

The MG follows the form specified by [39]:

$$\gamma_i(L)z_{it} = \alpha(L)y_{it} + d_i X_{it} + \varepsilon_{it}, \qquad (11)$$

$i = 1, 2, 3 \ldots\ldots N,$ which is for the cross-sectional unit, given that the mean group model's long run and short run coefficients, and the long run coefficient for each cross section is given as:

$$\varphi_i = \frac{a_i(1)}{b_i(1)}. \qquad (12)$$

In sum, the mean group estimator for the entire panel is represented as follows:

$$\varphi = \frac{1}{N}\sum_{i=1}^{N}\varphi_t. \qquad (13)$$

According to [39], the MG estimators are reliable and have asymptotic normal distribution for N and T, which are adequate.

Nevertheless, owing to its inconsistency in terms of the small T (T is for number of observation), it can become quite biased; hence, the Pooled Mean Group occupies an intermediary locus between MG and the Fixed Effect Model. It does this by allowing the short run coefficients to vary and the long run coefficients to pool across countries. According to [40], PMG combines the efficiency of pooled estimations while overtaking the inconsistencies that emanate from the pooling heterogeneous dynamic relationship.

Following the [39] prescription, the PMG for this study assumed the following form:

$$Z_{it} = \sum_{j=i}^{n}\gamma_{i\ j}Z_{i,t-j} + \sum_{j=0}^{m}\partial_{ij}\gamma_{i,t-j} + \mu_i + \varepsilon_{it}. \qquad (14)$$

This model is reparametrized in a vector error correction framework following [39]:

$$\Delta Z_{it} = \sigma_i\left(Z_{i,t-1} - \beta_i\,y_{i,t-1}\right) + \sum_{j=1}^{n-1}\delta_{ij}\Delta Z_{i,t-j} + \sum_{j=0}^{m-1}\delta'_{ij}\,y_{i,t-j}\mu_i + \varepsilon_{it}. \qquad (15)$$

In sum, the major inferences in the relationship under study are based on the estimates provided by the PMG model.

Panel A in Table 1 contains the basic descriptive statistics of the series under study. The mean and the median are measures of the aggregative tendencies of stock market performance and show the studied macroeconomic variables across the period and the studied SSA countries. The spread and dispersion of these indicators are also shown by their respective standard deviation, minimum, and maximum. For the kurtosis, the series are all found to be leptokurtic (>3). The Jarque Bera statistics [40] predisposes us to a test of skewness of 0 and kurtosis of 3, which is a combined test for normality of the series. It can be inferred from the Jarque Bera statistics [40] and the associated probability value (all<5%) that the series are characteristically distributed like economic and financial time series [34]. The linear association of the series is shown in the correlational matrix, as illustrated in Panel B of Table 1. It is evident that the variables share a combination of positive and negative correlation. Market Capitalization shares a strong positive correlation with the volume of stock traded and broad money supply, while it shares a negative linear association with real interest rate and inflation rate. This is the same as the volume of stock traded, which also correlates negatively with inflation rate and real interest rate but has a positive correlation with broad money supply. This shows that as interest rate and inflation rate rise, there is a tendency that stock activity drops, showing a dip in market capitalization and volume of stock traded. The results of the panel unit root test, following the form specified in equations 1, 2, 3 and 4, respectively, are presented in Panel C of Table 1 below in line with [35-38].

Table 1. Summary of basic preliminary tests

PANEL A: BASIC DESCRIPTIVE STATISTICS							
Variable	Mean	Median	Std Dev	Skewness	Kurtosis	Jarque Bera	Prob
GDPR	3.86	4.04	6.88	1.18	44.02	110058.05	0.000
INFL	44.68	7.65	670.05	32.79	1147.32	7531660.05	0.000
M2	26.01	21.79	16.59	2.04	8.11	2601.04	0.000
MC	8.91	2.94	2.17	3.05	11.17	714.69	0.000
RIR	6.17	13.61	13.61	1.48	13.69	4318.12	0.000
ST	8.63	20.11	20.11	3.35	15.14	1391.26	0.000
PANEL B: CORRELATIONAL MATRIX							
	ST	RIR	MC	M2			
INFL	-0.11	-0.40%	-0.05%	-0.264			
M2	0.37%	0.24%	0.36%	-------			
MC	0.97%	-0.06%	------	-------			
RIR	-0.026%	--------	--------	--------			
ST							

PANEL C: STATIONARITY PROPERTIES OF THE SERIES							
	LLC		IPS		ADF-FISHER		PP-FISHER	
Variables	Test Stat	Inference	Test Stat	Inference	Test Stat	Inference	Test Stat	Inference
ST	-7.95 (pv<0.05)	I(1)	-8.48 (pv<0.05)	I(1)	-85.34 (pv<0.05)	I(1)	-229.44 (pv<0.05)	I(1)
RIR	-6.83 (pv<0.05)	I(0)	-6.54 (pv<0.05)	I(0)	-196.97 (pv<0.05)	I(0)	-323.18 (pv<0.05)	I(0)
MC	-3.02 (pv<0.05)	I(1)	-4.38 (pv<0.05)	I(1)	-63.85 (pv<0.05)	I(1)	-118.38 (pv<0.05)	I(1)
INFL	-12.04 (pv<0.05)	1(0)	-9.83 (pv<0.05)	1(0)	-244344 (pv<0.05)	1(0)	-418.60 (pv<0.05)	1(0)
M2	-16.50 (pv<0.05)	I(1)	-21.64 (pv<0.05)	I(1)	-565.03 (pv<0.05)	I(1)	-935.84 (pv<0.05)	I(1)

Note: LC = Levin, Lin and Chu Test, IPS = Im, Pesaran and Shin W-Stat, ADF FISHER = Augmented Dickey Fueler Fisher Chi-Square Test, PP FISHER = Philip Peron Fisher Chi-Square Test (MC is the natural logarithm of the absolute value of Market Capitalization; ST is the natural logarithm of the Value of Stock Traded; INFL and RIR are the Inflation Rate and Interest Rate, respectively; and M2 is the natural logarithm of Broad Money Supply and GDPGR is economic growth rate)

Source: the authors' fieldwork

The panel unit root test results show varied stationarity properties at the 5% level of significance. The results show that there is a mixed order of integration, justifying the use of the Pooled Mean Group (PMG) estimates.

Short run elasticities. There was no short run impact on stock market indicators, as shown in Panel A of Table 2, which shows that market investments are usually represented by financial assets of a long term nature; hence, the market indicators are not expected to exhibit ideal short run elasticities to changes in the explanatory variables.

Long run elasticities. Two models were specified in Panel B of Table 2. In the first model, real interest rate had a negative impact on stock market capitalisation and volume of stock traded over the long run. It showed that a percentage change in real interest rate caused a long run

7% and 4% decrease in market capitalization and volume of stock traded, respectively. Conversely, it was found that both market capitalization and volume of stock traded are positively significant functions of inflation rate. At the 0.05 level of significance, a 1% change in inflation rate caused a 5% and 8% increase in market capitalization and volume of stock traded, respectively. There was a mixed relationship between broad money supply and the dependent variables for the two models. While market capitalization performed a positively significant function of the broad money supply at 5% level of significance, the volume of stock traded proved to be a negatively significant function of broad money supply. As indicated, while a 1% change in broad money supply increased market capitalization by 9%, it reduced volume of stock traded by 7% (Table 2).

Table 2. Pooled mean group estimates showing short run, long run elasticities and error correction representation

PANEL A: Short Run Estimates AND ERROR CORRECTION REPRESENTATION		
Variables	*logMC=f(logM2,infr,rir)*	*logST=f(logM2,infr,rir)*
RIR	0.002 (0.09)	0.002 (0.06)
logm2	-0.03 (-0.05)	0.21 (0.08)
Infr	0.002 (0.03)	0.001 (0.01)
ECM$_{t-1}$	-0.43 (-3.22)	-0.66 (-4.15)
PANEL B: Long Run Estimates		
RIR	-0.24 (3.89)**	-0.14 (3.17)**
logm2	0.09 (2.09)**	-0.07 (2.25)**
INFR	0.05 (3.11)**	0.08 (2.39)**

Error correction representations. The error correction estimates showed the convergence to long run equilibrium owing to changes originating from the short run. The two models indicated that the error terms were negatively significant, indicating the speed of adjusting from short run disequilibrium to long run equilibrium. The adjustment speed of market capitalization to macroeconomic variables was 43%, while the volume of stock traded was 66%. This implies the convergence to equilibrium level in the long run from a short deviation, which takes place as follows: a little above 2 years for market capitalization and a little above 1 year for the volume of stock traded. The relationships are plausible, as they fall between 0 and 1, rendering them reasonably and economically predictable.

DISCUSSION

The study's findings partly align with the efficient market hypothesis that establishes a relationship between indicators of stock market performance and macroeconomic variables. In its simplest form, information on macroeconomic performance indicators, as used in this study, proved to be good predictors of stock market performance. It was found to be consistent with the efficient market hypothesis that macroeconomic indicators are ready inputs in determining the current and dynamic behavior of the stock market.

Implications of long run adjustments of the market in SSA countries to shocks emanating from the macroeconomic environment can be blamed for the lack of information efficiency. Put differently, the EMH may not explain the performance of the stock markets in SSA largely owing to information defect. Changes in money stock, all things being equal, lead to changes in aggregate demand, which, in turn, lead mainly to changes in real output (Y) in the short run and changes in the price level (P) in the long run. In the long run, the economy is assumed to have attained full resource employment level so that a further increase in money stock (M) raises the price level (P) rather than the real output (Y). Total demand is the summation of investment demand, consumption demand, government demand, and net export demand, while their respective determinants are wealth, interest rates, taxes and tariffs, and exchange rate [41]. By extension, changes in money stock can impact the stock market by affecting investment demand directly, along with other components of aggregate demand. This conclusion concurs with the Monetarist's perspective that the transmission mechanism between money and aggregate demand is direct; hence, additional cash balances are spent directly on real goods and services, both investment and otherwise (a similar view is expressed by [42].

Even the Keynesian's view supports the linkage between money stock and aggregate demand but disagrees with the direct-link position of the Monetarists. They opine that the linkage between money stock and aggregate demand occurs through the interest rate [43]. An increase in investment (say equity) demand, *ceteris paribus*, results in an increase in equity prices at the stock market [44].

Changes in interest rates affect stock prices in two major ways: first, through their effects on corporate profits, and second, through investors' decisions on asset holdings, namely whether to hold more or less stocks or bonds in their investment portfolio. A rise in interest rates increases corporate interest expenses and decreases corporate profits (a component of the national income). The decrease in corporate profits decreases funds available for consumption and investment demands. It also sends wrong "signals" to investors in the stock market. Moreover, higher interest rates could shift investments to bonds at the expense of stocks (and other assets). In response to rising interest rates, stock sales obviously depress stock prices. Inversely, lower interest rates could shift investments to stocks (and other assets) at the expense of bonds and increase demand for stock raises and stock prices. [44] argue that a rise in interest rates raises the discount rate in computing the present value of stock prices while decreasing the latter.

The impact of inflation on prices appears a bit controversial. A more general consensus is that, under competition, inflation increases production costs, lowers revenue, and decreases the future cash flow of firms, which, in turn, discourages equity demand and lowers stock prices. There is a counter argument that stock prices, through hedging, could react positively to inflation, since equities are claims of real assets [25].

This study was conducted with a focus on SSA countries, which represent a collection of developing economies and stock markets in Africa. Hence, it is believed that the results contribute to a better understanding of stock market forces in a manner that is distinct from those of developed economies and their stock markets. Therefore, the results of this study can be employed for generalization with emphasis on economies similar to the sub-Saharan African region and economic blocs.

CONCLUSIONS

This study sought to relate stock market performance to the macroeconomic environment in SSA countries. The exceptionalism of the study lies in the fact that it inclined developing stock markets against a developing macroeconomic environment. Whilst employing the pooled mean panel estimation technique, the study evaluated the long run and short run elasticities of the studied relationship, including an appraisal of the error correction and dynamic profile of the relationship.

One of the key takeaways from this study is the discovery that stock market indicators are relatively responsive to changes in the macroeconomic indicators in the long run and not in the short run. Hence, a percentage change in real interest rate caused a long run decrease in market capitalization and volume of stock traded, respectively. Conversely, it was found that both market capitalization and volume of stock traded are positively significant functions of inflation rate. The nexus between broad money supply and the dependent variables for the two models was found to be a mixed one. While market capitalization had a positive and significant impact on broad money supply, the volume of stock traded was found to be a negatively significant function of broad money supply. This confirms that stock market variables generally exhibit long run elasticity profiles. It is clear that financial assets that are traded in the stock market are long term in nature; hence, their responsiveness to their influencing variables should have the same effect. This discovery spells the need for policy impact to be expected more over the long term than the short term. Market capitalization was found to adjust to the dynamics of the studied macroeconomic variables, similar to the volume of stock traded.

REFERENCES

[1] Popoola, O.R., Ejemeyovwi, O.J., Alege, O.P., Adu, O., & Onabote, A.A. (2017). Stock market and economic growth in Nigeria. *International Journal of English Literature and Social Sciences*, 2(6), 97-105.

[2] Lingaraja, K., Selvam, M., & Vasanth, V. (2014). The stock market efficiency of emerging markets: Evidence from Asian region. *Asian Social Science*, 10(19), 158-168.

[3] Billmeier, A., & Massa, I. (2009). What drives stock market development in emerging markets – institutions, remittances, or natural resources? *Emerging Markets Review*, 10(1), 23-35.

[4] Yartey, C.A., & Adjasi, C.K. (2007). *Stock market development in Sub-Saharan Africa: Critical issues and challenges.* Retrieved from imf.org/external/pubs/ft/wp/2007/wp07209.pdf.

[5] Fama, E., & French, K. (2005). Financing decisions: Who issues stock? *Journal of Financial Economics*, 76(3), 549-582.

[6] William, F. (1964). Sharpe capital asset prices: A theory of market equilibrium under conditions of risk. *The Journal of Finance*, 19(3), 425-442.

[7] Lintner, J. (1965). Portfolios and capital budgets. *The Review of Economics and Statistics*, 47(1), 13-37.

[8] Ross, S.A. (1976). The arbitrage theory of capital asset pricing. *Journal of Economic Theory*, 13(3), 341-360.

[9] Hillier, D., Ross, S.A., Westerfield, R.W., Jeffrey, J., & Bradford, D.J. (2010). *Corporate finance*. London: McGraw Hill Education.

[10] Tangjitprom, N. (2012). Macroeconomic factors of emerging stock market: The evidence from Thailand. *International Journal of Financial Research*, 3(2), 105-114.

[11] Nasseh, A., & Strauss, J. (2000). Stock prices and domestic and international macroeconomic activity: A cointegration approach. *The Quarterly Review of Economics and Finance*, 40(2), 229-245.

[12] Rapach, D.E., Wohar, M., & Rangvid, J. (2005). Macro variables and international stock return predictability. *International Journal of Forecasting*, 21(1), 137-166.

[13] Osamwonyi, I.O., & Evbayiro-Osagie, E.I. (2012). The relationship between macroeconomic variables and stock market index in Nigeria. *Journal of Economics*, 3(1), 55-63.

[14] Tsoukalas, D. (2003). Macroeconomic factors and stock prices in the emerging Cypriot equity market. *Managerial Finance*, 29(4), 87-92.

[15] Rjoub, H., Tursoy, T., & Gunsel, N. (2009). The effects of macroeconomic factors on stock returns: Istanbul stock market. *Studies in Economics and Finance*, 26(1), 36-45.

[16] Chen, S. (2009). Predicting the bear stock market: Macroeconomic variables as leading indicators. *Journal of Banking and Finance*, 33, 211-223.

[17] Hondroyiannis, G., & Papapetrou, E. (2001). Macroeconomic influences on the stock market. *Journal of Economics and Finance*, 25(1), 33-49.

[18] Heldarl, H., Kahrlz, A.R., & Mohammadzadeh, Y. (2018). Stock market behaviour of pharmaceutical industry in Iran and macroeconomic factors. *Economic Change and Restructuring*, 52(3), 255-277.

[19] Kumari, J., & Mahakud, J. (2014). Relationship between conditional volatility of domestic macroeconomic factors and conditional stock market volatility: Some further evidence from india, asia-pacific financial markets. *Asia-Pacific Financial Markets*. doi: 10.1007/s/10690-014-9194-7.

[20] Humpe, A., & Macmillan, P. (2009). Can macroeconomic variables explain long-term stock market movements? A comparison of the US and Japan. *Applied Financial Economics*, 19, 111-119.

[21] Wongbangpo, P., & Sharma, S.C. (2002). Stock market and macroeconomic fundamental dynamic interactions: ASEAN-5 countries. *Journal of Asian Economics*, 13, 27-51.

[22] Pilinkus, D. (2010). Macroeconomic indicators and their impact on stock market performance in the short and long-run: The case of the Baltic States. *Ukio Technologinis ir Ekonominis Vystymas*, 16(2), 291-304.

[23] Bilson, C.M., Brailsford T.J., & Hooper, V.J. (2001). Selecting macroeconomic variables as explanatory factors of emerging stock market returns. *Pacific-Basin Finance Journal*, 9, 401-426.

[24] Fama, E.F. (1981). Stock returns, real activity, inflation, and money. *The American Economic Review*, 71(4), 545-565.

[25] Fama, E.F. (1990). Term-structure forecasts of interest rates, inflation, and real returns. *Journal of Monetary Economics*, 25(1990), 59-76.

[26] Black, A., Fraser P., & MacDonald, R. (1997). Business conditions and speculative assets. *The Manchester School,* 65(4), 379-393.

[27] Pilinkus, D. (2010). Macroeconomic indicators and their impact on stock market performance in the short and long-run: The case of the Baltic States. *Ukio Technologinis ir Ekonominis Vystymas*, 16(2), 291-304.

[28] Bodie, Z.A., Kane, A., & Marcus, A.J. (2002). *Investments* (5th ed.). New York: McGraw-Hill/Irwin.

[29] Wongbangpo, P., & Sharma, S.C. (2002). Stock market and macroeconomic fundamental dynamic interactions: ASEAN-5 countries. *Journal of Asian Economics*, 13, 27-51.

[30] Bilson, C.M., Brailsford, T.J., & Hooper, V.J. (2001). Selecting macroeconomic variables as explanatory factors of emerging stock market returns. *The Pacific-Basin Finance Journal*, 9, 401-426.

[31] Harris, R., & Tzavalis, E. (1999). Inference for unit roots in dynamic panels where the time dimension is fixed. *Journal of Econometrics*, 91(2), 201-226.

[32] Maddala, G.S., & Wu, S. (2001). A comparative study of unit root tests with panel data and a new simple test. *Oxford Bulletin of Economics and Statistics*, 16, 631-652.

[33] Baye, M.R., & Jansen, D.W. (1996). *Money, banking, and financial markets: An economics approach*. Delhi: A.I.T.B.S. Publishers and Distributors.

[34] Besley, S., & Brigham, E.F. (2005). *Essentials of managerial finance* (13th ed.). Texas: South-Western Thomson.

[35] Levin, A., Lin, C.F., & Chu, C. (2002). Unit root test in panel data: Asymptotic and finite sample properties. *Journal of Econometrics*, 108, 1-25.

[36] Pesaran, M.H. (2007). A simple panel unit root test in the presence of cross-section dependence. *Journal of Applied Economics*, 22, 265-312. doi: 10.1002/jae.951.

[37] Choi, I. (1999). Testing the random walk hypothesis for real exchange rates. *Journal of Applied Econometrics*, 14, 293-308.

[38] Maddala, G.S., & Wu, S. (2001). A comparative study of unit root tests with panel data and a new simple test. *Oxford Bulletin of Economics and Statistics*, 16, 631-652.

[39] Pesaran, M.H., Shin, Y., & Smith, R. (1999). Pooled mean group estimation of dynamic heterogeneous panels. *Journal of the American Statistical Association*, 94, 621-634.

[40] Bera, A.K., & Jarque, C.M. (1981). *An efficient LARGE-sample test for normality of observations and regression residuals*. Canberra: Australian National University.

[41] Dhakal, D., Kandil, M., & Sharma, S.C. (1993). Causality between the money supply and share prices: A VAR investigation. *Quarterly Journal of Business and Economics*, 32(3), 52-74.

[42] Lawrence, R.S., & Silber, W.L. (1991). Principles of money, banking, and financial markets (7th ed.). New York: Basic Books.

[43] Wongbangpo, P., & Sharma, S.C. (2002). Stock market and macroeconomic fundamental dynamic interactions: ASEAN-5 countries. *Journal of Asian Economics*, 13, 27-51.

[44] Pierdzioch, C., Döpke, J., & Hartmann, D. (2008). Forecasting stock market volatility with macroeconomic variables in real time. *Journal of Economics and Business*, 60(3), 256-276.

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Зв'язок показників фондового ринку з макроекономічними змінними в країнах, що розвиваються

Анотація. Враховуючи унікальність фондового ринку в країнах Африки на південь від Сахари та той факт, що емпіричні висновки завжди робилися на основі більш розвинених фондових ринків, виникає необхідність дослідити зв'язок між показниками фондового ринку та окремими макроекономічними змінними в країнах Африки на південь від Сахари та той факт, що емпіричні висновки завжди робилися на основі більш розвинених фондових ринків, виникає необхідність дослідити зв'язок між показниками фондового ринку та окремими макроекономічними змінними в країнах Африки на південь від Сахари. Унікальність та актуальність цієї роботи полягає в тому, що вона розглядає фондові ринки, що розвиваються, в макроекономічному середовищі, що розвивається, і охоплює період з 1997 по 2018 рік. В якості методу оцінки було використано панельну авторегресійну модель з розподіленим лагом, підтриману значною кількістю методів попередньої та кінцевої оцінки, а набори даних, які мають вторинний характер, були отримані з Індикаторів світового розвитку. Результати дослідження показали, що індикатори фондового ринку відносно добре реагують на макроекономічні показники в довгостроковій перспективі та пристосовуються до шоків і динаміки мінливого макроекономічного середовища. Результати дослідження підтвердили, що зв'язок між широкою грошовою масою та залежними змінними обох моделей має змішаний характер. Висновки, що випливають з цього дослідження, свідчать про те, що короткострокове пристосування показників фондового ринку до змін макроекономічних змінних є важливим для уряду для інтерпретації та розробки політики щодо поточних ефектів та прогнозування динаміки фондового ринку та макроекономічних зв'язків

Ключові слова: економічний розвиток, гіпотеза ефективного ринку, ринкова капіталізація, процентна ставка, рівень інфляції

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The essence of key success factors as a competitive advantage of the enterprise

Abstract. The relevance of the researched topic lies in the growth of competition between business entities in both domestic and foreign markets. The processes of globalization and integration predetermine the constant search by enterprises for ways to gain competitive advantages in order to increase the loyalty of existing customers and obtain new ones, to seek access to new markets, and ultimately, increase profits. In such circumstances, the study of key success factors becomes an extremely important task for both business representatives and scientists. The purpose of the article is to review existing views on the process of defining and forming key success factors, as well as the issue of separating the essence of the concepts of "key success factors" and "key performance indicators". To write the article, Ukrainian and foreign scientific publications in the field of marketing, management, international business and entrepreneurship have been analyzed. The article is devoted to the problem of increasing the competitiveness of Ukrainian enterprises through the development of key success factors. The article groups the main approaches to defining the concept of "key success factors". The author's interpretation of the concept of "key success factors" has been provided. Characteristics, that competitive advantages have to meet in order to be considered strategic success factors, have been identified. The main areas of key success factors have been formed and considered. It has been concluded that the competitive advantage of any product or service is constantly changing and unique, and therefore requires constant analysis of the market and economic situation, taking into account many factors that affect them. Recommendations have been provided on the effective use of key success factors by management of Ukrainian enterprises in order to increase the enterprise's financial performance, improve its image, stabilize its economic condition, etc. The article presents scientific and practical significance for business representatives who seek to identify, investigate and improve the key success factors of their own enterprises and gain additional competitive advantages

Keywords: competitiveness, strategic development, efficiency, marketing, technologies

INTRODUCTION

The main question facing any enterprise is the problem of existence and strategic development in the most difficult situations. Effective solutions to such problems are only possible if the enterprise is competitive and if it implements its key success factors. The level of competition increases every year in almost all types of market, and, because of this, timely awareness of the importance of the application and development of enterprise's key factors becomes one of the most acute challenges facing modern enterprises.

Thus, G. Hunya highlights the problems of how transnational corporations (TNCs) of the EU successfully do business compared to other regions [1]. J. Kleinert explains the role of TNCs in the process of globalization [2]. E. Skawinska, R.I. Zalewski devote their work [3] to the study of the entrepreneurship development in various fields through the use of key success factors. The authors also emphasize that measuring the enterprise's success is seen as a competitive advantage. In other words, an enterprise has to be successful in order to grow.

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B. Kim, H. Kim, Y. Jeon note the insufficiency of empirical research in the field of success factors of entrepreneurs involved in the creation of new enterprises [4]. J.R. Saura, P Palos-Sanchez, A. Grilo note that key success factors can include management, business plan or investments in innovative and sustainable development [5].

M. Porter [6] claims that various management tools, such as total quality management, benchmarking, time-based competition, outsourcing, partnership, reengineering that are used today, do increase and significantly improve the enterprise's operational efficiency, but do not provide it with stable profitability. Thus, the root cause of the problem is management's inability to distinguish between operational performance and strategy. A. Smith [7] as early as in 1776 expressed the idea that, in a free market, everyone is guided by their own interests, but in the end the system reaches an equilibrium from which everyone benefits. D. Ricardo [8], Zh. Zh. Lamben [9] and others devoted their works to the study of the concept of competition.

T. Asgari, A. Daneshvar, A.P. Chobar, M. Ebrahimi, S. Abrahamyan identified the following key success factors: economic factors, innovation, entrepreneurship and technological variables [10]. P.E. Davis, J.S. Bendickson noted that strategic planning is valuable for innovation in small firms and that organizational structure has a positive effect on innovation in large firms [11]. J. Guo, B. Zhou, H. Zhang, C. Song, M. Hu considered the actions determined by firms within the company, in particular, strategic planning, i.e., they focus their attention on the study of internal factors, rather than external ones [12].

Despite the great interest among representatives of the scientific world in the problem of competitiveness, the use and improvement of key success factors, the question of the relationship between key success factors and the enterprise's competitive advantages is still unclear.

The purpose of the article was to research and review existing views on the process of identifying and forming key success factors, as well as their impact on the enterprise's competitiveness.

OVERVIEW OF APPROACHES TO DEFINING THE CONCEPTS OF "KEY SUCCESS FACTORS"

There is no single definition of the concept of "key success factors" in scientific literature. In order to give our own definition, let us consider different interpretations of this term, given by Ukrainian [13-15] and foreign [16-18] scientists and researchers. N.V. Kudenko gives the following definition: "The key success factors in the industry are those factors that ensure successful profitable market activity of the enterprise in this industry. They are also related to the success of the company's financial position and level of competitiveness. Key success factors are extremely important factors that should be characteristic of the company" [19].

Key success factors (KSFs) are those factors that every company has to create and maintain in order to increase its competitiveness and achieve success. As a rule, they are analyzed in the context of the main functional areas of the company (marketing, management, material and technical support, production, personnel, finance, logistics) [20-21]. It should also be added that KSFs are the company's assets and competencies, which are used to achieve success in a certain area. In that case, if the company has a strategic

weakness in the context of KSFs, which is not leveled by a certain marketing strategy, then the ability of the company to compete effectively on the market is small [22-24].

It should be noted that the KSFs methodology was developed as a management tool that, from a scientific point of view, substantiates the principles and mechanism of success for companies and divisions. The key success factors are certain areas in which everything is stable, without problems and troubles, and ensures the success of the enterprise. Thus, these are areas of managerial activity or enterprise activity that must be constantly in focus in order to achieve maximum results and success. KSFs are important not only for the current success of the company, but also in terms of strategic development.

Equally important is the identification and understanding of the difference between KFCs and KPIs (key performance indicators). The difference is significant, since KPI is an indicator of the effectiveness of the company's departments, which contribute to the achievement of the company's tactical and strategic goals. The use of such terms allows the company to assess its position, as well as to assess its own strategic development. Thus, key performance indicators are measures that evaluate success, and key success factors are those elements that help achieve success.

Since there is no single definition of the term "key success factors", the author's definition has been formed.

Key success factors are the main indicators of achievements in a certain area, with the help of which it is possible to create a promising future for the company, i.e., improvement in the market position or competitive advantage.

The key factors of success include a system of factors of market and resource orientation, which affect the construction of the company's strategic competitiveness and its long-term success.

There are two main features of the key success factors, namely: 1) they have a distinct industry character; 2) they are common guidelines for companies in a certain industry.

Theoretical and practical studies [25-27] show that the totality of KSFs in different industries may slightly differ. Moreover, they can sometimes change within the same industry due to a change in the general economic or political situation. Therefore, it is extremely important to form key success factors, taking into account economic conditions and intra-industry competition.

Since the key success factors are the main indicators of the competitive position in the industry, they have another name – competitive advantages. This is quite logical, since competitive advantages are a focused manifestation of the company's competitiveness in such areas of activity as economic, technical and organizational and can be measured in monetary units (growing profit, profitability, market share, sales). It should also be noted that competitive advantage is not equal to the company's capabilities. Competitive advantages as opposed to capabilities are actual customer benefits. And because of this, competitive advantages are the most desirable goal of economic activity of any business [28].

Different approaches to defining the essence of the concept of "competitiveness" are due to the fact that the concepts of the company's competitiveness and the competitiveness of products or services are equated. Another reason is the presence of different levels of competitive

analysis in different markets. In one case, such a concept is considered at the regional level, in another case, at the national level, and the concept can also be considered at the global level (company, industry, country). In addition, the reason may be the replacement of one term by another (for example, competitive status, competitive level, competitive condition, etc).

At the same time, the main characteristics of the concept of "competitiveness" are:

1. Relative character. Competitiveness can be a characteristic that is relevant to a specific object. Competitiveness is not created based on the intrinsic nature of a definite object. The state of competitiveness can be determined by comparing one object with another. So, it can be concluded that the competitiveness of companies can be assessed by comparing the main indicators of their activity.

2. Temporal nature (dynamism). The level of competitiveness of any company cannot be considered as a long-term characteristic of its position on the market, regardless of the state of the efficiency of its activities. The activities of other economic entities and the active implementation of their competitive strategies may cause the loss of the achieved competitive position on the market and, as a result, a decrease in competitiveness.

Market competition performs many functions, they include: coordinating the interests of producers, stimulating the improvement of the quality of products and services, forming a fair market price, stimulating the reduction of individual production costs, etc.

Through the implementation of these functions, competition can directly affect production efficiency by improving the technological level, ensuring the quality of products and services, expanding the range of products.

Having analyzed various approaches [29; 30] to the definition of the concept of competitiveness, and having reached a general conclusion about the determining role of the implementation of the above-mentioned functions, it is necessary to note the factors of building competitiveness specifically in the domestic market, due to the fact that in this type of market competition is a mandatory stage for the formation of a company. Competition includes various types of rivalry between companies in the market for improving the conditions for the sale of goods and the provision of services. Such factors as the number of economic entities, their market share, as well as the types and manifestations of competition that are used, affect the level of competition in certain market segments.

It is quite common to define competitive advantages as a system of features, consumer properties of a trademark that create a competitive advantage for an enterprise over direct competitors. This advantage is formed by providing customers with greater benefits: either through the sale of cheaper products, or through the offer of better products with a set of additional services, but at relatively higher prices.

The most popular is the following definition of competitive advantages, namely: they are a concentrated manifestation of getting ahead of competitors in various areas of the company's activity. Thus, the company's competitive advantages are manifested in the predominance over competitors by building market success factors or key competencies.

Based on the above, it can be concluded that a single definition of the term competitive advantages does not currently exist. Therefore, the author's definition of the concept of "competitive advantages" has been given. Thus, competitive advantages are the systems of the most important factors that affect the company's competitive status, using which the company will not only improve its economic performance, but also has the opportunity to win the competition.

ANALYSIS OF THE RELATIONSHIP BETWEEN COMPETITIVE ADVANTAGES AND KEY SUCCESS FACTORS

The authors have identified three characteristics that competitive advantages must meet in order to be considered strategic success factors:

• the competitive advantage should be based on the capabilities and resources of the enterprise, the originality of which should be greater compared to that of competitors, and, an important nuance is that such resources should be unique;

• the competitive advantage should ensure for quite a long time the uniqueness of its brand in comparison with competitors;

• the competitive advantage should provide a real tangible benefit to its buyer, i.e., satisfy all the specific needs of the target group of consumers of its product or service.

The main task of competitive advantages is to achieve a better assimilation by the customer of the characteristics and overall value of the product in relation to the products of competitors. Besides the very concept of competitive advantage, it is also important to understand its factors. A competitive advantage factor is a distinct element of a campaign's external/internal environment that puts it ahead of its competitors. Factors of competitive advantage can be tactical and strategic.

The tactical factor of competitive advantage is a specific element of the firm's external/internal environment, according to which it will be able to compete in the near time/period (up to a year) of the enterprise.

The strategic factor of competitive advantage is a specific element of the firm's external/internal environment, according to which it is ahead of its competitors, but only after fulfilling specific conditions in the future that will determine the company's competitive advantage based on this component compared to other companies.

At the same time, the strategic factors of the company's competitive advantage can be divided into three more elements, namely the element of macroenvironment, the element of micro- environment of the company and the element of the region's infrastructure.

It should be taken into account that competitive advantages are a result. The result that arose due to the low cost of production, a high degree of real differentiation of the company's goods or services, smart segmentation, due to the introduction of various, important innovations, and also, of course, due to the quick response of the company's management to various market requirements. They can also include: labor efficiency, higher than that of competitors, as well as the qualification level of staff, namely: production, technical, commercial; as well as the quality and high technical level of the manufactured products; skill in management, strategic thinking at different levels of management, which, subsequently, will necessarily be reflected in the economic growth of the company.

Competitive advantage is quite relative, and therefore not absolute, because such an advantage can be assessed only by comparing characteristics that have an impact on the economic efficiency of product sales [30]. Preference for specific conditions and reasons is another manifestation of the relativity of competitive advantages. For example, if a product has a competitive advantage in, say, design, it may have absolutely no such advantage in another geographic market. And vice versa, a product or service may not be successful in the market, at the same time, after the exit of the main competitor from the market, it may be a significant success, either due to the depreciation of money or due to a successful advertising campaign that led to the popularity of the brand. As a conclusion, the competitive advantage of any product or service cannot be permanent and absolutely universal. At the time of analysis, market and economic conditions must be clearly taken into account. In addition, another feature of competitive advantage is that it is influenced by many factors. In order to achieve a competitive advantage, a comprehensive approach is necessary.

APPROACHES TO THE CLASSIFICATION OF KEY SUCCESS FACTORS

Now, there are many different ways to assess and analyze the level of competitiveness of the company. Classification of key success factors helps to do this. Today, there is a large number of approaches to the competitive analysis of the enterprise and to the identification of classification criteria. It should be understood that the analysis of each company requires an individual approach, knowledge of the specifics of the industry and the end user.
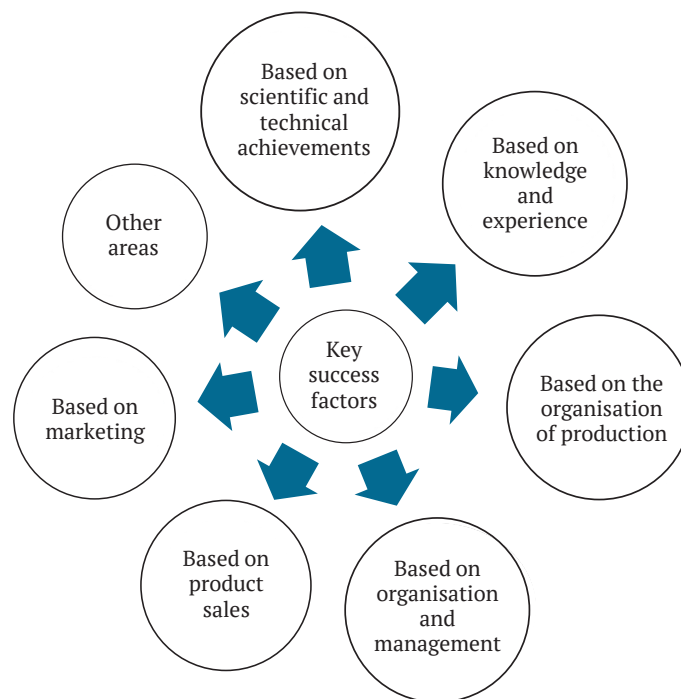
Figure 1. Areas of key success factors
Source: compiled by the authors according to [30; 31]

Fig. 1 presents the main areas of key success factors. Let us consider each area in more detail.

1. Key success factors that are based on scientific and technical achievements:
– experience in conducting scientific research (important in high-tech industries);
– possibility of operational implementation of technological and (or) organizational innovations;
– introduction of innovative products;
– preliminary use of innovative technologies.

2. Key success factors that are based on knowledge and experience:
– professional experience, recognized talent (a factor of great importance in the field of professional services);
– knowledge of unique production features;
– ability to develop a unique and ergonomic product design;
– experience in the implementation of certain technologies;
– creation of unique, creative advertising;

– ability to quickly develop and adapt new types of products.

3. Key success factors that are based on production organization:
– reduction of production costs;
– quality products;
– high level of capital return (for capital-intensive industries);
– advantageous location of the enterprise;
– availability of highly qualified staff;
– reliable suppliers;
– high level of labor productivity (for labor-intensive industries);
– low costs for research and development (R&D) and technological preparation of production;
– adaptability in the development of various models and sizes, the possibility of fulfilling individual customer orders.

4. Key success factors that are based on organization and management:

– use of the latest information systems;

– adaptability of the management system to changes in market conditions;

– experience and effective management team.

5. Key success factors that are based on product sales:

– an effectively planned corporate distribution system or the presence of established partnership relations with an outsourcing company;

– free access to the retail network;

– own retail outlets;

– relatively low costs for the sale of goods;

– highly qualified sales staff;

– the highest level of service;

– clear execution of orders.

6. Key success factors that are based on marketing:

– a wide range of products;

– nice and ergonomic packaging;

– the most accurate processing of customer orders (insignificant number of returns and errors);

– a wide range of products;

– highly qualified sales staff;

– guarantees for buyers (especially in catalog trade, e-commerce, sale of expensive and new goods);

– effective product promotion system.

7. It is possible to single out such key success factors as:

– positive image (reputation) of the brand among customers;

– access to financial capital;

– low overall costs;

– the company's leadership in the industry;

– favorable location (especially in retail);

– politeness and professionalism of all employees who communicate with customers;

– access to financial markets (especially for new enterprises in risky or capital-intensive industries);

– Patent protection.

Besides the above classification, there are many other classifications of KSFs. Let us analyze another classification presented in Figure 2.
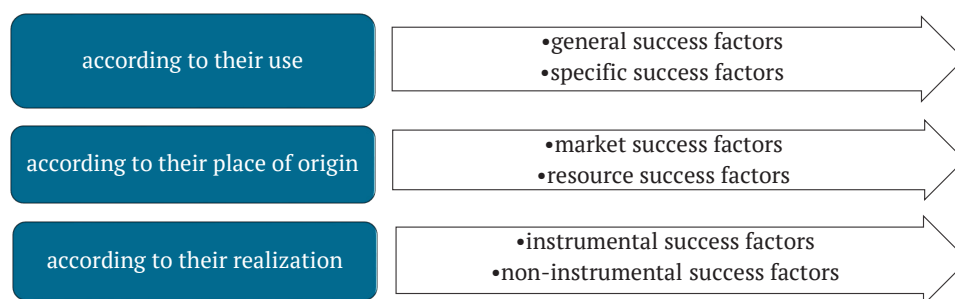
Figure 2. Typology of key success factors

Source: developed by the author based on the source [31; 32]

According to the method of use, KSFs include general KSFs, which are universal and can be used in various industries; and specific KSFs that can only be used for specific areas; e. g., the reputation of a confectionery factory in a retail chain of confectionery stores.

According to the place of origin, KSFs are divided into market KSFs, which are associated with the attitude of customers to the company, e. g., the price of products, the image of the enterprise; and resource KSFs, which are associated with the unique resources of the company, e. g., special staff skills, quality and product design.

From the point of view of the company, the main thing is the classification of key success factors according to the methods of implementation, since all the efforts of the structural divisions of the enterprise are precisely necessary to attract instrumental factors.

On this basis, instrumental KSFs are distinguished, where the implementation directly depends on the method of action of the company, e. g., the size of the sales network; and non-instrumental KSFs, independent of the company's activities, e. g., the growth of market volumes.

Factors related to the external formation of competitive advantages include market factors of success. Modern Swiss and German economists [33; 34], who are engaged in the development of the concept of the company's success factors, form two categories from all the key success factors

available in the company, namely: strategic success factors and key competencies.

The first category – strategic success factors – are related to implemented success factors that directly affect the buyer. Thus, it can be concluded that the definition of "strategic" does not correspond to the essence which was primarily put into this concept. Because of this, it is more correct to call the first group of factors "market" success factors. Market success factors include: price and product quality, service, after-sales service.

The second category is key competencies (as an internal factor of building competitive advantages) – which are a set of skills and technologies that is based on obvious and hidden knowledge and forms a system of values in the customer's system, is unique and provides access to new markets for products. It is very difficult to copy and transfer them. In the case when the selection and combination of available resources is more original, faster and better than that of competitors, such resources of the company become manifestations of key competencies. Such key competencies should continuously maintain competitive advantages and resource asymmetry with respect to market competitors. The ability of competitors to copy a key competence leads to its complete devaluation [35].

It should also be noted that the company's position is particularly affected by the number and nature of sources

of competitive advantage. The more comprehensive and wide the range of sources of a certain advantage of the company, the lower the level of probability that the product will be copied and the longer the period for competitors to lag behind. The main role is also played by the constant improvement and modernization of all areas of the company's activities, starting with the development and expansion of the range of marketing research tools and ending with the level of quality and completeness of after-sales customer service. Thus, continuous innovation and improvement are necessary to maintain a competitive advantage.

CONCLUSIONS

The key success factors are one of the most important elements of increasing the competitiveness of the enterprise. A rational and balanced approach to their formation and use gives the enterprise the opportunity to enter new markets, diversify risks, acquire new customers, increase the loyalty of existing customers and receive other benefits.

It has been concluded that the company cannot occupy a favorable competitive position in the market without forming its own unique competitive advantages. Such competitive advantages should be significant for the company's customers, which will ultimately affect the success of the business.

The interrelationship of such categories as key performance indicators, with the help of which the company's management evaluates its position, as well as its own strategic development, as well as KSFs, which directly affect this position, has been established.

The analysis of approaches to the classification of KSFs showed that the main elements of the formation of KSFs are experience and knowledge, the presence of unique technologies, effectively built management, sales, organization of production, and marketing.

It is obvious that the company's competitive advantages lie in being ahead of competitors due to the formation of market success factors or key competencies.

The management of Ukrainian companies must realize that a detailed study and analysis of KSFs are an indispensable condition for the existence of modern business. The need to conduct an analysis of the company's internal and external environment, a critical assessment of the assortment of goods or services, and an analysis of the competitive environment enable the company to highlight its own unique KSFs. At the same time, it is necessary to take into account such factors as scientific and technical progress, changing trends in demand, the emergence of new competitors, etc.

The problem remains the insufficient level of research on this issue, the lack of an unambiguous definition of the concept of "key success factors", the relatively low level of competitiveness of Ukrainian enterprises, so further research will certainly retains its relevance in the future.

REFERENCES

[1] Hunya, G. (2012). *The role of multinational companies in international business integration. Research reports 384.* Vienna: The Vienna Institute for International Economic Studies.
[2] Kleinert, J. (2001). *The role of multinational enterprises in globalization. Kiel Working Paper 1069.* Kiel: Kiel Institute of World Economics.
[3] Skawinska, E., & Zalewski, R.I. (2020). Success factors of startups in the EU – Acomparative study. *Sustainability*, 12, article number 8200.
[4] Kim, B., Kim, H., & Jeon, Y. (2018). Critical success factors of a design startup business. *Sustainability*, 10, article number 2981.
[5] Saura, J.R., Palos-Sanchez, P., & Grilo, A. (2019). Detecting indicators for startup business success: Sentiment analysis using text data mining. *Sustainability*, 11(3), article number 917.
[6] Porter, M.E. (1996). What is strategy? *Harvard Business Review*, 74, 61-78.
[7] Smith, A. (2018). *The wealth of nations. Research on the nature and causes of the well-being of nations.* Kyiv: Our format.
[8] Ricardo, D. (2015). *Principles of political economy and taxation.* Cambridge: Cambridge University Press.
[9] Lambin, J.J. (1993*). Strategic marketing: A European approach.* London: McGraw-Hill Book Company.
[10] Asgari, T., Daneshvar, A., Chobar, A.P., Ebrahimi, M., & Abrahamyan, S. (2022). Identifying key success factors for startups with sentiment analysis using text data mining. *International Journal of Engineering Business Management*, 14, article number 8200.
[11] Davis, P.E., & Bendickson, J.S. (2018). Strategic antecedents of innovation: Variance between small and large firms. *Journal of Small Business Management*, 507, 1-18.
[12] Guo, J., Zhou, B., Zhang, H., Song, C., & Hu, M. (2018). Does strategic planning help firms translate slack resources into better performance? *Journal of Management and Organization*, 26(4), 1-13.
[13] Barabas, D.O. (2013). Improving the competitiveness of enterprises in the conditions of the general economic crisis. *Economic Development Strategy of Ukraine*, 33, 192-197.
[14] Shershnyova, Z.E. (2014). *Strategic management.* Kyiv: KNEU
[15] Dolzhansky, I.Z. (2012). *Competitiveness of the enterprise.* Kyiv: Center for Educational Literature.
[16] Köseoğlu, M.A., Chan, E.S., Okumus, F., & Altin, M. (2019). How do hotels operationalize their competitive intelligence efforts into their management processes? Proposing a holistic model. *International Journal of Hospitality Management*, 48, 124-134.
[17] Natalicchio, A., Ardito, L., Savino, T., & Albino, V. (2017). Managing knowledge assets for open innovation: A systematic literature review. *Journal of Knowledge Management; Kempston*, 21(6), 1362-1383.
[18] Estrin, S., Nielsen, B.B., & Nielsen, S. (2017). Emerging market multinational companies and internationalization: The role of home country urbanization. *Journal of International Management*, 23(3), 326-339.
[19] Kudenko, N.V. (2011). Key success factors in the industry and competence of the enterprise. In *Formation of a market economy* (pp. 225-228). Kyiv: KNEU.

[20] Rana, S., Prashar, S., Barai, M.K., & Hamid, A.B.A. (2020). Determinants of international marketing strategy for emerging market multinationals. *International Journal of Emerging Markets*, 16(2), 154-178.

[21] Hakobyan, S. (2017). Export competitiveness of developing countries and US trade policy. *World Economy*, 40(7), 1405-1429.

[22] Assarlind, M., & Gremyr, I. (2014). Critical factors for quality management initiatives in small- and medium-sized enterprises. *Total Quality Management & Business Excellence*, 25, 397-411.

[23] Aaker, D.A. (2005). *Strategic market management*. Hoboken: Wiley.

[24] Al-Aali, A., & Teece, D.J. (2014). International entrepreneurship and the theory of the (long-lived) international firm: A capabilities perspective. *Entrepreneurship Theory and Practice*, 38, 95-116.

[25] Arend, R.J. (2016). Entrepreneurs as sophisticated iconoclasts: Rational rule-breaking in an experimental game. *Journal of Small Business Management*, 54, 319-340.

[26] Boddy, C.R. (2016). Sample size for qualitative research. *Qualitative Market Research: An International Journal*, 19, 426-432.

[27] Devece, C., Peris-Ortiz, M., & Rueda-Armengot, C. (2016). Entrepreneurship during economic crisis: Success factors and paths to failure. *Journal of Business Research*, 69, 5366-5370.

[28] Franco, M., Haase, H., & Correia, S. (2018). Exploring factors in the success of creative incubators: A cultural entrepreneurship perspective. *Journal of the Knowledge Economy*, 9, 239-262.

[29] Gupta, V.K., Niranjan, S., Goktan, B.A., & Eriskon, J. (2016). Individual entrepreneurial orientation role in shaping reactions to new technologies. *International Entrepreneurship and Management Journal*, 12, 935-961.

[30] Hsu, D.K., Wiklund, J., & Cotton, R.D. (2017). Success, failure, and entrepreneurial reentry: An experimental assessment of the veracity of self-efficacy and prospect theory. *Entrepreneurship Theory and Practice*, 41, 19-47.

[31] Sofi, M.R., & Hakim, I.A. (2018). Customer relationship management as tool to enhance competitive effectiveness: Model revisited. *FIIB Business Review*, 7(3), 201-215.

[32] Kemitare, G., Kabuye, F., Olyanga, A.M., & Rudaheranwa, N. (2021). Value chain, productivity and trade performance in the dairy industry. *Modern Supply Chain Research and Applications*, 3(1), 24-40, doi: 10.1108/MSCRA-05-2020-0009.

[33] Bhaumik, S., Driffield, N., Gaur, A., Mickiewicz, T., & Vaaler, P. (2019). Corporate governance and MNE strategies in emerging economies. *Journal of World Business*, 54(4), 234-243.

[34] Klaus, S. (2017). *World economic forum: The global competitiveness report 2017-2018*. Retrieved from https://www3.weforum.org/docs/GCR2016-2017/05FullReport/TheGlobalCompetitivenessReport2016-2017_FINAL.pdf.

[35] Beugelsdijk, S., & Jindra, B. (2018). Product innovation and decision-making autonomy in subsidiaries of multinational companies. *Journal of World Business*, 53(4), 529-539.

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Сутність ключових факторів успіху, як конкурентної переваги підприємства

Анотація. Актуальність досліджуваної теми полягає в зростанні конкуренції між суб'єктами господарювання як на внутрішніх, так і на зовнішніх ринках. Процеси глобалізації та інтеграції зумовлюють постійний пошук підприємствами шляхів отримання конкурентних переваг для того, щоб підвищувати лояльність існуючих клієнтів та отримувати нових, шукати вихід на нові ринки збуту, зрештою, підвищувати прибутки. В таких умовах, дослідження ключових факторів успіху стає надзвичайно важливим завданням як для представників бізнесу, так і для науковців. Метою статті був огляд існуючих поглядів на процес визначення та формування ключових факторів успіху, а також питання відокремлення сутності понять «ключові фактори успіху» та «ключові показники ефективності». Для написання статті було проаналізовано українські та закордонні наукові публікації в сфері маркетингу, менеджменту, міжнародного бізнесу та підприємництва. Стаття присвячена проблемі підвищення конкурентоспроможності українських підприємств шляхом розвитку ключових факторів успіху. В статті угруповано основні підходи до визначення поняття «ключові фактори успіху». Надано авторське трактування поняття «ключові фактори успіху». Виділені характеристики, яким повинні відповідати конкурентні переваги, для того, щоб вважатись стратегічними факторами успіху. Сформовано та розглянуто основні напрямки ключових факторів успіху. Зроблено висновок про те, що конкурентна перевага будь-якого товару або послуги постійно змінюється і є унікальною, а отже, вимагає постійного аналізу ринкової та економічної ситуації, з урахуванням багатьох чинників, які впливають на них. Надано рекомендації щодо ефективного використання ключових факторів успіху керівництвом українських підприємства з метою підвищення фінансових результатів діяльності компанії, покращення іміджу, стабілізації економічного стану підприємства тощо. Стаття представляє наукову та практичну значущість для представників бізнесу, які прагнуть виділити, дослідити та вдосконалити ключові фактори успіху власного підприємства та отримати додаткові конкурентні переваги

Ключові слова: конкурентоспроможність, стратегічний розвиток, ефективність, маркетинг, технології