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Закарпатська область, Україна
тел/факс: (03131) 2-11-09, (03131) 2-11-09
E-mail: info@economics-msu.com.ua
www: https://economics-msu.com.ua/uk

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Factors of Sustainable Intensification in Agriculture of Ukraine: Evidence from the Enterprises of the Kharkivska Oblast

Svitlana I. Strapchuk*, Olena P. Mykolenko

V.N. Karazin Kharkiv National University
61022, 4 Svobody Sq., Kharkiv, Ukraine

Abstract. Reducing the negative impact of agricultural enterprises' activities on the environment with an increase in food demand can be achieved by implementing sustainable intensification measures, where the key measure is an increase in crop yields while reducing the use of resources. The purpose of this study is to identify the factors of sustainable intensification of agricultural enterprises in Ukraine by building a model of the interdependence of yield on the level of diversity of agricultural crops, application of organic fertilisers, availability of animal husbandry on the farm, labour costs, mineral fertilisers and depreciation, the use of fuel materials per 1 ha and the level of payback of costs. During the scientific study, a sample of 516 enterprises of the Kharkivska Oblast that grow agricultural products was processed; some of them are engaged in animal husbandry. Using the correlation and regression analysis method, data was analysed and processed using specialised Microsoft Excel and SPSS 21 software. The paper presents a model of the dependence of the yield of agricultural enterprises of the Kharkivska Oblast on numerous factors that were selected based on the theoretical provisions of the sustainable intensification of agriculture. It was found out that the diversity of agricultural crops, the application of organic fertilisers, the availability of animal husbandry on the farm, and labour costs are considerable factors and have both a positive and negative impact on yield. The model applied the effect of interaction between two factors, which showed the greatest impact on the dependent variable. The study provides reasoning for the availability of the highest yield among enterprises that additionally engage in economic activities for raising animals, as well as specialise in the production of various crops. The practical significance of the results obtained lies in the provision of proposals on the areas of sustainable intensification of agricultural enterprises in Ukraine

Keywords: sustainable development, circular economy, agricultural enterprises, correlation-regression model

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*Corresponding author

Introduction

The world's population is constantly growing, which requires an increase in the volume of food [1]. Each country solves the problem of food security and reduces the negative impact of management on the environment in different ways. To date, several solutions have been proposed, which include constant intensification; increasing crop yields, but with less resources used [2; 3], changing the diet [4], and reducing food waste [5].

A special place among the proposed measures is occupied by increasing yields through intensification, which greatly depends on business entities and their practices. In Ukraine, intensification in agriculture is achieved in three ways: through an increase in yield per hectare, an increase in crop intensity or the use of more resources, as well as through a change in land use from low-cost crops to those that generate increased incomes and profits. Intensification in agriculture is possible under the conditions of additional application of mineral fertilisers, which increases the yield per 1 ha of land, and, often, per unit of labour used. At the same time, such intensification reduces production per unit of fertiliser applied or per unit of money invested, if other resources are not simultaneously increased (or at least optimised) in accordance with the law on reducing returns (profitability) [6]. However, for the most part, this method of management depletes land, requires a considerable amount of resources, in particular water, and has many externalities associated with a negative impact on the environment and society.

Among the promising aspects of increasing the yield, there is a steady intensification of agriculture, which is defined as the production of a greater yield from the same area of land, while reducing the negative impact on the environment and preserving natural and human capital [7].

Agricultural intensification is a method of increasing the yield per hectare, rather than expanding the area of cultivated land through better use of materials and resources [8]. The main ways to sustainably increase land productivity are to increase crop yields above the baseline level and apply the practice of double seeding. Increasingly more attention has been paid to the environmental costs of intensification over the past decade. Questions are raised as to the negative impact of fertilisers and pesticides on the environment and excessive consumption of water required for irrigation. That is why the academic and business community turned to the concept of sustainable intensification as a concept of compromise [9]. Researchers from the Netherlands found that there are not so many win-win situations in agronomy, while the trade-offs (between the resources used, the goals achieved and the values of sustainable development) are much greater [10]. Agroeconomists have defined sustainable intensification as "a simultaneous increase in the return on used land and labour (in the short term) and maintaining the balance of nutrients in the soil (in the long term)" [11]. This definition links constancy to particular business goals.

The purpose of this study is to identify the factors of sustainable intensification of agricultural enterprises in Ukraine by building a model of the interdependence of yield on the level of diversity of agricultural crops, application of organic fertilisers, availability of animal husbandry on the farm, labour costs, mineral fertilisers and depreciation, the use of fuel materials per 1 ha and the level of payback of costs.

To achieve the purpose, the study set and solved the *task* concerning the analysis of the influence of natural and economic factors on the yield of agricultural enterprises of the Kharkivska Oblast to establish the correlation between the indicator and a set of independent variables, considering environmental and economic components, as an attempt to expand the understanding of factors of sustainable agricultural development and their assessment.

Materials and Methods

The present study used statistical data from 516 enterprises of the Kharkivska Oblast engaged in agricultural activities, namely in the cultivation and sale of agricultural crops. Some enterprises are engaged in animal husbandry.

The following indicators were used for statistical data processing. The dependent variable in the author's model is yield, which is measured in centners per 1 ha of area, as suggested in previous models. The yield was measured as a weighted average for the crops grown by the analysed enterprises. Among the variables that affect the change in yield, the following are distinguished. The diversity of agricultural crops means the number of different types of crops grown by the enterprise. The parameter of processing areas (parts) with organic fertilisers is a dichotomous variable that takes the value 1 if there is a practice in the economic activity of the enterprise, 0 – if it is not available. The presence of animal husbandry on the farm, similar to the previous indicator, takes the value 1 if there is such a practice, 0 – if there is no practice. Remuneration of the main employees involved in the production of products is measured as a part of such expenses in the total production costs of agricultural enterprises. The use of mineral fertilisers in production is described in the author's model by a part of such costs in total production.

Additionally, control variables were used in the model, which can have different effects on yield and should be studied from the standpoint of the possibility of their constant intensification. One of these indicators is the use of fuel materials in production, which is a cost indicator per 1 ha of area. Another one – depreciation, which demonstrates the technical equipment of production, which affects the ability to increase processing and harvesting; it is measured as the share of costs in the total production costs of the enterprise and indicates the technical advantages of the enterprise in comparison with the use of manual labour. Cost recovery is the last indicator that determines the ability to return the invested funds of an enterprise, and is

calculated in the model as the ratio of income to the cost of products sold. This indicator demonstrates the market position of the enterprise, namely price advantages.

The study uses the method of multivariate correlation and regression analysis, which allows measuring the degree of influence on the effective feature (yield) of the selected factors, establish a single measure of the tightness of the relationship and the role of the studied factors in the overall change in the effective feature. This method is used in cases where variables are not normally distributed. The paper uses a sufficient number of qualitatively homogeneous observations, in particular, their number considerably exceeds the number of factors included in the model (64 times). The main task of the method is to develop a dependence model of yield on the level of diversity of agricultural crops, the application of organic fertilisers, the availability of animal husbandry on the farm, labour costs, mineral fertilisers and depreciation, the use of fuel materials per 1 ha, and the level of payback of costs. In addition, upon constructing a correlation-regression model, the effect of interaction between the two studied factors was applied to determine their joint impact on yield. The obtained model will allow identifying and analysing the possibilities of sustainable intensification of the yield of agricultural enterprises of Ukraine using evidence from the Kharkivska Oblast.

The selection of crucial factors for inclusion in the correlation model was based on the theoretical foundations of the provisions of sustainable intensification in agriculture and pre-constructed and analysed factor groups [12; 13]. The SPSS 21 and Microsoft Excel analysis package was used to process the data and construct a linear correlation-regression model of the yield dependence on the selected factors. To exclude the problem of multicollinearity, the variance inflation factor (VIF) (multicollinearity statistics) criterion was used, which allows controlling the interchangeability of factors.

Results and Discussion

Theoretical foundations of sustainable intensification

The current intensification is based on three main assumptions: 1) the world should produce considerably more food in the coming decades to feed the growing, increasingly affluent population; 2) the area of arable land cannot be significantly expanded; 3) agricultural production should become more sustainable, and resource efficiency is the basis for preserving natural capital [12]. Table 1 describes the characteristics, principles, and practices of sustainable intensification in agriculture.

Table 1. Definition, principles, and practices of sustainable intensification in agriculture

	Sustainable intensification of agriculture	Source
Characteristics	A noticeable increase in crop production without harm to nature	J.N. Pretty [14]
	Maximising the return on land use and labour, ensuring a balance of soil nutrients	R. Ruerd, D. Lee [11]
	Effective use of natural, social, and human assets, as well as the best technologies that reduce the negative impact on the environment	J.N. Pretty [14]
	Increase crop productivity to increase yields from less land	J.N. Pretty [14]
Principles	Use of renewable resources such as light, labour, knowledge	L.G. Firbank, J. Elliott, B. Drake [15]
	Efficient use of resources, optimal use of external resources, reducing the negative impact of food production on the environment, reducing the yield gap	J.N. Pretty [14]
	Use of improved varieties of agricultural crops and livestock breeds	J.N. Pretty [14]
	Reduce food waste and increase productivity	T. Garnett, M.C. Appleby, A. Balmford [2]
Practices	Use of bio-vegetation and residual polyethylene film to cover the soil, compliance with the principles of preserving tillage and crop rotation	Wezel et al. [16]
	Inclusion of legumes and grain legumes in crop rotation	D. Tilman, C. Balzer, J. Hill [17]
	Integrated pest management	J.N. Pretty [14]
	Soil and water conservation, soil management	FAO [18]
	Protection of plant genetic resources and improvement of crop varieties	FAO [18]
	Insufficient irrigation, additional irrigation, water resources management	FAO [18]

Sustainable intensification is described as an agricultural process or system that supports or improves management results while preserving the environment [19]. This is a strategy for increasing labour productivity on existing agricultural land with a positive environmental and social effect [20]. That is why the intensification has also become associated with the "Green Revolution", which at the initial stage was considered as a combined use of highly productive

varieties, mineral fertilisers and agrochemicals in the economy [21]. Later, this concept opened up new prospects for the use of "green technologies" in production.

From the standpoint of technology, productive and sustainable agricultural systems provide the best combination of different varieties of crops, livestock, and their agroecological and agronomic management [22]. Sustainable intensification requires the cultivation of complex plant and animal species adapted to local conditions and the use of appropriate management methods. The latter requires farmers to have agronomic skills and knowledge. To effectively and sustainably increase production, farmers need to understand under what conditions agricultural resources (seeds, fertilisers, and pesticides) can accelerate or, conversely, slow down biological processes in the agricultural ecosystem [23]. A separate established practice is integrated pest management, which is aimed at efficient and rational use of pesticides to restore nutrients in soils and maintain yields [23]. Management also means managing the risks associated with reduced water quality due to rapidly changing receipts of nitrogen and phosphorous fertilisers [24]. A distinctive feature of sustainable intensification is the efficient use of resources in agriculture to produce more food products with a reduced negative impact on the environment or society. The economic content of intensification lies in the development of productive forces, increasing efficiency, when new technologies and modern means of production are used in combination with scientific organisation of labour, accompanied by training of personnel and a proper level of management.

Like agricultural sustainability, resource efficiency has many dimensions: agronomic, ecological, economic, social, transgenerational, and global. That is why critics have proposed other concepts along with sustainable intensification, namely ecological intensification and agroecological intensification. The latter relates to the cultural and social aspects of the activities of agricultural enterprises [16]. Under the conditions of environmental intensification, farmers rely more on internal resources and reduce the use of external ones, which is an element of agricultural circularity [25]. The goal of environmental intensification is to use resources most efficiently, applying knowledge and better understanding of environmental processes. Environmental intensification is aimed at increasing production per unit land area while maintaining the potential of the system, which requires environmentally intensive agronomy [26] and appropriate practices. For example, a recent study in various countries has shown that crop diversification is an important tool for environmental intensification [27]. In particular, an international group of experts concluded that "diversified agroecological systems" can produce the same results as "industrial food systems" in terms of yield [28]. Consequently, the yield and its increased intensification require an analysis of the resources used in terms of their efficiency, but considering the benefits for the environment and society. Ignoring trade-offs makes intensification less sustainable, and considering them makes it more environmentally sound.

The intensification of agricultural production includes the introduction of technologies for sustainable yield growth, the use of fertilisers, additional irrigation and/or water conservation, high-performance varieties and improving crop management practices [29]. Factors of direct impact on the intensification of agriculture are as follows: labour, in the form of either human or mechanised; water, either through rain or irrigation; inorganic chemicals and/or organic substances, such as fertilisers, manure (FYM), nutrient residues and pesticides; biodiversity, whether new varieties of crops or livestock breeds [30]. Some of them were considered in the author's theoretical model. Factors that have an indirect impact on yield were also partially considered. In particular: financial capital to invest in production resources and other changes in the farming system; knowledge of a new way of working and local conditions; infrastructure that provides access to markets and production; technology that generates and supports new forms and ways of using resources; access to new markets to increase production.

Selection and analysis of factors for building a model

Thus, the data indicate that on average enterprises grow 4 agricultural crops. 11% of enterprises have areas treated with organic fertilisers and other substances, and 24% have animal husbandry on the farm, which ensures the circularity of the business model. The share of mineral fertilisers in production costs is quite high (20% on average), which indicates the widespread use of minerals and pesticides for growing agricultural crops in the Kharkivska Oblast. The largest share of mineral fertilisers reaches 67%. A low indicator on average is the share of labour remuneration in production costs (7.31%), which is equal only for some enterprises to 10-15%. A considerable number of enterprises do not have full-time employees (Fig. 1).

The amount of depreciation also indicates a small share of the cost of technical equipment in the production of agricultural goods (Fig. 1). A considerable number of enterprises do not own machinery and other fixed assets for the production of agricultural goods.

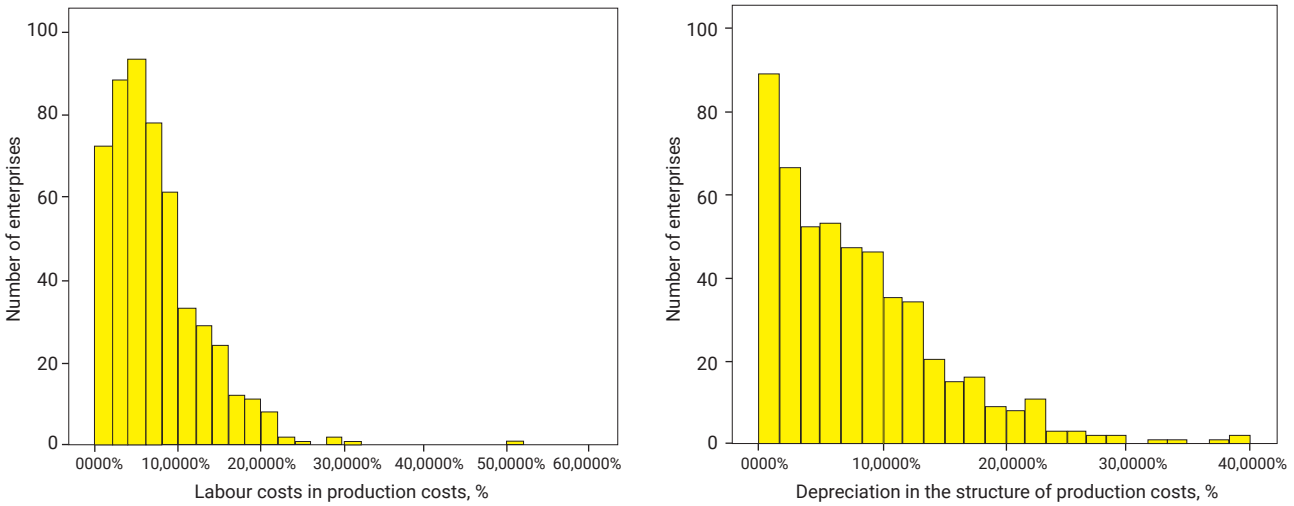

Figure 1. Labour costs and depreciation in the structure of production costs of agricultural enterprises of the Kharkivska Oblast in 2019

The average yield index for enterprises of the Kharkivska Oblast was 39.28 centners per 1 ha for those crops that are grown in the region and are the most popular on the market (Fig. 2). The cost recovery indicator demonstrates that on average, income exceeds the cost of sales by 1.3, which indicates a fairly strong position in the market of agricultural enterprises. In most enterprises, this indicator does not exceed the coefficient of 2.5. The last indicator is the use of fuel and lubricants, which must be analysed in terms of cost and negative impact on the environment (Fig. 2).

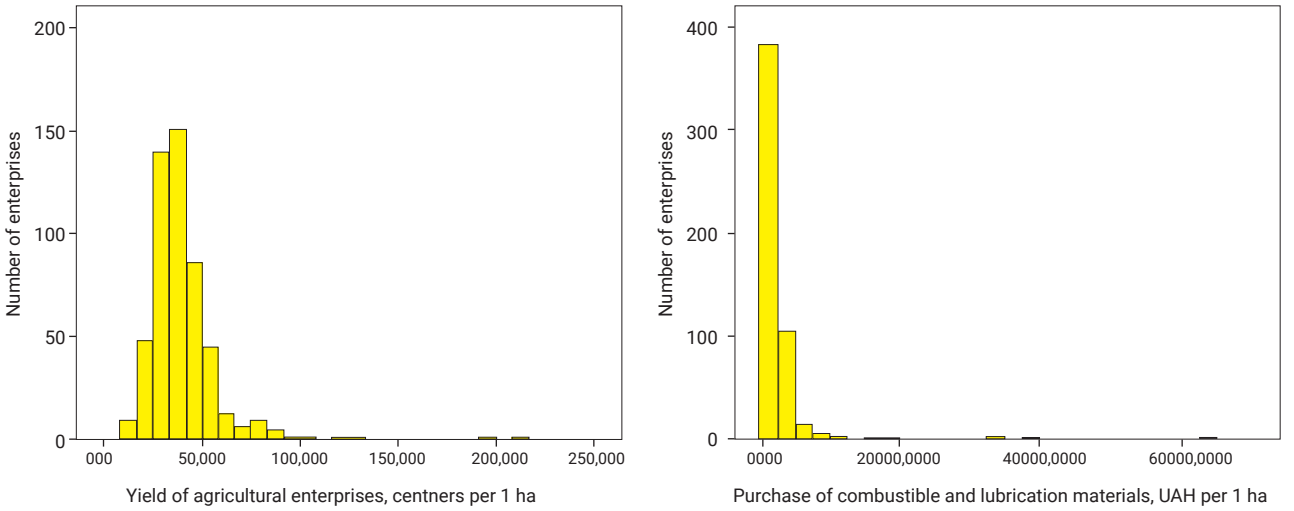

Figure 2. Yield and expenses for the purchase of fuel and lubricants per 1 ha of land area of agricultural enterprises of the Kharkivska Oblast in 2019

The calculation of the average value and standard deviation for all variables is presented in Table 2. Determining the level of correlation between indicators demonstrates no need to exclude indicators for further analysis.

Table 2. Descriptive statistics and analysis of correlations between yield and dependent variables

Indicators	Average value	Standard deviation	1	2	3	4	5	6	7	8	9
1. Yield, c / ha	39.28	17.58	1								
2. Diversity of agricultural crops	4.04	1.73	0.193**	1							
3. Treatment of areas (parts) with organic fertilisers	0.11	0.316	0.012	0.363**	1						
4. Availability of animal husbandry on the farm	0.24	0.430	0.164**	0.572**	0.383**	1					

Table 2, Continued

Indicators	Average value	Standard deviation	1	2	3	4	5	6	7	8	9
5. Labour remuneration (share in production costs),%	7.31%	5.72%	-0.082	0.353**	0.194**	0.327**	1				
6. Mineral fertilisers (share in production costs), %	19.86%	10.07%	0.116**	-0.116**	-0.037	0.124**	-0.280**	1			
7. Use of fuel materials, UAH / ha	2,407.3	4,122.2	0.216**	-0.004	0.062	0.122**	0.035	-0.006	1		
8. Depreciation (share in production costs), %	8.0%	-6.9%	0.087*	0.073	-0.020	-0.011	0.022	-0.028	-0.047	1	
9. Cost recovery (ratio of income and cost of sales)	1.3	0.77	0.088*	-0.015	0.072	0.027	0.109*	-0.003	0.058	-0.047	1

Notes: ** – the correlation is significant at 0.01, * – the correlation is significant at 0.05

Construction of a correlation-regression linear yield model

The next stage of data analysis is the construction of a correlation-regression linear model of yield, which is reflected in Table 3.

The constructed correlation-regression linear yield model is significant (F=11.383, p<0.001). The data indicate that all factors are significant as well, having both positive and negative effects on the dependent variable, and explaining the change in yield at the level of 13.9%. In particular, the diversity of agricultural crops has a positive effect on yield; furthermore, it indicates constancy in agricultural production (β=0.236, p<0.001). Mineral fertilisers and their use also increase yields; however, their use is limited in accordance with established production practices. The data also demonstrate that the efficiency of mineral fertilisers should increase, which requires an appropriate agricultural system for growing crops, as well as high-quality seeds, fertilisers or chemicals, and studies of the effect of their use.

Table 3. Yield model of agricultural enterprises of Kharkivska Oblast (partial model)

Indicators	Standardised β-coefficients	t-coefficient	VIF (multicollinearity)
1. Diversity of agricultural crops	0.236**	4.502	1.646
2. Treatment of areas (parts) with organic fertilisers	-0.096*	-2.117	1.228
3. Availability of animal husbandry on the farm	0.107*	2.041	1.643
4. Labour remuneration (share in production costs), %	-0.173**	-3.745	1.272
5. Mineral fertilisers (share in production costs), %	0.109**	2.561	1.089
6. Use of fuel materials, UAH / ha	0.214**	5.164	1.029
7. Depreciation (share in production costs), %	0.091*	2.198	1.014
8. Cost recovery (ratio of income and cost of sales)	0.107**	2.578	1.026
Constant	21.992**	–	–
F-criterion	11.383**	–	–
Adj.R^2 (adjusted)	0.139	–	–

Notes: ** – the variable is significant at 0.01, * – the variable is significant at 0.05

Data analysis also allowed summarising that enterprises with technical advantages generate higher yields, which was repeatedly noted in the study (β=0.091, p<0.05). At present, this factor is not decisive in the yield model of enterprises that require increasing technical equipment. The cost recovery factor is significant in the model, has a positive impact on crop yields and is a sign of the constancy of enterprises' activities (β=0.107, p<0.01). Businesses with a higher ratio show better marketing policies and have a price advantage in the market. Another factor determining the positive dynamics of yield is the presence of animal husbandry as a type of activity of agricultural enterprises. The latter is a sign of the circularity of the business model, which, on the one hand, is more expensive, and on the other

hand, increases the yield of such enterprises due to the production and introduction of additional resources, as well as the use of more efficient management methods.

At the same time, the growth of wages of key employees negatively affects the yield of agricultural enterprises in the Kharkivska Oblast, although it is an integral element of achieving sustainable practices in the sector (β=-0.173, p<0.01). This trend may be typical for businesses that use a lot of manual labour and demonstrate a higher salary fund. Although an increase in wages with an increase in the technical equipment of the agricultural sector may be a sign of constant intensification and have a different impact on yields, which requires further research.

A significant factor determining the yield of agricultural enterprises is the use of fuel materials (β=0.214, p<0.01). In this area, a compromise must be found between the volume of materials used and the adverse environmental impact. The following correlation-regression linear model demonstrates the existing effect of interaction of such factors as existing animal husbandry in agriculture and the cultivation of various agricultural crops (Table 4).

Table 4. Yield model of agricultural enterprises of Kharkivska Oblast (complete model)

Indicators	Standardised β-coefficients	t-coefficient	VIF (multicollinearity statistics)
1. Diversity of agricultural crops	0.083*	1.312	2.470
2. Treatment of areas (parts) with organic fertilisers	-0.113**	-2.519	1.238
3. Availability of animal husbandry on the farm	0.467**	3.193	13.199
4. Labour remuneration (share in production costs), %	-0.173**	-3.805	1.272
5. Mineral fertilisers (share in production costs), %	0.105**	2.490	1.089
6. Use of fuel materials, UAH / ha	0.242**	5.853	1.056
7. Depreciation (share in production costs), %	0.097*	2.198	1.015
8. Cost recovery (ratio of income and cost of sales)	0.123**	3.005	1.035
9. Diversity of agricultural crops × Availability of animal husbandry on the farm	0.698**	4.195	17.100
Constant	26.751**	–	–
F-criterion	12.405**	–	–
Adj.R^2 (adjusted)	0.166	–	–

Notes: ** – significant at 0.01, * – significant at 0.05

In particular, the empirical model is significant (F=12.405, p<0.001). Factors included in the model determine a positive or negative change in yield by 16.6%. The complete model demonstrated that it is the effect of interaction between two certain factors that has the greatest influence. Its presence is indicated by high VIF values for these two factors studied, exceeding the values of 2. That is, enterprises that are additionally engaged in animal husbandry, as well as grow various crops, have the highest yield (β=0.698, p<0.001). In this model, intensification is possible, since such enterprises are more efficient in using internal resources.

Figure 3 clearly demonstrates the positive dynamics of yield growth in case of growing various crops. The exception is their number 7, which give a reduced yield. This is conditioned upon the fact that the seventh crop of the farm, as a rule, is grasses, which themselves have a slightly lower yield than legumes. However, the increase in the number of herbs grown by the enterprise considerably increases the yield. Figure 3 also clearly demonstrates the high yield of enterprises engaged in animal husbandry. A detailed analysis requires the factor of processing land areas (parts) with organic fertilisers.

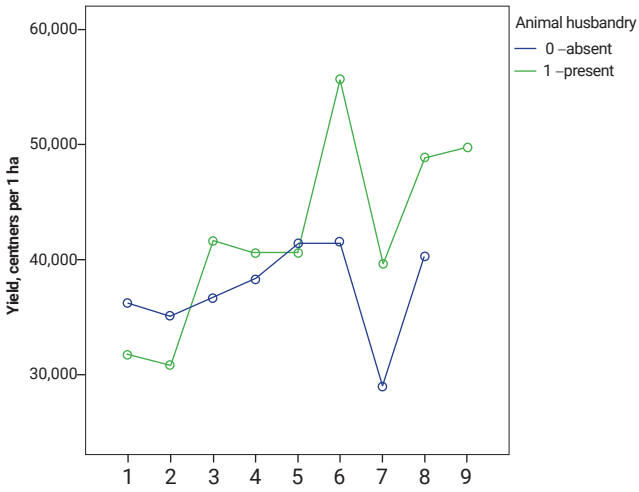

Figure 3. The effect of interaction of factors of the number of agricultural crops and the presence of animal husbandry in the management of enterprises

Both models demonstrated that enterprises that have organic matter in their land structure show lower yields on average than those that use only mineral fertilisers and pesticides. This situation may develop solely due to the lack of special knowledge among agricultural producers about the effective use of organic fertilisers. In particular, the application of organic practices is part of environmental intensification.

Conclusions

The results of the study of the possibilities of sustainable intensification of agricultural enterprises on the example of the Kharkivska Oblast can be generalised, as evidenced by the standardised β-coefficients of the constructed models. The obtained correlation-regression models confirmed the theoretical provisions on the influence of such factors as the diversity of agricultural crops, the application of organic fertilisers, the availability of animal husbandry on the farm, labour costs and mineral fertilisers on the yield of agricultural enterprises.

The effect of the interaction of two variables allowed establishing that enterprises growing different crops and having animal husbandry are more efficient and sustainable, show higher yield indicators, and have signs of a circular business model. An increase in the use of mineral fertilisers, as well as combustible and lubrication materials, considerably affects yields, and on the way towards sustainable intensification, only a certain compromise can be found between their use (quality, quantity) and the adverse environmental impact. Increasing the level of technical equipment is an essential factor in the model, but it does not substantially affect the yield, and the cost recovery indicator indicates the importance of an effective marketing policy of enterprises.

The increased intensification of agriculture allows crop production to apply a balanced method of production without negative impact on the environment and society. The recommendation of this study is that the scientific community should focus its research strategies on developing better sustainable agricultural practices that will be adapted locally, particularly to climatic conditions.

References

[1] World population prospects. (2017). Retrieved from https://population.un.org/wpp/publications/files/wpp2017_keyfindings.pdf.

[2] Garnett, T., Appleby, M.C., Balmford, A., Bateman, I.J., Bloomer, P., Burlingame, B., Dawkins, M., Dolan, L., Fraser, D., Herrero, M., Hoffman, I., Smith, P., Thornton, P.K., Toulmin, C., Vermeulen, S.J., & Godfray, J. (2013). Sustainable intensification in agriculture: Premises and policies. *Science*, 341(6141), 33-34.

[3] Charles, H., Godfray, J., & Garnett, T. (2014). Food security and sustainable intensification. *Philosophical Transactions of the Royal Society B,* 369(1639), article number 20120273.

[4] Green, R., Milner, J., Dangour, A.D., Haines, A., Chalabi, Z., Markandya, A., Spadaro, J., & Wilkinson, P. (2015). The potential to reduce greenhouse gas emissions in the UK through healthy and realistic dietary change. *Climatic Change*, 129(1-2), 253-265.

[5] Gunasekera, D. (2015). Food production: Cut food waste to help feed world. *Nature,* 524(7566), article number 415.

[6] Keating, B.A., Carberry, P.S., Bindraban, P.S., Asseng, S., Meinke, H., & Dixon, J. (2010). Eco-efficient agriculture: Concepts, challenges and opportunities. *Crop Science*, 50, 109-119.

[7] Conway, G., & Waage, J. (2010). *Science and innovation for development.* London: UK CDS.

[8] Angelsen, A., & Kaimowitz, D. (Eds.). (2001). *Agricultural technologies and tropical deforestation.* Wallingford: CABI Publishing.

[9] Evans, M. (2019). *Agricultural intensification has fed the world, but are we healthier?* Retrieved from https://forestsnews.cifor.org/59674/agricultural-intensification-has-fed-the-world-but-are-wehealthier?fnl=.

[10] Struik, P.C., Kuyper, T.W., Brussaard, L., & Leeuwis, C. (2014). Deconstructing and unpacking scientific controversies in intensification and sustainability: Why the tensions in concepts and values? *Current Opinion in Environmental Sustainability,* 8, 80-88.

[11] Ruerd, R., & Lee, D.R. (2000). *Combining internal and external inputs for sustainable intensification*. Retrieved from http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/128483/filename/128694.pdf.

[12] Cook, S., Silici, L., Adolph, B., & Walker, S. (2015). *Sustainable intensification revisited.* London: IIED.

[13] Xie, H., Huang, Y., Chen, Q., Zhang, Y., & Wu, Q. (2019). Prospects for agricultural sustainable intensification: A review of research. *Land,* 8(11), article number 157.

[14] Pretty, J.N. (1997). The sustainable intensification of agriculture. *Natural Resources Forum*, 21(4), 247-256.

[15] Firbank, L.G., Elliott, J., Drake, B., & Cao, Y. (2013). Evidence of sustainable intensification among British farms. *Agriculture, Ecosystems and Environment,* 173, 58-65.

[16] Wezel, A., Soboska, G., McClelland, S., Delespesse, F., & Boissau, A. (2015). The blurred boundaries of ecological, sustainable, and agroecological intensification: A review. *Agronomy for Sustainable Development,* 35, 1283-1295.

[17] Tilman, D., Balzer, C., Hill, J., & Befort, B.L. (2011). Global food demand and the sustainable intensification of agriculture. *PNAS*, 108(50), 20260-20264.

[18] Thompson, P.B. (2008). The ethics of sustainable agricultural intensification. In *The ethics of intensification. The international library of environmental, agricultural and food ethics* (pp. 19-41). Dordrecht: Springer.

[19] Pretty, J., Benton, T.G., Bharucha, Z., Dicks, L.V., Flora, C.B., Godfray, J., Goulson, D., Hartley, S., Lampkin, N., Morris, C., Pierzynski, G., Prasad, P.V.V., Reganold, J., Rockstrom, J., Smith, P., Thorne, P., & Wratten, S. (2018). Global assessment of agricultural system redesign for sustainable intensification. *Nature Sustainability*, 1(8), 441-446.
[20] Donovan, M. (2020). *What is sustainable intensification?* Retrieved from https://inlnk.ru/gozmj.
[21] Kyrnis, N. (2020). Assessment of the competitiveness of catering companies. S*cientific Horizons,* 23(9), 77-85. doi: 10.48077/scihor.23(9).2020.77-85.
[22] Pretty, J., Toulmin, C., & Williams, S.B. (2011). Sustainable intensification in African agriculture. *International Journal of Agricultural Sustainability*, 9(1), 5-24.
[23] Settle, W., & Garba, M.H. (2011). Sustainable crop production intensification in the Senegal and Niger River basins of francophone West Africa. *International Journal of Agricultural Sustainability*, 9(1), 171-185.
[24] Bouwman, A.F., Beusen, A.H.W., Lassaletta, L., Apeldoorn, D.F., Grinsven, H.J.M., Zhang, J., & Ittersum, M.K. (2017). Lessons from temporal and spatial patterns in global use of N and P fertilizer on cropland. *Scientific Reports*, 7, article number 40366.
[25] Levain, A., Vertès, F., Ruiz, L., Delaby, L., Gascuel-Odoux, C., & Barbier, M. (2015). "I am an intensive guy": The possibility and conditions of reconciliation through the ecological intensification framework. *Environmental Management,* 56(5), 1184-1198.
[26] Struik, P.C., & Kuyper, T.W. (2017). Sustainable intensification in agriculture: The richer shade of green. A review. *Agronomy for Sustainable Development,* 37, article number 39.
[27] Gurr, G.M., Lu, Z., Zheng, X., Xu, H., Zhu, P., Chen, G., Yao, X., Cheng, J., Zhu, Z., Catindig, J.L., Villareal, S., Chien, H.V., Cuong, L.Q., Channoo, C., Chengwattana, N., Lan, L.P., Hai, L.H., Chaiwong, J., Nicol, H.I., Perovic, D.J., Wratten, S.D., & Heong, K.L. (2016). Multi-country evidence that crop diversification promotes ecological intensification of agriculture. *Nature Plants*, 2, article number 16014.
[28] Frison, E.A. (2016). *From uniformity to diversity: A paradigm shift form industrial agriculture to diversified agroecological systems*. Brussels: IPES Food.
[29] Pandey, R.K., Crawford, T.W., & Maranville, J.W. (2002). Agriculture intensification and ecologically sustainable land use in Niger: A case study of evolution of intensive systems with supplementary irrigation. *Journal of Sustainable Agriculture,* 20(3), 33-55.
[30] Sustainable intensification: A new paradigm for African agriculture. (2013). Retrieved from https://inlnk.ru/poKvy.

Чинники сталої інтенсифікації у сільському господарстві України на прикладі підприємств Харківської області

Світлана Іванівна Страпчук, Олена Петрівна Миколенко

Харківський національний університет ім. В.Н. Каразіна
61022, майдан Свободи, 4, м. Харків, Україна

Анотація. Зниження негативного впливу діяльності підприємств сільського господарства на навколишнє середовище за умови зростання потреби в продовольстві може бути забезпечене шляхом впровадження заходів сталої інтенсифікації, де ключовим вимірником є збільшення урожайності культур за умови зменшення використання ресурсів. Метою дослідження є виявлення чинників сталої інтенсифікації сільськогосподарських підприємств України шляхом побудови моделі взаємозалежності урожайності від рівня різноманіття сільськогосподарських культур, внесення органічних добрив, наявності тваринництва у господарстві, витрат на оплату праці, мінеральні добрива та амортизацію, використання паливних матеріалів на 1 га та рівня окупності витрат. Під час проведення наукового дослідження опрацьовано вибірку з 516 підприємств Харківської області, що вирощують сільськогосподарську продукцію; деякі з них займаються тваринництвом. За допомогою методу кореляційно-регресійного аналізу здійснено аналіз та обробку даних з використанням спеціалізованих програм Microsoft Excel та SPSS 21. У роботі представлено модель залежності урожайності сільськогосподарських підприємств Харківської області від низки чинників, які були обрані, спираючись на теоретичні положення сталої інтенсифікації сільського господарства. З'ясовано, що різноманіття сільськогосподарських культур, внесення органічних добрив, наявність тваринництва в господарстві, витрати на оплату праці є значущими чинниками та здійснюють як позитивний, так і негативний вплив на урожайність. У моделі було застосовано ефект взаємодії двох чинників, який продемонстрував найбільший вплив на залежну змінну. Обґрунтовано наявність найвищої урожайності у підприємств, що додатково здійснюють господарську діяльність з вирощування тварин, а також спеціалізуються на виробництві різноманітних культур. Практична значущість отриманих результатів полягає в наданні пропозицій щодо напрямів сталої інтенсифікації сільськогосподарських підприємств України

Ключові слова: сталий розвиток, циркулярна економіка, аграрні підприємства, кореляційно-регресійна модель

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Methodological Support for the Analysis of Debt Security in Agribusiness and Measures to Improve Its Level

Anna V. Hevchuk[1]*, Belle Christoffers[2]

[1]Vinnytsia Finance and Economics University
21037, 71A Pyrohov Str., Vinnytsia, Ukraine

[2]Universidad Nacional de Quilmes
B1876BXD, 352 Roque Saenz Pena, Bernal, Provincia de Buenos Aires, Argentina

Abstract. The relevance of the study lies in the fact that in modern competitive environment for effective business management, the analysis of settlements, namely the state of accounts receivable and accounts payable, which are an integral part of monetary relations and play an important role for risk assessment of the impact on the development of agribusiness is important. The purpose of this study is to improve the methodological support for the analysis of debt security in agribusiness and measures to improve its level as an effective way to manage settlements. Methodological techniques for comparing indicators and ratio analysis techniques were used to analyse calculations. The approaches of scientists to organise the analysis of settlements and debt security assessment in agribusiness are summarised and two phases are highlighted: 1) providing analysis; 2) organising the analytical process. Provisions are determined for the organisation of settlements analysis in terms of tasks, objects, subjects, frequency and stages which include: analysis of structure and dynamics of settlements, analysis of turnover of accounts receivable and payable; analysis of quality of settlements and assessment of debt security. A model of settlement analysis methodology has been proposed with the separation of debt security assessment, accounting and evaluation based on an integral indicator which includes: debt load indicators, structure indicators, quality indicators, and turnover indicators. It has been found that the improvement of methodological support through the introduction of the debt security assessment methodology provides ample opportunities for a comprehensive analysis of agribusiness calculations, enables the identification of threats and is the result of a detailed analysis of calculations. A matrix of measures to improve debt security is considered. The practical value of scientific work lies in the introduction of methods of analysis of settlements with the assessment of debt security, which will control the status of settlements with counterparties, reduce the risk of non-repayment of receivables, determine the need for additional resources to cover accounts payable and contribute to risk reduction

Keywords: calculations, debt, methodology, management, indicators, model, risks

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*Corresponding author

Introduction

The current stage of economic development is characterised by the fact that the settlement operations of business entities, according to the statistics of the National Bank of Ukraine [1], among the total volume of activity is 80%. The growing volume of settlement transactions generates the need to improve analytical support for their risk management and assessment of the state of debt security of agribusiness enterprises. Studies have shown that about 30% of farms in the agricultural sector are unprofitable, and more than half have overdue accounts payable [2]. Notably, most agribusinesses have traditionally used loans. The prices for purchasing agricultural products for producers are low, which makes it impossible for them to repay their loans on time. In such a situation, it is worth paying particular attention to the indicators that characterise financial security, or more precisely the debt part of it, which requires a timely analysis of the calculations. Therefore, the development of economic analysis and control of settlement operations is one of the important tasks of current and strategic management of an agribusiness enterprise in an unstable business environment.

At the current stage of research, calculations have received little attention as a comprehensive subject of analysis. scientists reveal the sequence of analysis for its individual components – receivables, payables [3]. In competitive conditions, there is a need to improve the organisational provisions of the economic analysis of debt security in terms of justification of tasks, objects, subjects, frequency and stages, which allows structuring the process of managing the calculation of agribusiness enterprises and provides a comprehensive approach to the assessment of their debt security. Revealing the importance of settlement management [4] in the process of evaluating agribusiness enterprises, there is a need for a comprehensive approach to their analysis and allocation of debt security assessment. This approach makes it possible to assess the real size of the debt and identify ways to optimise it. To fulfil the objectives of business management, it is important to analyse settlements, namely the status of receivables and payables, which are an integral part of monetary relations and play an important role in assessing risks and the impact on the development of agribusiness.

Researchers distinguish two approaches to the analysis of financial statements:

1) analytical work in a two-module structure:

a) rapid analysis of financial and economic activities;

b) in-depth analysis of financial and economic activities;

2) consistent analysis of the accounting forms, involving calculation of the indicators and comparison of their values with the standards. However, that whichever approach to organising analytical work is chosen in the agribusiness enterprise, calculation analysis will be present in everyone. Despite the outlined importance of settlement analysis for evaluating agribusinesses, scientists have rarely paid attention to a comprehensive approach to its methodology. Researchers mostly dwell on the specifics of analysing the components of the calculation, and in the process of uncovering the methodological steps, they point out the typical steps. Thus, A.N. Ganyuta and R.M. Nafikova [3] in describing the purpose of the analysis of accounts receivable and payable indicate the stages: identifying the dynamics, level, structure and composition of these debts, as well as determining the causes of changes in transactions with debtors and creditors and establishing the degree of influence of such changes on the financial condition of the enterprise. It is not even a question of singling out such an important stage of analysis as the assessment of debt security, because this object at the enterprise level is only given in isolated works. However, this stage, in the author's opinion, is the best way to reveal the state of the company's accounting policy.

Since scientists do not separately distinguish between debt security analysis at the enterprise level, we will analyse the methods for analysing receivables and payables presented in scientific papers. The main characteristics of doubtful and uncollectible debts are given in the monograph [5]. The agribusiness management process needs to maintain a balance between the size of receivables and payables, as non-optimal sizes and ratios are evidence of inefficient use of resources. An analysis of accounts receivable and payable makes it possible to assess the real size of the debt and also to identify measures to optimise it [3]. Therefore, there are all prerequisites to believe that calculation is an important indicator for evaluating the performance of agribusinesses. In the process of reviewing scientific information, it was determined that more attention is given to studying the status, dynamics of accounts receivable than to accounts payable. Thus, to effectively manage settlements, there is a need to improve the methodological support for settlement analysis, particularly with regard to the assessment of debt security in agribusiness and measures to improve its level.

The aim of the study is to improve the methodological support for the analysis of debt security in agribusiness and measures to improve its level as an effective way to manage settlements.

Literature Review

The research of the methodology of analysis of receivables and payables is devoted to the works of many scientists, but at the present stage there is no unity among scientists and practitioners regarding the indicators and the list of stages of analysis. Thus, according to S.V. Kobeleva and O.Yu. Konova, the analysis of accounts receivable should take place in the following sequence [4]:

– analysis of the dynamics, movement and structure of receivables;

– analysis of the quality of receivables;

– assessment of the turnover of receivables;

– analysis of the ratio of receivables and payables.

Among the steps presented, receivables quality analysis as a step in which changes in the share of overdue and doubtful debts that meet agribusiness management

requirements are assessed is noteworthy. Notably, O.P. Kolisnyk and I.O. Zamota propose to use such indicators as – the accounts receivable turnover ratio, the duration of receivables period and the specific weight of receivables in total volume of current assets [6] to analyse the quality of receivables. However, these indicators are determined at the stages of analysis of the structure and turnover of receivables, so we cannot agree with the need to attribute the indicators to this stage. The indicators used in the analysis of receivables and the methodology of their calculation are summarised by A.V. Hevchuk [7]. For their part, N.B. Bondarchuk and A.M. Timashova [8] cite the stages of a comprehensive analysis of receivables, including:

– determination of the object of the analysis, the purpose and the main objectives of the receivables analysis at the enterprise;

– collecting and processing sources of information for receivables analysis;

– analysis of receivables at the enterprise (analysis of dynamics, composition and structure, analysis of qualitative condition of receivables, analysis of overdue and uncollectible receivables);

– evaluating the results of the receivables analysis and formulating analytical conclusions;

– management decisions that will improve the efficiency of business operations and reduce the risk of debt default.

As can be seen, no separate analysis of overdue and uncollectible receivables has been identified, indicating that the authors distinguish this type from the analysis of the qualitative condition of receivables.

An interesting approach of T. Payanok, A. Savchenko to the sequence of analysis of receivables, which scientists present as areas of analysis: analysis of total amount level; determination of collection period; analysis of accounts receivable composition; quantitative and qualitative analysis; generalisation of results [9]. In the overall scheme, quantitative and qualitative analysis is presented as one stage, which includes a regression analysis of receivables and other indicators affecting sales revenue; a ranking of the components of receivables; and an analysis of the range of goods that occupy the largest share in the structure of receivables. However, the conducted study would be more informative in revealing the formation of the rating assessment. The authors paid more attention to correlation analysis, which "... makes it possible to assess the effectiveness of management over time, determine the nature of operations and predict future development scenarios" [9].

Regarding the analysis of accounts payable, most authors conduct an evaluation based on horizontal and vertical analysis [10]. Researchers have proposed that accounts payable turnover ratio should be defined as the ratio of sales revenue to the average annual value of accounts payable. However, the above method ignores the fact that sales revenue is also received at the expense of another part of the capital [11]. In the work of L.F. Berdnikov and V.V. Odarich does not specify what value of accounts payable to take for calculation: the average value or the absolute value on a certain date [11]. This all limits the application of the proposed method in practice and makes it impossible to draw conclusions about the status of accounts payable.

The last step in the methodology by S.V. Kobeleva and O.Yu. Konova is an analysis of the ratio of receivables and payables, which is a confirmation that the analysis of these objects should be conducted comprehensively [4]. The same position is held by L.V. Kruchak [12], who points out the spread of this comparison in world practice and its definition as one of the stages of analysis of accounts receivable and payable. Based on the results of this comparison, it is possible to assess the coverage of accounts receivable by accounts payable and to determine the impact on the financial position of businesses.

However, there are a number of scientific papers in which the issue of analysis of receivables and payables is considered comprehensively. Thus, E.I. Kolbasin, emphasising the similarity of the methods for analysing receivables and payables, considers them separately [13]. These techniques include types of analysis such as: determining the share in the total; determining debt dynamics; determining the structure of debt; assessing the condition (quality) of debt; assessing the turnover of accounts receivable and payable.

The same approach is followed by O.K. Yeliseyeva and A.E. Prykhodko [14]. However, the considered methods for analysing accounts payable and receivable do not take into account the features of agribusiness. Thus, despite the considerable work done by scientists, there is no unified position regarding the methodological support for the analysis of settlements in terms of debt security of agribusiness enterprises and measures to improve the level of settlements.

Materials and Methods

The main basis for accounting for settlements with purchasers is UAS 10 "Accounts Receivable", according to which receivables are recognised as an asset if it is probable that future economic benefits will flow to the business and its amount can be measured reliably [15], and UAS 11 "Liabilities" [16], which concerns the determination of payables. To perform the study, it is necessary to use accounting software, including financial statements of PJSC "Khmelnytskrybkhoz", APJSC "Ukraine" and PJSC "Vasyschevo", as well as the breakdown of receivables and payables analytics of these enterprises.

The methodological basis of the study is the general scientific and special methods of cognition. The methods of theoretical generalisation, grouping and comparison are used to analyse settlement transactions. Systematic approach, methods of specification, analysis, synthesis and method of expert evaluations laid down in the basis of improving the organisational and methodological provisions for the analysis of transactions related to the provision of settlement operations of agribusiness enterprises. Using the modelling method, a model of methodological support for the analysis of settlements with the allocation of debt

security in agribusiness has been developed and measures to improve its level as an effective way of managing settlements have been identified. The generalisation method and the tabular method were used to generalise the analysis data and visual representation to ensure effective management of settlement operations.

In summary, the analysis of agribusiness calculations mainly uses methodological comparison techniques and ratio analysis techniques. To ensure effective management in today's competitive environment, the management of agribusiness enterprises should not limit itself to the known indicators and study receivables and payables in the analysis of settlements, but should conduct both the assessment of settlements and diagnosis of the level of risks that accompany them on debt security of agribusiness enterprises using the integral indicator.

Results and Discussion

The importance of analysing settlements and improving organisational provisions with a focus on debt security

To timely control the amounts of settlements within the analytical activities of agribusiness enterprises, it is worth monitoring monthly settlements with different counterparties, the causes of debt, special attention should be paid to the amount of overdue accounts payable and receivable, given the features of debt security analysis in agribusiness (Fig. 1).

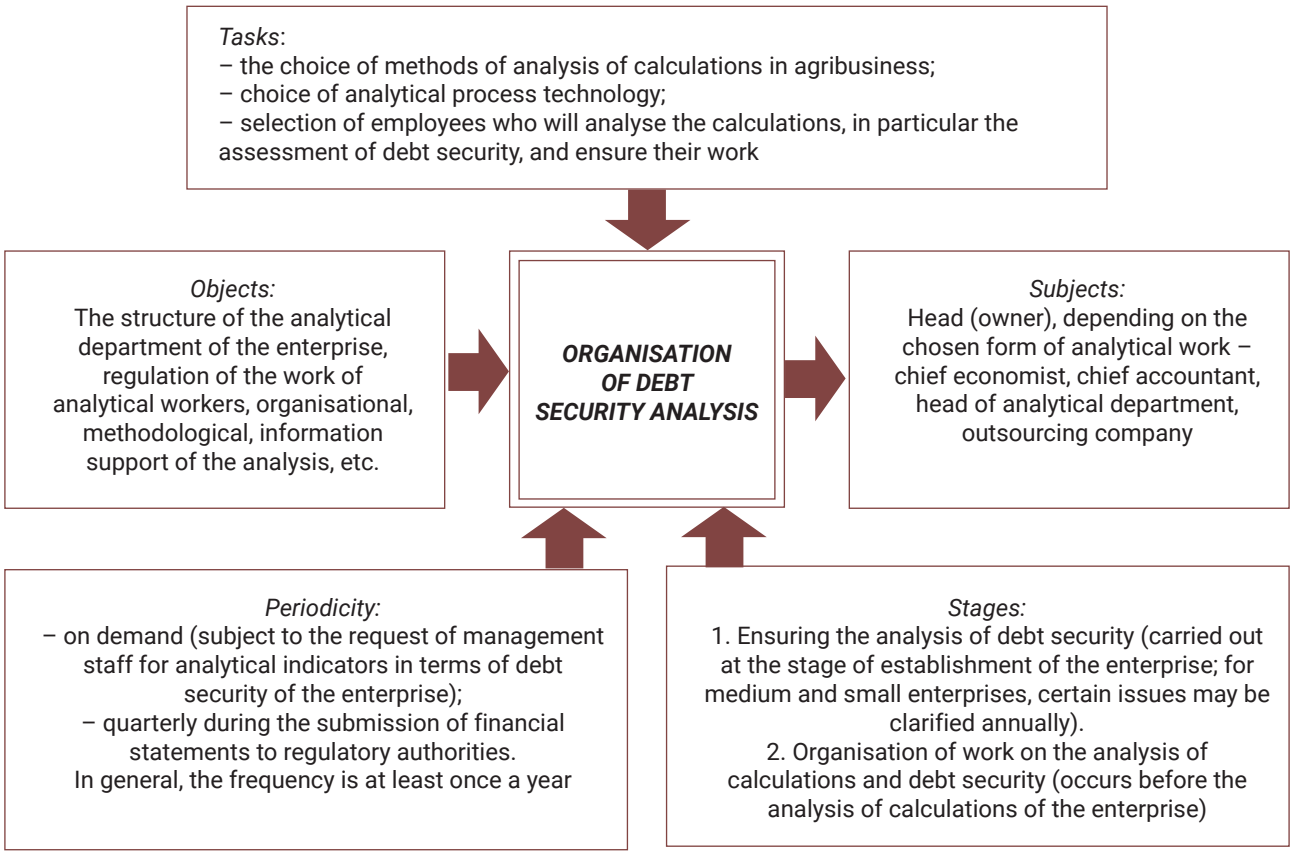

Figure 1. Features of the organisation of the analysis of debt safety in agribusiness
Source: developed by the author based on studies [2; 5; 17]

To conduct such an analysis and exercise ongoing control, an internal control department should be established or a person should be designated with the responsibility to monitor, control and carry out measures to reduce accounts payable and to clear accounts receivable in a timely manner.

We consider it necessary to highlight a number of provisions that define the importance of the calculation indicator as an object of analysis. Firstly, when considering the classification of settlements of agribusiness enterprises, it was pointed out that it is important to take into account such a feature as the impact on entrepreneurial interest, because it is thanks to the timely provision of information about the available volume of settlements by counterparty, the management of agribusiness makes decisions in particular to ensure uninterrupted supply of raw materials, to make adjustments in the process of production. Secondly, the values of accounts receivable and payables are used to calculate many indicators, based on which the financial condition of an agribusiness enterprise is assessed. Thirdly, effective payments management requires a systematic approach, which cannot be reduced to solving individual problems – finding ideal customers and suppliers, court debt collection, and so on. Let us consider the importance of calculation analysis for evaluating the performance of agribusinesses in today's business environment (Fig. 2).

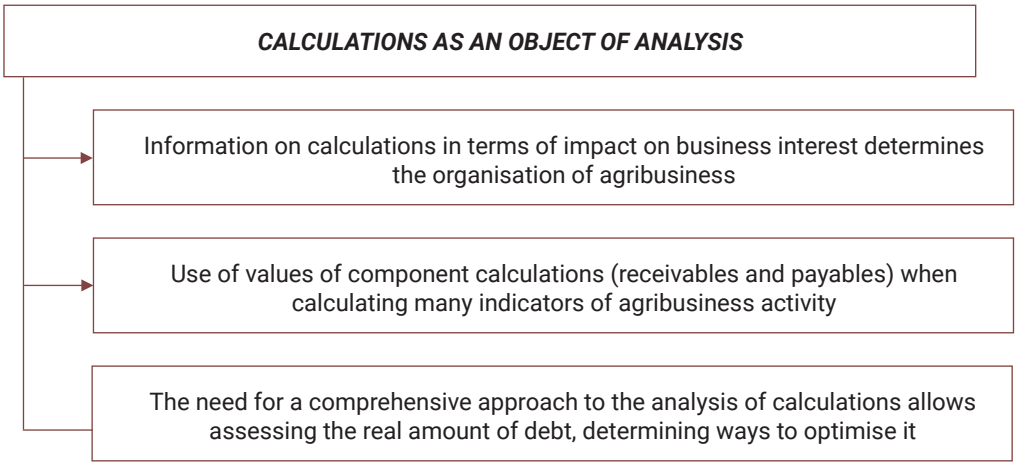

Figure 2. The importance of calculation analysis for evaluating agribusinesses
Source: developed by the author based on studies [2; 5; 17]

Notably, the importance of settlement analysis for assessing the performance of agribusinesses is important in a competitive environment, given the fact that agribusinesses have traditionally benefited from loans. The prices of agricultural products for producers are low, which prevents them from repaying their loans on time – a characteristic of financial security, or, more precisely, of debt security. There are many methods for assessing financial security based on the indicators required to manage receivables and payables, which identify the risks of settlement transactions, primarily manifested in the default of receivables and the identification of customers who are insolvent.

Taking into account the identified contradictions in the authors' proposals, we propose that the sequence of the analysis of agribusiness enterprises calculations should be considered in terms of three stages: organisational, methodological and final (Fig. 3).

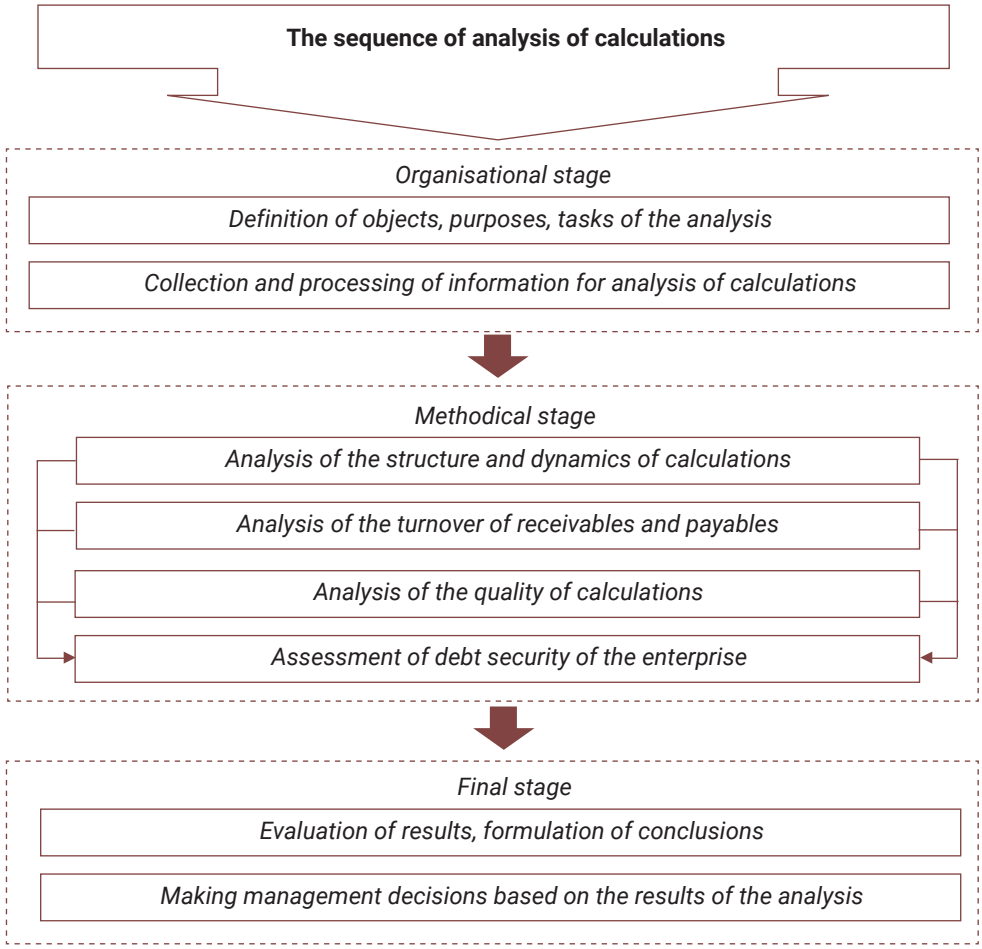

Figure 3. Sequence of calculation analysis in agribusiness
Source: developed by the author based on studies [4, 6; 8]

In today's economic environment, agribusiness is associated with a certain amount of risk. A study of the settlement operations of agribusiness enterprises in Ukraine identified the risks to which settlements are most vulnerable and would have a negative impact on business development (Table 1).

Table 1. Characteristics of the risks inherent in settlement operations (settlements) of agribusinesses

Type of risk	Indicator	Risk characteristic
1	2	3
Currency risk	**CR**	Caused by the depreciation of the Ukrainian hryvnia and exchange rate fluctuations
Industry risk	**IR**	The industry is under state control, which leads to problems with settlements
Inflation risk	**IR**	Debt depreciation due to rising inflation
Climate risk	**CIR**	Adverse weather conditions can have a negative impact on the yield and efficiency of agricultural production
Political risk	**PR**	Political instability negatively affects the country's economic situation, reduces the country's investment attractiveness, makes it difficult to do business and can have an adverse effect on the company's operations
Credit risk	**KrR**	Non-performance of financial obligations by counterparties may have a negative impact on the company's financial condition
Legal (juridical) risk	**JR**	Lack of legal regulation, changes, unpredictable application of legal provisions leading to losses
Interest rate risk	**IRR%**	Changes in interest rates can affect financial performance
Lender's risk	**LR**	Lender's refusal to continue financing
Risk of liquidity	**RI**	The risk that the real transaction price may be very different from the market price in a worse way; difficulties in repaying the enterprise's financial obligations requiring the transfer of funds or other financial assets
Risk of non-performance by the debtor	**RD**	Shortfall in income and/or compensation for the debtor's unpaid supply debt
Risk of underpayment	**RU**	Under-recovery of funds, resulting in a loss of performance
Risk of personnel (HR)	**RP**	Shortage of qualified staff, failure to provide normal working conditions, lack of supervision of staff (fulfilment of their duties)
Fraud risk (intentional deception)	**FR**	Deliberate acts by a debtor or creditor, or both, to obtain benefits, conspiracy

Source: developed by the author based on studies [2; 5; 17]

To effectively manage the risks of settlement transactions and to justify the appropriateness of a particular risk management method (e.g., self-insurance through the formation of reserves to cover possible adverse consequences of settlement risks, etc.), a scale for assessing the likely consequences of risk has been developed (Table 2).

Table 2. Scale for assessing the level of settlement risk and its probable consequences

Measuring the impact of risk	Impact measurement indicator	% Probability of risk implementation	Characteristics of risk impact measurement
Zero and minor impact measurements	MI_0	0-24%	The impact of the negative impact of risk on the company's financial performance, development and reputation is minimal
Measurement of moderate impact	MI_{mod}	25-49%	The consequences of the risk are not critical to the operation of the business, can be managed or risk transferred to other parties
Measurement of high (significant) impact	MI_{sig}	50-74%	Risk has a significant impact, requires management, and its consequences can disrupt one or more busi-ness processes
Measurement of catastrophic (critical) impact	MI_{cr}	75-100%	The risk and its likely consequences are critical for the company, causing significant losses, damage, losses and causing an exit from the normal state of business processes

Source: developed by the author based on studies [2; 5; 17]

This scale is recommended for use by agribusinesses and takes into account the sectoral averaging of the probability of occurrence of risks specific to their business operations. However, direct use of the scale for assessing the level of settlement risk and the occurrence of possible consequences is not possible without applying the proposed ranking and the translated probability scale for the realisation of settlement risks. Notably, the ranking of the possible consequences of the risks of settlement transactions of agribusiness enterprises should be governed by the company's internal risk management regulations and accounting policies. This is due to the fact that with the help of the developed transfer scale the accountant will be able to assess the probability of the risk on a settlement transaction and to record a contingent liability or contingent asset and form the appropriate collateral (Table 3).

Table 3. Ranking and transfer scale of probability of implementation of settlement transaction risks

No.	Indicator	Normative	Likelihood of settlement risk implementation			
			MI_0	MI_{mod}	MI_{sig}	MI_{cr}
1	**ClR**	**0-0.12**	0-0.02	0.03-0.05	0.06-0.09	0.10-0.12
2	**Rl**	**0-0.12**	0-0.02	0.03-0.05	0.06-0.09	0.10-0.12
3	**FR**	**0-0.12**	0-0.02	0.03-0.05	0.06-0.09	0.10-0.12
4	**IR**	**0-0.08**	0-0.01	0.02-0.03	0.04-0.05	0.06-0.08
5	**CR**	**0-0.08**	0-0.01	0.02-0.03	0.04-0.05	0.06-0.08
6	**RD**	**0-0.08**	0-0.01	0.02-0.03	0.04-0.05	0.06-0.08
7	**RU**	**0-0.08**	0-0.01	0.02-0.03	0.04-0.05	0.06-0.08
8	**CR**	**0-0.05**	0-0.01	0.02	0.03	0.04-0.05
9	**KrR**	**0-0.05**	0-0.01	0.02	0.03	0.04-0.05
10	**LR**	**0-0.05**	0-0.01	0.02	0.03	0.04-0.05
11	**RP**	**0-0.05**	0-0.01	0.02	0.03	0.04-0.05
12	**IR**	**0-0.04**	0-0.01	0.02	0.03	0.04
13	**JR**	**0-0.04**	0-0.01	0.02	0.03	0.04
14	**IRR%**	**0-0.04**	0-0.01	0.02	0.03	0.04
	Risk limits		**0-24%**	**25-49%**	**50-74%**	**75-100%**

Source: developed by the author based on studies [2; 5; 17]

Table 3 provides normative values of risk indicators of settlement operations as indicators of their effectiveness, delimits risk zones (zero – there is a serious doubt of risk occurrence; moderate – the probability of risk occurrence is low, but the receipt of negative consequences of risk is doubtful, but can take average values; significant – the probability of risk is high, which leads to mandatory use of risk management measures; critical – risk occurrence

Building a system to manage the risks inherent in the settlement operations of agribusinesses is a complex process that involves an accounting system. A settlement risk management system should be based on interrelated components, one of the most important being the analysis and planning of the settlement status. Thus, analytical support for the risk management of settlement transactions is presented for their groups:

– industry-specific risks (IR, ClR);
– risks caused by government restrictions (CR, LR);
– financial risks (IRR%, CR, IR, Rl);
– organisational risks (RD, FR, RU, RK, KRR);
– personnel risk (RP).

Let's consider analytical support for risk management of settlement transactions in agribusiness (Table 4).

Thus, the main threats to the first two groups of risks are the lack of economically sound support programmes, and the unattractiveness of the industry. In settlement management, a risk assessment of this group will help to understand the structure and dynamics of agribusiness, its specific opportunities and threats to settlement transactions, and improve settlement policy on this basis. This group includes risks that cannot be managed because they arise as a result of the development of the entire economic system. However, this does not mean that they cannot be reduced, so they must be taken into account in the diagnosis of settlement risk in agribusiness. Whereas, the identification of financial and organisational risks is driven by threats such as a lack of investment and financial resources; a lack of reserves; problems in the credit process; and poor organisation of settlements. These groups of risks include those that cannot be managed, but their assessment is simplified because it is based on quantitative indicators.

Table 4. Analytical support for risk management of settlement operations in agribusiness

<table>
<tr><th colspan="2" rowspan="3">Management components</th><th colspan="8">Risk group and their indicators</th></tr>
<tr><th rowspan="2">Industry specific risks</th><th rowspan="2">Risks due to government restrictions</th><th colspan="4" rowspan="2">Financial risks</th><th colspan="2">Risks arising in dealing with creditors and debtors</th></tr>
<tr><th>IR, CIR</th><th>CR, LR</th><th>RD, FR, RU</th><th>LR, KrR</th><th>RP</th></tr>
<tr><td rowspan="11">Analysis and planning the settlement status</td><td rowspan="2">Areas of analysis</td><td rowspan="2">Assessment of buyers' market strength</td><td rowspan="2">Analysis of the country's political environment</td><td colspan="4" rowspan="2">Balance analysis of receivables and payables in terms of amounts, currencies, terms</td><td>Analysis of receivables, identification of dependency on major debtors, assessment of their quality, recoverability</td><td>Analysis of liabilities, identifying their concentration and dependence on main creditors</td><td>Staff performance analysis</td></tr>
<tr><td colspan="2">Debt load assessment</td><td>Personnel development assessment</td></tr>
<tr><td rowspan="5">Quantitative parameters of calculations</td><td>Buyers' market strength</td><td rowspan="5">–</td><td rowspan="5">The interest coverage ratio</td><td rowspan="5">Indicators of interest rates and currency exchange rates</td><td rowspan="5">Share of revenue denominated in a certain currency</td><td rowspan="5">Inflation rate</td><td rowspan="5">The current liquidity ratio</td><td>Degree of concentration of major buyers /customers</td><td rowspan="5">Counterparty credit rating</td><td rowspan="5">–</td></tr>
<tr><td>Product profitability</td><td>Accounts receivable turnover period</td></tr>
<tr><td rowspan="3">Return on sales</td><td>Share of unsecured receivables</td></tr>
<tr><td>Share of doubtful debt</td></tr>
<tr><td>Amount of allowance for doubtful debts</td></tr>
<tr><td colspan="2">Debt ratio</td></tr>
<tr><td rowspan="3">Qualitative parameters for evaluating calculations</td><td>Assessment of the level of state support</td><td rowspan="2">Assessing access to information on the state of the agribusiness industry</td><td colspan="5">Assessing investment activity</td><td colspan="2" rowspan="3">Availability and evaluation of reserves for receivables, reserves for future liabilities, capital reserves</td><td>Assessment of the level of organisation of settlement transactions</td></tr>
<tr><td>Assessment of the level of competition</td><td rowspan="2">Assessing of the impact of the state on the enterprise</td><td colspan="5" rowspan="2">Availability and evaluation of reserves for receivables, reserves for future liabilities, capital reserves</td><td rowspan="2">Assessment of training level</td></tr>
<tr><td>The value of the enterprise within the region</td></tr>
<tr><td>Development of a system of limits / standards</td><td colspan="3">–</td><td colspan="5">Concentration limit on receivables and payables
Limits on gaps in receivables and payables by terms and types of currencies</td><td>Accounts receivable limit (broken down by main buyers/ customers)</td><td>Limit of borrowed funds used in business activities</td><td>–</td></tr>
<tr><td colspan="2">Generation of financial statements</td><td colspan="2">Not provided; an information sheet may be provided</td><td colspan="5">Notes to the annual financial statements (relating to collaterals and provisions)</td><td colspan="2">WFP -1 “Report on the status of settlements with/against payables”, WFP -2 "Report on the status of settlements with / against receivables”, Management report (in terms of settlement transactions)</td><td>–</td></tr>
<tr><td colspan="2">Development of a system of measures for monitoring the status of settlements</td><td colspan="9">Determined based on the established level of debt security and the main assessment parameters</td></tr>
</table>

Source: developed by the author based on studies [2; 5; 17]

Improving the methodology for the analysis of settlements with a breakdown of debt security

Generalising the scientific approaches and taking into account the state of agribusiness, a methodology for the analysis of agribusiness enterprise settlements is proposed, which differs from the existing ones in a comprehensive approach to the analysis and assessment of enterprise debt security. The proposed methodology covers such a sequence, which takes into account the features of agribusiness, but can be supplemented with other lines of analysis, if necessary, based on the risk diagnosis data of the given enterprise, taking into account the specifics of the activity.

Based on the developed methodological support for analysing the implementation of settlement operations, the author proposed a list of economic indicators for assessing the debt security of an enterprise (*main*: debt-to-assets ratio (I1), net debt-to-assets ratio (I2), debt-to-equity ratio (I3), interest coverage ratio (I4), current liquidity ratio (I5), accounts receivable turnover ratio (I6), accounts payable turnover ratio (I7), receivables-to-payables ratio (I8), payables-to-costs financing ratio (I9) and *additional*: receivables-to-assets ratio (I10, payables-to-liabilities ratio (I11)), which became the basis for calculation of the integral debt security index by applying a comparative assessment score (0-4 – debt security, 5-7 – sufficient debt security; 8-10 – high debt security).

To ensure prompt decision-making in the process of settlement management, in the author's opinion, it is advisable to use the methodology of integral assessment of the debt security of an agribusiness enterprise. Using the indicators derived and substantiated by Iu.V. Skripnik [17] for the agribusiness sector, as well as his proposals for expanding the list of indicators, let us define the order of their integration based on the role in ensuring debt security, which should be understood as a certain level of debt that allows maintaining its financial sustainability to internal and external threats, while maintaining an appropriate level of solvency. Taking into account that the indicators proposed by the author, which determine the debt security of the enterprise, have different units of measurement, we propose to form an integral indicator based on the evaluation of its components' values, where:

– "0" – does not meet the defined criterion;
– "1" – meets the defined criterion for the core indicators.

Furthermore, additional indicators that are evaluated over time need to be calculated. An improvement in the indicator is rated at 0.5, a deterioration at 0. Additional indicators are included in the total estimates. The evaluation of parameters that do not have normative values is subjective, which can be achieved with expert judgement.

Consequently, in the case of total debt security, the integral indicator would be 10.

Summarising the scientific approaches, the author proposed a methodology for the analysis of calculations, which includes an assessment of the debt security of agricultural businesses (Fig. 4).

The proposed methodology, which differs from the existing ones in its comprehensive approach and evaluation of debt security and covers such a sequence that best characterises agribusiness, but can be complemented by other lines of analysis, if necessary, based on risk diagnostic data for a particular enterprise, given the specifics of agribusiness.

Based on the results of the agribusiness settlement risk assessment, the analyst identifies areas for further settlement analysis. The analytical work involved in the calculations requires detailed decision-making routines that allow the benefits and risks to be assessed and compared. This is why the cost-effectiveness of implementing the proposed debt security analysis methodology is determined by comparing the cost of the analysis and the economic efficiency obtained using the results of the analysis. Given the current level of information-computer technology development, the cost of analysis will only be significant at the initial stage of the organisation, when a methodology is proposed in the software. Further costs will be minimal, as automation will not require the agribusiness to spend a significant amount of time and money.

Thus, the application of the proposed methodology for the analysis of accounts receivable and payable, including as a separate step the assessment of debt security, provides a comprehensive approach to management and allows for timely identification of the most problematic areas of the settlements and take appropriate action.

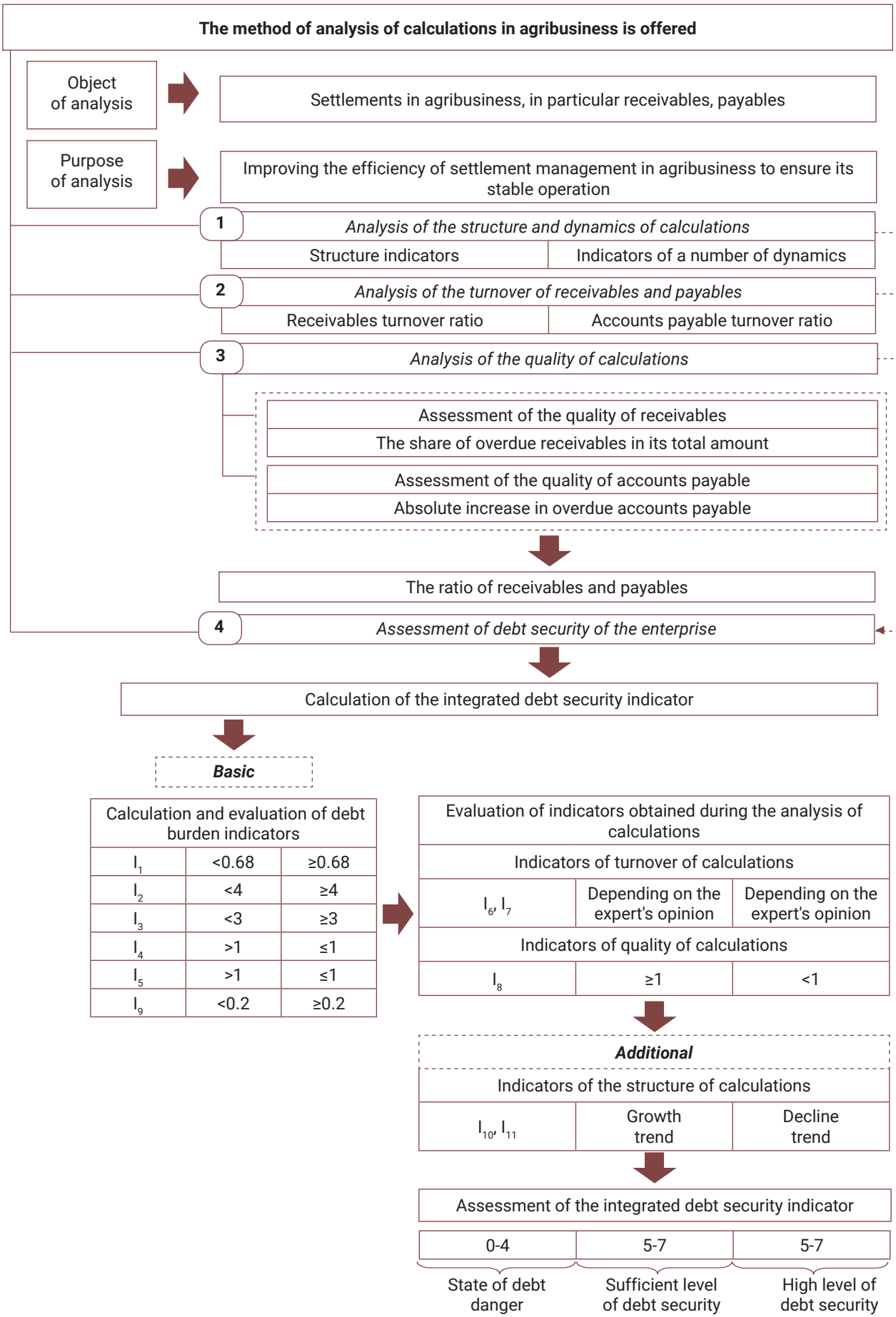

Figure 4. Proposed methodology for analysis of calculations, including debt security assessment
Source: developed by the author based on studies [2; 5; 17]

Practical application of the proposed methodology for analysing debt security in agribusiness and suggesting measures to improve it

The introduction of the proposed methodology will allow assessing the debt security and have, in addition to economic, a social effect, as it will provide a basis for timely settlements and contribute to the stability of agribusinesses, ensuring a steady income for their employees. Consider the calculation of debt security indicators in 2018 based on the studied enterprises (Table 5).

Table 5. Calculation of debt security indicators in 2018

No.	Indicator	PJSC "Khmelnytskrybkhoz"		APJSC "Ukraine"		JSC "Vasyschevo"	
		Result	Rating*	Result	Rating*	Result	Rating*
1.	I_1	1.73	*Negative*	0.15	*Positive*	0.004	*Positive*
2.	I_2	1.74	*Positive*	0.02	*Positive*	0.004	*Positive*
3.	I_3	-1.88	*Negative*	0.57	*Positive*	-0.09	*Negative*
4.	I_4	X	*Negative*	15.26	*Positive*	X	*Negative*
5.	I_5	9.72	*Positive*	6.13	*Positive*	44.48	*Positive*
6.	I_6	1.69	*Negative*	5.08	*Negative*	X	*Negative*
7.	I_7	0.27	*Negative*	6.01	*Negative*	35	*Negative*
8.	I_8	0.29	*Negative*	1.31	*Positive*	0	*Negative*
9.	I_9	0.04	*Positive*	15.27	*Negative*	0.06	*Positive*
10.	I_{10}	2017-0.02 2018-0.03	*Positive*	*2017-0.11* *2018-0.13*	*Positive*	2017-0 2018-0	*Positive*
11.	I_{11}	2017-0.27 2018-0.10	*Negative*	2017-0.02 2018-0.03	*Negative*	2017-0.03 2018-0.04	*Positive*
Debt security level		4	*State of debt danger*	7	*Sufficient level of debt security*	6	*Sufficient level of debt security*

Source: developed and conducted calculations by the author based on data from these companies

In addition, a number of indicators at PJSC "Khmelnytskrybkhoz" have deviations from the recommended values, indicating significant problems in debt repayment and, in general, financial sustainability. A negative profit figure, even in the absence of interest that the company has to repay, does not allow for a positive assessment of the interest coverage ratio.

The changes in the share of accounts receivable are not significant, and the share of accounts payable has decreased, which allows giving the maximum score in the evaluation of additional debt security indicators at PJSC "Khmelnytskrybkhoz". The situation of additional debt security indicators at APJSC "Ukraine" is similar to that at PJSC "Khmelnytskrybkhoz". Whereas at JSC "Vasyschevo" there are no accounts receivable at the end of the reporting period, this situation is dictated by the general policy of working with debtors and maximum sales of products against prepayment. The changes that characterise the share of both receivables and payables (additional debt security assessment indicators) are insignificant, and the indicator remains at the beginning of the period under investigation and at the end within the normal range.

To assess the integral indicator, it is necessary to use a scale (Table 2) that has been developed based on a synthesis of the work of scientists who have investigated the issue of assessing the components of economic security (which has enabled the definition of states of debt security), and modelling situations and consequences for indicators that do not meet the established criteria. The normative value of the turnover ratios for accounts receivable and accounts payable depends on the specifics of a particular agribusiness enterprise, so these indicators have not been taken as the main ones for determining the scale of debt security. In fact, they are subjective in nature. Furthermore, additional indicators were also not taken into account, as their impact is significantly less than that of the main indicators.

However, a negative value of receivables (payables) turnover ratios and additional indicators combined may worsen the value of the integral indicator of debt security, thereby moving it to the line between sufficient debt security / at risk or between sufficient debt security / high debt security. The debt security indicator is assessed by applying a scoring scale, as follows:

0-4 – state of debt danger;
5-7 – sufficient level of debt security;
8-10 – high level of debt security.

Consequently, the value of the integral indicator of debt security for PJSC "Khmelnytskrybkhoz" is 4, for APJSC "Ukraine" it is 7, and for PJSC "Vasyschevo" it is 6. The resulting value of the integral index indicates a sufficient level of debt security at APJSC "Ukraine" and PJSC "Vasyschevo". As a result of a detailed analysis of the agribusiness calculations, the measures of the stabilisation and debt security programme can be used. Consider the matrix of measures to improve debt security in agribusiness enterprises (Table 6).

Table 6. Matrix of measures to improve debt security in agribusiness

Indicators / Type of debt security	Debt burden indicators (I_1, I_2, I_3, I_4, I_5, I_9)	Indicators of the structure and quality of calculations (I_8, I_{10}, I_{11})	Turnover indicators (I_6, I_7)
State of debt danger (0-4)	Continuous monitoring of accounts payable status; reduction of accounts payable by scheduling payments; increase in cash through continuous work with debtors; adjustments in the formation of reserve capital	Continuous control of the payment status; reduction of accounts payable by scheduling payments; establishment of a credit limit for customers	Increasing sales through the use of new equipment and technologies
+ measures for the level that characterises the highest type of debt security			
Sufficient level of debt security (5-7)	Monitoring the timeliness of loan repayments; making provisions for expenses and payments; increasing retained earnings	Constant work with debtors; analysis of creditworthiness of counterparties, assessment of creditworthiness of new potential buyers and customers; development of business processes for initiating claims work with buyers and customers in case of violation of payment terms under the contract	Increasing sales by expanding the customer base; constant work with debtors
+ measures for the level that characterises the highest type of debt security			
Sufficient level of debt security (8-10)	Increase cash flow by dealing with debtors on an ongoing basis	Improving the reputation of an agribusiness enterprise	Monitoring of receivables for arrears

Source: developed by the author based on studies [2; 5; 17]

The implementation of most of these measures in practice involves changes in the organisation of the accounting system, as well as in the recording of transactions. In particular, decisions can be made to write off uncollectible receivables based on the results of settlement monitoring, as well as adjusting the methods for calculating the allowance for doubtful debts and/or reviewing the way the doubtfulness factor is calculated. It is compulsory for changes to be indicated in an accounting policy order with appropriate justification.

Thus, properly organised settlement analysis of agribusiness enterprises allows controlling the status of settlements with counterparties, reduce the risk of default on receivables and overdue debt formation, as well as to determine the need for additional resources to cover accounts payable.

Conclusions

Having summarised and evaluated the approaches of scientists in organising debt security analysis in agribusiness, two stages were identified:

1) providing analysis (determining the form of analytical work; drawing up a comprehensive plan of analytical work; writing methods of analysis; determining ways to provide analysis results);

2) organisation of the analytical process (development of a plan and programme for debt security analysis, allocation of work among the performers, identification of sources of information for analysis; diagnosis of risks of settlement operations based on Risk Passports, evaluation of the proposed methodology in accordance with the conditions for analysis and its adjustments).

For methodological support of the analysis as one of the important factors of effective management of debt security, provisions for the organisation of agribusiness debt security analysis in terms of objectives, objects, subjects, frequency and stages have been outlined. The stages of settlement analysis include: analysis of settlement structure and dynamics, analysis of turnover of receivables and payables; analysis of settlement quality and assessment of debt security. The most attention is paid to the analysis of debt security of the enterprise, which is proposed to be assessed based on an integral index, the calculation of which includes indicators from such groups as debt load indicators, structure indicators, quality indicators, turnover indicators. The proposed methodology for assessing the debt security of agribusiness enterprises provides ample opportunity for a comprehensive analysis of agribusiness settlements and enables the identification of threats. One of the advantages of this technique is to bring the indicators into a comparative view by applying a scoring system to diagnose the level of debt security of agribusiness enterprises. As a result of a detailed analysis of the calculations, individual measures of the programme to stabilise and enhance agribusiness debt security can be used. Further research is planned to develop a risk management model tailored to agribusiness and to develop an action programme to improve debt security, which will contribute to better management of settlements.

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References

[1] Official website of the National Bank of Ukraine. Statistics. (n.d.). Retrieved from https://bank.gov.ua/statistic.
[2] Biliak, Yu.V. (2019). Features of the financial security of the agricultural enterprise in the general system of the agro-industrial complex. *Agrosvit,* 3, 24-29.
[3] Ganyuta, O.N., & Nafikova, R.M. (2019). The role of analysis in optimizing the accounting of receivables and payables. *Topical Issues of the Modern Economy,* 3, 568-572.
[4] Kobeleva, S.V., & Konova, O.Yu. (2015). Accounts receivable: Origin, analysis and management. *Territoriya Nauki,* 2,
[5] 109-115. Hevchuk, A.V. (2020). *Accounting for settlement operations at agricultural enterprises in conditions of economic uncertainty.* Vinnytsia: TOV "Tvory".
[6] Kolisnyk, O.P., & Zamota, I.O. (2019). Theoretical and practical aspects of accounting and analysis of receivables in the field of information and telecommunications. *Modern Economics,* 15, 108-113.
[7] Hevchuk, A.V. (2018). Methodical approaches to the analytical evaluation of the level of debt registration of the enterprise. *Bulletin of Chernivtsi Trade and Economic Institute. Economics,* 3(71), 90-100.
[8] Bondarchuk, N.V., & Timashova, A.M. (2019). Method of analyzing accounts receivable of enterprises. *Problems of Systemic Approach in the Economy,* 3(71), 170-177.
[9] Payanok, T., & Savchenko, A. (2017). The analysis of accounts receivable of an enterprise using the economic and mathematical methods. *Economist,* 3, 27-32.
[10] Sheremet, A.D., & Nagashev, E.V. (2008). *Methods of financial analysis of commercial organizations.* Moscow: INFRA-
[11] M. Berdnikova, L.F., & Odarich, V.V. (2016). On the analysis of efficiency receivables and payables. *Karelian Scientific Journal,* 5(4), 56-59.
[12] Kruchak, L.V. (2016). Analysis of account receivable and account payable state of business entity. *Ekonomichnyy Analiz,* 25(2), 93-98.
[13] Kolbasina, E.I. (2015). The essence of the analysis of receivables and payables. *Models, Systems, Networks in Economics, Engineering, Nature and Society,* 3(15), 46-52.
[14] Yeliseyeva, O.K., & Prykhodko, A.E. (2019). Improving the accounting and analysis of receivables and payables in the management system of the agricultural enterprise "Agromyr-ST". *Business Inform*, 7, 293-298.
[15] Order of the Ministry of Finance of Ukraine No. 237 "On Approval of the National Regulation (Standard) Accounting". (1999, October). Retrieved from https://zakon.rada.gov.ua/laws/show/z0725-99#Text.
[16] Order of the Ministry of Finance of Ukraine No. 20 "On Approval of the National Regulation (Standard) Accounting 11 "Liabilities". (2000, November). Retrieved from https://zakon.rada.gov.ua/laws/show/z0085-00#Text.
[17] Honcharenko, O., Diachenko, O., & Bykova-Fedorchuk, N. (2020). State regulation of Ukraine's foreign trade in a global pandemic. *Scientific Horizons,* 23(9), 86-97. doi: 10.48077/scihor.23(9).2020.86-97.

Методичне забезпечення аналізу боргової безпеки в агробізнесі та заходів щодо підвищення її рівня

Анна Вікторівна Гевчук[1], Белль Крістофферс[2]

[1]Вінницький фінансово-економічний університет
21037, вул. Пирогова, 71А, м. Вінниця, Україна
[2]Національний університет Кільмеса
B1876BXD, Рок Саенц Пена, 352, м. Берналь, провінція Буенос-Айрес, Аргентина

Анотація. Актуальність дослідження полягає в тому, що в сучасних конкурентних умовах для ефективного управління бізнесом важливе значення має аналіз розрахунків, а саме стан дебіторської та кредиторської заборгованостей, які є невід'ємною частиною грошових відносин і відіграють вагому роль для оцінки ризиків щодо впливу на розвиток агробізнесу. Мета наукової роботи – вдосконалення методичного забезпечення аналізу боргової безпеки в агробізнесі та заходів щодо підвищення її рівня як ефективного способу управління розрахунками. Використано методичні прийоми порівняння показників та прийоми аналізу коефіцієнтів щодо аналізу розрахунків. Узагальнено підходи науковців щодо організації аналізу розрахунків та оцінки боргової безпеки в агробізнесі і виділено два етапи: 1) забезпечення аналізу; 2) організація аналітичного процесу. Окреслено положення організації аналізу розрахунків в частині завдань, об'єктів, суб'єктів, періодичності і етапів до складу яких віднесено: аналіз структури та динаміки розрахунків, аналіз оборотності дебіторської та кредиторської заборгованості; аналіз якості розрахунків та оцінку боргової безпеки. Запропоновано модель методики аналізу розрахунків з виділенням оцінки боргової безпеки, яка має вплив на бухгалтерське відображення та оцінку на основі інтегрального показника, який включає: показники боргового навантаження, показники структури, показники якості, показники оборотності. З'ясовано, що удосконалення методичного забезпечення шляхом впровадження методики оцінки боргової безпеки надає широкі можливості для комплексного аналізу розрахунків в агробізнесі, дає змогу визначити загрози та є результатом деталізованого аналізу розрахунків. Розглянуто матрицю заходів щодо підвищення рівня боргової безпеки. Практична цінність наукової роботи полягає у запроваджені методики аналізу розрахунків з виділенням оцінки боргової безпеки, яка дасть змогу контролювати стан розрахунків з контрагентами, знизити ризик неповернення дебіторської заборгованості, визначити потребу в додаткових ресурсах для покриття кредиторської заборгованості та сприятиме зменшенню ризиків

Ключові слова: розрахунки, заборгованість, методика, управління, показники, модель, ризики

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Creation of a Risk Management Culture on the Example of MNS Investment LLC

Iryna V. Fedulova[1]*, Anastasiia Y. Havryliuk[1], Karl Ricketts[2]

[1]Kyiv National University of Trade and Economics
02156, 19 Kioto Str., Kyiv, Ukraine

[2]Utah State University
UT 84322, 1600 Old Main Hill, Logan, United States

Abstract. Creating a risk management culture is an important task for any enterprise in a changing and unpredictable external environment. The purpose of this study is to consider the theoretical foundations of determining the essence of the risk management culture and practical aspects of its creation in the enterprise. The article discusses the methodological provisions of the creation of a risk management culture at the enterprise, according to which a system of parameters for risk management is built: a list of key success factors and risk management indicators in the context of the main risk groups, the activity scope of the company under study, and the areas of influence on risks. Risk management culture is considered a complex concept that determines how much all employees of an enterprise are aware of the values within the risk management system and how much the results of their activities are associated with achieving the lowest risk targets. For that purpose, the company must provide risk identification, risk analysis, risk response, and risk control. The creation of a risk management culture involves combining all these stages into an united company management chain. The methodology for creating a risk management culture was tested at MNS Investment LLC. As a result of the analysis, a risk rating was constructed in terms of the degree of their impact on the main key success indicators. The relationship of identified risks with the main activity fields of the company and the areas of influence on risks is analysed. It was discovered that the greatest risk to the company's activities in terms of impact on the purpose achievement is the risk of violating the reliability and financial status of suppliers. The use of this methodological approach is of practical value since it allows integrating the stages of risk management into the company's activities

Keywords: risk management, risk management culture, risk factors, risk indicators, impact on risks

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*Corresponding author

Introduction

The risk management culture in a company is an important component of the risk management system, its core, however, the management of enterprises frequently does not pay due attention to it. Therewith, in conditions of uncertainty and socio-economic instability, and a well-built risk management system allows making effective management decisions that lead to the achievement of long-term strategic goals. The relevance of studying this issue is due to the need to create an effective risk culture at the enterprise, which should combine the identification of key risks of the enterprise, the organisation of risk management, and the use of effective methods to overcome them.

The risk culture creation and its development at the enterprise have been highlighted by many foreign and Ukrainian researchers, in particular: J.M. Farrell, A. Hoon [1], L.M. Titarenko, B.Yu. Rostiyanov, and V.A. Yatsenko [2], O. Dyugovanets and I. Dovba [3], I.V. Semenyutina [4], Ph. Silberzan and M. Jones [5], Z.N. Omarova [6]. They considered the essence of risk culture and outlined the main characteristics and attributes that determine its creation in the enterprise. Notably, the issues related to creating a risk management culture are understudied by Ukrainian researchers, most of the articles are devoted to the investigation of general theoretical aspects of the company's corporate culture. Currently, there is no generally accepted risk management methodology. Many researchers have considered methods of risk analysis and management. Namely, I. Shevchenko, and Yu. Palamarchuk [7], Yu. Shvets [8], O. Kovalenko [9], J. Freund, J. Jones [10], G. Xiaoyan, C. Chen, S. Hao, S. Juan [11] considered methods of quantitative and qualitative risk analysis. For risk analysis, specific methods are applied that are aimed at evaluating risk in terms of the probability of its emergence and its impact on achieving the company's goals. It is essential not only to apply one of the methods for risk analysis but also to build a risk management system that would allow creating a risk culture at the enterprise, that is, to combine all the business processes of the enterprise with the risk management.

According to the authors, the culture of risk management can be defined as the degree of awareness of the company's need for risk management, based on values, knowledge, beliefs, risk understanding by management, workforce, top management and building on this basis activities and management decisions, taking into account the optimal ratio of benefit and danger.

An enterprise with a developed risk culture should have established standards and methods for identifying, analysing, evaluating, and managing risks. Companies need to create a risk culture that views risk not only as a danger but also as a source of future profits for the company. It is worth noting that implementing and developing a risk management culture is a continuous and complex process. Such a process should be controlled directly by top management. If the company's risk management services do not find support from management, employees consider the risk management system ineffective, approach the risk evaluation formally, solely to avoid punishment or liability in case of negative consequences. According to the scientist [6], the risk management system as a process accounts for only 5% of work, and the risk management culture accounts for 95%. The risk management culture should be created in such a way as to provide for the entire chain of the risk management processes in the enterprise, namely: risk identification, risk analysis, the use of measures to influence risks, and control over these processes.

The risk management culture is, on the one hand, an integral component of the modern risk management system of companies, on the other, the least studied issue in Ukrainian science. The results of the annual EY survey "Changing priorities: risk culture in the banking sector" show that risk culture is among the priority areas of development: 84% of global, systemically important banks are actively working on its development [12].

The purpose of the study is to determine a methodological approach to the creation of a risk management culture on the example of MNS Investment LLC.

In accordance with this purpose, the article defines the following tasks: to investigate the essence of the risk management culture, to determine the attributes of the risk management culture creation in the organisation, to test the methodology for creating a risk management culture on the example of MNS Investment LLC.

Literature Review

J.M. Farrell, A. Hoon characterise risk management culture as an organisation's existing system of values and behaviours that determines the essence and form of decisions made in the field of risk management [1]. It affects the decisions made by management and employees, even if the company does not conduct an analysis of possible risks. In their opinion, an effective risk management culture exists when employees know the position of the organisation, the limits of their powers, and can openly discuss with management the risks that they will have to take in order to achieve the company's long-term strategic goals [1]. L.M. Titarenko, B.Yu. Rostiyanov, V.A. Yatsenko, considering the organisational aspects of risk management determine that the issues related to controlling them directly depend on the effectiveness of behaviour and activity forms of administration, their ability to give explanations, make an expert evaluation of decision-making, create conditions that allow identifying problems, guarantee the objectivity and comprehensiveness of information analysis at a professional level [2].

O. Dyugovanets and I. Dovba outlined the following determinants of risk culture development in the corporate management system: integration of risk culture identification, analysis and risk management in decision-making; regular risk culture development in the corporate system; transparency and disclosure of information about the results and effectiveness of risk management; continuous development and improvement of approaches to risk management within the organisation; implementation of international

principles in the corporate governance system, ensuring the protection and equal treatment of shareholders' rights, recognition of their rights provided for by law, timely and accurate disclosure of information on all important issues related to the organisation, effective control over the activities of management with management board (supervisory board), as well as accountability of the management board to shareholders; coordination of activities and compilation of a clear strategy in the field of risk management and corporate governance on the part of management; building an integrated risk management system in the business processes of the enterprise [3]. Risk management should be harmoniously integrated into the overall management system of the company.

I.V. Semenyutina examined the attributes that can be used to identify a high level of risk management culture, namely, a unified understanding of basic concepts, principles, and goals in the field of risk management; the principles for determining risk tolerance, consistent with all stakeholders in the company's activities, its resources, and goals; the level of management competencies in the field of risk management; interaction and consulting of the management team during risk identification and substantiation of optimal risk management ways; material incentives for personnel to assist in solving risk management tasks; integration of risk management methods and procedures in all areas of business; standardisation of the risk management, availability of standards and regulations for risk management in the enterprise [4].

Representatives of the Audit Committee Institute (KPMG) consider risk culture as an internal environment where management and employees perform activities and make decisions based on taking into account and choosing the optimal ratio of risks and opportunities [13]. Ph. Silberzan specifies that it is necessary to distinguish two types of risks. The first is an activity that leads to errors or unsatisfactory results. The second is "the risk of not doing something that could be useful" [5]. Both types are interrelated, but practical experience shows that the first type is more common than the second. The entire corporate culture is also focused on the first type of risk in order to increase the viability of the system and its continuity. However, despite the risk management activity, it is still possible to get negative consequences. N. Taleb in the book "The Black Swan" [14] shows that one of the main and fundamental mistakes in risk management is that the analyst considers the possibility of regulating all obstacles by analysing ordinary statistical observations of events that occurred in the past and extrapolating them to the future without taking into account changes in business conditions. This is an impactful source of risks in the company.

Methodology

The methodological basis of the research is a bibliographic analysis of the definitions of the risk management culture, as well as dialectical and abstract-logical approaches to determining the main parameters and attributes of the creation of a risk management culture. The study considers the research method of risk management, which is based on systems analysis, as a result of which a matrix approach was used to establish causal links between key success factors, risks of the company's activities by individual groups, fields of activity, and measures to influence risks in order to minimise them. This method was proposed by Chinese researchers [11], it includes risk identification, risk analysis, risk response, and risk control. The methodological provisions of this approach are presented in Figure 1.

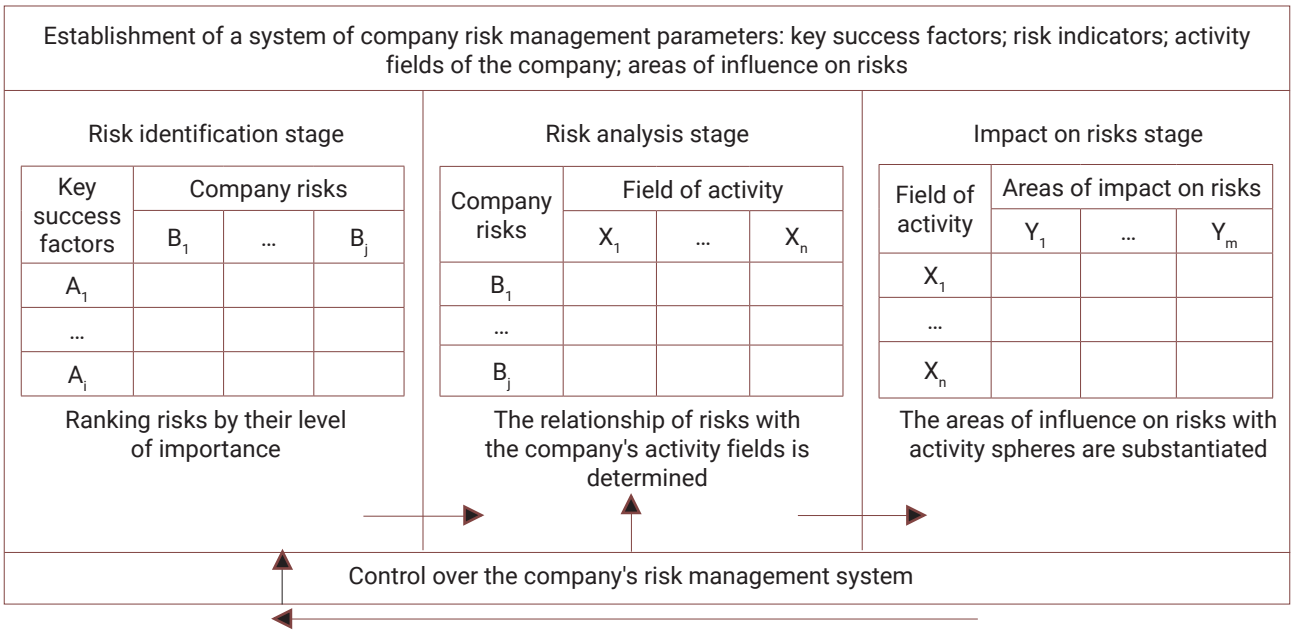

Figure 1. Methodological approach to the company's risk management

Source: compiled by the authors based on [11]

The proposed methodology was tested on the materials of MNS Investment LLC. Previously, the authors identified the key success factors, the list of risks that can affect them, structured according to certain risk groups, the fields of main activity and influence on the risks of the company under study.

To determine the level of impact that the identified risks have on the key success indicators of the company, an expert survey among leading specialists of MNS Investment LLC (6 people) in 2021 was used. The survey was conducted in the form of interviews between the authors of the study and the company's specialists and was not anonymous. The survey results were summarised using an arithmetic mean and reflected in Table 2. The assessment was performed on a 5-point scale from 0 to 5, according to which 0 is the absence of risk influence on the key success factor; 1 is a weak impact; 2 is an impact below the average level; 3 is an average level of impact; 4 is an impact above the average level; 5 is a strong impact. In addition, as a result of the analysis, the authors determined the links between the identified risks and the main activity fields of the company (Table 3) and between the areas of influence on risks and individual activities of the company (Table 4).

The weighted average score was used to calculate the integral risk assessment.

Results and Discussion

Parameters of creating a risk management culture at MNS Investment LLC

The methodology proposed in [11] allows comprehensively linking all risk management stages with the main business processes of the company, which ultimately creates a risk management culture at the enterprise. The methodology was tested at MNS Investment LLC. The company under study is the official representative of CALZEDONIA GROUP in Ukraine. As of 2021, based on the results of an analysis of operating activities, the company opened 51 stores, including the following brands: Calzedonia, Intimissimi, Falconeri, Tezenis.

The financial standing of MNS Investment LLC, according to the analysis of its financial statements in 2020 compared to previous years, was extremely critical. Despite a 5.9% drop in sales revenue in 2020 compared to the previous year, annual net profit fell more than 9 times, from UAH 56.2 million to UAH 5.1 million. The list of global restrictions due to the COVID-19 pandemic primarily affected the decline in demand for underwear and a decrease in revenue from sales. The main cause for such a rapid drop was restrictions on purchases, which began to operate throughout Ukraine and led to the closure of all stores of MNS Investment LLC. The case of COVID-19 is a vivid example of the need to take into account all the risks that may be associated with the company's activities and provide for measures to manage them in advance. Proper organisation of risk management will allow the company not only to stay afloat but also to maintain its profits or minimise its decline.

For a detailed analysis of the risks of MNS Investment LLC's activities in accordance with the methodology (Fig. 1) initially, a system of risk management parameters was built: a list of key success factors, risk management indicators in the context of their main risk groups, the scope of activity of the company under study, and the areas of impact on risks (Table 1). This activity is the key part of using the methodology under consideration, since it requires a thorough analysis of all the company's business processes, highlighting the most important risk assessment indicators in terms of remuneration and danger.

Table 1. System of risk management parameters for MNS Investment LLC

Risk management parameters	Risk indicators
Success factors	A_1 – affordability; A_2 – relevance of models; A_3 – naturalness of fabrics; A_4 – product quality; A_5 – availability of products of different price categories; A_6 – brand awareness; A_7 – advertising campaigns; A_8 – the level of management efficiency; A_9 – availability of a network of stores in Ukraine; A_{10} – product originality
Risk groups	**Globalisation risks**: B_1 – violation of the reliability and financial status of suppliers (factories); B_2 – delays and difficulties in logistics; B_3 – influence of global trends on the demand and prices
	Design risk: B_4 – the uncertainty of global fashion trends; B_5 – non-compliance with consumer expectations; B_6 – quality requirements are not met
	Trading risks: B_7 – a small concentration of sale points; B_8 – insufficient range of products; B_9 – growth of logistics costs; B_{10} – low level of staff competencies
	Market risks: B_{11} – uncertainty of currency fluctuations; B_{12} – limiting the quality and quantity of raw materials; B_{13} – decrease in the purchasing power of the population
Field of activity	X_1 – logistics; X_2 – management and marketing; X_3 – retail trade; X_4 – wholesale trade
Methods of influencing risks	Y_1 – consolidation of the supply chain (diversification); Y_2 – cost optimisation; Y_3 – creation of a reserve system; Y_4 – outsourcing; Y_5 – risk compensation; Y_6 – active marketing

Source: compiled by the authors

Risk should be considered as the level of influence of uncertainty factors on the goal achievement. Key success factors of a company are a certain list of factors that allow an enterprise to gain an advantage in the market among other organisations and defeat them in competition. This list may represent the company's minimum requirements for achieving its strategic goals. Risks that affect the key success factors of the company determine the level of achievement of the company's goals. Key success factors are the outstanding features of the company's activities in the market. These can be factors related to the level of development of management, logistics, personnel, marketing, financial status, level of innovation of the company, and others.

Among the methods of influencing risks that can be used in the enterprise, the following are considered: consolidation of the supply chain (diversification); cost optimisation; creation of a reserve system; outsourcing; risk compensation; active marketing. Supply chain consolidation aims to ensure the most effective cooperation between shippers and suppliers to ensure the most acceptable conditions in terms of providing for each required added value. Cost optimisation is a key part of every company's competitive success. If a company has reserves to reduce costs and can use them, they allow it to be successful in the unpredictable and changing conditions in the external environment.

The creation of a reserve system can take place by creating insurance reserves of raw materials, materials, components, reserve funds and developing plans for the use of those reserves to overcome negative consequences in the event of their occurrence. Outsourcing is also an important area of risk reduction for the company since the burden of loss or profit from income is shared with the other party associated with the risk. Risk compensation methods are associated with the creation of hazard prevention mechanisms, they are more time-consuming and require considerable preliminary analytical work for their effective application. The methods include strategic planning of activities, forecasting the external environment, monitoring the socio-economic and regulatory environment, training and instructing personnel.

An integral part of compensation methods is the work on strategic planning, periodic development of scenarios, evaluation of the future state of the business environment, forecasting the behaviour of partners and competitors, tracking current information about the constant update of regulatory and reference data systems, and general economic forecasting, all this can notably lower the level of uncertainty and allow anticipating the appearance of bottlenecks. Active marketing includes direct marketing (this applies to advertising activities to provide a potential consumer with complete information about the company and its products) [15], a survey of a wide audience, and personal communication with a potential consumer to study their needs.

Analytical study of creating the risk management culture at MNS Investment LLC

The next stage of methodology implementation is the construction of a matrix for determining the ratio of risks with key factors of the company's success, where the importance of the main risks at MNS Investment LLC is analysed (Table 2).

Table 2. Matrix for determining the ratio of risks with key success factors of MNS Investment LLC

Key success factors	The importance of the factor in achieving the goal	Risk groups												
		Globalisation risks			Design risk			Trading risks				Market risks		
		B_1	B_2	B_3	B_4	B_5	B_6	B_7	B_8	B_9	B_{10}	B_{11}	B_{12}	B_{13}
A_1	5	5	3	2	1	3	1	1	2	5	4	5	4	2
A_2	5	5	0	5	5	5	5	0	0	1	0	0	1	1
A_3	3	4	0	2	4	1	4	0	1	0	0	0	0	0
A_4	4	4	1	4	4	4	4	1	1	1	0	0	1	1
A_5	3	2	0	0	2	2	1	2	4	5	5	5	5	4
A_6	2	1	0	5	3	1	2	5	3	1	1	0	2	1
A_7	2	0	0	2	1	2	3	4	2	1	0	2	5	0
A_8	1	0	0	1	1	1	1	3	1	1	0	0	0	0
A_9	4	1	5	3	2	2	1	5	5	5	4	2	2	2
A_{10}	1	0	0	1	2	1	0	1	0	1	1	0	2	0
Total		90	39	85	83	81	76	57	60	75	54	52	68	41
Average generalised assessment of the impact level		3.0	1.3	2.8	2.8	2.7	2.5	1.9	2.0	2.5	1.8	1.7	2.3	1.4
Rank by impact level		1	13	2	3	4	5	9	8	6	10	11	7	12

Source: compiled by the authors

This matrix determines not only the relationship between a company's success factors and risk indicators but also the level of impact of the corresponding risk on each individual key success factor of the company. The impact level is determined by the expert method. The same rating system determines the importance of a key success factor in achieving the goals of a company. The generalised assessment for each type of risk was performed as the sum of the products of risk impact assessments on the key success factor and assessment of the importance of the key success factor in achieving the goal (Eq. 1):

$$B_{jgen} = \sum_{i=1}^{k} B_{ij} * C_i \quad (1)$$

where B_{jgen} – generalized assessment of the *j-th* type of risk; B_{ij} – influence of the jth type of risk on ith key success factor; C_i – the importance of *i-th* key success factor in achieving the goal; k – the number of key success factors.

According to this assessment, the rating of risk factors was determined. The average generalised score of *j-th* type of risk $B_{jgen\ avg}$ is determined by the equation (2):

$$B_{jgen\ avg} = \frac{\sum_{i=1}^{k} B_{ij} * C_i}{\sum_{i=1}^{k} C_i} \quad (2)$$

In the course of the analysis, it is possible to remove from the overall system of previous risk indicators those that have little to do with the company's success factors and establish a better system of risk assessment indicators.

According to the analysis of the main risks of LLC "MNS investment" (Table 2), the dependence on the supplier has the greatest impact on activities of the company (indicator B_1 – violation of the reliability and financial status of suppliers (factories) received rank 1), which was especially acute during the COVID-19 pandemic. The main producers of underwear for the company under study are the countries of Southeast Asia, which were among the first to be forced to close their production facilities. Production chains have been deeply affected by the COVID-19 crisis. The peak of the epidemic in China led to a shortage of raw materials (especially cotton) and other materials and components, as a considerable part of the factories-suppliers of raw materials were closed, which caused damage to MNS Investment LLC. To prevent the spread of the virus in the workplace and due to the inability to deliver products on time, factories in China and Bangladesh began to cancel orders. Due to the lack of orders, MNS Investment LLC was forced to diversify its expenses, still paying salaries to employees not to be left without sellers after the epidemic.

At the next stage of the analysis, it is necessary to determine the relationships of the main risks with the activity fields of MNS Investment LLC to determine the risks for each field of the company's activity (Table 3). By building a matrix of relationships between risks and activity fields of the company, the main risks for each field can be identified. In Table 3 the "+" sign is placed where a certain type of risk takes place in this field of activity.

Table 3. Matrix of risk relationships with the main fields of activity of MNS Investment LLC

Company risks	Average generalised assessment of the risk impact level	Rank by impact level	Activity fields of the company			
			X_1	X_2	X_3	X_4
B_1	3.0	1			+	+
B_2	1.3	13	+		+	+
B_3	2.8	2		+	+	+
B_4	2.8	3		+	+	+
B_5	2.7	4			+	
B_6	2.5	5			+	
B_7	1.9	9	+			
B_8	2.0	8			+	
B_9	2.5	6	+			
B_{10}	1.8	10			+	
B_{11}	1.7	11			+	+
B_{12}	2.3	7		+	+	
B_{13}	1.4	12			+	
Sum of risk impact assessments			5.7	7.9	24.3	11.6

Source: compiled by the authors

From Table 3 it is clear that most of the risks affect the retail trade of MNS Investment LLC, which is a key field of its activity. Moreover, the company's management has the opportunity to see what risks are associated with working in these fields of activity and discover how this affects the key success factors of the company in achieving strategic goals. With the correct identification of risks and their analysis, the company will build an effective development strategy in the clothing market in Ukraine.

At the next stage, it is necessary to determine the

key methods of influencing risks in the context of the main fields of activity of MNS Investment LLC (Table 4). At the risk response stage, managers can determine the measures that should be taken for each field of the company's activities.

Table 4. Matrix for determining the areas of influence on risks in the context of individual activity fields of MNS Investment LLC

Activity fields	Methods of influencing risks					
	Y_1	Y_2	Y_3	Y_4	Y_5	Y_6
X_1	+	+	+	+		
X_2		+			+	
X_3	+	+	+			+
X_4	+					+

Source: compiled by the authors

According to Table 4, for logistics, the main methods of influencing risks are supply chain consolidation (Y_1), cost optimisation (Y_2), creation of a reserve system (Y_3), and outsourcing (Y_4). Delivery of goods from Asian countries, their customs clearance, and various delays on the way from the manufacturer to the buyer's warehouse is one of the most unpredictable moments since the cargo can stand in the customs warehouse for more than a month or be damaged during transportation. That is why it was determined that building efficient logistics will allow MNS Investment LLC to anticipate and overcome key business risks.

For the company's management and marketing, the methods of influencing risks are cost optimisation and risk compensation. For retail trade, methods of influencing risks can include supply diversification, cost optimisation, creating a reserve system, and active marketing. For wholesale trade, methods of influencing risks are supply diversification and active marketing.

Risk control plays an integral role in the company's operations. Control should ensure that the list of risk priorities and measures to influence risks are adjusted and that the established requirements for the implementation of these processes are met. The above will allow the company to create a risk culture and ensure the construction of an effective risk management strategy. Effective risk control requires periodic repetition of all stages of the proposed methodology.

The creation of a risk management culture in accordance with the proposed methodology provides for a comprehensive and structured approach to understanding the risks of the company's activities in the context of their impact on key success indicators and the company's fields of activity, to determining the areas of impact on risks that do not correspond to an acceptable level.

Unfortunately, Ukrainian companies do not generally integrate risk management into the main business processes of the company's activities. This applies not only to the prevention of undesirable events but also to the positive aspect of risk management, which is manifested in the deviation of risky activities, which can result in lost opportunities. After all, without risk, it is difficult to achieve real success. Certain Ukrainian companies use detached elements of the risk management system, namely risk identification, risk evaluation and analysis, determination of risk appetite and tolerance to individual risks, substantiation of the areas of influence on risks, control and audit of risk management. The best result can be obtained in the case of their integrated use when they work for the overall result and allow deriving the most benefit with the least risk.

Conclusions

The use of the proposed methodology allows comprehensively considering the risk management system of the company under study. All the main stages of risk management are considered in their interrelation, which makes it possible for the company's management and its managers to understand how risks affect the key success factors and determine measures that can limit their negative impact on achieving the goal. The above allows creating an effective risk management culture at the enterprise. Such an analysis cannot be one-time, in order to ensure the effectiveness of the risk culture it is necessary to perform it on a regular basis with independently determined frequency.

The reduction of delivery time is an impactful way to minimise operational risks for MNS Investment LLC. Most of the imported underwear is seasonal and has a very limited shelf life, so it is essential for the studied company to identify ways to deliver it to its customers in the shortest possible time. Reducing globalisation and market risks for MNS Investment LLC in this area is associated with improving logistics and the possibility of timely passage of customs procedures. Trends in global clothing and underwear markets, particularly before the pandemic crisis, exacerbate the issue of risk management, especially for the clothing and fashion sector. MNS Investment LLC is required to monitor global changes and respond to them quickly, at a minimal cost.

Further research will be aimed at substantiating the effectiveness of risk management measures to ensure a balance between benefit and danger.

References

[1] Farrell, J.M., & Hoon, A. (2009). *What's your company risk culture?* Retrieved from https://inlnk.ru/1PnGO.
[2] Titarenko, L.M., Rostiyanov, B.Yu., & Yatsenko, V.A. (2011). *Organizational culture of risk management.* Odesa: Odessa Regional Institute for Public Administration.
[3] Dyugovanets, O., & Dovba, I. (2019). The role of risk management in the corporate governance system. *Geopolitics of Ukraine: History and Modern Times,* 2(23), 147-163.
[4] Semenyutina, I.V. (2015). Corporate risk management culture as an integral part of an effective risk management system in the enterprise. *Business Inform*, 4, 297-302.
[5] Silberzan, Ph., & Jones, M. (2012). *Risk culture vs culture of uncertainty: A crucial management issue.* Retrieved from https://silberzahnjones.com/2012/05/16/culture-of-risk-culture-of-uncertainty-a-crucial-management-issue/.
[6] Omarova, Z.N. (2015). Strong culture of risk management as an integral part of the risk management system. *Basic Research*, 11(2), 2421-2424.
[7] Shevchenko, I., & Palamarchuk, Yu. (2020). Analysis of quantitative and qualitative methods of assessing financial risks in the enterprise. *Scientific Support of Technological Progress of the XXI Century*, 1, 15-20.
[8] Shvets, Yu. (2018). Risks in the activities of industrial enterprises: Types, methods of assessment and measures to overcome the risk. *Scientific Bulletin of Uzhorod National University: Series: International Economic Relations and the World Economy,* 17(2), 131-135.
[9] Kovalenko, O. (2018). Methods of qualitative analysis and quantitative risk assessment of software development. *Control, Navigation and Communication Systems*, 3(49), 116-125.
[10] Freund, J., & Jones, J. (2015). *Measuring and managing information risk: A fair approach*. Oxford: Butterworth-Heinemann.
[11] Xiaoyan, G., Chen, C., Hao, S., & Juan, S. (2015). Research on R&D project risk management model. *Communications in Computer and Information Science,* 35, 552-558.
[12] Risk culture is one of the development priorities for banks against the background of rising fines and the introduction of customer protection programs. (2014). Retrieved from https://inlnk.ru/emeom.
[13] Risk management as the main tool to combat uncertainty. KPMG in Kazakhstan and Central Asia. (2014). Retrieved from http://www.eurobak.kz/uploads/attachments/post_attachments/447/30d4701477092cbaa74865f01a9419f2.pdf.
[14] Taleb, N. (2015). *Black swan*. Moscow: Azbuka.
[15] Yaremova, M. (2020). Theoretical conceptualization of the problem of understanding bioeconomics. *Scientific Horizons,* 23(10), 78-87. doi: 10.48077/scihor.23(10).2020.78-87.

Формування культури управління ризиками на прикладі ТОВ «МНС Інвестмент»

Ірина Валентинівна Федулова[1], Анастасія Юріївна Гаврилюк[1], Карл Рікеттс[2]

[1]Київський національний торговельно-економічний університет
02156, вул. Кіото, 19, м. Київ, Україна
[2]Університет штату Юта
UT 84322, Олд Мейн Хіл, 1600, м. Логан, Сполучені Штати Америки

Анотація. Формування культури управління ризиками є важливою задачею для будь-якого підприємства в умовах роботи в мінливому і непередбачуваному зовнішньому середовищі. Метою даного дослідження є розгляд теоретичних засад визначення сутності культури управління ризиками і практичних аспектів її формування на підприємстві. В статті розглядаються методичні положення формування культури управління ризиками на підприємстві, відповідно до яких відбувається побудова системи параметрів для управління ризиками: перелік ключових факторів успіху, перелік індикаторів управління ризиками в розрізі основних груп ризиків, сфери діяльності досліджуваної компанії і напрями впливу на ризики. Культура управління ризиками розглядається як комплексне поняття, яке визначає наскільки всі працівники підприємства усвідомлюють цінності системи управління ризиками на підприємстві і наскільки результати їх діяльності пов'язані із досягненням цільових показників із найменшими ризиками. Для цього на підприємстві мають бути передбачені роботи з ідентифікації ризиків, аналізу ризиків, реакції на ризики та контролю ризиків. Формування культури управління ризиками передбачає поєднання всіх цих етапів у єдиний ланцюг управління компанією. Методика формування культури управління ризиками була апробована на ТОВ «МНС Інвестмент». У результаті проведеного аналізу було побудовано рейтинг ризиків з точки зору ступеня їх впливу на основні ключові показники успіху. Здійснено аналіз взаємозв'язків ідентифікованих ризиків з основними сферами діяльності компанії і напрямами впливу на ризики. З'ясовано, що найбільшим ризиком для діяльності компанії з точки зору ступеня впливу на досягнення цілі є ризик порушення надійності і фінансового стану постачальників. Використання даного методичного підходу має практичну цінність, оскільки дозволяє інтегрувати етапи процесу ризик-менеджменту в діяльність підприємства

Ключові слова: ризик-менеджмент, культура управління ризиками, індикатори ризиків, вплив на ризики

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Prospects of Innovative Development of Agricultural Production on the Example of the Republic of Kazakhstan

***Nora Denissova*[1]*, *Robert Born*[2]**

[1]*University of Latvia*
LV-1586, 19 Raina Blvd., Riga, Latvia

[2]*Vellore Institute of Technology*
632014, Tiruvalam Rd, Katpadi, Vellore, India

Abstract. The relevance of the study is conditioned by the need to revise the methods of farming with a focus on the use of innovative technologies to improve the quality and quantity of output. The purpose of the study is to analyse the problems and prospects of agricultural production in the Republic of Kazakhstan to create a comprehensive innovative model for the further development of the agro-industrial sector. The study of the prospects for the modernised improvement of the agro-industrial complex of the Republic of Kazakhstan was carried out in three stages based on the functional and logical, systemic, and structural approaches using methods of analysis, synthesis, comparison, systematisation, SWOT analysis, and statistical data processing. The analysis of research papers of Kazakhstani and foreign researchers was carried out to separate the problems and opportunities of agriculture of the Republic of Kazakhstan. It is determined that the agricultural complex of the state is represented by three forms of management, including farming, cooperatives, and the main business. The features of innovative activity and types of innovations in agriculture are considered. The possibilities and strengths of agriculture of the Republic of Kazakhstan are substantiated in accordance with the statistical data of gross output for 2012-2019. The organisational model of further development of the agro-industrial complex of the state in the context of the application of innovative technologies and the establishment of relationships with state information systems is proposed. The practical value of the study consists in providing a general analysis of both the problems and prospects of agriculture in the Republic of Kazakhstan, as a result of which a comprehensive model of innovative development was compiled

Keywords: innovative model, agro-industrial complex, monitoring, agricultural economy, economic growth

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*Corresponding author

Introduction

Agriculture, as one of the current global trends, is rapidly gaining momentum all over the world. Over the past 16 years, its area has grown eightfold, more than 2 million organic suppliers have been certified, more than three-quarters of which are located in developing countries [1]. Currently, about 1% of the world's agro-industrial land area is under organic production. The regularities of the development of organic production are significant in more than 170 countries of the world and this figure increases annually due to the fact that organic agricultural products are becoming in demand among many segments of the population for various reasons [1]. The improvement of organic production in Kazakhstan is in an intensive stage of operation. Currently, there are about 30 manufacturers certified according to international standards, which account for more than 300 thousand hectares of land developed for organic production [2]. At a particular time, this production is reoriented primarily for export, but if the desired conditions for innovative development are created, Kazakhstan can also manufacture products for its own domestic market.

Such activation of the search for solutions to the problems of agriculture of the Republic of Kazakhstan contributed to the development of the scientific activities, in particular, conducting both theoretical and empirical research. For example, N. Almuhamedova studied the problems of the operation of the agricultural sector of the Republic of Kazakhstan [3]. According to the researcher, during the years of the centralised economy, the state was one of the first producers of livestock and grain products, but after the collapse of the Soviet Union, these industries underwent a decline due to lack of technological readiness and lack of human resources [3]. N. Baranova suggests that at the moment there are a huge number of projects in Kazakhstan that contribute to the development of agriculture [2]. Thus, to simplify the export of grain to world markets, terminals in the ports of Aktau, Baku and Amirabad were put into operation. In addition, an elevator complex with a mill was put into operation in the Mangystau region, and the construction of the Uzen-Gorgan railway lines is also being carried out, which qualitatively affects the agro-industrial sector as a whole [3]. Yu. Vasyukova considered the potential of farming as part of agriculture [4]. The researcher believes that farms have received their maximum use in Kazakhstan. However, V. Krutilov argues that attracting investment in farming is one of the most important tasks for today, which is not taken into account to improve the agricultural sector of Kazakhstan [5]. The beliefs of E. Gridneva are of interest for this study [6]. The researcher suggests that the solution to the problems of agriculture should be sought in the use of innovative technical support. The high-quality modernised equipment and the introduction of academic developments are sources for improving agricultural products [7]. Kazakh researchers also suggest that the model of the organisational structure, which is based on the analysis of the results of the survey on the use of domestic or imported products by the population of Kazakhstan, can not only increase the competitiveness of agriculture, but also ensure food security [8]. Based on this, the problem of agriculture of the Republic of Kazakhstan is relevant, but the research is aimed at solving single issues, which is the reason for the choice of the subject of the study.

The purpose of the study is to analyse the problems and prospects of agricultural production in the Republic of Kazakhstan to create a comprehensive innovative model for the further development of the agro-industrial sector. For the furtherance of this goal, the following *tasks* were performed: to determine the features of innovation activity in the context of the development of the agricultural sector as a whole; to define the current state of agriculture of the Republic of Kazakhstan: problems and prospects; to analyse the possibilities of introducing innovative technologies into the agro-industrial complex of the Republic of Kazakhstan.

Materials and Methods

The theoretical and methodological basis of the study is the scientific provisions and definitions of economic theory, research papers of Kazakh and foreign researchers. The study of the prospects for innovative development of agricultural production on the example of the Republic of Kazakhstan was carried out in three stages. The first stage included an analysis of the specifics of innovation activity and the concept of innovation in the context of agriculture. The second stage was aimed at forming a general picture of the state of the agricultural industry in the Republic of Kazakhstan. At the third stage, a model of innovative development of agriculture was developed, which provides for the introduction of information technologies, and the establishment of a correlation with the state information system.

The research is based on functional and logical, systemic, and structural approaches. With the help of a functional and logical approach, agriculture was considered in the logic of its functional development and innovative improvement. The systematic approach contributed to a holistic study of agriculture based on a separate analysis of its components such as animal husbandry and agriculture. The structural approach helped analyse the development of agriculture based on the causal explanation of the relationships of its components, the relationships with external factors, including geographical, economic, cultural and political.

During the research of innovative development of agriculture of the Republic of Kazakhstan, a complex of general scientific research methods was used, including analysis, synthesis, comparison, systematisation, SWOT analysis, and processing of statistical data. Thus, the analysis method was used to analyse the research papers from the selected topics, as a result of which the features of innovative activity, in particular in the agricultural sector, the current state of development of the agro-industrial complex of the Republic of Kazakhstan and the prospects for further improvement of the agricultural industry were clarified. The synthesis was used for a combined study of agriculture, based on a separate analysis of crop production and animal

husbandry. The comparison was adopted during the study of the state of agriculture before the introduction of innovative technologies and after the active use of modernised technical support. The systematisation helped to organise the components of agricultural monitoring and the types of innovations in agriculture. SWOT analysis was used to analyse the agricultural sector of the Republic of Kazakhstan, in particular, to identify strengths and weaknesses, opportunities and threats, as a result of which the prospects of agriculture of the Republic of Kazakhstan were clarified, including the constant growth of the gross agricultural product, high production and export potential of organic products and the demand for organic food products. With the help of statistical data processing, the trend of gross output of the agricultural industry of the Republic of Kazakhstan, in particular for 2012-2019, was analysed.

Thus, analysing the example of regional development of agriculture, methodological changes were formulated, and the scientific element of their research in the system was determined.

Results and Discussion

Currently, three variants of economic forms have been developed in the agriculture of Kazakhstan: small business, indicated by small (peasant) farms; medium-sized business, represented by various partnerships, associations, cooperatives; and the main business, which is represented by a competitive enterprise. Various forms of management reflect the corresponding types of property relations and form the economy as a whole. Diversity in agriculture is implied by an objective need, and initially, its development indicated the main goal and the main content of the agrarian reform in Kazakhstan. In the general methodological factor, this follows from the fundamental significance of building a multi-layered economy in the system of market transformation of the economy. The complexity of the industry under consideration is based on the relevant factors (conditions), which can be divided into two groups: non-economic and economic. The first group includes:

- differences in natural conditions;
- interregional features in population density;
- developed infrastructure;
- local, historical, religious, and other features of the region.

The second group of conditions provides for the technical modernisation and evaluation of agricultural enterprises to create the necessary conditions for the production of competitive products for the domestic equalisation market; integration of national agricultural production into the world space; improvement of trade between agricultural enterprises and industrial enterprises; ensuring an increase in production capacity to increase the level of employment of the population, which contributes to its profitability. At the same time, the diversity of the agricultural industry needs to be controlled, in particular, the use of land equipment and the implementation of the legal development process. One of the examples of such activities is the monitoring of the grain spectrum (Fig. 1).

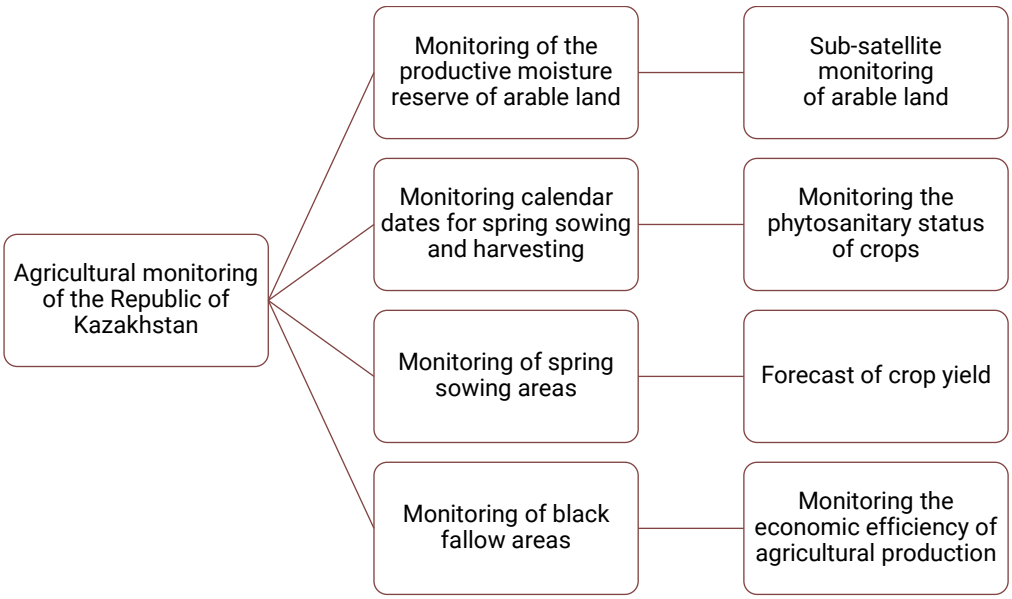

Figure 1. Agricultural monitoring scheme

One way or another, the presence of multistructurality and monitoring of the agricultural sector is not an exhaustive condition for the modernised functioning of agro-industrial production, and therefore there is a need for innovative activities. Innovative activity is understood as the innovative process of economic development of the country or the satisfaction of the needs for innovation of individual sectors of industry. In this context, it is important to determine the advantages of the agrarian strategy of innovative development, including high-quality products, modernised mechanisation, potential producers and consumers [9].

Innovations take the form of fundamental results and the application of patents of inventions, licenses,

trademarks, documentation of new technologies, innovative projects, national, regional, and industry programmes [10]. Innovations related to agriculture should be considered as a process of creating new and unique products, improving technologies and organisational work based on the use of scientific research. In the scientific community, there is a classification of types of innovations in agriculture, which provides for the following (Table 1).

Table 1. Classification of types of innovations in agriculture

Selection and genetic	New varieties and hybrids of agricultural plants, new breeds, types of animals and bird crosses. Breeding of plants and animals resistant to diseases and pests, adverse environmental factors
Technical and technological production	The use of new equipment Resource-saving new technologies in agriculture and animal husbandry. New waste-free technologies for the production and storage of food products aimed at improving their nutritional qualities
Organisational, managerial, and economic	Development of cooperation and formation of integrated structures in agriculture. Progressive forms of maintenance and provision of agricultural resources. New forms of organisation and management in agriculture. Formation of innovation and advisory systems in the field of scientific, technical, and innovative activities. Modern forms and mechanisms of innovative development
Socio-ecological	Creation of a new personnel training system. Provision of better working conditions, solution of the problems of health, education, and culture of farmers. Improvement of health and quality of the environment. Establishment of favourable environmental conditions for the life, work, and recreation of the population in rural areas

Based on Table 1, the classification of types of innovations in agriculture consists of four elements. The first type of innovation is used only for agriculture. The choice of agrotechnical innovations is a special type of innovation that is characteristic only of agro-industrial production. These include the results of scientific and technical studies in the fields of crop production and animal husbandry, to attract new varieties of animal breed selection. The second type of innovation includes the main new technologies for carrying out work, methods used in keeping and feeding animals, technologies for storing and processing agricultural products, ensuring the increase and preservation of biologically valuable product characteristics, reducing production costs [11]. The third type, that is, organisational, provides for the management, institutional innovations, establishment of new information cells. This type of innovation is especially important in the restructuring and modernisation of the entire economic system. The last type of innovation, namely socio-ecological, is aimed at maintaining environmental safety. The decline of arable land, the threat of water shortage, and the depletion of natural sources show signs of the former economic complex, as a result of which there is a need to improve the agro-industrial production, in particular the Republic of Kazakhstan [12].

Notably, the agriculture of the Republic of Kazakhstan has a huge potential for the introduction of an innovative complex. Various climatic conditions of the state allow producing almost all agricultural crops [13]. According to the Ministry of Agriculture, 2018 was extremely favourable for the cultivation of such crops, in particular grain. Thus, agriculture accounted for about 5% of the country's total GDP that year [1]. The total agricultural output was 4 trillion tonnes, which is definitely higher than in previous years (Table 2) [1].

Table 2. Gross output of products (services) of agriculture, forestry, and fishery of the Republic of Kazakhstan (in current prices, KZT one million)

2012	2013	2014	2015	2016	2017	2018	2019
1. Agriculture, forestry and fishery							
1,832,335.4	2,733,474.7	2,407,939.3	2,963,938.2	3,158,758.6	3,321,718.5	3,701,415.4	4,092,333.0
2. Animal production, hunting, and other services							
1,823,364.8	2,721,663.2	2,394,710.0	2,950,614.7	3,144,773.5	3,308,019.2	3,685,439.7	4,071,820.6
3. Agricultural industry							
1,822,074.1	2,720,453.4	2,393619.0	2,949,485.0	3,143,678.1	3,307,009.6	3,684,393.2	4,070,916.8
4. Crop production							
895,425.2	1,654,428.5	1,241,517.0	1,683,851.4	1,739,436.4	1,825,236.7	2,047,580.8	2,249,166.9
5. Farming							
920,777.3	1,059,561.3	1,145,437.3	1,256,871.7	1,393,762.0	1,469,923.0	1,621,541.4	1,810,914.1
6. Forestry							
6,050.7	7,786.8	8,931.7	8,892.8	8,751.1	7,534.9	9,237.3	12,731.8
7. Fishery and aquaculture							
2,919.9	4,024.7	4,297.7	4,430.7	5,234.0	6,164.4	6,738.4	7,780.5

Such data indicate the presence of promising areas in the field of agricultural development of the Republic of Kazakhstan, in connection with which it was appropriate to conduct a SWOT analysis of the agricultural sector of the state (Table 3).

Table 3. SWOT analysis of the agricultural sector of the Republic of Kazakhstan

Strengths	Weaknesses
Kazakhstan is one of the nine largest countries in the world by area; By the area of arable land per capita, Kazakhstan ranks second in the world; Kazakhstan is one of the largest exporters of grain and flour; A large number of the rural population (43% of the total population), a high share of employment (18% of the employed population); High potential demand for food products in the CIS and Central Asian markets; Constant growth of the gross agricultural product; High production and export potential of organic products	Low share of GDP (4.8%); Lack of trade development, including exports; Low level of research and development implementation; Insufficient level of veterinary and food safety; High capital intensity; Long payback period; Dependence on climatic conditions; Low performance; Low level of profitability of agriculture
Opportunities	**Threats**
The possibility of increasing the volume of all types of agricultural products due to the growing number and changing structure of the population nutrition; Establishment of effective state support for agricultural cooperatives; Expansion of supplies and export volume in advanced industries	Adverse changes in natural and climatic conditions, instability of weather conditions; The spread of animal and plant diseases, environmental pollution; Increasing competition in international markets for certain products; The risk of inefficient state regulation of industry

Based on the analysis of the geographical location of Kazakhstan, the opportunities of the agricultural products market, transport accessibility, it can be concluded that the potential partners are the countries of the EAEU, the CIS, China, Iran, Afghanistan, and the United Arab Emirates. Based on the analysis of the volume of exported products at the end of 2018, wheat, barley, corn, and oilseeds were the leading among plants; beef, pork, lamb, and poultry among animals. In general, in the structure of imports of countries such as Russia, Uzbekistan, Kyrgyzstan, and Tajikistan, for certain types of crop products, products from Kazakhstan account for more than 86% [14]. Thus, in 2018, the share of wheat from Kazakhstan amounted to 86.6% of the total volume of imported wheat in Russia. In the import of wheat, flour and oilseeds of Uzbekistan, the share of products from Kazakhstan is 100%, 99.2%, and 98.7%, respectively [15]. According to the study results, the introduction of information technologies in agriculture, the development of information systems, and integration with the systems of state bodies in the following processes were offered: subsidies and other state support measures; traceability of livestock products; monitoring of the turnover of fish products; water resources management, monitoring, and accounting; registration of agricultural machinery, issuance of driver's licenses; monitoring and accounting of forest resources and prevention of forest fires; monitoring and management of land resources; accounting, production, movement of agricultural products for agricultural enterprises, processing enterprises, cooperatives. Due to these measures, the transfer of public services to electronic form will be ensured; increasing transparency and efficiency in the provision of public services; increasing the level of information saturation of industry; creating prerequisites for the export of agricultural products [16]. The financial and economic mechanism for implementing innovative projects in the agro-industrial sector should include the use of reverse financing of highly effective scientific and technical developments of commercial significance, state subventions, subsidies and grants; support for interregional high-tech innovation programmes and projects of state entities; stimulation of investors who invest in high-tech production, organisation of various entities for the development of innovations; development of leasing of high technologies and unique equipment; introduction of non-linear depreciation of foreign investors (when in the first years after the acquisition of fixed assets, most of their cost is written off), creating innovative products under international commercial contracts; providing financial support for patent and inventive activities assistance in the protection of property and protection of rights; improvement of the competitive system for selecting innovative projects and performers; creation and development of a contract system aimed at implementing innovative projects carried out at the expense of the budget and extra-budgetary sources [9]. Modernisation of the agricultural sector should be carried out in stages and with the correct target orientation. It is proposed to use a comprehensive, systematic approach to the innovative modernisation of industrial relations and productive forces of the agricultural sector of Kazakhstan. In this case, the innovative direction of agribusiness development would

become a real and effective direction. However, for the economy of Kazakhstan, when conducting such a policy, it is necessary to note the double effect of its implementation. The negative effect, in this case, would be a decrease in the ability of enterprises to innovate in business, which does not contribute to increasing labour productivity in this sector [17]. At the same time, innovation policy in the agricultural sector is necessary objectivity and it is, therefore, appropriate to note its expediency. At first glance, this situation looks economically unprofitable. This is true when social benefits exceed economic benefits, but, nevertheless, contribute to the competitiveness of agriculture and the country as a whole in modern conditions. Similarly, obtaining economic benefits will be the task of the second stage of the implementation of state programmes. This applies to productivity, innovation, etc., since innovation itself cannot be an end in itself, but only a consequence of the development of a system that has internal incentives for innovation. The approach proposed in the reform of the agricultural sector of management assumes the need to take into account the peculiarities of the industry operation, the epistemological roots and impulses of its development. At the present stage, the innovative vector of modernisation of agriculture is very important. However, in developing the concept of the development of the agricultural sector, it is necessary to correctly place emphasis, both in the long and short term. It is proposed to gradually modernise the sphere of operation of the agricultural sector and with the correct orientation to the goal. With this approach to the innovative modernisation of industrial relations and productive forces of the agricultural sector of Kazakhstan, this direction would become a real, effective sector of competitive development of the national economy.

Conclusions

Thus, the study analysed the problem field and prospects of the agricultural sector in the Republic of Kazakhstan to create an improved set of methods for further innovative development of the agro-industrial sector. The authors processed the theoretical base in the form of various research papers to determine the features of agriculture of the Republic of Kazakhstan. It was found out that the decline in the efficiency and productivity of the agro-industrial sector is associated with the lack of adequate technical support and lack of human resources. SWOT analysis and processing of statistical data were carried out, as a result of which the strengths and weaknesses, opportunities and threats of the agriculture of the Republic of Kazakhstan were identified. The specifics of innovative activity in the agricultural sector were considered, which helped to form a list of innovative methods for the development of agro-industrial production. A model of innovative improvement of the agricultural complex is proposed, which provides for the introduction of information technologies, integration with state information systems, and updating the financial and economic mechanism. The phased introduction of such an innovative model in the agro-industrial sector of the Republic of Kazakhstan is substantiated. The prospect of further study consists in the practical implementation of the developed innovative methods of agricultural development in the Republic of Kazakhstan.

References

[1] Official website of the Agency for Strategic planning and reforms of the Republic of Kazakhstan. (2020). Retrieved from https://stat.gov.kz/.

[2] Baranova, N.A., & Abdikadirova, A.A. (2018). Strategic analysis in AIC enterprise management. *Problems of AgriMarket,* 1, 45-52.

[3] Almuhamedova, N. (2019). *What prevents the agriculture of Kazakhstan from becoming a driver of the economy.* Retrieved from https://cabar.asia/ru/chto-meshaet-selskomu-hozyajstvu-kazahstana-stat-drajverom-ekonomiki.

[4] Vasyukova, Yu.S. (2019). Planning and features of the development of innovative activity in the agro-industrial complex. *Economics of Agricultural and Processing Enterprises*, 7, 67-72.

[5] Krutilov, V.K., Kosogorova, L.A., & Yakunina, M.V. (2018). *Regional economics and management*. Kaluga: Politop.

[6] Gradneva, Y.E., Kaliakparova, G.Sh., & Kalmanova, N.M. (2020). Development of livestock production in the Republic of Kazakhstan: Problems and solutions. *Problems of AgriMarket,* 2, 119-125.

[7] Uspambayeva, M., Zeinelgabdin, A., Turebekova, B., Rakayeva, A., Tulaganov, A., & Taipov, T. (2020). Agriculture in Kazakhstan: Effective financial management. *Revista de Economia Politica*, 40(3), 554-565.

[8] Bulkhairova, Z.S., Saimagambetova, G.A., Kizimbayeva, A., Kadyrova, G.M., & Abdiyeva, S.R. (2019). The situation of food security in Kazakhstan. *Space and Culture, India*, 7(1), 194-205.

[9] Lukhmanova, G., Baisholanova, K., Shiganbayeva, N., Abenov, B., Sambetbayeva, A., & Gussenov, B.S. (2019). Innovative development of the agricultural sector of the Republic of Kazakhstan. *Espacios,* 40(32). Retrieved from https://www.revistaespacios.com/a19v40n32/a19v40n32p06.pdf.

[10] Titkov, A.A., Nurgaliyeva, A.A., & Ernazarov, T.Y. (2019). Labor resources of AIC of the Republic of Kazakhstan and their effective use. *Problems of AgriMarket*, 4, 171-176.

[11] Koshanov, A. (2019). *Socio-economic problems of the progress of the agro-industrial complex of Kazakhstan.* Retrieved from https://mysl.kazgazeta.kz/news/13310.

[12] Moldakenova, Y., Bakirbekova, A., Moldashbayeva, L., Biyev, V., & Yskak, N. (2017). Kazakhstan and the European Union: Prospects of cooperation in developing the agro-industrial sector of economy. *Journal of Advanced Research in Law and Economics*, 8(6), 1861-1874.

[13] Moldashev, A.B., Kantureyev, M.T., & Madiyeva, A.G. (2020). Kazakhstan's food security. *Problems of AgriMarket,* 1, 11-18.
[14] Seitova, V., & Stamkulova, K. (2017). Agricultural knowledge and innovation system in South Kazakhstan Region: Sustainable agricultural intensification of innovation enterprises. *Espacios,* 38(47), article number 35.
[15] Madiyev, G., Kerimova, U., Yespolov, A., Bekbossynova, A., & Rakhimzhanova, G. (2018). Macroeconomic aspects of innovation-driven growth of agribusiness in the Republic of Kazakhstan. *Journal of Advanced Research in Law and Economics,* 9(2), 561-569.
[16] Tarasovych, L. (2020). Development of rural economy: European priorities for transition economies. *Scientific Horizons,* 23(10), 88-98. doi: 10.48077/scihor.23(10).2020.88-98.
[17] Plisetskiy, E.L., & Glushkova, V.G. (2018). *Regional economy.* Moscow: Yurayt.

Перспективи інноваційного розвитку сільськогосподарського виробництва на прикладі Республіки Казахстан

Нора Денісова[1], Роберт Борн[2]

[1]Латвійський університет
LV-1586, б-р Райна, 19, м. Рига, Латвія

[2]Технологічний інститут Веллора
632014, Тірувалам Роуд, Катпаді, м. Веллор, Індія

Анотація. Актуальність дослідження полягає в потребі перегляду методів ведення сільського господарства з орієнтацією на застосування інноваційних технологій для підвищення рівня якості та кількості виготовленої продукції. Метою роботи є аналіз проблем і перспектив сільськогосподарського виробництва в Республіці Казахстан для створення комплексної інноваційної моделі подальшого розвитку агропромислового сектору. Дослідження перспектив модернізованого удосконалення агропромислового комплексу Республіки Казахстан проводилось в три етапи на основі функціонально-логічного, системного та структурного підходів із використанням методів аналізу, синтезу, порівняння, систематизації, SWOT-аналізу та обробки статистичних даних. Проведено аналіз наукових робіт казахстанських і зарубіжних дослідників з метою виокремлення проблем та можливостей сільського господарства Республіки Казахстан. Визначено, що сільськогосподарський комплекс держави представлено у вигляді трьох форм господарювання, серед яких фермерство, кооперативи й основний бізнес. Розглянуто особливості інноваційної діяльності та типи інновацій у сільському господарстві. Обґрунтовані можливості та сильні сторони сільського господарства Республіки Казахстан відповідно до статистичних даних валової продукції за 2012–2019 роки. Запропоновано організаційну модель подальшого розвитку агропромислового комплексу держави в контексті застосування інноваційних технологій і встановлення взаємозв'язків з державними інформаційними системами. Практична цінність роботи полягає в наданні загального аналізу як проблем, так і перспектив сільського господарства Республіки Казахстан, внаслідок чого була складена комплексна модель інноваційного розвитку

Ключові слова: інноваційна модель, агропромисловий комплекс, моніторинг, аграрна економіка, економічний ріст

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Innovative Forms of Experience Services in Business Activities

Tetyana O. Nikolaychuk*

Institute of Market Problems and Economic and Ecological Researches of the NASU
65044, 29 Frantsuzkyi Blvd., Odesa, Ukraine

Abstract. Recently, due to the global coronavirus pandemic infection caused by SARS-CoV-2 people were not able to meet their needs for obtaining positive impressions, emotions, memories by visiting global tourist places due to geosocial restrictions, which led to the establishment of new vectors of economic activity in the national market and the popularisation of Ukrainian experience services. The purpose of the study is to consider the experience services, not only as a mechanism of social and psychological rehabilitation of a person, but also as an alternative tool for the development of entrepreneurial activity in the field of entertainment. In order to obtain objective results in determining the essence of experience services and indicators that hinder its development in Ukraine, the study used system analysis and scientific generalisation. The paper also discusses the main directions of development of the market of experience services in the field of conservation. The study analyses destructive factors of an economic, organisational, regulatory, and administrative nature that can negatively affect the dynamics of development of the relevant service sector. The dual nature of mechanism for regulating economic and social relations in the experience economy was defined, namely: ordering public relations, the purpose of which is the creation and consumption of the final product of experience services by customers – obtaining emotions, impressions, experience (commodity market) and regulating processes aimed at implementing a set of measures, the tasks of which are the establishment of artificial circumstances, a scenario for a potential client to receive a product (impressions, emotions), for example, transportation, creating conditions for rapid movement from one location to another, etc. (market for the production of services). The service market for programming experience and the service market for delivering experience have been separated, which can become a vector of financial, organisational and investment development of both the protected industry and the separation of a separate area of business activity in the hospitality industry

Keywords: economic mechanism, service market for delivering experience, service market for programming experience, innovative economic activity

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*Corresponding author

Introduction

The development of the experience economy on the national market requires the creation of new regulatory mechanisms that would take into account its economic and material essence. The main basis for the practical implementation of economic and legal mechanisms in the field of providing experience services are regulations as guarantees of the legality and transparency of relevant public relations, legitimate and transparent organisation of economic activities in this area. Since geosocial restrictions do not allow getting tourist and recreational services in a conventional way, experience services, in particular in the form of impression cases, will allow private entrepreneurs to continue their economic activities in another way, as well as expand the forms of intersectoral relations, attract new business entities to economic and public relations, both in the field of conservation and in the hospitality industry. The development of new vectors of investment and financial flows in the tourist, recreational, and conservation industries, by expanding the directions of economic activity related to the provision of experience services, will lead to a positive dynamics of environmental-oriented economic activity in general, a decrease in staff turnover, the emergence of new economic and environmental guidelines and trends in society, the emergence of new stakeholders in the industry, integrated economic and environmental development of regions.

According to A. Hellmann, L. Ang, S. Sood, the positive dynamics of experience services may depend on the manager's personality, business and professional qualities during direct interaction with the client, verbal and nonverbal signals, ways to form a positive "pre-service" impression among potential consumers [1]. I.-M. García-Sánchez, O. Suárez-Fernández, J. Martínez-Ferrero also note that the personal and professional qualities of the manager for providing experience services are important in the economic efficiency of the corresponding type of service, but, in according to researchers, a significant role is also played by gender as an element of the mental connection between the manager and the client [2]. S.C. Geyik, L. Chowdhury, F. Raudies, W. Pu, J. Shen note that the design of experience services is a key element in the process of providing them, since potential customers are primarily attracted by advertising and marketing tools [3]. Yu. Sun, S. Fang, Z.(J.) Zhang note that the best arena for providing experience services and self-presentation as a qualified manager is social networks and other media platforms [4].

The development of ecological and economic relations in the field of nature management requires the creation of new normative regulatory mechanisms that will take into account their economic and material essence. The main basis for the practical implementation of economic and legal mechanisms of relations in the field of environmental management are regulations as guarantees of the legality and transparency of relevant relations. However, the essence of the construction "economic and legal mechanism of nature management" does not have a single interpretation not only from a scientific standpoint, but also from a legislative standpoint, since it is determined taking into account the specifics of a particular type of Natural Resources and the procedure for their use.

Considering the above, *the purpose of the study* is to define the essence of experience economy as an innovative vector of business activity through the prism of legislative specialisation, taking into account the economic and organisational factors of the work of business entities, in particular in the field of the nature reserve fund of Ukraine. For the furtherance of this goal, the study set the following *tasks*: to analyse the forms of entrepreneurial activity that would have positive financial and organisational indicators and will become a mechanism for attracting constant investment flows in the field of conservation and hospitality industry; to solve scientific issues on the creation of an alternative mechanism for providing services to the population in conditions of social and geopolitical restrictions, and the inability to carry out tourist and economic activities in a conventional way.

Literature Review

Many Ukrainian and foreign researchers have analysed a wide range of issues related to the economic and organisational activities of the experience economy market. According to K. Seontaik, V.P. Magnini, experience services are a related tool in the sales industry, since the creation of an additional product for a particular brand or trademark is a tool for potential customers' loyalty to their own services by calling full positive associations [5]. J.H. Triche, E. Walden claim that experience management is a multi-level system with many variables and latent indicators. Researchers compare organisational strategies for managing experience with fluctuations in the stock market, since economic activity aimed at providing services for impressions or selling "emotions" is quite changeable and depends on fashionable trends in society [6].

O.V. Sadchenko, N.I. Khumarova suggest that the main task of "impression marketing" is to comprehensively take into account the consumer's desires regarding the properties of the product/service offered [7]. According to P.G. Pererva, V.O. Matrosova, O.M. Proskurnja, A.S. Volchenko, A.O. Ghridina, the development of emotional marketing is carried out through an emotional connection with the brand and marketing of experience [8]. G. Ranzini, E. Hoek consider that the marketing presentation of a product or service through social networks Facebook / Instagram and their visual and material appearance in real time can differ significantly [9]. Since the online and offline identity of the product or service of the corresponding sector can be different according to the principle of "expectation-reality" and negatively affect the entire market [10; 11].

D. Zhu, H. Xu, analysing the system of their own research, came to the conclusion that in the field of tourism, an important role in providing impression services or other tourist and entertainment services is played by the cultural

affiliation of the guide, since it is the ethnic and cultural education of the individual that affects the degree of his "acting" and flexibility in resolving misunderstandings with customers [12].

D.S. Carlson, K.M. Kacmar, M.J. Thompson, M.C. Andrews note that an economically effective factor in demand formation is successful self-presentation, that is, without a proper positive image of the business entity or manager, customer dynamics will have a low or even negative character. The self-branding tool is an analogue of business reputation and can form positive expectations for future services in advance [13]. P. Sugathan, K.R. Ranjan argue that the creation of a common product of two business entities (collaboration) significantly depends on the economic and organisational success of both, since an outsider can significantly affect the expectations of potential consumers from the service in advance. The establishment of organisational and legal transparency of such an alliance can become an advance tool in the market and ensure positive dynamics of demand [14].

According to M. Kanbaty, A. Hellmann, H. Le. Development of the vector of experience economy forms innovative tools for presentation and impact on potential customers, one of which, according to researchers, is infographics. Researchers define infographics as a mechanism for friendly presentation of necessary information directly to the consumer, taking into account the specifics of the service and potential expectations of the client [15]. At the same time, J.S. da Oliveira, G.M. Azevedo do Carmo consider the experience management system as a control and manipulation of the perception of certain types of services by potential customers [16]. Y Zhang, J. Ao, J. Deng suggest that the experience economy is a promising eco-oriented direction, as it distracts from conventional ways of doing business. According to Chinese researchers, green consumption, as the last link in consumer behaviour, can facilitate green production of services, change the environmental situation, and achieve sustainable development [17]. G. Bhattarai defines the field of experience services as related to the advertising industry, since most of the impressions and expectations of potential customers depend on advertisers, their identification of the services offered [18].

Materials and Methods

The theoretical and methodological basis of the study are the papers of Ukrainian and foreign researchers on issues of economic and organisational activity of the impression services market as well as the basic conceptual foundations of the theory of emotion management. The information and legal basis of the study are the laws of Ukraine, resolutions of the Verkhovna Rada of Ukraine and the Cabinet of Ministers of Ukraine, orders of the Ministry of Environmental Protection and Natural Resources of Ukraine, the Ministry of Culture and Information Policy, the Ministry of Development of Communities and Territories of Ukraine, other bylaws regulating the organisational procedure for providing services to the population and economic and public relations in the hospitality industry, and the mechanism for regulating nature use in the implementation of environmentally oriented types of economic activities.

By using *scientific generalisation* a unified approach to determining the essence of experience economy was defined, zoning of the market of experience services to the market for programming impressions and delivering impressions to potential customers was offered. Due to *system analysis method* destructive factors were identified and the main regulatory conflicts that weaken and hinder the development of the impression services market within the national economy, in particular in the field of the nature reserve fund of Ukraine, were identified. During the formation of conclusions and prospects for further research, the following methods were used: *scientific abstraction*, which allowed identifying the main vectors of development of the market of experience services, taking into account the peculiarities of economic and environmental processes in the Ukrainian economy.

Using *monographic method* factors that reduce the appearance of dysservices in the field of experience services, as negative manifestations of an imbalance between supply and demand were identified, gaps in administrative, economic and regulatory mechanisms for regulating relevant public relations were determined. The *graphic method* provided a visual reflection of the results of scientific research, namely: types of experience services, forms of economic activity in the relevant sector of the national economy and their relationship with each other, the implementation of contactless provision of services (e-experience services) in the hospitality industry, as an alternative form of doing business in modern socio-economic conditions and the use of natural resources without excessive anthropogenic load.

Results and Discussion

Destructive factors of the experience services market in Ukraine

Public relations associated with the provision of experience services and "selling emotions" are becoming increasingly popular among the population, but remain outside the regulatory and economic field, which generates a lot of abuse both on the part of the business entity that provides the relevant services, and on the part of potential customers who use regulatory gaps to avoid paying for the services provided. *Destructive reasons that negatively affect the development of the experience services market include the following:*

– lack of mechanisms for assessing the quality of services provided from a conventional economic standpoint, since, as a rule, there is no materialisation of the final product, in particular the price/quality ratio;

– lack of regulatory and organisational support (for example, the establishment of a conceptual and categorical apparatus, directions and principles of activity) and administrative and regulatory framework (for example, the statutory activity of a legal entity, a list of permits, in particular, obtaining limits for special use of natural resources or permits);

– specific temporal framework of services, usually unstable nature, instability of organisational, economic, environmental and social components (for example, the duration of providing the same service to different persons may differ significantly, which is the basis for determining such services as poorly provided);

– "affective" nature of services (for example, in the event of legal or out-of-court disputes, the inability to reproduce the exact algorithm of actions due to emotional uplift);

– lack of the possibility of certification or labeling of the relevant product, which significantly affects the level of quality of service delivery.;

– lack of expiration date ("relevance"), degree of repeatability (template) and mandatory components, without which the corresponding service is considered to have been provided poorly or not provided at all;

– lack of conditions for "post-warranty service", that is, the inability in the legal field to track the degree of influence of the relevant service on the well-being or consciousness of potential customers, the causal relationship, as a result, to bring the perpetrators to justice;

– lack of safety precautions for potential customers (for example, a ban on visiting places of a historical and mystical nature by tourists with psychological disabilities) and occupational safety – for the personnel of the relevant business entities (lack of job and functional instructions due to the inability to establish qualifications and relevant requirements);

– low level of qualified event managers and service personnel, as experience services are provided mainly by specialists in the tourism industry;

– two-way subjectivisation of experience services; the business entity provides relevant services according to its own scenario, which it considers the most organisationally and economically profitable; the potential client also evaluates the service provided according to its internal belief and outlook, which may differ significantly;

– low level of "donor economic activity", for example, lack of properly equipped places for eating or resting while staying in remote or mountainous areas, low level or neglect of infrastructure facilities (for example, lack of equipped accommodation facilities (according to the Classifier of economic activities 55.1, 55.2, 55.3, 55.9) [19];

– low level of time management when providing experience services (for example, long periods of time when organising a move from one place to another for potential clients);

– lack of information and organisational policy in terms of attracting tourists, zoning advertising activities aimed at identifying potential visitors, popularisation among the target audience (for example, potential visitors to the Zacharovana Dolyna Nature Reserve (Smerekovy Kamin) are seekers of mysticism, and not those wishing historical enlightenment);

– low level of accompanying services for transferring potential customers to remote locations, especially mountainous areas (for example, too high prices for related services and lack of comfort);

– presence of financial and political risks, for example, the risk of stagnation or decline in the market of impression services at the regional or national levels (lack of thorough research and operational monitoring of the needs of the experience services market, both by region and in the country as a whole; the possibility of market overload);

– unfavourable regulatory policy for small and micro-entrepreneurs carrying out their business activities in the field of experience services as payers of a single tax of II and III groups (for example, the introduction of a settlement operations register (SOR), as a means of state control over the turnover of non-cash and cash, accounting for goods, registration of services rendered and settlement operations);

– low level of financial and organisational support for entrepreneurs who provide experience services (insufficient level of trust on the part of banking or other financial and credit institutions);

– lack of branding of impression services and a market promotion strategy (for example, forming a separate direction of scary services or branding infrastructure facilities);

– low level of intra-enterprise organisation of the process, that is, the corresponding services are aimed at provoking a certain amount of emotions and impressions among customers; it is unacceptable to turn such services into educational and excursion services;

– lack of equipped territories that have a sufficient level of resource, economic, organisational, material, technical, and functional potential to ensure the level of service delivery for a wide range of people;

– lack of national and local cases in the field of providing experience services and marketing strategies.

Forms of economic activity in the field of the experience economy

Since the pandemic caused by COVID-19 has caused a lot of negative consequences not only for the health of the population, but also for many vectors of economic activity in almost all spheres of the national economy, there is a need to introduce social rehabilitation areas of entrepreneurship, which would become a vector of economic support for representatives of the private sector of the economy, meet modern social restrictions and ensure the mental and psychological recovery of society.

Considering the study by S. Bacq, G.T. Lumpkin, in the "coronavirus period" the most economically effective forms of conducting economic activity are social entrepreneurship, the main tasks of which are to solve acute social problems by market methods [20]. Many leading researchers suggest that social and economic crisis is one of the fundamental motives for innovation. In a crisis like COVID-19, the survival and success of business groups is no longer a matter of improving its efficiency and effectiveness. But the survival of entrepreneurs depends on the ability of the subject to define strategies and focus on non-standard innovative opportunities. According to economists, the most financially successful way to avoid or minimise the negative impact of COVID-19 on business is to engage in innovative areas of economic activity [21].

According to M. Sigala, tourism companies have experienced three stages during the coronavirus turmoil: response – depression – recovery. It is those business representatives who had sufficient resources for innovative and marketing transformations who receive a high potential for acquiring the status of stakeholders in the hospitality industry market [22]. Researchers [23] propose the creation of a new vector of the tourism industry – *e-Tourism*, as an alternative form of providing tourist services in the context of coronavirus restrictions. Researchers suggest that e-tourism can find its place in the market and become a challenge to existing economic and organisational paradigms, but without a creative approach from both the scientific community and representatives of the private sector of the economy, the corresponding direction will not have a proper basis for monetisation.

The tourism industry requires the creation of innovative and marketing areas of economic activity that will meet modern socio-social restrictions, meet the needs of the population in obtaining positive emotions and mental rehabilitation, and become financially profitable forms of business. For the purpose of forming transparent mechanisms for conducting business activities, reducing the tax and administrative burden on private entrepreneurs, providing an appropriate level of organisational and technical support, zoning of business entities in the Ukrainian market of services is proposed, depending on the type of their participation in organisational and economic processes:

– **business entity – experience programming operator**: a business entity (legal entity or individual entrepreneur, which ensures the creation of various forms, processes (in particular – uniquely designed) aimed at meeting the reasonable demand of the consumer in obtaining a certain type of impressions, emotions, experience and organising their purchase and sale. Organisation of purchase and sale of impression services can also be carried out by trader, that is, a business entity that purchases various cases, processes aimed at programming or regulating the intensity of emotions and impressions solely for the purpose of reselling it (for example, under the terms of franchise agreements, concessions, etc.);

– **business entity – experience service provider**: a business entity (individual entrepreneur or legal entity) that fulfills its obligations to provide services to consumers through direct interaction with customers or online traffic. In connection with the creation of the market for experience programming services and the market for impression delivery services, there is a need to create regulatory mechanisms for public relations, aimed at providing auxiliary services (Fig. 1).

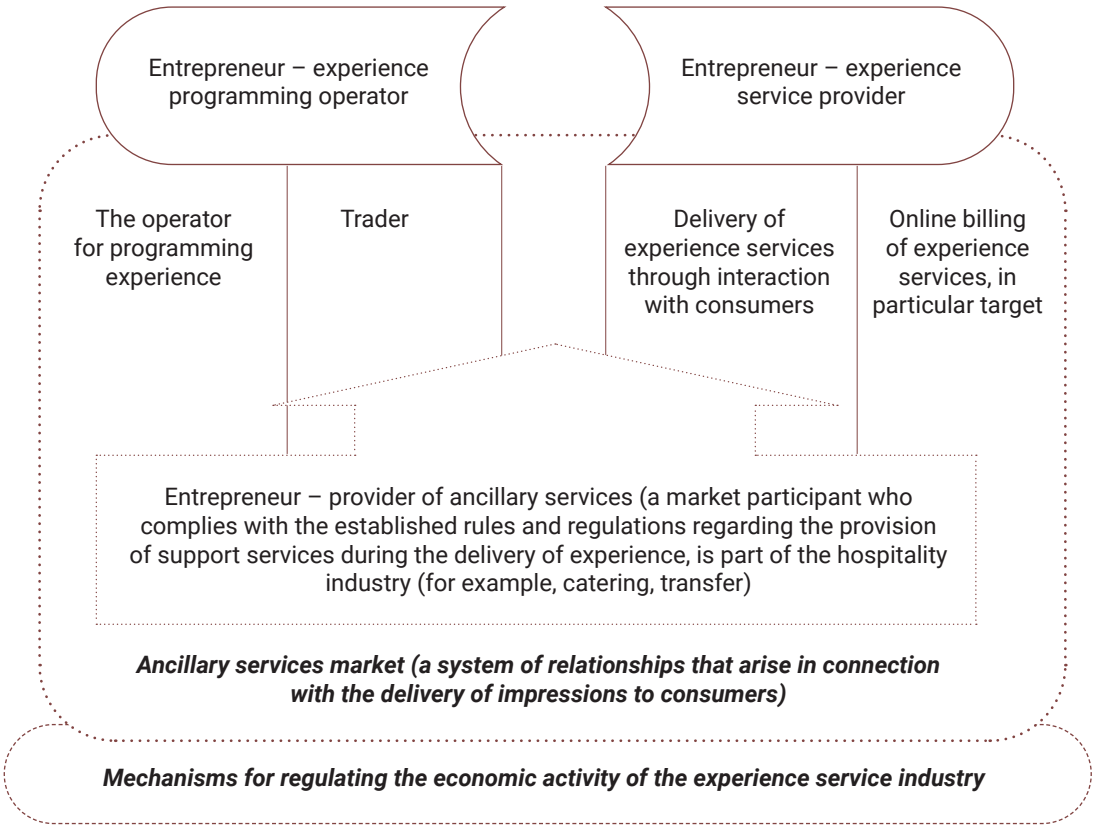

Figure 1. Mechanism for regulating socio-economic relations related to the implementation of economic activities in the field of experience services

Source: compiled by the author

Taking into account the above, it can be concluded that services for organising, programming emotions and impressions are not a type of tourist and recreational or educational services, it is a separate sector of public services, the main tasks of which are achieved through the establishment of artificially created circumstances, processes, algorithms of activity or cases, in order to cause potential customers a certain kind of emotions, impressions, the acquisition of non-traditional experience (usually positive), regulation of the intensity of emotions (Fig. 2).

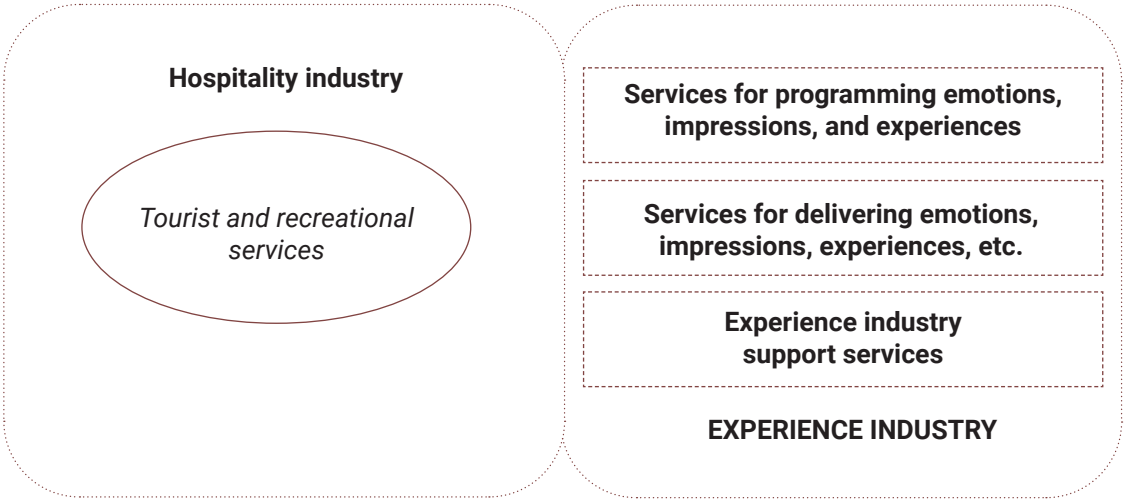

Figure 2. Relationship of experience services with tourist and recreational services
Source: compiled by the author

Disservices of economic activity of the experience industry

Given the fact that the mechanisms of regulatory and economic nature of experience services are at the stage of formation, there is no thorough monitoring of markets, analysis of the ratio of supply and demand, there is a possibility of the emergence of such an economic phenomenon as disservice of experience industry (Fig. 3).

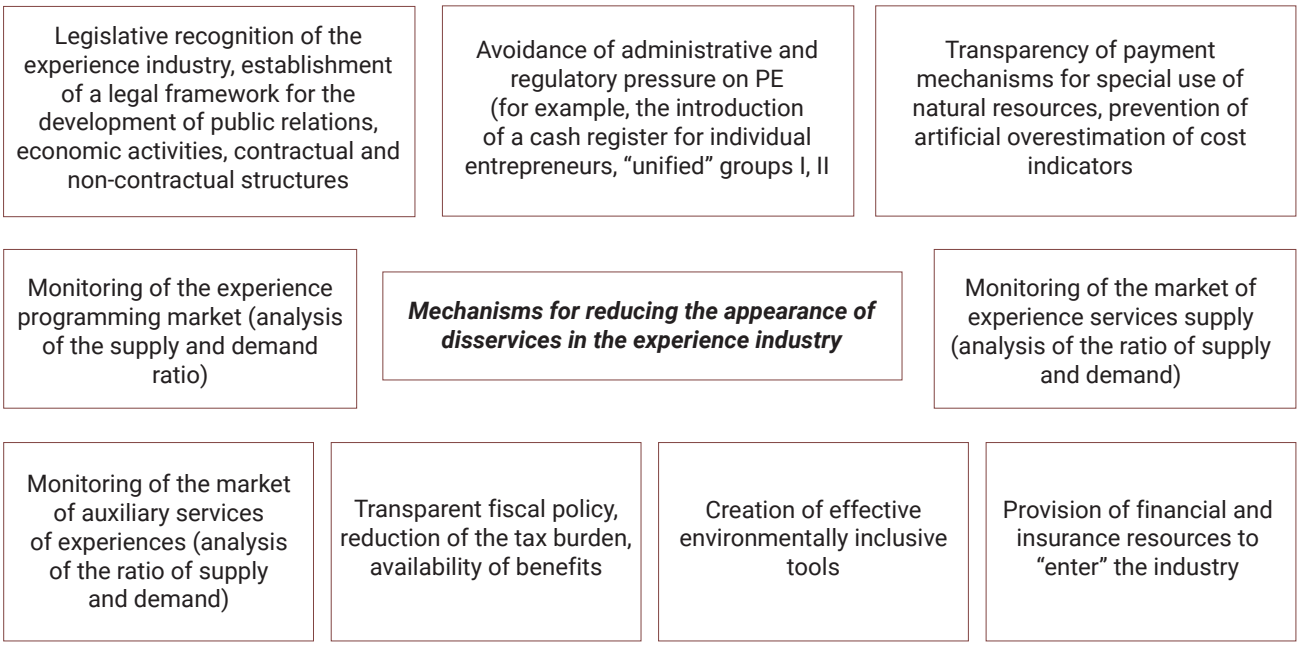

Figure 3. Developed mechanisms for reducing the appearance of disservices of economic activity in the experience industry

Source: compiled by the author

Experience industry services is an economic activity of an ecosystem direction (for example, auxiliary services) with latent, mostly delayed, negative consequences for human health and well-being or on natural ecosystems, unique territories, etc. (for example, equipping quest routes with special paths marked, which may in the future lead to the destruction or modification of migration flows of certain faunal groups, and therefore a decrease in their number).

The study suggests considering *mechanisms for regulating the inclusive development of environmental management* in the context of the experience economy in two clusters:

1) as a resource proper, in particular raw materials, providing conditions for rehabilitation, recreational activities and meeting related human needs (the appropriate approach assumes that the resource is "physically consumable", that is, a person can meet their needs if changes are made to the structure of the corresponding type of natural resources, their habitat, from partial destruction to complete destruction);

2) as a process, that is, a system of measures or other actions aimed at providing consumers with tourist and recreational services aimed at obtaining certain emotions and impressions, through interaction with natural resources (the approach involves minimising interference with the natural or physiological structure of resources, without their deformation or destruction). Institutional support for public relations, which regulates the actual process, should be zoned taking into account the method of providing such services:

– *real-time experience services (offline entrepreneurship)*, that is, direct interaction with clients by forming a personalised scenario for providing tourist and recreational services aimed at obtaining impressions (for example, developing a personal romantic tour of places of first acquaintance for a married couple; services of intimate experience);

– *online experience services (e-impression services)*, that is, a remote or indirect process of interaction with natural resources by modelling a client project, 3-D or 5-D quests, and experience case (Fig. 4).

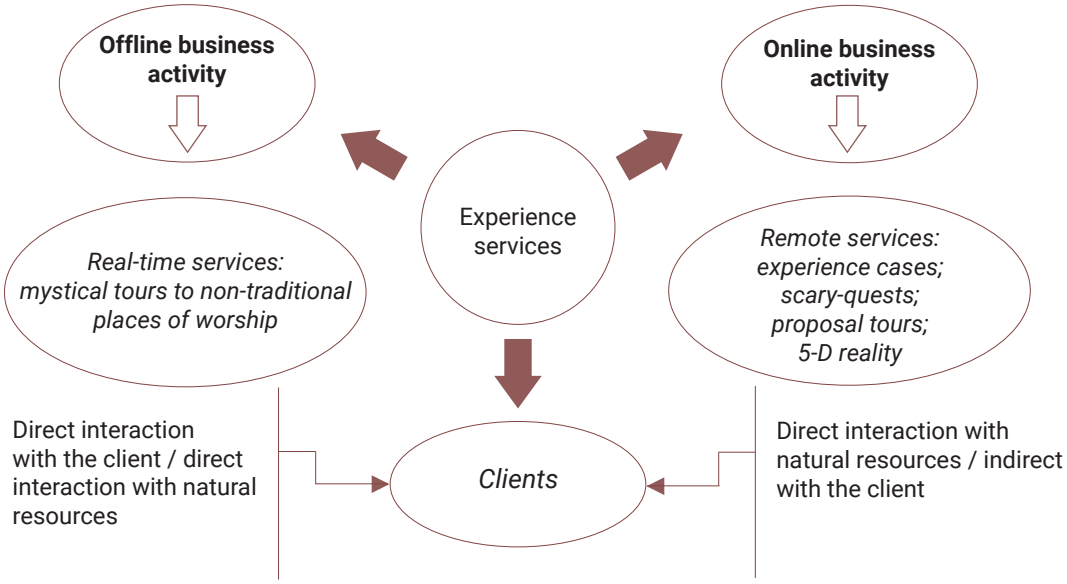

Figure 4. Forms of economic activity aimed at providing experience services
Source: compiled by the author

Commercial reproduction of the natural state, texture, colour, scent of natural resources, representatives of faunal or floral groups is a type of indirect special use of nature, since, without their "physical" contact with the "body" of the resource, the reproduction of the visual and textural image would be impossible (Fig. 5).

Experience cases in the field of tourist and recreational services are proposed to be considered as a properly ordered system of measures or other actions aimed at programming (regulating the intensity) of emotions, impressions, gaining experience based on an artificially developed scenario, taking into account the wishes of the client, his professional and personal qualities, tourist experience, financial resources. Experience cases have the following functional properties:

– graphic, audio and video formats;

– personalised artificial scenario that contains a number of circumstances that should provoke a certain range of emotions and impressions in the client;

– indirect interaction with natural resources through their visual or audio consumption;

– creation of experience case as the final product of all processes of economic activity of an entrepreneur.

Considering the global coronavirus pandemic caused by SARS-CoV-2, the lack of opportunities to meet the needs for obtaining positive impressions, emotions and memories through traditional types of tourism, visiting global tourist places and resorts, due to restrictions of a political and social nature, online experience cases can become a tool for alternative tourism (Fig. 6).

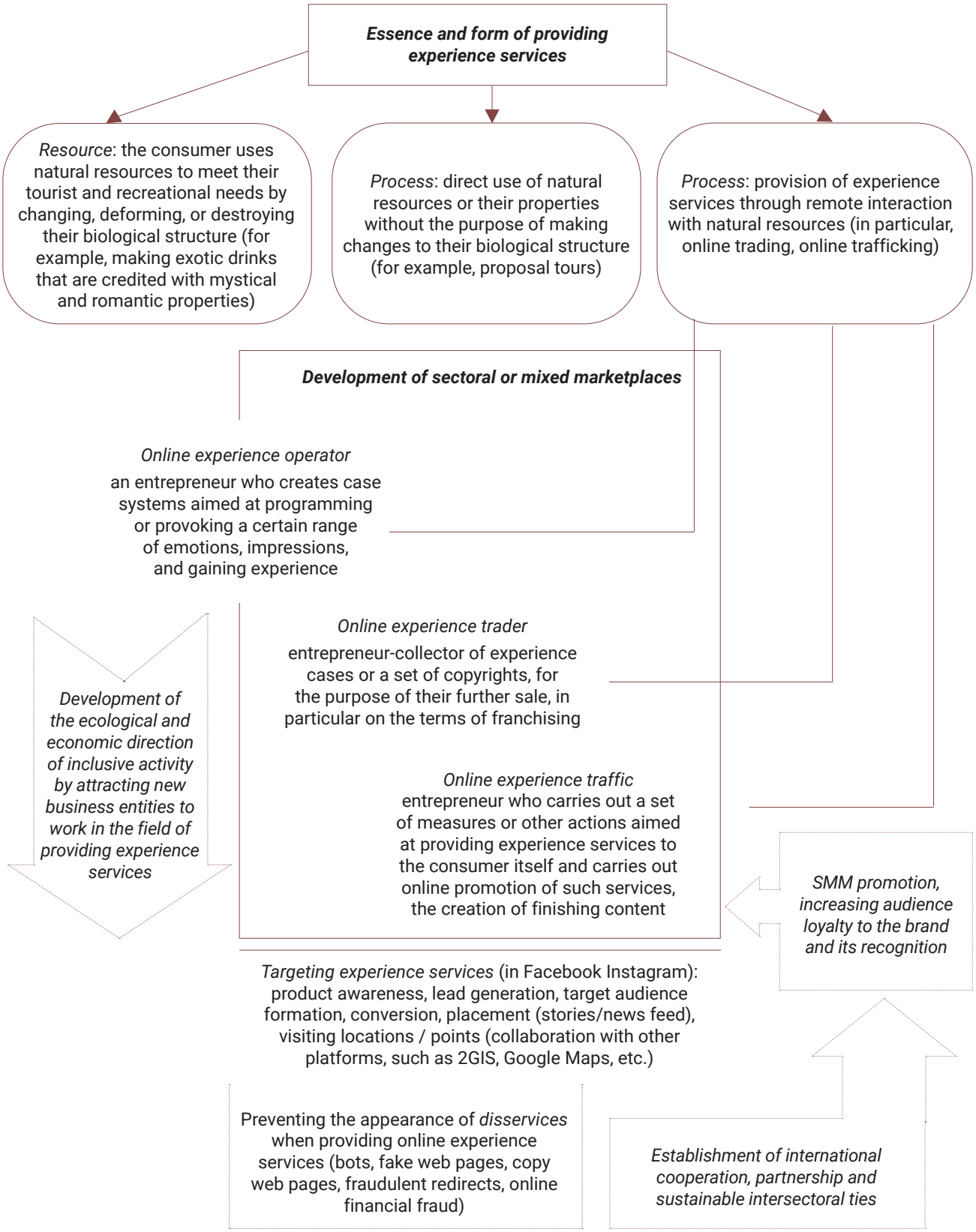

Figure 5. Economic and organisational forms of entrepreneurs depending on the format of providing experience services

Source: compiled by the author

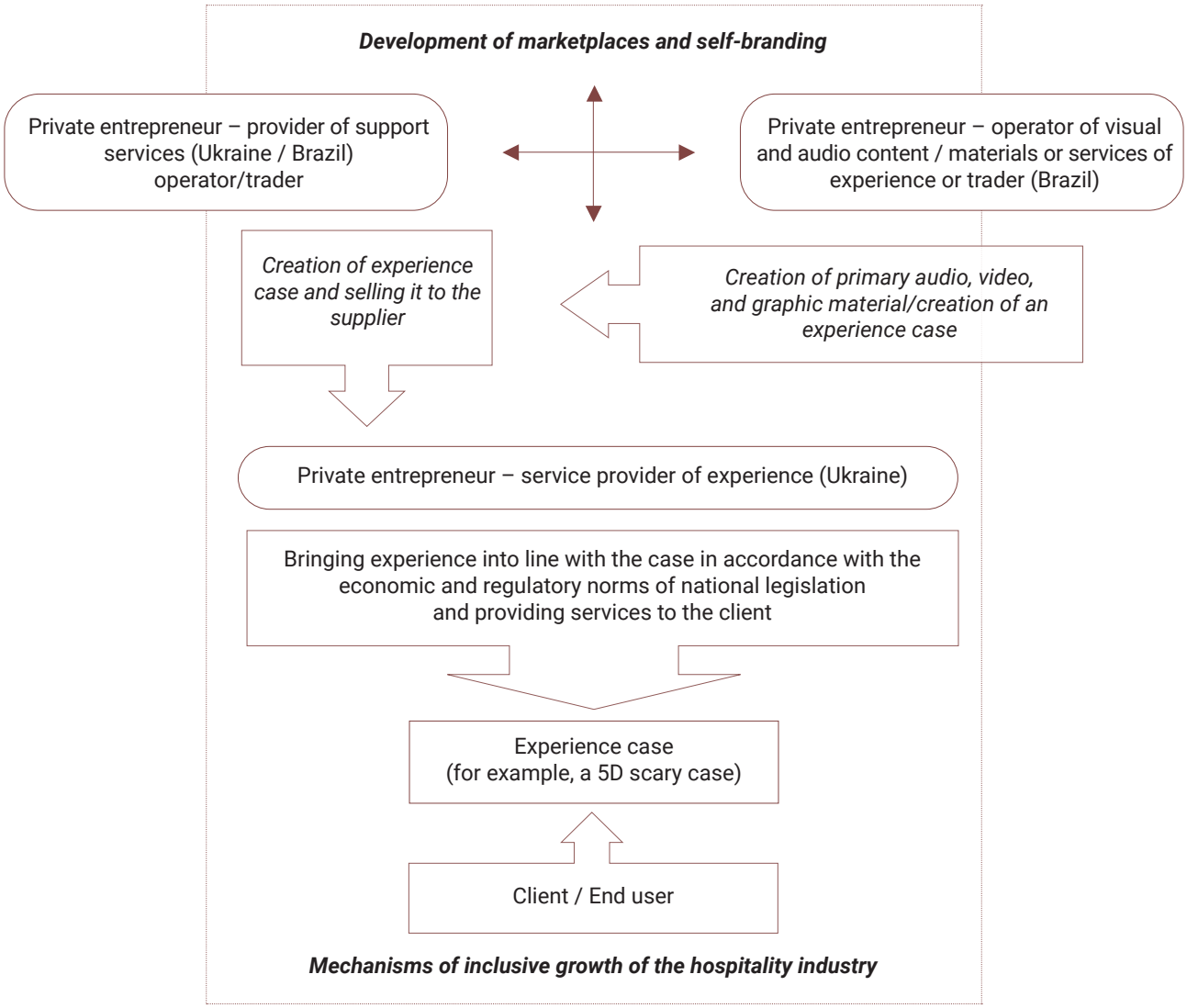

Figure 6. Mechanism for forming experience cases in the hospitality industry
Source: compiled by the author

Now, subject to existing geosocial restrictions, if a potential client intends to receive a scary quest (Appendix 1) on Snake Island (Keimoda Gradi Island, Brazil) (Appendix 2) and complete a certain amount of tasks, passing by more than 4000 thousand venomous snakes, the business entity develops a personal experience case in 5D format for such a client. A representative of the private sector of the economy that carries out its business activities in Ukraine and has organisational and technical equipment for direct provision of services to the client receives visual and graphic information (material) or a ready-made case from the partner entrepreneur (depending on the terms of cooperation and material and technical resources of each business entity).

Uniquely designed *experience case*, aimed at programming impressions, acquiring non-traditional experience, can not be considered exclusively as a subspecies of tourist and recreational product, since its main goal is not to familiarise the potential client with the historical and cultural features of a certain infrastructure object or natural complex (with a traditional tourist approach), but to challenge a certain range of emotions, regulate their intensity (Fig. 7).

Today, the market of experience services in Ukraine is at the stage of formation, since business entities do not have proper administrative, economic, organisational, and regulatory support mechanisms. There is no single view among the scientific community on the essence of experience services, their types and forms of practical implementation, which are associated with the lack of regulatory recognition of the relevant direction of economic activity. Some researchers, in particular G.V.N. Spoorthi suggests that the economic efficiency of the development of the experience service industry is related to the business reputation of the manager or the business entity itself [24]. Others argue that the discrepancy between the expectation and reality can become the main obstacle to the positive dynamics of demand for such services [25]. It is impossible not to agree with the opinion of leading foreign scientists that the establishment of the e-tourism industry is a financial and rehabilitation direction for the development of the hospitality industry, but requires a proper level of scientific and technical basis and legislative recognition as a separate form of economic activity [26; 27].

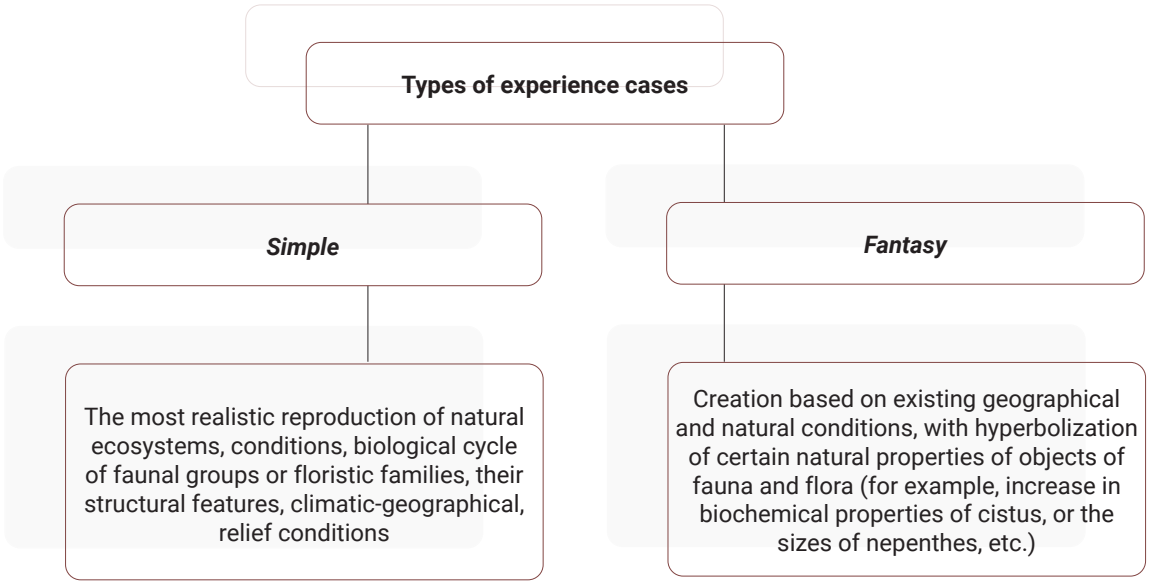

Figure 7. Zoning of experience cases depending on the visual and graphic form
Source: compiled by the author

Taking into account modern socio-economic challenges, it is the experience services that can become tools of financial and investment flows in the tourist, recreational and protected areas of the national economy of Ukraine. Zoning of the market of experience services for programming and delivery will cause both a reduction in administrative and tax pressure on private entrepreneurs, and can become a vector for the development of economic and environmental inclusion of the hospitality industry, by attracting more business entities to the relevant economic and social relations. At the same time, the absence of a regulatory act or the establishment of a clear legislative position on public relations related to obtaining emotions and impressions, in particular during the use or interaction with natural resources, determines the shadowing of the relevant sector of financial and organisational activities of business entities, establishment of quasi-normative structures of cooperation (agreements) and the formalism of bringing violators to legal responsibility.

The study suggests that providing experience services online and creating personal experience cases can be the key to understanding the new socio-economic conditions associated with the pandemic, in terms of the inability to manage everyday life and travel (crossing borders) in a traditional and familiar way for society. The format of providing experience services proposed by the study can introduce many economic and marketing trends, namely: experience services and experience cases can become the mainstream of the hospitality industry; areas of innovative collaboration with the advertising sphere; a form of self-presentation (self-branding) for freelancers (for example, Insta-targeting or blogging); the emergence of new types of marketplaces, a latent tool for drawing attention to acute economic and environmental problems (for example, scary-case of impressions associated with an anthropogenic catastrophe can attract the community to problems of drinking water shortage in the world). In particular, further study of the essence of experience services, the forms of their economic implementation, would become a constructive way to restore the hospitality industry, sustainable development of regions, the establishment of innovative intersectoral relations, in particular in the field of conservation, the expansion of economic and inclusive areas of economic activity.

Conclusions

Experience programming services require clear economic and legal, environmental regulatory tools, because without a proper level of institutional support, there are threats of copyright and related rights violations, consumer rights violations, excessive fiscal and financial-credit pressure on private entrepreneurs, and disservices as destructive forms of development of the experience industry. The development of experience services requires practical implementation of sectoral economic and contractual structures, training of specialised specialists, creation of standardisation and licensing tools (if necessary), coordination by public authorities, and so on.

Taking into account the specifics of economic activity in the field of providing experience services, it is advisable to zone business entities into: entrepreneurs-operators of experience, entrepreneurs-traders, entrepreneurs-providers of experience services directly to customers. Today, experience services are considered as a subspecies of tourist and recreational services of the hospitality industry, but the study suggests the introduction of the experience industry as a separate sector of the national economy, which would develop in two independent formats: online and offline. Due to the simultaneous establishment of a two-vector system for the development of the experience service industry, effective mechanisms of ecological and economic inclusion are formed both from the standpoint of representatives of the private sector of the economy (for example, cooperation with financial institutions, attracting entrepreneurs from related industries) and for state institutions (for example, expanding the vectors of ecological and economic cooperation with institutions of the nature reserve fund

of Ukraine). The potential of protected areas as complex zones of impressions has a multifunctional character, since objects of the nature reserve fund of Ukraine can be considered as areas for the creation of visual and graphic content of experience cases, and actually complex zones of experience, where potential customers can order a proposal tour or scary quest in addition to traditional recreational services.

The experience industry is one of the most promising business vectors for all organisational and constituent forms of representatives of business groups, as it ensures the continuous development of economic activities even in conditions of geosocial distancing. In addition, impression services are aimed at indirect interaction with natural resources, which significantly improves the dynamics of reproduction, preservation of natural ecosystems and reduces the burden on the resource potential of many valuable territories and objects.

References

[1] Hellmann, A., Ang, L., & Sood, S. (2020). Towards a conceptual framework for analysing impression management during face-to-face communication. *Journal of Behavioral and Experimental Finance*, 25, article number 100265. doi: 10.1016/j.jbef.2020.100265.

[2] García-Sánchez, I.-M., Suárez-Fernández, O., & Martínez-Ferrero, J. (2019). Female directors and impression management in sustainability reporting. *International Business Review*, 28(2), 359-374. doi: 10.1016/j.ibusrev.2018.10.007.

[3] Geyik, S.C., Chowdhury, L., Raudies, F., Pu, W., & Shen, J. (2020). Impression pacing for jobs marketplace at LinkedIn. In *Proceedings of the 29th ACM International Conference on Information & Knowledge Management* (pp. 2445-2452). New York: Association for Computing Machinery. doi: 10.1145/3340531.3412711.

[4] Sun, Yu., Fang, S., & Zhang, Z. (J.). (2021). Impression management strategies on enterprise social media platforms: An affordance perspective. *International Journal of Information Management*, 60, article number 102359. doi: 10.1016/j.ijinfomgt.2021.102359.

[5] Seontaik, K., & Magnini, V.P. (2020). The impacts of descriptive food names on consumer impressions. *International Journal of Hospitality Management*, 88, article number 102533. doi: 10.1016/j.ijhm.2020.102533.

[6] Triche, J.H., & Walden, E. (2018). The use of impression management strategies to manage stock market reactions to IT failures. *Journal of the Association for Information Systems*, 19(4), 333-357.

[7] Sadchenko, O.V., & Khumarova, N.I. (2019). The fundamentals of marketing in the ecological and innovative development of the impression'seconomy. *Bulletin of Scientific Works "Market Economics: Modern Theory and Practice of Management"*, 3(43), 26-41. doi: 10.18524/2413-9998.2019.3(43).183625.

[8] Pererva, P.G., Matrosova, V.O., Proskurnja, O.M., Volchenko, A.S., & Ghridina, A.O. (2020). Innovative marketing strategies impressions in the tourism business. In *The innovative marketing strategies impressions in the tourism business* (pp. 410-427). Kharkiv: Tritorium.

[9] Ranzini, G., & Hoek, E. (2018). To you who (I think) are listening: Imaginary audience and impression management on Facebook. *Computers in Human Behavior*, 75, 228-235. doi: 10.1016/j.chb.2017.04.047.

[10] Kisiolek, A. (2014). The development of internet advertisement in Poland throughout recent years. *Marketing and Management of Innovations*, 1, 43-51.

[11] Kisiołek, A., Karyy, O., & Halkiv, L. (2021). The utilization of Internet marketing communication tools by higher education institutions (on the example of Poland and Ukraine). *International Journal of Educational Management*, 35(4), 754-767. doi: 10.1108/IJEM-07-2020-0345.

[12] Zhu, D., & Xu, H. (2021). Guides' handling of multiple roles in interactions with tourists: The prism of impression management. *Tourism Management*, 85, article number 104306. doi: 10.1016/j.tourman.2021.104306.

[13] Carlson, D.S., Kacmar, K.M., Thompson, M.J., & Andrews, M.C. (2019). Looking good and doing good: Family to work spillover through impression management. *Journal of Managerial Psychology*, 34(1), 31-45. doi: 10.1108/JMP-04-2018-0162.

[14] Sugathan, P., & Ranjan, K.R. (2020). When co-production fails: The role of customer's internal attributions and impression management concerns. *Journal of Business Research*, 121, 535-548.doi: 10.1016/j. jbusres.2020.02.038.

[15] Kanbaty, M., Hellmann, A., & He, L. (2020). Infographics in corporate sustainability reports: Providing useful information or used for impression management? *Journal of Behavioral and Experimental Finance*, 26, article number 100309. doi: 10.1016/j.jbef.2020.100309.

[16] da Oliveira, J.S., & Azevedo do Carmo, G.M. (2019). Impression management strategies in the chairmen's statements: Evidence from the Portuguese banking industry. In *International financial reporting standards and new directions in earnings management* (pp. 199-215). Pennsylvania: IGI Global. doi: 10.4018/978-1-5225-7817-8.ch009.

[17] Zhang, Y., Ao, J., & Deng, J. (2019). The influence of high-low power on green consumption: The moderating effect of impression management motivation. *Sustainability*, 11(16), article number 4287. doi: 10.3390/su11164287.

[18] Bhattarai, G. (2021). Perception of organizational politics and employee performance: Antidotal role of impression management. *Problems and Perspectives in Management*, 19(1), 95-103. doi: 10.21511/ppm.19(1).2021.09.

[19] Order of Derzhspozhyvstandart of Ukraine. DK 009: 2010 No. 457 "On Approval of the National Classifier of Ukraine. Classification of Types of Economic Activity. DK 009:2010". (2010, October). Retrieved from https://minfin.com.ua/taxes/-/normdoc/kved2010.html.
[20] Bacq, S., & Lumpkin, G.T. (2020). Social entrepreneurship and COVID-19. *Journal of Management Studies*, 58, 285-288. doi: 10.1111/joms.12641.
[21] Li-Ying, J., & Nell, P. (2020). *Navigating opportunities for innovation and entrepreneurship under COVID-19*. Retrieved from https://cmr.berkeley.edu/2020/06/innovation-entrepreneurship/.
[22] Sigala, M. (2020). Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research. *Journal of Business Research*, 117, 312-321.doi: 10.1016/j.jbusres.2020.06.015.
[23] Gretzel, U., Fuchs, M., Baggio, R., Hoepken, W., Law, R., Neidhardt, J., Pesonen, J., Zanker, M., & Xiang, Z. (2020). E-tourism beyond COVID-19: A call for transformative research. *Information Technology & Tourism*, 22, 187-203. doi: 10.1007/s40558-020-00181-3.
[24] Spoorthi, G.V.N. (2020). Different impression management techniques used in organizational settings. *Journal of Critical Reviews*, 7(13), 1430-1435.
[25] Moreau, C.-P. (2020). Brand building on the doorstep: The importance of the first (physical) impression. *Journal of Retailing*, 96(1), 155-167. doi: 10.1016/j.jretai.2019.12.003
[26] Scott, Gr.-G., & Fullwood, C. (2020). Does recent research evidence support the hyperpersonal model of online impression management? *Current Opinion in Psychology*, 36, 106-111. doi: 10.1016/j.copsyc.2020.05.005.
[27] An, S., Choi, Y., & Lee, Ch.-K. (2021). Virtual travel experience and destination marketing: Effects of sense and information quality on flow and visit intention. *Journal of Destination Marketing & Management*, 19. doi: 10.1016/j.jdmm.2020.100492.
[28] TOP-25: The most horrible places on the planet, where only the bravest will dare to go. Retrieved from https://bugaga.ru/interesting/1146757909-top-25-samye-strashnye-mesta-planety-kuda-reshatsya-otpravitsya-lish-edinicy.html.
[29] Vinichenko, I., Tkachenko, S., Sereda, O., Prus, Yu., & Pochernina, N. (2021). Imperatives of Efficient Use of Land and Resource Potential of the Agricultural Enterprises of Ukraine. *Scientific Horizons,* 24(4), 72-89. doi: 10.48077/scihor.24(4).2021.72-89.

Інноваційні форми послуг вражень у сфері господарської діяльності

Тетяна Олексіївна Ніколайчук

Інститут проблем ринку та економіко-екологічних досліджень НАНУ
65044, Французький бульвар, 29, м. Одеса, Україна

Анотація. Останнім часом внаслідок всесвітньої пандемії короновірусної інфекції, спричиненої SARS-CoV-2, люди не мали можливості задовольнити свої потреби в отриманні позитивних вражень, емоцій, спогадів шляхом відвідування загальносвітових туристичних місць через обмеження геосоціального характеру, що зумовило формування нових векторів господарської діяльності на національному ринку та популяризації українських послуг вражень. Метою статті є розгляд послуг вражень, не тільки як механізму соціально-психологічної реабілітації особистості, а також як альтернативного інструменту розвитку підприємницької діяльності у сфері гостинності. З метою отримання об'єктивних результатів у частині визначення сутності послуг вражень і показників, що гальмують її розвиток в Україні, у науковій роботі був використаний метод системного аналізу та метод наукового узагальнення. У статті також розглядаються основні напрями формування та розвитку ринку послуг вражень у царині заповідної справи. Автором проаналізовано деструктивні чинники економіко-організаційного та нормативно-адміністративного характеру, що можуть негативно впливати на динаміку розвитку відповідного сектору послуг. Було визначено подвійну сутність механізму регулювання економіко-суспільних відносин, пов'язаних із економікою вражень, а саме: упорядкування суспільних відносин, метою яких є формування та споживання кінцевого продукту послуг вражень клієнтами – отримання емоцій, вражень, досвіду (товарний ринок) і регулювання процесів, що спрямовані на здійснення комплексу заходів, завданнями яких є формування штучних обставин, сценарію для потенційного клієнта щодо отримання продукту (вражень, емоцій), наприклад транспортування, створення умов для швидкого переміщення з однієї локації до іншої, тощо (ринок виробництва послуг). Здійснено відокремлення ринку послуг з програмування вражень і ринку послуг з постачання вражень, що може стати вектором фінансово-організаційного та інвестиційного розвитку як заповідної галузі, так і виокремлення окремого напряму підприємницької діяльності в індустрії гостинності

Ключові слова: економічний механізм, ринок постачання послуг вражень, ринок програмування послуг вражень, інноваційна господарська діяльність

Appendix 1. Proposed types of SCARY-services as an innovative form of providing experience services

SCARY-SERVICES
1. Scary-services related to historical and cultural places Experience services related to the historical or political and social development of a particular infrastructure object or territory (for example, castles, other fortifications: Palace Koenig, Kharkivska oblast, Baturyn Fortress Citadel, Baturyn)
2. Scary-personal and mystical services Experience services related to a certain historical person, or a deceased person, who is considered restless (spirit) and is in connection with a certain territory or infrastructure object, estate (for example, Pidhirtsi Castle, Pidhirtsi village, Brodivsky district, Lvivska oblast)
3. "Cult" events Experience services associated with visiting territories or infrastructure facilities where cults of non-traditional ritual nature were performed for a certain period of time, in particular, the worship of pagan gods, natural phenomena (for example, Yeni Sala II, Perevalne village, Crimea; Bogitsky dolmens-portals, Gusyatynsky district, Ternopilska oblast)
4. Scary-services related to historical burial sites Conducting tours to cemeteries with historical and cultural burials, or non-traditional monuments, visiting the coffins of outstanding personalities, for example, a sanctuary with ancient burials of a clan of priests in Nedayvoda village, Kryvorizkyi district, Dnipropetrovska oblast; Saint Peter and Paul Cathedral, Lutsk
5. Scary-services related to abnormal natural phenomena Organisation of a historical and mystical scenario in the following places, for example, Mavrinsky Maidan, Dnipropetrovska oblast; Okonski Dzherela, Volynska oblast
6. Visiting "abandoned" infrastructure facilities, territories or zones, or ghost sites Organisation of extreme events in abandoned high-rise buildings, remote villages with an unfavourable geo-economic location, in particular swampy areas, flooded refrigeration plant in Vasylkiv, Kyivska oblast; ghost town Pripyat; military town Glukhiv-2, Sumska oblast
7. Visiting places with unfavourable energy or places of historical and social tragedies Places of mass shootings or burials that took place during military operations, the Govda sanctuary on river Zbruch
8. Turbo-extreme entertainment with life and health risks Performing night races in mountainous areas, or descending into abandoned tunnels, volcanic bungee jumping, diving in water with sharks or crocodiles in a glass cage, communicating with ghosts
9. Organisation of tours to "power places" Creating a scenario based on the wishes of potential clients (finance and business, love, politics, health, etc.), (for example, mount Totoha, Medvin village, Boguslavsky district Kyivska oblast)
10. Organisation of personal quests Individual programming according to the physical fitness or preferences of potential customers (for example, descent to the Mlynki cave, Zalissya village, Ternopilska oblast
11. Extreme catering Master classes of cooking on an open fire or during the reconstruction of the ancient conditions of human existence; holding food events or tasting dishes that are not typical for national cuisine, but using domestic resources
12. Invent-extreme events Creation of a theatrical historical or fantasy storyline for the pursuit of fugitives or gold seekers, etc.; in mountainous or forest areas that cause the presence of natural obstacles
13. Guided tours to places of magical energy where the cults of sorcerers took place, "meetings" with ghosts Including with appropriate services for predicting the future, otherworldly suggestions for solving pressing issues of a personal, financial or other nature, etc. (for example, the Lepesivskyi divination temple, Lepesivka village, Khmelnytska oblast
14. Participation in non-traditional cults, rituals, and ceremonies For example, molfars, hradivnyky, khmarnyky, as well as "orders of rites" – conjuration for financial and investment growth, political career, and so on

Appendix 2. List of potential places for creating experience cases (Ukraine / worldwide)

Potential foreign objects (territories) for creating experience cases			
No. s/n	**Name**	**Location**	**Note**
1	Darvaza Gas Crater	Turkmenistan	
2	Snake Island	Brazil	
	Waverly Hills Sanatorium	Kentucky, USA	Abnormal activity
3	Bran Castle	Romania	Abnormal activity
4	Hashima Island	Japan	
5	Lake Natron	Tanzania	
6	Doll Island	Mexico	
7	Psychiatric hospital in Parma	Italy	Ghosts
8	Centralia	Pennsylvania, USA	Abnormal natural activity
9	Plague island	Italy (Poveglia)	Ghosts
10	Lipp Fortress	Offaly, Ireland	Ghosts
Potential Ukrainian objects (territories) for creating experience cases			
1	Pripyat	Kyivska oblast, Ukraine	
2	Somynske Lake	Somyn village, Volynska oblast	
3	Ghost Valley	Alushta, Crimea	Ghosts
4	Donetsk airport	Donetsk, Ukraine	
5	Pidhirtsi Castle	Pidhirtsi village, Brodivskyi district, Lvivska oblast	
6	Mount Bona	Kremenets, Ternopilska oblast	Abnormal phenomena
7	Hitler's headquarters	a Stryzhavka vilalge, Vinnytska oblast	Abnormal activity
8	Khropotva Lake	Khropotivka, Khmelnytska oblast	Ghosts
9	Mertve Lake	Kamyanka village, Lvivska oblast	Ghosts
10	Buhayskyi triangle	Mala Buhayka village, Sumska oblast	Ghosts, hallucinations

Source: compiled by the author based on [28; 29]

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Conceptual Approaches to the Development of a Strategy for Innovation and Investment Activity in a Food Enterprise

Iryna H. Kryvonohova*

Odessa National Academy of Food Technologies
65039, 112 Kanatna Str., Odesa, Ukraine

Abstract. The variability and uncertainty of the external environment inherent in business activities determine a high level of risk and enhancing the role of strategic planning as a special tool for adapting to the external environment. The purpose of the scientific research was to form a conceptual approach to the process of developing a strategy for innovation and investment activity of a food enterprise. During the study of the study's theoretical basis, it was determined that the issues of strategic planning of the enterprise as a whole and individual economic functions, in particular innovation, were developed by many foreign and Ukrainian researchers. However, for the most part in the literature, innovation and investment strategies are considered separately, at the same time they are closely related, and the implementation of an innovation project can be considered as an implementation of an investment project. In recent times, the concept of innovation and investment activity has appeared in the literature, but the methodology for rational organization of such activity has not been sufficiently developed. In the course of the research, three main approaches to developing a strategy for innovation and investment activity were described, also our own fourth approach was formulated. The analysis of methodological principles that are the basis for building strategies for innovation and investment activity was also carried out. It was concluded that the effectiveness of the strategy development process depends on the creation of a system of its information support. At the same time, increasing the productivity of innovation and investment activities of individual enterprises will help to increase the number of enterprises engaged in such activities, which will have a positive impact on the country's economy as a whole. The practical significance of the study lies in the fact that the considered strategies of innovation and investment activity can be used in the activities of relevant enterprises

Keywords: efficiency, information support, work of the organization, economic development

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*Corresponding author

Introduction

The strategy of innovation and investment activity is a system of actions of an economic entity to achieve the goals of financing innovative developments in order to obtain the desired state of assets, personnel and market position in the long term. The strategy takes into account the existing innovation and investment potential and the existing prerequisites for its implementation and development. The combination of a system of goals and directions for achieving them in the strategy of innovation and investment activity determines the limits of potential innovation and investment activity of an enterprise according to the forms of its innovation and investment activity in the long term. The strategy of innovation and investment activity is based on a scientifically based concept, which includes a description of innovation and investment activity through a system of formalized criteria by which innovation and investment opportunities of the enterprise are evaluated and implemented.

Mandatory elements of the concept in economic research are: the issue that needs to be solved, the purpose and timing of the implementation of the concept, ways and means of solving the issue, expected results, the amount of financial, material and technical, labor resources. Mandatory elements of the strategy of innovation and investment activity are: the general part, analysis of problems of (industrial) development, the goal, strategic goals and principles, targets for implementing the strategy, priority areas for achieving strategic goals, the strategy implementation mechanism, monitoring and evaluating the effectiveness of strategy implementation.

The process of developing a strategy for innovation and investment activity is based on a system of strategic decisions, the main of which are: a strategic set of decisions that determine the dynamics of investment, the impact of market factors on it and the forecast of innovations; strategic decisions on ways to raise funds, accumulate investment resources, allocate funds for innovation and investment projects.

The role of the strategy of innovation and investment activity is as follows:

– providing a mechanism for implementing strategic innovation and investment goals;

– assessment of real innovation and investment opportunities of the enterprise;

– ensuring strategic changes in the company's activities (changes in the organizational structure due to reorganization, restructuring).

The development of the strategy of innovation and investment activity begins with the analysis of the strategic investment potential of the enterprise, which is based on the identification of the strategic innovation and investment level of the enterprise and includes an assessment of the levels of scientific and technological development, organizational development (compliance of the organizational structure of the enterprise with its goals and objectives of investment activity), resource support.

General issues of innovation strategy formation were studied in [1-3], investment strategy in [4-6]. The issue of evaluating the economic efficiency of the developed innovation strategy was considered in [7-8]. The issue of information support for the innovation strategy is covered in [9]. In [10], the innovation strategy is considered from the point of view of ensuring the competitive advantage of the enterprise. The description of the practical use of the innovation strategy tool by modern Ukrainian enterprises is given in [11].

The purpose of this scientific research is to form a conceptual approach to the process of developing a strategy for innovation and investment activity of a food enterprise.

Characteristics of Four Approaches to Developing a Strategy for Innovation and Investment Activity

The development of a strategy for innovation and investment activity is based on the methodology of strategic planning, which, as a separate process, is based on the provisions of project analysis [3]. In a generalized form, the process under study can be represented by four stages and sixteen phases (Table 1).

Table 1. Stages and steps of developing a strategy for innovation and investment activity

Stages	Phases of planning an innovation and investment activity strategy
I. Preparatory	1.1. Initiation of the development of innovation and investment activity strategy 1.2 Generalization of existing experience, analysis of scientific and technological background 1.3 Designing the process of developing an innovation and investment plan 1.4. Formation of the innovation and investment planning process
II. Development of the strategy of innovation and investment activity	2.1. Setting goals and directions 2.2. Strategic analysis 2.3. Formation of innovation and investment activity strategy 2.4. Adoption of the innovation and investment activity strategy plan
III. Implementing the strategy of innovation and investment activity	3.1 Tactical analysis (assets, personnel, market status) 3.2. Marketing analysis 3.3. Financial and economic analysis 3.4. Monitoring (control) of the implementation of the strategy of innovation and investment activity

Table 1, Continued

Stages	Phases of planning an innovation and investment activity strategy
IV. Liquidational	4.1. Calculation of economic efficiency by stages, phases, generally 4.2. Preparation for utilization of innovation and investment project 4.3. Utilization 4.4. Determination of prospects for further development of innovation and investment activity

The result of the process of planning innovation and investment activity should be a strategic plan of innovation and investment activity, which should reflect the results of the phases of innovation and investment planning:

– formation of the mission and goals of the strategy of innovation and investment activity that is being developed;

– strategic analysis

– scenario analysis;

– mechanism for managing the implementation of the innovation and investment activity planning strategy;

– tactical analysis;

– marketing analysis;

– financial and economic analysis;

– monitoring of the implementation of the strategy of innovation and investment activity.

Thus, the actual strategy of innovation and investment activity includes a description of: strategic goals and priorities of development, areas of activity for the implementation of the set development goals, resources and ways to attract them [12-14].

The strategy of innovation and investment activity is part of the overall system of strategic choice of the enterprise and is in a certain correspondence with other elements of its strategic choice. Levels of such coherence can be represented in the general scheme of strategic planning, as shown in Figure 1.

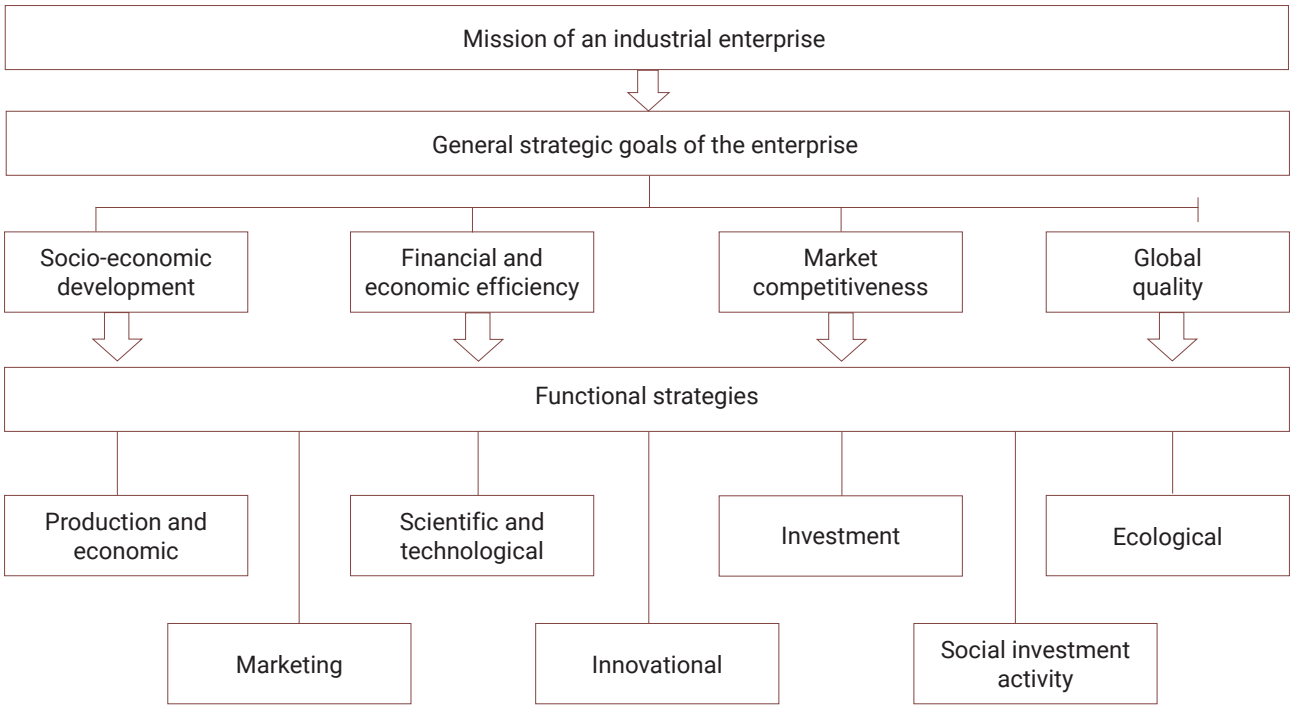

Figure 1. Levels of interrelated enterprise strategies

As can be seen from Figure 1, it is not advisable to consider the strategy of innovation and investment activity as the main one. This strategy, or rather its implementation, is a tool for achieving the overall strategic goals of the enterprise's development. Therefore, the strategy of innovation and investment activity of an enterprise should be defined as a coordinated set of relevant strategic decisions that have stable long-term consequences and have a decisive impact on the development of the enterprise [15-17].

Innovation and investment goals are closely interrelated with the main goal of production and economic activity of the enterprise and are implemented with it in a single policy. It is common to distinguish three approaches in the genesis of this issue. The first approach, based on research in classical economic theory, states that the main goal of investing in innovation is to maximize profits. Later, this goal was seriously criticized, and profit maximization began to act as one of the main criteria for evaluating the effectiveness of investments, but not as the main goal [3]. The second approach is based on the theory of sustainable economic growth. The main goal is to ensure the financial development of the enterprise based on innovation, that is, to ensure a crisis-free state. This goal minimizes investment risks and limits the growth of return on investment, since this approach is weakly focused on tracking the situation of the commodity and financial markets, which affect the

reduction of parameters of the conditions for the formation of investment resources of the enterprise, as a result of which the approach was also criticized. The third approach, which is based on the coordination of financial interests of the owners of the enterprise, is expressed and supported by modern economic theory and interprets the main goal of investing in innovation as ensuring the maximization of the market value of the enterprise [6]. Maximizing the enterprise's market value involves and maximizes the welfare of business owners – the more investment in assets, the more products are produced, the more income can be obtained and, accordingly, distributed among the owners, etc. [18].

It is desirable to supplement the three existing approaches with a fourth one – an industrial enterprise's innovation and investment goals form the basis for implementing its strategy of innovation and investment activity for long-term socio-economic development. The listed general approaches to defining innovation and investment goals are specified and closely linked to the marketing strategy of this enterprise. Thus, the marketing strategy of an enterprise can offer such goals as growth, retention of positions, change of business, implementation of benefits and rejection of business (Table 2).

Table 2. Innovation and investment goals and development of marketing strategies

Innovation and investment goals	Marketing strategy			
	Innovative products	Nomenclature development	Product improvement	Cost reduction
Growing market niche	X	X	X	X
Holding market positions		X	X	X
Changing business			X	X
Implementation of market advantages				X
Business Exit				X

The innovation and investment goal of "growth" is linked to all marketing strategies, but, of course, most of all it is aimed at developing new products and services, new technologies [19]. Ensuring the survival of the enterprise can also be achieved by increasing new products, but more often it is used to exploit excess production capacity, etc. The process of developing a strategy for innovation and investment activity based on an innovative approach can be represented by the following developed algorithm (Fig. 2).

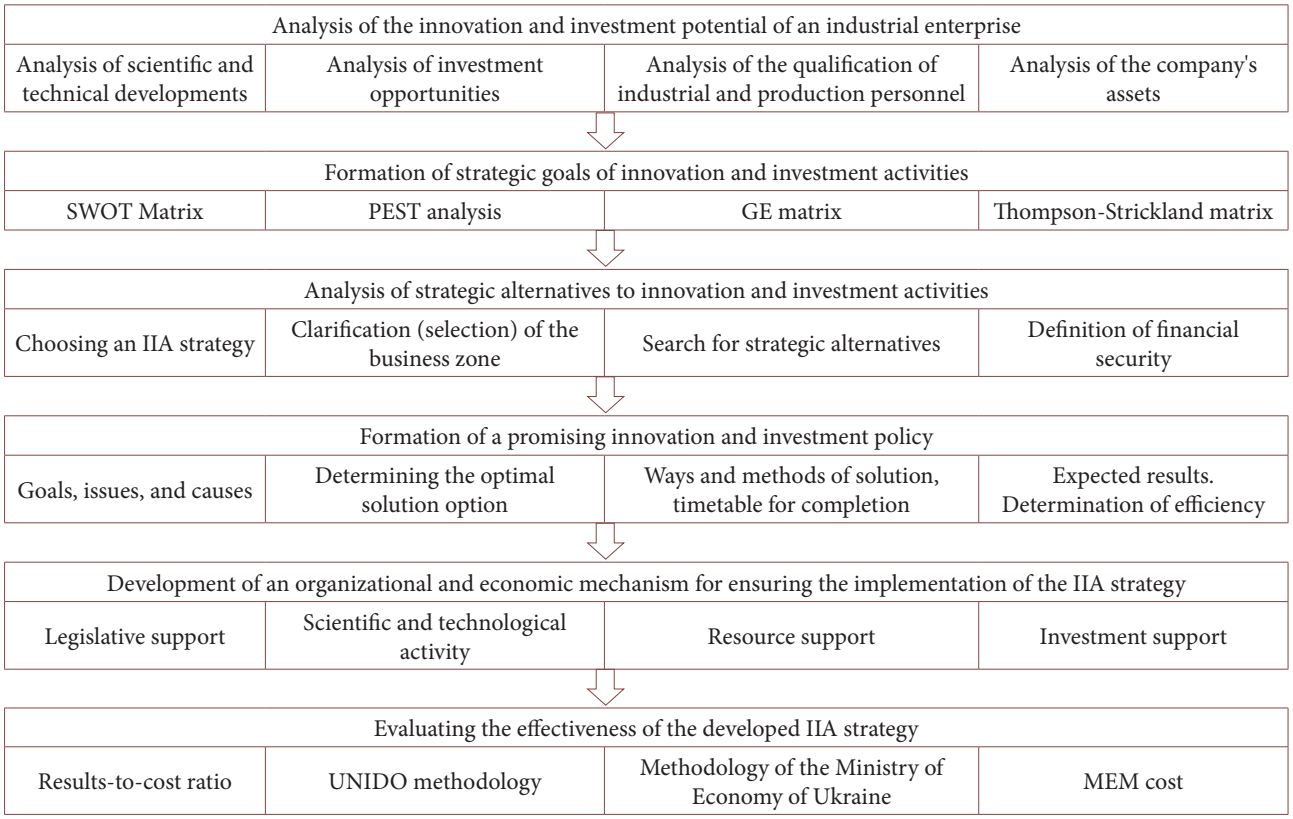

Figure 2. Algorithm for developing a strategy for innovation and investment activity compliance of the conditions of innovation and investment activity with prospective requirements, dynamics of factors of the external investment environment

Note: in modern economic conditions special attention is paid to analysing the enterprise's scientific and technological improvements

The implementation of the principles of flexibility and adaptability of entrepreneurship, which ensure the rational use of investment in innovation, dictates the need to apply a strategy for updating resources, which primarily concerns production resources and personnel. The renewal strategy is based on the desire to keep all the resources of the production and economic system up-to-date through technical re-equipment cycles, which are repeated periodically. When developing this strategy it is necessary to distinguish:

– frequency of re-equipment or reconstruction, due to the rate of physical and moral deterioration of all elements of the production system;

– possible start and completion dates for each cycle of the transformation process, which depend on resource constraints;

– amount of funds required to implement various upgrade strategy options;

– the most rational (optimal) version of the strategy, selected in accordance with the efficiency criterion.

Analysis of the System of Principles that are the Methodological Basis for Building Strategies for Innovation and Investment Activity

The principle of complexity is implemented in several areas. It provides for the integration of external and internal investment sources, the analysis of scientific and technological developments and the development of a holistic innovation and investment policy of entrepreneurship. It is reflected in the systematic unity of functional management strategies, which ensures the achievement of a synergistic effect. It also manifests itself in integrating the interests of all participants in the innovation and investment market and creating conditions for their coordination or reaching various compromises [20; 21].

The second extremely important principle of forming strategies for innovation and investment activity is the principle of multivariate strategic decisions. This principle is adequate to strategic management in general, and its application in the framework of innovation and investment policy is one of the modifications of the process of finding the most rational solutions using the optimization modeling method.

As the third principle that needs to be taken into account in the process of developing innovation and investment solutions, it is necessary to highlight the principle of timeliness. It lies in the need to take the time factor into account. This factor (along with others) determines the possibilities of effective implementation of the marketing approach, since an entrepreneur operating in a market environment and implementing marketing functions always meets with the dynamism of market processes, which can change in different periods of time [22].

The principle of timeliness of marketing investment decisions is related to the need for an implementation principle. This principle reflects the readiness of the strategy of innovation and investment activity for practical application. As a methodological tool that ensures the appropriate use of the implementation principle, we can recommend:

– using problem-oriented methods and approaches;

– specification of innovative developments;

– application of monitoring methods, which makes it possible to get expanded information about the state and trends of the innovation market.

The generalizing principle that aggregates the above-mentioned ones is the principle of target orientation of the strategy of innovation and investment activity of an industrial enterprise operating in a competitive environment. Being a transformation of the target orientation, which is inherent in a single process of strategic management, this principle implies the need to form a system of goals that should be implemented through strategic innovation and investment decisions that are being developed.

In conjunction with the strategy of innovation and investment activity, a financial strategy is developed that covers two main areas:

– managing the movement of financial resources;

– managing relationships related to cost-performance comparisons, material incentives, and responsibility for efficient use of financial resources.

The financial plan, based on the application of these methods, ensures transparency of the financial and economic state of the business structure of owners, investors, innovators, creditors and is the main element of strategic financial management of the enterprise. The development of a financial plan makes it possible to combine the interests of enterprise development, the availability of a sufficient level of financial resources for the implementation of functioning, development and solvency programs. It contains the following sections:

– income and expense plan;

– cash receipts and disbursements plan;

– plan for sources and use of funds;

– evaluation of alternative financial sources;

– opportunities for optimizing cash flows.

Each of these sections of the financial plan is developed using a number of methods and techniques that are widely tested in the practice of financial justifications, and is based on key indicators that reflect the relevant aspects of financial activity. From a strategic point of view, financial performance indicators as elements of the "resources – strategies – goals – results" chain deserve special attention.

Conclusions

The interpretation of the strategy of innovation and investment activity of a food enterprise as an inseparable whole gives an advantage in the form of increasing the validity and facilitating the practical implementation of innovation activities, directing investment funds of the enterprise to ensure its sustainable development in the long term. To ensure the effectiveness of the strategy development process, it is necessary to create an information support system for it. Increasing the efficiency of innovation and investment activities of individual enterprises can lead to an increase in the number of enterprises engaged in innovation and investment activities, which is necessary to ensure the economic growth of the country as a whole and gain more favourable positions in the world trade.

Methods for developing a financial strategy should reflect the idea of consistency and harmonization of the resulting and cost components. Being a limiter of innovation and investment activity, which directs it in the direction of financial validity, this strategy implements an extremely important function of strategic management-ensuring the expediency of innovation and investment activity in the current market conditions, based on the rational use of innovation and investment potential.

References

[1] Varadarajan, R. (2018). Innovation, innovation strategy, and strategic innovation. *Review of Marketing Research. Innovation and Strategy,* 15, 143-166.

[2] Jia, N. (2017). Corporate innovation strategy, analyst forecasting activities and the economic consequences. *Journal of Business Finance & Accounting,* 44(5-6), 812-853.

[3] Gutorov, O.I. (2018). Innovation strategy: The importance, development, and selection methods. *Bulletin of KhNAU named of V.V. Dokuchaeva. Economic Sciences Series*, 3, 307-319.

[4] Dzwigol, H., & Dzwigol-Barosz, M. (2020). Sustainable development of the company on the basis of expert assessment of the investment strategy. *Academy of Strategic Management Journal*, 19(5). Retrieved from https://www.abacademies.org/articles/sustainable-development-of-the-company-on-the-basis-of-expert-assessment-of-the-investment-strategy-9587.html.

[5] Lóránth, G., Morrison, A., & Zeng, J. (2021). *Organizational structure and investment strategy*. Retrieved from https://ideas.repec.org/p/cpr/ceprdp/15602.html.

[6] Skotnikova, L.P., & Uhrimova, I.V. (2018). The role of investment strategy in enterprise development. *Bulletin of the National Technical University "Kharkiv Polytechnic Institute" (Economic Sciences)*, 19(1295), 19-22.

[7] Guo, R. (2019). Effectuation, opportunity shaping and innovation strategy in high-tech new ventures. *Management Decision*, 57(1), 115-130.

[8] Kustrich, L.O. (2018). Economic evaluation introduction of innovation strategies in the activities of agricultural enterprises. *Investytsiyi: Praktyka ta Dosvid*, 1, 36-40.

[9] Segarra-Ciprés, M., & Bou-Llusar, J.C. (2018). External knowledge search for innovation: The role of firms' innovation strategy and industry context. *Journal of Knowledge Management*, 22(2), 280-298.

[10] Baryshevskaya, I.V., Malyshenko, Yu.G., & Skleva, K.V. (2018). Innovative strategy of the company as a source of its competitive advantages. *Modern Economics*, 11, 13-18.

[11] Horyaschenko, Ju.H., & Baiov, B.S. (2017). Market of innovation in Ukraine and characteristics of innovation strategies at production enterprises. *Economic Bulletin of Dnipro University of Technology*, 1, 132-139.

[12] Kryvonohova, I., & Muzhailo, V. (2018). Innovation and investment monitoring as a tool of information support for activisation of the innovation and investment activity of an enterprise. *Economics. Ecology. Socium*, 2(3), 1-12.

[13] Voytolovskiy, N., Pogodina, V., & Ivanova, M. (2020). Management strategy for innovation and investment activities of an enterprise. *E3S Web of Conferences*, 164(3), article number 10051.

[14] Minaeva, E., Lastochkina, V., Gusev, V., Fadeev, A., & Manukhina, L. (2018). Formation of the strategy of management of innovation and investment activity of the enterprise. *MATEC Web of Conferences*, 193(2), article number 05082.

[15] Ahn, S.G., Yoon, J., & Kim, Y.J. (2018). The innovation activities of small and medium-sized enterprises and their growth: Quantile regression analysis and structural equation modeling. *Journal of Technology Transfer*, 43(2), 316-342.

[16] Zhen, W., Li, J., Zhang, M., Zhang, Z., & He, Y. (2021). A case study on R&D investment of technology-intensive private enterprise in Sichuan province of China. *Advances in Intelligent Systems and Computing*, 1191, 647-662.

[17] Kuś, A., & Grego-Planer, D. (2021). A model of innovation activity in small enterprises in the context of selected financial factors: The example of the renewable energy sector. *Energies*, 14(10), article number 2926.

[18] Frolova, L., Zhadko, K., Ilyash, O., Yermak, S., & Nosova, T. (2021). Model for opportunities assessment to increase the enterprise innovation activity. *Business: Theory & Practice*, 22(1), 1-11.

[19] Kisiołek, A., Karyy, O., & Halkiv, L. (2020). Comparative analysis of the practice of internet use in the marketing activities of higher education institutions in Poland and Ukraine. *Comparative Economic Research. Central and Eastern Europe,* 23(2), 87-102.

[20] Yu, Y., & Cheng, H. (2021). Environmental taxes and innovation in Chinese textile enterprises: Influence of mediating effects and heterogeneous factors. *Sustainability*, 13(8), article number 4561.

[21] Ribeiro, M., Staduto, J., & Westeren, K.I. (2020). Knowledge and innovation in MSE companies in transportation in Cascavel, Brazil. *Proceedings of the European Conference on Innovation and Entrepreneurship*, 1, 553-561.

[22] Semenenko, O., Solomitsky, A., Onofriichuk, P., Chernyshova, I., Skurinevska, L., & Pekuliak, R. (2021). Methodical Approach to Assessing Level of the State Energy Security and Its Influence on the National Security and Economy of the Country. *Scientific Horizons,* 24(4), 90-96. https://doi.org/10.48077/scihor.24(4).2021.90-96

Концептуальні підходи до розробки стратегії інноваційно-інвестиційної активності на харчовому підприємстві

Ірина Геннадіївна Кривоногова

Одеська національна академія харчових технологій
65039, вул. Канатна, 112, м. Одеса, Україна

Анотація. Мінливість і невизначеність зовнішнього середовища, притаманні підприємницькій діяльності, зумовлюють високий рівень ризику й підвищують роль стратегічного планування як особливого інструменту адаптації до зовнішнього середовища. Метою наукового дослідження було формування концептуального підходу до процесу розробки стратегії інноваційно-інвестиційної активності харчового підприємства. Під час дослідження теоретичної бази дослідження було визначено, що питання стратегічного планування підприємства загалом та окремих економічних функцій, зокрема інноваційної, розроблялося багатьма зарубіжними й українськими дослідниками. Однак здебільшого в літературі інноваційна й інвестиційна стратегії розглядаються окремо, водночас вони тісно пов'язані, та можна говорити про здійснення інноваційного проекту як здійснення й інвестиційного проекту. В останні часи в літературі з'явилося поняття інноваційно-інвестиційної активності, однак методологія раціональної організації такої активності не набула достатньої розробки. У процесі дослідження було надано характеристику трьом основним підходам до розробки стратегії інноваційно-інвестиційної активності, а також сформульовано власний четвертий підхід. Також було зроблено аналіз методологічних принципів, що є основою побудови стратегій інноваційно-інвестиційної активності. Було зроблено висновок про те, що ефективність процесу розробки стратегії залежить від створення системи її інформаційної підтримки. Водночас підвищення продуктивності інноваційно-інвестиційної діяльності окремих підприємств сприятиме збільшенню кількості підприємств, що здійснюють таку діяльність, що буде позитивно впливати на економіку країни загалом. Практична значимість дослідження полягає в тому, що розглянуті стратегії інноваційно-інвестиційної активності можна використовувати в діяльності відповідних підприємств

Ключові слова: ефективність діяльності, інформаційне забезпечення, робота організації, економічний розвиток

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Current Trends in the Demographic Development of the Population of Small Villages in Zakarpattia Region

Vasyl P. Miklovda[1], Mykhailo I. Pitiulych[2], Volodymyr V. Hoblyk[2*], Mykhailo M. Pitiulych[1]

[1]Uzhhorod National University
88000, 3 Narodna Sq., Uzhhorod, Ukraine

[2]Mukachevo State University
89600, 26 Uzhhorodska Str., Mukachevo, Ukraine

Abstract. One of the dominant features of modern civilisation is the growing correlation between economic growth and the quality of its human potential, the level and condition of which are vital components of national wealth and the driving force of economic prosperity. Hence the increased attention to the analysis of current trends in demographic development of the population. This particularly concerns the lower administrative-territorial level, because it is there that the demo-reproducing processes are developed and the life processes of the population take place. The purpose of the present study is to investigate the main trends of demographic development of the population of small rural settlements of Zakarpatska Oblast and identify factors that generate depopulation phenomena and, consequently, formulate recommendations for minimising the impact of said factors on the demographic processes among the rural population. In accordance with the set purpose, the study analyses the main trends in the demographic development of the population of small rural settlements in the Zakarpatska Oblast over the past 30 years. The demo-reproducing processes were studied considering the population structure in terms of natural and economic zones of the region, covering small villages of lowland, foothill, and mountain natural and economic zones. It was established that vertical zoning affects not only the conditions of business affairs and entrepreneurial activity of the population, but also the dynamics of natural population growth. Considerable attention is paid to the analysis of the dynamics of change in the population living in small settlements. The study identifies the main reasons that determine the strengthening of depopulation in small villages of the mountain natural economic zone. The authors prove the fact of decrease in the population density of small villages with their remoteness from regional centres and cities. The paper also features an analysis of changes in the age and sex structure of the population of small rural settlements, as well as identifies factors that deform the sex and age structure of the population, the effect of which in the near future will lead to decrease in the number of the economically active population and increase in budgetary expenditures for the maintenance of retired persons. The authors provide sound justification of the necessity of measures aimed at ensuring the effective implementation of demographic policy, thereby improving the quality of the human potential of the rural population, as well as preserving and reproducing its life and labour potential

Keywords: demographic development, rural population, depopulation, dynamics

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*Corresponding author

Introduction

Overcoming the demographic crisis in Ukraine, achieving sustainable demographic development and normalising the processes of population reproduction today largely determine the effectiveness of market transformation processes in Ukraine and its national security. The processes of population depopulation, which have become sustainable in Ukraine and its regions, have substantially intensified the study of demographic processes. Therefore, the authors of the present study agree with the opinion that "a thorough analysis of demographic processes at different levels of territorial communities is necessary to create favourable conditions for the development and effective organisation of social and demographic potential of the country and its regions" [1, p. 6].

Peculiarities of each region as a territorially social community in the sphere of life support of the population is manifested, first of all, in demographic processes and structures, the state of the population health and the system of its protection. The system of settlement in the region and the level of its urbanisation also has a significant impact on demo reproduction processes.

The intensification of scientific research, which lays the scientific foundations for justifying population policy, allows distinguishing three main approaches to its understanding, which differ from each other in the set of components included in the process of population reproduction. The first approach is described by the reduction of the processes of demographic creation of the population only to natural reproduction, that is, fertility and mortality [2-4], which, to a certain extent, is evidence of a simplified approach to understanding demographic policy, since its tools are reduced to the effect on fertility and mortality. Proceeding from knowledge that describes only quantitative changes between fertility and mortality, the role of demography is essentially reduced to stating quantitative changes, without explaining the reasons that determine changes in the processes of natural reproduction of the population. The second approach substantially expands the scientific area of population research, since, apart from the natural movement of the population, it includes migration as a component of demographic policy and a specific component of social policy [5; 6].

The third approach, which is inherent in modern research, examines population reproduction and, accordingly, demographic policy in a broad sense, including a considerable scope of issues in the analysis, shifting the emphasis towards the qualitative parameters of the population – its sex and age structure, level of education, professional training, sectoral structure of employment [7-12]. According to the authors, it is the third approach that is the most promising, since it allows investigating the population processes in all the complexity and multidimensionality of this process and hierarchical levels of management. This is crucial, since the vast majority of studies analysing the demographic processes cover only macro- and mesoscale. As for the lower administrative level (village, township, city), this issue, with minor exceptions, has not receive proper coverage [13]. Meanwhile, the dynamics of demographic processes is reflected in the rate of natural increase/decrease in the population, changes in its sex and age structure, life expectancy and a number of other indicators that are decisive in the development of social and labour potential, are formed precisely at the lower administrative territorial level. Hence the relevance and importance of the scientific analysis of demo reproductive processes at the level of taxonomic units of the basic level. This refers to small rural settlements that provide life processes on their territory.

The purpose of the study is to clarify the main trends in the development of demographic processes in small rural settlements of the Zakarpatska Oblast based on the analysis of key quantitative indicators that make it possible to find out the nature of the course of demographic processes, to identify factors that enhance the depopulation phenomenon and to propose recommendations of an applied nature for the development of local programs for the reproduction of qualitative characteristics and density of the rural population.

Materials and Methods

The study of demo-reproducing processes in small villages of Zakarpattia region is determined by a number of important factors. First, small villages provide natural population growth in the region. Second, they are providers of human resources for urban settlements, essentially ensuring their development. Third, they form the core of labour migration. There are a number of other strong arguments, but these are enough to understand the impact of small rural settlements on the population processes of the region.

The main source of information for the study were the passports of small villages, monitoring of the rural population, data from State Statistics, census materials. The study was conducted in 2017-2019 under the theme "Social and economic development of small settlements in the Zakarpatska Oblast in terms of decentralisation". In the course of the survey, which covered more than 450 rural residents, data were obtained on the values of respondents, population size, fertility, mortality, life expectancy, gender and age structure of the population, family and marriage relations, and population health. Social and economic characteristics of respondents, adaptation to market conditions, propensity for entrepreneurial activity, efficiency of doing business, satisfaction with the activity of social infrastructure institutions in their places of residence, migration sentiments, etc. were also registered. The study of the influence of these factors is important from an instrumental and theoretical point of view, since they allow identifying key indicators of the impact on demo-creative processes in empirical data.

Factor analysis identifies two main factors that determine the development and evolution of the population. First, the type of natural movement of the population of a certain area, and second – the migratory activity of the working population. In the first case, if an extended type of reproduction is achieved, there is a predominance of the share of economically active population in the population

structure with a relatively small proportion of people of retirement age. In the second case, the migration movement, which today is a determining factor that characterises the development of social and labour relations, shapes the situation in local labour markets, employment, welfare, consumption and conservation, reproduction regime [14, p. 44]. From this theoretical position, it follows that a systematic analysis of the main trends in the development of the population of small villages in the region is carried out based on two interrelated processes: natural and migration movement of the population.

Consequently, when analysing and assessing the prospects for demographic development and choosing a model of social and demographic policy, the dominant approach is the analysis of indicators of population movement.

Results and Discussion

Population dynamics, its age composition, reproduction regime in general are the main components that create the preconditions for the development of human potential of the rural population, determine its quantitative limits and partially qualitative characteristics and opportunities. The results of research showed that despite the increase in the population of the region during the analysed period (+4692 people) the potential of the negative natural balance was laid in previous years. Natural population growth until 2018 was ensured mainly due to the demographic potential accumulated in previous decades and the favourable demographic structure of the population. As a result, the region was among the few regions of the country that provided an expanded type of population reproduction. However, starting from 2018, the processes of demo reproduction of the population in Zakarpattia region have identified negative national trends, although they do not have such sharp manifestations. During 2018, there was a total population decline of 1,353 people, which was 1.1 people per 1,000 inhabitants. The decrease in population was due to the reduction of natural population growth in the number of 1437 people [15, p. 40; 16, p. 39] (Fig. 1).

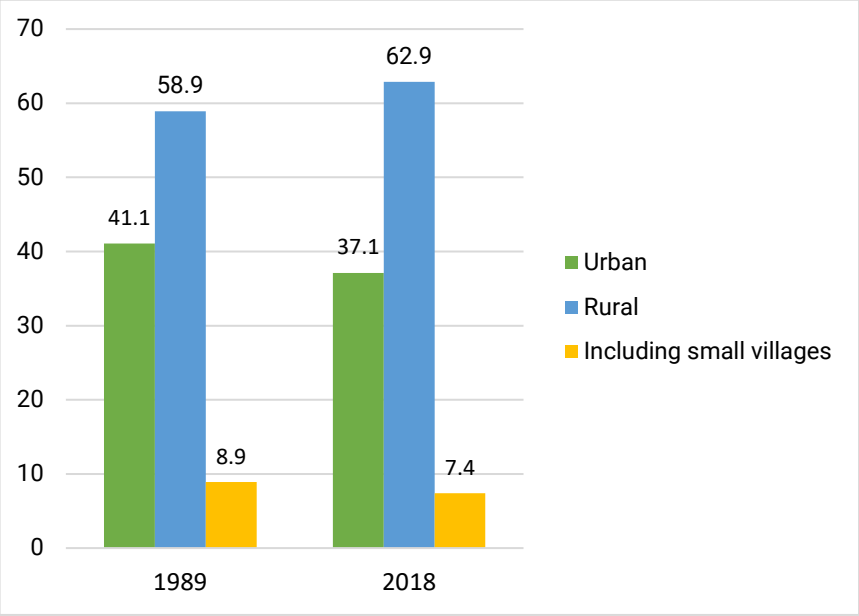

Figure 1. The structure of the current population in the towns and villages of the Zakarpatska Oblast in 1989-2018
Source: created by the authors according to [15; 16]

From the data shown in Figure 1, it is seen that the dynamics of population decline in urban settlements is much higher than in rural areas. The number of urban residents during the analysed period decreased from 41.1% to 37.1%, which indicates a low level of urbanisation in the region. At the same time, the share of rural residents in the total population structure of the region increased from 58.9% in 1989 to 62.9% in 2018. Two fundamentally important conclusions follow from this. First – rural settlements are a source of reproduction, i.e., the development of social and labour potential of the region. Second – population processes during the last period acquire clear intra-regional differences, which significantly increases the scientific interest in their research, in particular small settlements, which occupy a significant share in the settlement structure of the region.

The data shown in Figure 1, indicate that the increase in the rural population during the analysed period (+53439 people) is accompanied by an increase in the population in small rural settlements of the region (+1352 people).

The analysis of changes in the population dynamics of small rural settlements in terms of natural and economic zones of Zakarpattia region, which is shown in Table 1, indicates a general trend towards its growth. The growth of the population in the foothill zone is especially noticeable, the number of small villages of the lowland natural and economic zone is growing at a slightly slower pace. In the

mountain zone, the dynamics of declining population living in small villages is growing. At the same time, in each of the natural and economic zones there are rural settlements, where there is a tendency to reduce the number of rural residents (Table 1).

Table 1. Dynamics of change in the population of small rural settlements in the Zakarpatska Oblast for 1989-2018

Natural and economic zones	Number of small settlements	Population, persons		Increase (+) / decrease (-), %
		1989	2018	
Lowland	75	24 623	25 193	+2.3
Foothill	43	11 980	12 980	+8.3
Mountain	70	22 396	22 178	-1.0

The total increase in the population of small villages in the region can also be explained by the increase in the total number of small villages, the number of which increased by 9 units and at the beginning of 2019 amounted to 188 villages. Despite the general increase in the population living in small villages of the region, depopulation trends can be clearly seen here. The main reason for the intensification of depopulation processes in small rural settlements is the natural population decline due to declining birth rates. In 2018, 13,883 children were born (11.7 people per 1,000 available population), which is approximately the same as in 1999. If during 2008-2014 on average 50-52 babies were born every day, in 2016-2017 – less than 45, and in 2018 – only 38 [15, p. 42]. The above indicates a radical change in the reproductive behaviour of young families, the vast majority of which focus on single-child families. Present-day issues include gradual loss of value of the family, reducing need for children, as well as reducing number of marriages, and more frequent divorces. The overall marriage rate decreases and the number of consensual (unregistered) marriages increases. The number of divorces remains high, and the divorce rate for a long period of time remains consistently high – 2.3 per 10,000 population [17, p. 51]. Thus, the problems in the field of fertility are not limited to its reduction, but are increasingly associated with changes in fertility rates and family structure.

An important factor that determines the processes of depopulation of the rural population is the strengthening of the trend towards an increase in mortality, which is confirmed by the data of state statistics bodies. Starting from 2005, the mortality rate in rural areas remains stably high at 12.2 persons per 1000 population. Analysis of trends in mortality in the context of deepening decline in natural population growth that has emerged over the past period of time prompts to consider the situation in rural areas from the standpoint of the demographic security of the region. After all, the negative tendencies of almost all components of the demographic process – fertility, mortality, intensive labour migration, especially among rural youth – lead to the loss of human potential, its core – the economically active population. The current situation requires a deep understanding of the nature and specifics of modern demographic processes, analysis of the effectiveness of the tested mechanisms of influence on the reproduction processes by the state, regions, territorial communities. The appeal to the existing experience of many highly developed countries of the world unequivocally proves that regulatory instruments, which in the past provided positive dynamics of population growth, today do not bring the desired result. The way out of the current situation is to focus population policy on prolonging life expectancy and reducing mortality. Focused efforts on labour protection, reduction of occupational injuries, deaths as a result of road accidents, fight against drug addiction, alcoholism, smoking – not a complete list of problems that are now the direct object of regulatory impact on the dynamics of reproductive processes. Their inclusion in the strategic documents of regulation of demographic processes at any hierarchical level brings a significant dose of specification of program documents and the possibility of their actual implementation. Therefore, the authors support the opinion of E. Libanova that among the whole range of demographic problems of modern Ukraine, the problems of mortality are perhaps the most pressing. The roots of their development, according to the author, lie in the events of at least half a century ago, when a deep gap in the trends in mortality and life expectancy of the population of the USSR and economically developed countries gradually began to emerge [18, p. 23]. Hence one of the most important tasks – maintaining the reproductive health of the rural population by improving preventive and curative care, ensuring the availability and quality of medical services, reorganising the primary care system, improving the supply of medicines to low-income people. Admittedly, the solution to this complex knot of problems is largely associated with the transition to insurance medicine.

It is well known that the dynamics of mortality and life expectancy are largely determined by the sex and age structure of the population. Analysis of the population structure of small rural settlements in the region for the analysed period on the main social and demographic indicators, which is presented in Figure 2, demonstrates new trends and processes in the field of demographic development of the population of small settlements in the region.

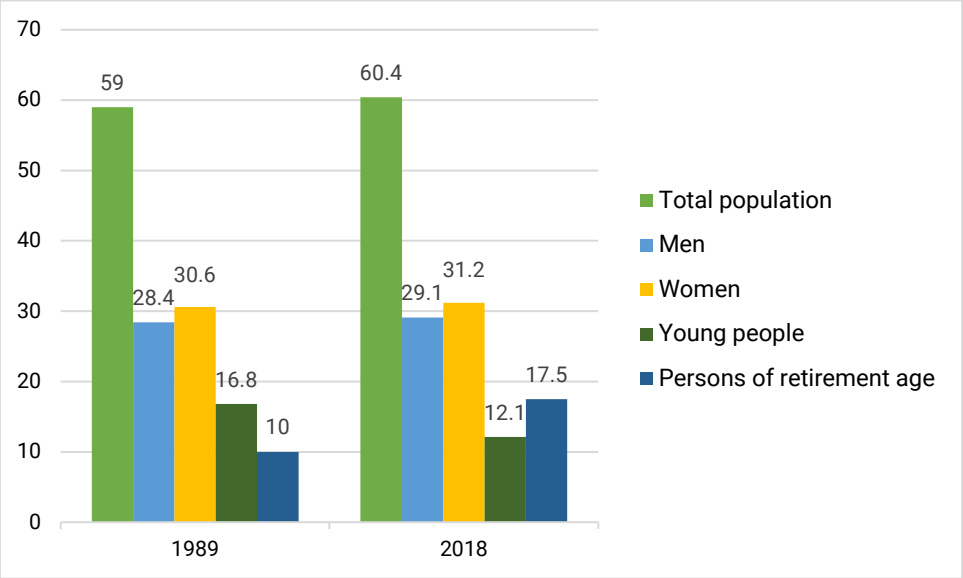

Figure 2. Changes in the sex and age structure of the population of small settlements in the Zakarpatska Oblast for 1989-2019

The slowdown in the population growth of small villages in the region is accompanied by changes in the demographic proportions of the sex and age structure due to an increase in the share of the population that is beyond working age. This is clearly confirmed by the data presented in Figure 2. During the analysed period, the share of people older than working age was 29.8% of the total population of the region. This indicates an aging population. This conclusion is confirmed by the assessment on the UN scale. In countries where the proportion of people aged 65 and over exceeds 7%, the population is considered old. In Ukraine, the share of such population on January 1, 2019 was 16.8%, and in the Zakarpatska Oblast – 11.8%, which is the lowest indicator among the regions of the country [15, p. 37]. The deformation of the demographic space of small villages is due to the aging process of the population and a decrease in the proportion of people younger than the working age, in the near future it will negatively affect the situation on local labour markets and will lead to the need to increase resources for the maintenance of disabled people, and the growth of budgetary expenditures. A good example of this is the study of this problem by the American economist D. Weil, whose results show that in the United States, almost 60% of all expenditures can be tied to certain age groups. According to the calculations of the above cited author, the budgetary expenditures for older people are 8 times higher than the costs for a person of working age and 25 times the costs for a child [19].

The rapid growth of the aging population in Ukraine and its regions requires the implementation of effective pension reform, the implementation of which must be accompanied by a set of economic, legal and administrative measures aimed at preserving and strengthening the health of pre-retirement and retirement age to maintain the ability to work activities. Thus, the analysis of the main trends in the demographic development of the population of rural settlements is important both scientifically and practically. The practical significance of assessing the demographic processes is that based on quantitative criteria and their content analysis it is possible to conduct cluster analysis, the results of which can serve as a scientific basis for developing and implementing local strategies for demographic development of each small rural settlement.

According to the results of the study, three clusters were formed depending on the demographic situation in each small rural settlement. The first cluster with rates exceeding the regional average population growth rate includes small villages of Rakhiv, Tyachiv and Berehiv districts. The second cluster includes Khust district with a positive increase in rural population. And, finally, the third cluster includes rural settlements of Mukachevo and Uzhhorod districts, where the dynamics of population growth has slowed down, local processes of population depopulation and an increase in the share of people older than working age have appeared.

Analysis of the development of the demographic potential of small rural settlements in Zakarpattia region over a thirty-year period shows that due to the intensification of migration processes, the transformation of individual villages into urban-type settlements, the intensification of urbanisation processes, changes in the rates of natural growth and mortality of the population, complex and ambiguous processes are taking place in the development of the rural population. These changes are transformed in the ekistic structure of the population and in combination with the economic component reflect not only the trends of the past and present, but also lay the foundation for future social and economic relations and demographic development. Hence the relevance and importance of the study of

demographic processes not only at the macro and meso levels, which is typical for most scientific publications [20-22], but also at the local level, since it is here that the dynamics of the demographic development of any taxonomic unit is formed.

Indicative in this regard is the Zakarpatska Oblast, which for a long time was one of the few regions of Ukraine, characterised by positive dynamics of population growth, but in the last period of time there are depopulation and loss of natural population growth. Zakarpatska Oblast is the least urbanised region of the country, as 62.9% of the population lives in rural areas [15, p. 40; 16]. In the structure of rural settlements, 32.5% are small villages (up to 500 people), where as of January 1, 2019 lived about 10% of the rural population of the region. The share of small rural settlements in the spatial cut is sharply differentiated – from 48.0% in Uzhhorod district to 10.7% – in Rakhiv district.

Considering the pronounced spatial vertical zoning of Zakarpattia region, including lowland, foothill and mountain natural-economic zones, differing in climatic conditions, natural resource and production potential, altitude, relief, it is extremely important to analyse demographic processes in small rural settlements in the context of natural and economic zones of the region. These factors require their consideration in the process of developing a strategy for the development of small settlements and adequate mechanisms of state support for problem settlements, since they actively influence the efficiency of doing business, the value of transaction costs, the competitiveness of production, and, consequently, the standard of living of the rural population [23, p. 70].

Existing natural differences, which are objective in nature, create unequal economic conditions, resulting in deepening disparity in social and economic development of territories and small settlements in particular, as most of them in the past developed on a residual basis, which created unequal conditions of their entry into market relations. In terms of natural and economic zones of Zakarpattia region, the largest share of small rural settlements falls on the lowland natural and economic zone. Almost 40.0% of all rural settlements of the region are concentrated in the lowland economic zone, of which 39.9% belong to the category of small settlements.

The share of small villages in the total number of rural settlements in the mountain economic zone, which is the least developed in economic terms, is 37.2%, of which 46.3% have the status of mountain ones. In areas with mountain settlements, the number of small villages ranges from 41.9 to 54.8%. In this zone 7 small settlements are sparsely populated, where the population does not exceed 150 people. In the foothills of the natural economic zone, the share of small settlements is 22.9% of the total number of rural settlements, of which 14.5% have the status of mountain ones.

The analysis of the settlement structure of the population in terms of natural and economic zones of Zakarpattia region allows clarifying numerous important trends. Rural settlement is characterised by a large proportion of small villages. The average size of a small rural settlement is 317 people in a mountain natural and economic zone, 301 people in a foothill zone, and 336 people in a lowland zone. There is a clear decrease in population density as the distance from district centres and towns increases. The lowest population density is recorded in small mountain settlements. The number of small villages with a population of up to 150 people is increasing. The largest number of sparsely populated villages is concentrated in Khust and Mukachevo districts – 7 and 6 settlements, respectively, which is evidence of increasing trends in depopulation of rural settlements, which is a negative phenomenon, since small villages were long described by a positive balance of population growth, playing an important role in demo-reproduction processes and provision of labour to the adjacent district centres and cities of the region.

Thus, local-spatial aspects in the development of strategies for demographic development should consider the existing asymmetry of demographic development. This circumstance objectively determines the need for further research carried out on the methodological basis of multifactor analysis, considering geoinformation, ethnocultural, ecohomologous projections of regulation of demo-reproducing processes.

Conclusions

The current demographic situation in small settlements of Zakarpattia region is influenced by the transformation of the social and economic system of deep economic crisis and declining living standards of the rural population, underdeveloped industrial and social infrastructure, lack of effective social protection of young families, people of retirement age. These problems directly affect the demographic development of the rural population, exacerbating the deformation of its gender and age structure, accelerating the depopulation of villages, intensifying labour migration, especially rural youth. The threat of losing the demographic potential of the village requires the implementation of effective demographic policies aimed at increasing fertility and mortality, improving the health and life expectancy of the rural population, implementing measures to protect motherhood and children, promoting family values, optimising migration. The prerequisite for solving this complex problem is to increase the social activity of the rural population by creating an effective business environment in rural areas, mobilisation of investment resources, the transfer of the rural economy to an innovative path of development, economic diversification, competition.

References

[1] Kravtsiv, V.S. (Ed.). (2016). *Territorial development and regional policy in Ukraine.* Lviv: Dolishniy Institute of Regional Research of NAS of Ukraine.

[2] Valentei, D.I. (Ed.). (1983). *Demographic policy of the USSR.* Moscow: Finance and statistics.

[3] Ivanov, S. (1980). The relationship of social change and the dynamics of fertility in developing countries. *Management of demographic processes.* Moscow: Statistika.

[4] Zvereva, N.V., & Medkov, V.M. (Eds.). (1987). *Population: Past, present and future.* Moscow: Mysl.

[5] Rymarenko, Yu.I. (1998). *Migration processes in the modern world: Global, regional and national dimensions (terminology, conceptual approaches, theory and practice).* Kyiv: Dovira.

[6] Freeman, R. (1999). America's economic recovery is a myth. *Executive Intelligence Review*, 26(21), 4-18.

[7] Kravtsiv, V.S., & Sadova, U.Ya. (Eds.). (2013). *Carpathian region: Actual problems and prospects for development. Volume 2: Socio-demographic potential.* Lviv: Institute of Regional Research of the NAS of Ukraine.

[8] Sadova, V.Ya. (Ed.). (2011). *Regional migration policy and mechanisms of its implementation.* Lviv: Institute of Regional Research of the NAS of Ukraine.

[9] Resolution of the Cabinet of Ministers of Ukraine No. 879 "On Approval of the Strategy of Demographic Development in the Period up to 2015". (2006, June). Retrieved from https://zakon.rada.gov.ua/laws/main/879-2006-%D0%BF.

[10] Libanova, E.M. (2006). Innovative trends in the mortality rate of the population of Ukraine. *Demography and Social Economy*, 1, 23-37.

[11] Pityulych, M., Sochka, K., Makarovych, V., Yoltukhovska, O., & Keretsman, N. (2021). Sustainable development in polyethnic border regions of Ukraine (on the example of Zakarpattia region). *E3S Web of Conferences,* 255, article number 01052. doi: 10.1051/e3sconf/202125501047.

[12] Miklovda, V.P., Pitiulych, M.I., Hoblyk, V.V., Pityulych, M.M., & Keretsman, N.I. (2020). Socio-economic transformations of small rural settlements of Zakarpattia amidst decentralisation. *International Journal of Criminology and Sociology,* 9, 3089-3094.

[13] Sarioglo, V.H. (2010). *Small populations: Measurement of indicators and quality assessment*. Kyiv: Ptoukha Institute for Demography and Social Studies of the National Academy of Sciences of Ukraine.

[14] Pitiulych, M.I. (Ed.). (2015). *Regulation of labour migration processes in the cross-border region.* Mukachevo: MSU.

[15] Hrynyk, H.D. (Ed.). (2019). *Statistical YearboZakarpattia region for 2018.* Uzhhorod: Main Department of Statistics in Zakarpatska Oblast.

[16] Hrynyk, H.D. (Ed.). (2018). *Statistical YearboZakarpattia region for 2017.* Uzhhorod: Main Department of Statistics in Zakarpatska Oblast.

[17] Hrynyk, H.D. (Ed.). (2020). *Statistical YearboZakarpattia region for 2019.* Uzhhorod: Main Department of Statistics in Zakarpatska Oblast.

[18] Libanova, E. (2012). Harmonisation of social and economic development and aging. Which approaches work in Ukraine? *Demography and Social Economy,* 2(18), 5-22.

[19] Weil, D.N. (2006). *Population Aging. NBER Working Papers. Paper No. 12147.* Retrieved from https://econpapers.repec.org/paper/nbrnberwo/12147.html.

[20] Steshenko, V. (Ed.). (1999). *Demographic perspectives of Ukraine until 2026*. Kyiv.

[21] Libanova, E.M. (Ed.). (2006). *Comprehensive demographic forecast of Ukraine for the period up to 2050.* Kyiv: Ukrainian Center for Social Reforms.

[22] Pyrozhkov, S., Malynovskaia, O., & Marchenko, N. (1997). *External migration in Ukraine: Causes, directions, strategies.* Kyiv: Academic Press.

[23] Miklovda, V.P. (Ed.). (2012). *Zakarpattia regionn mountain territories: Social and economic transformations.* Uzhhorod: PE "Breza".

Сучасні тенденції демографічного розвитку населення малих сіл Закарпаття

Василь Петрович Мікловда[1], Михайло Іванович Пітюлич[2], Володимир Васильович Гоблик[2], Михайло Михайлович Пітюлич[1]

[1]Ужгородський національний університет
88000, пл. Народна, 3, м. Ужгород, Україна

[2]Мукачівський державний університет
89600, вул. Ужгородська, 26, м. Мукачево, Україна

Анотація. Однією з домінантних рис сучасного цивілізаційного розвитку є зростаюча залежність між економічним зростанням країни та якістю її людського потенціалу, рівень і стан якого є важливим компонентом національного багатства та рушійною силою економічного поступу. Звідси підвищена увага до аналізу сучасних тенденцій демографічного розвитку населення, особливо на нижчому адміністративно-територіальному рівні, оскільки саме тут формуються демовідтворювальні процеси і забезпечуються процеси життєдіяльності населення. Метою наукової роботи є дослідження основних тенденцій демографічного розвитку населення малих сільських населених пунктів Закарпатської області та виявлення чинників, які генерують депопуляційні явища і на цій основі сформулювати рекомендації прикладного характеру щодо мінімізації їх впливу на демовідтворювальні процеси сільського населення. У відповідності до поставленої мети у статті проведено аналіз основних тенденцій демографічного розвитку населення малих сільських населених пунктів Закарпатської області за останні 30 років. Дослідження демовідтворювальних процесів здійснено з урахуванням структури населення в розрізі природно-економічних зон області, що охоплює малі села низинної, передгірської та гірської природно-економічних зон. Встановлено, що вертикальна зональність впливає не тільки на умови ведення бізнесу, підприємницьку активність населення, але і на динаміку природного приросту населення. Значна увага приділена аналізу динаміки зміни чисельності населення, що проживає у малих населених пунктах, виявлено основні причини, які детермінують посилення депопуляції населення в малих селах гірської природно-економічної зони. Доведено факт зменшення щільності населення малих сіл по мірі віддаленості їх від районних центрів і міст. Проаналізовано зміни статево-вікової структури населення малих сільських поселень, виявлено чинники, які деформують статево-вікову структуру населення, дія яких у недалекій перспективі призведе до зменшення чисельності економічно активного населення та зростання бюджетних витрат на утримання осіб старше працездатного віку. Обґрунтовано необхідність здійснення комплексу заходів, що покликані забезпечити ефективну реалізацію демографічної політики, спрямованої на підвищення якості людського потенціалу сільського населення, збереження та відтворення його життєвого і трудового потенціалу

Ключові слова: демографічний розвиток, сільське населення, депопуляція, динаміка

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New Trends in Improving Public Service Delivery in Ukraine

Tymur O. Slobodeniuk*

State Enterprise "Document"
04116, 8 Dovnar-Zapolskyi Str., Kyiv, Ukraine

National Academy for Public Administration under the President of Ukraine
03057, 20 Anton Tsedik Str., Kyiv, Ukraine

Abstract. In the aspect of the European integration aspirations of Ukrainian society and the social development of the nation state, the issues of its service function formation in the form of public services are becoming more and more relevant in Ukraine. It is worth noting that the functioning of the service state model in Ukraine is only at its initial stage and requires improvement of the institutional arrangements for the public services delivery, which involves taking into account existing problems of their delivery by public authorities in the process of deepening the local government reform and long-term restructuring of the national economy. The purpose of the article is to state the areas of concern in the system for providing administrative, social, housing and public utility services, and to define and elaborate on long-term trends for improving their functioning, as well as their common features and characteristics. The modern general and specific scientific research methods have provided the methodological basis for the research. Their use is based on a systematic approach. The analytical method was used to identify the problematic area of the branched public service delivery system. The comparative-functional and analytical methods were used to identify modern trends in improving the provision of administrative, social, housing and public utility services, their functioning, as well as their common features and characteristics. The research process has provided a comprehensive grounding and articulation of promising trends in improving the system of providing administrative, social and housing and public utility services in Ukraine and identifying their functional features and common characteristics

Keywords: administrative services, social services, housing and public utility services, citizens, public governance

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*Corresponding author

Introduction

Numerous existing problems in the functioning of the service state model have been identified, making it possible to plan and solve them in a practical way. Considering that the public services provided by the public authorities, the author has paid attention to, are divided into three components: administrative, social, and housing and public utility services, they are meant to ensure a comfortable daily life of citizens. As a matter of fact, the development of a service state model is focused on ensuring a comfortable, trouble-free everyday life for the Ukrainians. In Ukraine, the whole structure of this model is focused on recreating its functioning regarding the provision of administrative, social, housing and public utility services and constantly reaffirming the necessity of its existence. Once the problems in public services delivery are overcome, and if this is implemented quickly, Ukrainian society will be faced with a new set of problems.

The nature of the service state model paradigm is not properly articulated. Both citizens and legal entities are not particularly interested in the way the public services are delivered and the procedure they are provided with. They are interested in the trouble-free meeting of their daily needs. They are not supposed to be interested in the type of structure giving them certain services. They are interested in a prompt satisfaction of daily issues, with or without services, given that they are the taxpayers who maintain the entire service state system. The whole service delivery system in Ukraine is organised in such a way that citizens and legal entities are the supplicants to services, while the structures for delivering them decide whether there is a reason to provide services which are not always necessary. Service is not just about services, but about satisfying needs through the service delivery, and the primary goal of the service state model should not be to provide services, but to meet the everyday legitimate needs of citizens and legal entities. For this reason, citizens and legal entities are not particularly concerned with the full range of public services, but with satisfying their needs in order to ensure their comfortable living and functioning.

On the other hand, the public service system is the driving mechanism for the qualitative functioning of the service state model and all of its structural components. Exactly in this dialectical contradiction between the necessity of citizens and legal entities to comfortably satisfy their needs as the leading idea and content of service state model, and public services as a form of service state functioning, the leading direction in improving organisational and legal model of service state functioning in Ukraine is determined. The harmonisation of this dialectical contradiction is the major direction, the way to improve the Ukrainian service state, the principal function of which is to provide public services. The service approach in public governance primarily provides for the development of forms, methods and technologies of governance aiming to improve the services quality offered to persons and entities by public authorities and local self-governments. Let us consider ways (directions) of improving public services by analysing their components' features: administrative, social, and housing and public utility services. The problematic issues in the system of providing administrative, social, housing and public utility services in Ukraine, as well as the trends of their improvement and modernisation caused by them have been researched by such scholars as I. Koliushko [1], Y. Leheza [2], N. Kalynetz [3], N. Hrabar [4], Y. Ivanov, A. Senina [5], T. Dzhyha [6], H. Dudinska [7], T. Bavol [8], V. Kuts [9], I. Drahan [10], L. Pismachenko [11].

The purpose of the article is to state the areas of concern in the system for providing administrative, social, housing and public utility services, and to define and elaborate on long-term trends for improving their functioning, as well as their common features and characteristics.

Characteristics of the Administrative Services Delivery Operating Peculiarities

Administrative services include services related to the implementation of public authority and those provided by public authorities. I. Koliushko [1] has identified their distinctive features:

– are provided upon request of a person or a legal entity;

– are intended to provide legally relevant conditions for the enforcement of a particular private person's rights;

– are solely provided by the authorities;

– eligibility for and provision of an administrative service is regulated solely by law;

– the result of a public service must be an administrative act.

In Ukraine, since the establishment of the Administrative Service Centres (ASCs), there has been a significant decrease in the quality of their performance during the introduction of the concierge and mediator concepts, caused in particular by an increase in the rejection of documents submitted by citizens due to a lack of contact between the client and the immediate provider. This demonstrates once again that life is far more complicated than formalised procedures for public services delivery. It is therefore relevant to develop a dynamic and adaptive procedure for assessing the quality of administrative services provision. Given that a public governance system cannot perform its functions, in particular those of service delivery, outside of the procedure, as an implementation tool, it should constantly adapt to the changing needs of administrative service consumers and the quality of their provision. This is why the procedure standardisation and the list of quality assessment actors, the definition of quality assessment criteria for administrative services provision should constantly undergo dynamic and adaptive changes, depending on the needs of these services' consumers.

When implementing this direction, it is necessary to consider European standards for assessing the quality of administrative service provision, which focus primarily on a set of principles, norms of formation and implementation, relevant requirements for public servants, thus bringing it

closer to the internationally recognised standard for the implementation of the "service state" concept. In order to significantly improve the quality of administrative services provision in the ASC system, it is essential to establish and substantially develop feedback from administrative service consumers, which is crucial for proper quality assessment. This governance tool provides the administrative service provision entity with information about the interests and needs of its customers, identifies service shortcomings and defines directions for improving service delivery according to customer needs. Feedback setting should be the primary function of the ASCs.

In terms of the administrative services provision quality, the issue of developing and implementing standards for their provision is relevant. Quality standards for administrative and other public services represent specific requirements for the service delivery that can be used to assess whether a certain public service is of good quality [2]. Quality standards are the requirements for informing citizens about administrative services, the procedure and conditions for their provision; the availability of informational and process sheets for administrative services; deadlines for administrative services provision; reception times for entities of appeals at administrative service centres, etc. Too long timelines for receiving public services cause corruption risks, as entrepreneurs and citizens try to solve their problems as soon as possible, and the impossibility of receiving some administrative services in a single visit forms another direction for improving the administrative services provision in Ukraine. A step forward should be the establishment and implementation of an automated Virtual office of e-services system, which will make it possible to:

– achieve maximum transparency, ensure openness and equal conditions in the process of considering citizens' appeals, and provide information and consulting services;

– organise electronic document exchange between administrative service providers and ASCs;

– for citizens and legal entities, to view the list of electronic communications and information on the state of affairs they are interested in, to make an appointment with an administrator, to receive consultations and to create their personal account [3].

In order to increase the quality of administrative services provision, effective mechanisms should be put in place [4]:

– studying the citizens' needs for services and satisfaction with their provision;

– ensuring public participation in the evaluation process of the services quality provided;

– introducing a system for appealing against the actions of a service provider.

The Unified State Portal of Administrative Services (maintained by the Ministry of Economic Development and Trade of Ukraine) should be developed in the following directions:

– expanding the range of administrative services provided through the portal;

– integrating the portal with the information systems of public authorities with unified interaction requirements;

– harmonising the requirements for the introduction of electronic administrative services and interfaces for their provision;

– legitimising the electronic identification mechanism for citizens to receive electronic administrative services using alternative electronic identification methods to electronic digital signatures [12];

– creating a feasible possibility for the applicants to receive information on the status of their applications [13].

Meanwhile, there are similar problems in the functioning of the ASCs, in particular the lack of premises, understaffing in some regions, and the main problems are insufficient funding, commercialisation and lack of service quality control, long queues, the existing lack of clear explanations when citizens apply, the long waiting period for applications by the applicants, etc. Furthermore, there is a need to monitor and evaluate the quality of e-services and to resolve personnel issues, taking into account the factors of high professionalism and psychological resilience. The expansion of the ASC service range has led to a number of complications, in particular related to ensuring efficient interaction between ASC and the territorial units of the central bodies of executive power (CBEP), providing sufficient personnel for ASC and their adequate training level, along with appropriate funding. The advantage of providing administrative services by the ASC is that a citizen can receive the service faster, of higher quality and at no charge. The third direction should envisage a prohibition for the CBEP to provide administrative services directly, but rather solely through the ASC system.

The implementation of this improvement direction is the most controversial, as it concerns departmental interests of monopolistic ownership and management of certain information. This information monopoly needs to be dismantled for the sake of the consumers' interests in administrative services. The long queues issue in ASCs can to some extent be solved by electronic services that allow tracking the queue movement, which has already been implemented in ASCs of Kyiv, Kharkiv and Kremenchuk [12]. At the same time, the issue of providing related services (laminating, photocopying, banking, documents production, photographing, selling stationery) on the premises of the ASC is problematic. The issue of defining the full and exclusively own powers and responsibilities by local self-governments for bringing administrative services closer to the residents of the respective territorial communities, while improving their quality, is relevant. However, state authorities have taken the path of transforming the ASCs from the district level to local territorial communities in order to bring administrative services closer to citizens, but this is a rather long-term process driven by the local government reform implementation.

Hence, it is necessary to systematise and regiment the service delivery system at the local level with the introduction of state control mechanism for the quality of

administrative service provision, the creation of adequate material, financial and organisational conditions to ensure that the local self-government bodies exercise their powers in the administrative service provision area. The process of administrative services provision entails interdepartmental interaction or citizens' applications to several public authorities, which is time-consuming due to the lack of interaction between departmental information systems. The increased use of electronic document exchange using electronic signatures should become one of the solutions to this issue. The service sector development is driven by changing social needs. Ukraine's system of administrative services remains opaque and incomprehensible to most of the population. A large number of consumers are dissatisfied with their quality level, as they experience a number of difficulties in receiving them. A complicated procedure for the administrative services provision, which requires not only visiting a large number of authorities, usually situated in different locations, but also collecting a significant number of various documents and obtaining permits and decisions to provide the required service. Too long timelines for receiving public services cause corruption risks, as entrepreneurs and citizens try to solve their problems as soon as possible. The impossibility of receiving some administrative services in a single visit.

An interesting fact is that in Ukraine, the practice of public authorities and local self-government bodies establishing their own standards of administrative service quality, exceeding the requirements determined by the Law of Ukraine No. 5203-VI "On Administrative Services" [13], has not yet become common, which is usual for the European Union (EU) countries. Consequently, the standardisation of administrative services is an important public policy objective in the short term in the administrative services provision. An important aspect in this regard is to eliminate the splitting system of administrative services, when in order to provide a service, one has to receive an additional set of services, which in its turn implies prolonged time for receiving the service, increased costs, numerous documents (each time applying for an intermediate service) and numerous visits to the relevant authorities. For instance, entering data into the State Land Cadastre implies the provision of additional services: registration in the e-queue; obtaining permission from the executive authority to produce technical documentation; making technical documentation; land registration (providing a cadastral number); normative monetary evaluation; land ownership registration [5]. The prolonged and split nature of services leads to a corruptive element in their provision. In order to successfully resolve this issue, it is necessary to delegate this service provision to the ASC, where citizens would receive only one service, free of charge, and much faster. Under these circumstances, the procedure for providing this service is no longer a matter of concern to the service recipient. At the ASC, the citizen gets proper counselling, submits an application with the help of specialists, and waits for the result.

This is why the creation of convenient, comprehensible and accessible conditions for citizens to receive administrative services is a leading area to be addressed by public authorities. The issue of comfortable facilities for persons with disabilities (even in some ASCs) and long queues remain unresolved. Despite the high level of information technology development, the issue of getting the necessary information in the service delivery process is still problematic. Meanwhile, there are still pressing issues regarding the credibility and relevance of the counselling provided. There is a tendency for central public authorities to set up a system of their own offices for providing their administrative services. This tendency may put an end to the reform of administrative services by monopolising them in a particular agency. An interesting aspect in this regard is that, back in 2013-2014, citizens assessed the quality of administrative services provision in administrative service centres as higher than in public authorities [14; 15]. Back then, the practice of monitoring the administrative service delivery at the local level by public organisations was noted as being highly effective, resulting in strengthened partnerships between local authorities and public organisations, and contributing to an increased level of trust in local government [16]. And this was even before the local government reform towards decentralisation of public authorities, as well as the significant development of the ASC system.

The high-quality operation of the ASC depends substantially on the central bodies of executive power complying with the requirements of existing legislation on the delegation to the local level of authority for these services provision. The greatest resistance to the delegation of authority is observed on the part of the State Migration Service and the Ministry of Internal Affairs, particularly in issues of issuing passports of a citizen of Ukraine and passports to Ukrainian citizens for travelling abroad [6]; the State Service of Ukraine for Geodesy, Cartography and Cadastre, limiting ASC access to issuing data from the State Land Cadastre, disrupting the decentralisation process of administrative services in the land relations sphere. The adverse process of establishing departmental service centres leads to an inefficient use of budgetary funds that could have been allocated to expanding the integrated offices network – ASCs. The priority for budget funding should be the expansion of the ASC network at local self-government level, and departmental service centres should be integrated into their networks, thus increasing the administrative services accessibility for the community residents. In order to solve these issues, a unified list of administrative services provided by ASCs should be legislated and provided with relevant electronic, financial and personnel resources.

The Specific Functioning of the System for Providing Social, Housing and Public Utility Services

Unpleasant circumstances that impair the life quality, health, development and activities of any individual, due to incurable disease, disability, unemployment, advanced age, etc., may

happen to any person. The Ukrainian law defines these as difficult life circumstances [7]. Thus, social services represent actions aimed at overcoming difficult life circumstances (social support), minimising their consequences (social services) and preventing them (social prevention). Respectively, social services comprise three components: social support, social services and social prevention. "Simple" social services provide permanent or systematic comprehensive support (counselling or interest intermediation), "comprehensive" social services aim at permanent or systematic support (such as social support or social inclusion), "specialised" social services are provided to a particular category of persons (such as refugees or HIV (human immunodeficiency virus) positive individuals), and "ancillary" social services provided in kind: food, personal hygiene items and products, clothing, shoes, etc. In modern Ukraine, the topical directions for improving the functioning of the modern social service delivery system are:

1. Bringing necessary social services closer to the consumer. This direction is due to the uneven positioning of social service providers (concentrated in urban areas and almost none in rural ones). Therefore, it is relevant to strengthen the local self-government's role in the planning, financing and organisation of social services, which should be centred at the community level. This specific approach would ensure the targeting of social services provision, which involves differentiating their provision in accordance with the living conditions of the recipient, targeting funding from local budgets, procuring services or targeting social support to the recipient in order to pay for the services of the chosen service provider.

2. The improvement in the public expenditure management of social services with a view to their rational use. This direction provides for the improvement of existing and creation of new types of social services; the definition of the list of state-guaranteed free social services and the population categories entitled to receive them; the methodology for calculating the cost of services per beneficiary.

3. The establishment of a social service delivery system that would swiftly respond to social changes in society. This is particularly relevant given the significant increase in socially vulnerable groups.

4. The establishment of an efficient information system that would provide the population with good information about social services. In the varied range of social service providers, it is difficult for those receiving social services to know which institution to turn to in order to receive the service in question.

5. The improvement of the social services quality. The introduction of the social services effectiveness evaluation system. In the social protection system, the regional directorates of labour and social protection, and children's affairs services, there is a ramified, hierarchically subordinated system of social service institutions, which do not properly use the quality control mechanism of social services, do not evaluate them, and consequently, social services do not contribute to raising the standard of living of their consumers. The quality of social services provision is difficult to assess as some of the social service delivery standards are lacking. In 2014, 11 standards for specific social services were legalised: domiciliary care, day care, shelter care for homeless people, social integration and reintegration of homeless people, social adaptation, counselling, interest intermediation, institutional care for persons unable to look after themselves, palliative care, crisis and emergency intervention and mediation [17].

In 2020, the state standard for social services provided in kind was developed, but not rationed [18]. The centralised approach to defining the needs for social services and forming a social services network, institutions and agencies, which focuses the quality and scope of services on the financial possibilities of the budget rather than on the needs of population, and does not engage service recipients and their representatives in planning and monitoring the quality of the services provided, needs to be changed. This is certainly an objective reality, as with the crisis in the Ukrainian economy, corruption, and budget deficits it is precisely this kind of planning that needs to be abandoned, but under the conditions of national economic restructuring. The development of methods for assessing the need for services both at the territorial unit and institution levels, as well as quality control mechanisms for social services and effective sanctions for their quality breaches (only financial resources used by state social service providers should be monitored in accordance with established standards), mechanisms for state and independent monitoring, and efficiency assessment of social services and their workers.

6. The formation of a social services market in order to dismantle the state monopoly of their provision. The development of a system for engaging the private sector in the social services provision sphere, taking the example of European countries. It is appropriate in this aspect to switch to the direct financing of specific social service orders based on the principle of selling them. The customer of a particular service for a consumer is the budgetary service manager, and the purchaser can be either a private institution or a budgetary one [19]. Under these circumstances, there should be a voluntary principle of receiving social services, the opportunity to choose an institution and a place to receive them. There should also be envisaged the development and implementation of a social services commissioning mechanism in non-state service providers by regional, city and district self-governments at the expense of local budgets, based on the defined needs of the territorial unit for their provision.

There is a caveat with regard to this direction. Not all European innovations can be adequately implemented in Ukraine. Under Ukrainian realities, this system could give rise to a "chase" for budget funds. The Ukrainian corruption peculiarities would create a system of relations in which private entities would "take over" almost the entire system of social services delivery, the state would lose proper control over their provision, and their quality and efficiency would considerably decrease. It would be extremely difficult

to regain state control and influence in this area of local self-government. This proposal should therefore be treated with extreme caution and with much caution. One should also bear in mind that non-state organisations can provide unique and sometimes innovative social services. An important aspect in this regard is high-quality regulation through licensing and registration of social service providers.

7. The creation of a high-quality registry of social service consumers and providers [8]. This is necessary in order to eliminate the confusion about the functioning social service providers, which leads to abusive budget use, and fraud within this area of social relations. The registry creation will eliminate the system of subordination of social service providers to different public structures. It will facilitate state authorities and local self-governments under conditions of limited public financial resources and rising poverty rates to focus budgetary resources on supporting only the neediest members of society.

8. To clearly delineate the responsibilities and functions between the different structures of the social service delivery system. T. Bavol [8] points to the example of orphans or children deprived of parental care, who are dealt with by the Department of Social Protection of the Population and the Children's Affairs Service in regional state administrations, which have lost their leverage over social processes during the administrative reform process. At the same time, the competence of the social services centres for families, children and youth includes the provision of individual social services for this population category.

9. The optimisation of the authority structures for social service delivery at local and regional level. T. Bavol [8] considers that in order to eliminate duplication of functions among institutions providing social services, it would be advisable to merge territorial social service centres and social service centres for family, children and youth with appropriate functional departments, with functions divided according to age and category criteria. The departments shall provide comprehensive social services regardless of age and the place of residence in either inpatient, temporary or day care conditions of stay. The procedure for deciding on the relevant social service provision for an individual should also be simplified. In terms of this organisational change, the management functions, i.e. organisational, control and monitoring functions, need to be delegated to the labour and social welfare departments, where the employees have been made redundant and stripped of their direct role in the individual social service provision.

Thus, the scholar suggests that there should be an institutional separation between management functions and the direct social service delivery functions in the social welfare sector. The logic behind this distinction is to separate the organisational and controlling functions from the public authority structures that directly provide social services. On the other hand, the negative side of such reorganisation is that there will be a growing bureaucracy in the directorates over time, and the structures directly providing social services will become increasingly understaffed, given that the directorate will drain the budget allocated for social protection, which in turn will lead to a decrease in the quality of social service provision. This direction should envisage the implementation of a quality management system in social care institutions and organisations in accordance with DSTU ISO 9001: 2015 "Quality Management System" [20]. One should clearly understand and realise that this standard is not about measuring the quality of the social service provided, but defining the quality criteria for managing the social service delivery system.

10. The development of a sustainable human resource capacity in social service delivery. In order to stop significant staff turnover in the authority structures that provide social services, it is necessary to create a system of incentives for employees in this sphere, which should include not only wage rises, but also the creation of a system providing certain types of social guarantees and promising pension provision. Various measures can be planned in order to improve the quality and efficiency of social service provision, but when there is a lack of permanent personnel in the sphere, it is impossible to achieve this goal. Considerable attention has been given to developing and improving the system of training and advanced training for social service specialists and social service providers; developing procedures for the certification of specialists in social service delivery; ensuring the certification of specialists from non-state social service providers in the State system of social service delivery.

11. The improvement of the legal and regulatory as well as the methodological framework for social protection in accordance with the defined directions for modernising the social service delivery system to the population. Furthermore, it provides for the creation of legal conditions for the independent inspections functioning and for public monitoring of the social service provision quality.

On the basis of the Law of Ukraine No. 2189-VIII "On Housing and Public Utility Services" [21], the concept "housing and public utility services" is defined as the result of economic activity aimed at providing the conditions of residence or stay of persons in residential and non-residential premises, buildings and constructions, groups of buildings and constructions in accordance with the regulations, norms, standards, procedures and rules, which is carried out by virtue of the respective agreements on providing housing and public utility services. Article 5 of the Law of Ukraine No.2189-VIII "On Housing and Public Utility Services" [20] provides a list of housing and public utility services:

– housing service or multifamily house management service, in particular: maintenance of the multifamily house common property, cleaning of the internal premises and the adjoining territory, sanitation works, maintenance of internal house systems, lift maintenance, purchase of electricity to ensure the functioning of the multifamily house common property, maintenance repairs of the multifamily house common property, etc.;

– public utility services covering the supply and distribution

of natural gas, electricity, heat energy and hot water supply, centralised water supply and water disposal, household waste management.

In the Order of the State Committee of Ukraine for housing and public utility services No. 76 "On Approval of the Rules of Maintenance of Residential Buildings and Adjacent Territories" [22] the concept of "housing and public utility services" is defined as the result of economic activity aimed at providing the conditions of residence or stay of persons in residential and non-residential premises, buildings and constructions, groups of buildings and constructions in accordance with the regulations, norms, standards, procedures and rules. The modern system of housing and public utility services consists of two hierarchically interconnected levels: the managed system in the state superstructure form (regional, district, city authorities, consumers of housing and public utility services); the managed system in the form of housing and public utility enterprises. The housing and public utility sector is represented by two subsystems – the logistical and the organisational and economic.

The logistic subsystem consists of two units: stock of buildings, maintenance facilities and engineering infrastructure. The demand for housing and public utility services is determined by the total capacity of the city's building stock. The organisational and economic subsystem is the totality of all types of expenditures, the "service availability time", the size of the population to be served, and the totality of management levels. Both subsystems are in constant dependence on each other, determining the level of production costs of housing and public utility services [9]. There is therefore a need to define the main directions for modernising and improving the provision of housing and public utility services:

1. *Organisational modernisation*. The present situation in the sphere of organisational structures in the housing and public utility services is characterised by the replacement of hierarchical structures by adaptive ones with elements of hierarchy. A matrix management structure should be recognised as the most efficient adaptive management structure. It emerged as a response to the need for rapid change while making the most efficient use of a highly skilled workforce. The establishment of an adaptive system for housing and public utility services at the regional level will contribute to resolving the contradiction between the quality of their provision as well as their tariffs and the creation of effective mechanisms for state regulation of this economic sector.

2. *Indicative planning for the provision of housing and public utility services*. In the course of developing an algorithm for regulating the housing and public utility services sphere, the application of indicative planning as a mechanism for coordinating the interests of the state, enterprises and households in market conditions is promising. For the managed market model, indicative planning operates on the basis of a reallocation of producer and consumer resources. According to V. Kuts [9], a vivid example of the qualitative and efficient performance of this mechanism under conditions where cold and hot water supply is intermittent would be to adjust the payments for receiving the respective services downwards.

3. *The formation of a housing and public utility services market*. The market relations establishment in this sphere of social relations would contribute to breaking the monopoly of enterprises supplying energy, heating, gas and water, which makes it possible for them to conduct a cost-based economy, neglect scientific and technical development and avoid reducing the cost price of the services and tariffs provided. Under Ukrainian realities, the transition to a market economy in the housing and public utility services provision must be accompanied by state tariff regulation. The cost price of these tariffs should be regulated through the annual introduction of an increasing overall technical enterprise level factor.

4. T*he coordination of the housing and public utility service delivery reformation with other systemic reforms.* Reforms of the housing and public utility service delivery system, require the coordination and close interrelation with other reforms underway, particularly the natural monopoly reform in energy sector, local government reform, inter-budgetary relations reform, tax reform, and personal income reform [10].

5. *Tariff setting*. Pricing optimisation and tariff regulation in the market-reformed sphere of housing and public utility services envisages the development of self-regulation in the sphere of housing and public utility services. The preservation of the regulatory mechanism in the housing and utility services provision with the use of various methods focused both on increasing the investment attractiveness of this social relations sphere and on the stimulating effect in regard to enterprises and consumers. This implies individual tariff regulation of concessional contracts when private-sector operators are involved in the operation of utilities, resulting in the contractual nature of defining the tariff calculation methodology. The application of standard indicators during the formation of the respective services' cost price. A differentiated approach to setting tariffs for the same type of housing and public utility services within a region should be envisaged.

6. *A single operator for the housing and public utility services provision*. The number of entities in the housing and public utility services market, which aim to possess a certain type of information on the consumers of these services, determines the need for a single operator – a specialised enterprise that calculates and collects payments for housing and public utility services and ensures the timely flow of working capital to enterprises that provide services. It also meets the need of local governments for objective information on money flows in this area of social relations and of consumers to receive timely information on all the changes regarding payments for housing and public utility services [11]. The unified information-computing centres should serve not only as integrators of financial and information resources in the housing and public utility service

provision at the regional level, but also as an institution ensuring transparency of information and financial flows in the sector.

The tasks of economic, organizational and technological nature should be solved at the present stage in the housing and public utility services sector in Ukraine in order to eliminate the tendency of constant underfunding of this sector and to form a coherent, systematic public policy regulating the activity of enterprises providing these services. To delineate the regulatory responsibilities between local representative and executive authorities.

Conclusions

Thus, there have been considered long-term trends for improving the three components of public services, the modernisation and development of which should contribute to the development and establishment in Ukraine of a well-functioning service state model. The author considers these three components of public services (administrative, social, housing and public utilities) without mentioning other socially important services, including educational and medical ones, which are essential for a well-functioning service state model, as they also ensure the everyday life quality of the population. These two areas of public life and service systems are so vast in content and in their manifestation in public life that they need to be studied separately as part of public services. When considering the trends in the improvement of public services, it should be mentioned that despite the diverse nature of the issues to be addressed for their delivery, there remain common trends in their improvement:

– organisational modernisation;

– the integration of the system for these services delivery to market operating conditions and the decentralisation of the public administration system;

– significant improvement in the quality of the entire public service range and its assessment criteria standardisation;

– the improvement of the legal and regulatory framework;

– the development of a sustainable and professional human resource capacity in public service delivery;

– the development of an appropriate efficient information system;

– the establishment of effective interaction between the state regulation and control system and the public and private sector in the public services provision.

The directions for future research on the public services improvement lie in the need for detailed development of tools and mechanisms for improving and modernising the provision of administrative, social, housing and public utility services in terms of the state service function development in Ukraine.

References

[1] Koliushko, I. (Ed.). (2001). *Administrative reform for human*. Kyiv: Center for political and legal reforms.

[2] Leheza, Ye.O (2016). Evaluation of the quality of public services in Ukraine. *Bulletin of Zaporizhia National University. Law,* 1, 91-97.

[3] Kalynets, N. (2015). Improvement of the mechanism for providing administrative services in the context of interaction of public authorities with the community. *Efficacy Public Administration,* 43, 211-219.

[4] Grabar, N. (2015). Ways to improve the quality of administrative services in Ukraine. *Actual Problems of Public Administration*, 1(47), 33-39.

[5] Ivanov, Yu., & Sienina, A. (2014). Improvement of the organization of administrative services as a way to prevent corruption. *The Problems of Economy*, 3, 81-88.

[6] Dzhyga, T. (2014). Reforming administrative services in Ukraine within public service dominant approach. *Actual Problems of Public Administration*, 3, 70-73.

[7] Dudinska, H. (2020). *What are social services and will the new law work?* Retrieved from https://decentralization.gov.ua/news/12073.

[8] Bavol, T. (2016). Optimization of entities providing social services: Systematic approach. *Public Administration and Local Government*, 1(28), 61-66.

[9] Kuts, Ya.V. (2018). Improving the management of housing and communal services for the population: The tandem of market and state regulators. *Investytsiyi: Praktyka ta Dosvid,* 8, 125-130.

[10] Drahan, I. (2010). *Modernization of housing and communal services in Ukraine: Theory, methodology, practice of public administration.* Donetsk: Yugo-Vostok.

[11] Pismachenko, L. (2008). Public administration in the field of housing and communal services: Problems and ways to solve them. *Ekonomika ta Derzhava,* 4, 74-76.

[12] Regarding the areas of improving the system of administrative services in Ukraine. (2018). Retrieved from https://niss.gov.ua/sites/default/files/2017-05/admin_poslug-71b6f.pdf.

[13] Law of Ukraine No. 5203-VI "On Administrative Services". (2012, September). Retrieved from https://zakon.rada.gov.ua/laws/show/5203-17#Text.

[14] Estimates of service centers in 10 cities of Ukraine. (2013). Retrieved from https://dif.org.ua/article/otsinki-diyalnosti-tsentriv-nadannya-poslug-u-10-mistakh-ukraini.

[15] A study of the quality of administrative services provided by the State service of Ukraine for regulatory policy and entrepreneurship development. (2014). Retrieved from http://www.drs.gov.ua.

[16] Public participation in monitoring the provision of services by public authorities: regulations and existing practices of Ukraine. (2013). Retrieved from https://issuu.com/galynasmirnova/docs/monitoring_poslug_print_small_size.
[17] State standards of social services. (2014). Retrieved from http://gutszn.kr-admin.gov.ua/2014-01-24-15-29-01.
[18] Order of the Ministry of Social Policy of Ukraine No. 147 "About the Statement of the State Standard of Social Service of Natural Help". (2021, March). Retrieved from https://zakon.rada.gov.ua/laws/show/z0589-21#Text.
[19] Kisiołek, A., Karyy, O., & Halkiv, L. (2021). The utilization of Internet marketing communication tools by higher education institutions (on the example of Poland and Ukraine). *International Journal of Educational Management,* 35(4), 754-767. doi: 10.1108/IJEM-07-2020-0345.
[20] DSTU ISO 9001: 2015 "Quality Management System". (2016). Retrieved from https://khoda.gov.ua/image/catalog/files/%209001.pdf.
[21] Law of Ukraine No. 2189-VIII "On Housing and Communal Services". (2017, November). Retrieved from https://zakon.rada.gov.ua/laws/show/2189-19#Text.
[22] Order of the State committee of Ukraine for housing and communal services No. 76 "On Approval of the Rules of Maintenance of Residential Buildings and Adjacent Territories". (2005, May). Retrieved from https://zakon.rada.gov.ua/laws/show/z0927-05#Text.

Нові тенденції удосконалення надання публічних послуг в Україні

Тимур Олегович Слободенюк

Державне підприємство «Документ»
04116, вул. Довнар-Запольського, 8, м. Київ, Україна

Національна академія державного управління при Президентові України
03057, вул. Антона Цедіка, 20, м. Київ, Україна

Анотація. В аспекті євроінтеграційних устремлінь українського суспільства та розвитку соціального характеру національної держави, в Україні все більше актуалізуються питання формування її сервісної функції, яка матеріалізується у формі публічних послуг. Потрібно констатувати, що функціонування моделі сервісної держави перебуває в Україні лише на початковому етапі і потребує вдосконалення організаційного механізму надання публічних послуг, що передбачає врахування наявних проблем їхнього надання органами публічної влади в процесі поглиблення адміністративно-територіальної реформи і перспективної структурної перебудови національної економіки. Мета статті полягає у констатації проблемних аспектів системи надання адміністративних, соціальних та житлово-комунальних послуг, що зумовлює потребу у формулюванні та конкретизації перспективних тенденцій удосконалення їхнього функціонування з виявленням властивих для них особливостей та спільних характеристик. Методологічною основою дослідження стали сучасні загальні та спеціальні методи наукового пізнання. Їхнє застосування обумовлюється системним підходом. Аналітичний метод використовувався для констатації проблемного поля в сфері розгалуженої системи надання публічних послуг. Порівняльно-функціональний та аналітичний методи використовувались для виявлення сучасних тенденцій удосконалення надання адміністративних, соціальних та житлово-комунальних послуг, їхнього функціонування з виявленням властивих для них особливостей та спільних характеристик. У процесі дослідження було комплексно обґрунтовано і артикульовано перспективні тенденції удосконалення системи надання адміністративних, соціальних та житло-комунальних послуг в Україні та виявлення властивих для них функціональних особливостей та спільних характеристик

Ключові слова: адміністративні послуги, соціальні послуги, житлово-комунальні послуги, громадяни, публічне управління

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The Process of Designing Artificial Intelligence: Development Trends and Prospects

Eugeniu B. Cozac*

LTD "GUN"
LLP "Memery Crystal"
EC4A 2D, 165 Fleet Str., London, Great Britain

Technical University of Moldova
2004, 168 Stefan cel Mare Blvd, Chisinau, Republic of Moldova

Abstract. The relevance of research is due to the rapid development of artificial intelligence. It is an important technology that supports everyday social, technical, and economic activities. Artificial intelligence allows computers to learn from their own experience, adapt to set parameters, and perform tasks that were previously only possible for humans. In this regard, this article is aimed at identifying trends and prospects for the development of artificial intelligence. Another considerable task is to highlight the principles of building artificial intelligence systems. Developing an artificial intelligence system differs from building a conventional system as it requires a systematic approach, big data analysis, and model training. Building an artificial intelligence system – is a detailed process of reverse engineering human traits, capabilities of a machine, and using its computational power to surpass humans' skills. The leading approach to the study of this issue is literature analysis, which makes it possible to comprehensively consider artificial intelligence development. This article includes the modern foundations of artificial intelligence and various representative applications. In the context of the modern digital world, artificial intelligence is the property of machines, computer programmes and systems to perform intellectual and creative human functions, independently find ways to solve issues, be able to draw conclusions and make decisions. The research materials are of practical value for a critical analysis of current artificial intelligence capabilities, reasons why it still cannot achieve human intelligence, and the challenges it faces when achieving and surpassing the level of human intelligence

Keywords: artificial intelligence, information technologies, algorithm, technology development, expert systems

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*Corresponding author

Introduction

Artificial intelligence has become an important aspect of the future. This applies equally to information technology (IT) and many other industries that rely on it. Just a decade ago, artificial intelligence technology seemed like something out of science fiction; today, we use it in everyday life without even realising it – from intelligence research, facial and speech recognition to automation. Artificial intelligence is a general term that covers various areas, such as artificial neural networks, natural language processing, and deep learning, which are used for predictive modelling [1]. For many researchers, the purpose of artificial intelligence – is to mimic human cognition, while for some of them – it is the creation of intelligence without taking into account any human characteristics [2]. According to numerous other researchers, artificial intelligence is aimed at creating useful tools for human comfort and needs without any criteria for abstract intelligence [3].

The aforementioned variations in purposes are not necessarily wrong, as each approach provides new ideas and a framework for conducting research in the field of artificial intelligence. However, there is a strong argument that due to the lack of a correct definition of the given phenomenon, it is difficult to determine what can and cannot be done using existing methods. One of the purposes of studying AI – is to create intelligence in machines as a general property, not necessarily based on any quality of a person. This purpose also includes the task of providing means of human comfort and meeting the needs that are the driving force of technological development. Nevertheless, such purpose also requires a definition of intelligence.

The AI definition should cover data input, output, and their relationship based on the system structure. It is necessary that the definition is general and can be applied uniformly. In the absence of such a definition, the approaches to determining AI vary from case to case, such as a game of chess, automated vehicle control, the medical expert system for diagnostics. The scientific purpose of AI is to define theories and methods about knowledge representation, learning, rule-based systems that explain different intelligence types [4]. The engineering purpose of artificial intelligence is to give the machine the ability to solve real issues [5]. The main methods applied in artificial intelligence for this purpose are knowledge representation, machine learning, rule systems, and state space search.

The prospects for artificial intelligence are outstanding: improving efficiency, convenience, eliminating lengthy processes and automating the regular ones. So far, the relatively new field faces numerous difficulties in implementing solutions. However, according to a study by McKinsey [6], production automation will accelerate in the coming years. For example, in China and India, 50% of workflows will be handled by smart systems. Artificial intelligence and machine learning are based on conventional computing methods, changing the productivity and day-to-day operations of many industries. Artificial intelligence has changed everything in a relatively short period of time, from research and manufacturing to modernising finance and healthcare.

This field and related technologies have had a positive impact on the work of the IT sector. Thus, it can be noted that artificial intelligence is a branch of computer science that aims to turn computers into intelligent machines which otherwise would be impossible without direct human intervention. With computer learning and advanced algorithms, artificial intelligence and machine learning can be used to create systems that can mimic human behaviour, provide solutions to complex issues, and develop modelling, in an effort to help artificial intelligence reach the human level.

This review article considers current trends, methods, and prospects for artificial intelligence development, including its shortcomings. *The purpose of this study* is to review trends and prospects for the development of artificial intelligence tools, identify possible areas and difficulties, as well as establish principles for building artificial intelligence as a system.

Methodological Component of Using Artificial Intelligence

In the past, scientists were more interested in engineering purposes [7], but psychologists, philosophers, and cognitive scientists were more interested in scientific ones. Despite these opposing perspectives, there are common methods that these two approaches can use for each other. At present, there is a debate about the possibility of comparing and considering artificial intelligence as real intelligence. The advantages of artificial intelligence include: accuracy of data processing; the ability to analyse a large amount of information at high speed; artificial intelligence does not need sleep and a lunch break; it does not make mistakes due to overwork; it can be used where it is dangerous for a person to be.

Using machines and learning programmes can considerably reduce time, financial costs, and increase productivity. For example, with artificial intelligence that can diagnose melanoma, doctors will be able to make more accurate diagnoses and spend less time on each of the patients. Accordingly, doctors will be able to help more people over a certain period of time [8]. The potential for using artificial intelligence is very wide, and it is already used in many areas: medicine, finance, industry, trade, and everyday life. For example, the Siri and Alexa voice assistants, which can be downloaded on iOS, Android, or Windows. There are also bots in video games that can always behave differently. There are also automatic translators, as well as complete integrated smart home systems. Artificial intelligence is a complex of related technologies and processes that develop efficiently and quickly (Fig. 1).

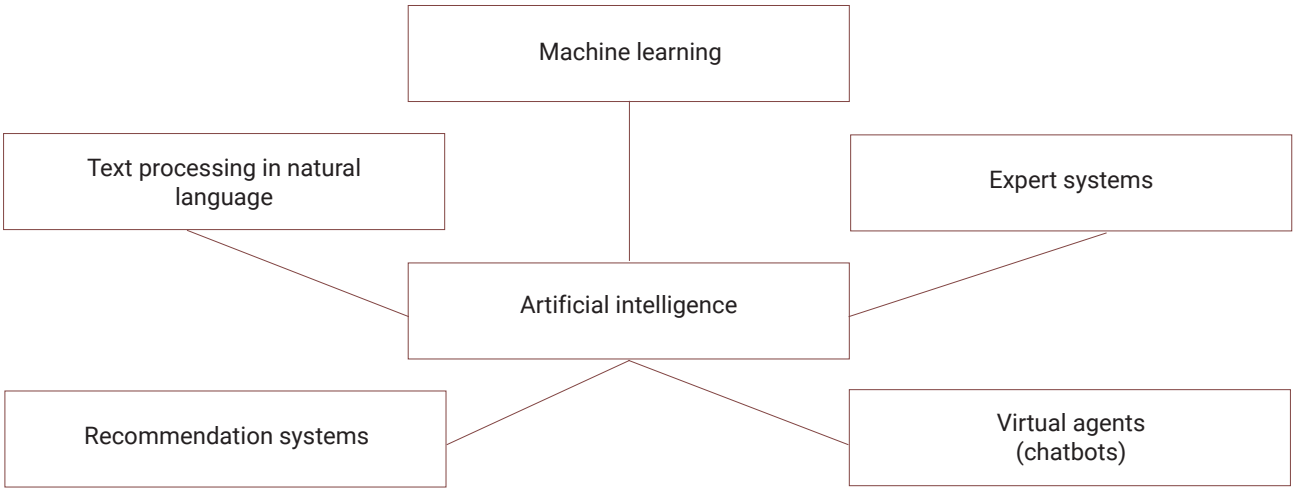

Figure 1. Artificial intelligence components

The consideration of artificial intelligence as human intelligence replication is primitive and can be misleading. This is because the actual process of human intelligence and its sources are still being discussed and investigated. Nevertheless, considering artificial intelligence as advanced computing is accurate. Over the past two decades, especially after 2000, artificial intelligence applications have evolved and expanded in commercial, industrial, pharmaceutical, medical science, consumer goods, manufacturing processes, and even management. The use of artificial intelligence methods in every organisation has become necessary to maintain competitiveness in the market. Many organisations keep the artificial intelligence techniques they use secret.

Now artificial intelligence consists of many components using various methods, such as:

– speech processing: for speech comprehension, speech generation, machine dialogue, machine user interface;

– natural language processing: information search, machine translation, questions/answers, generalisation;

– planning: development of schedules, game strategies;

– engineering and expert systems: troubleshooting diagnostics, decision support systems, training systems;

– fuzzy systems: for fuzzy controls [9];

– brain and evolution models: genetic algorithms and programming, brain modelling, time series prediction, classification;

– machine vision and robotics: object recognition, image comprehension, intelligent control, autonomous research.

– machine-learning: learning on decision trees, learning the versioning space.

The main technology of AI is the ability of computer systems to "self-learn" [10], using accumulated data or a specially created environment to program certain decision-making rules or behaviours applicable in the future. The main ideological "difference" between artificial intelligence technologies and conventional digital solutions is the fact that when performing tasks, AI does not rely on logical schemes set by programmers, but build complex decision-making mechanisms (neural networks) based on the data and tasks that were set by programmers.

In the following processes and tasks, the introduction of artificial intelligence technologies brings considerable results:

1. A large amount of input data (for example, credit risk assessment using social media data or working with seismic data to determine the location of oil deposits).

2. Large variability of input data, working with unstructured data (example: processing contracts executed using arbitrary templates of contracts with counterparties).

3. High "speed" of input data (example: real-time face recognition in a video stream from video surveillance cameras).

4. Analytical work (example: almost every profession where formula-based calculations were previously used to achieve results: finance, engineering, risk assessment).

Thus, high-quality solutions based on the possibility of using data with artificial intelligence technologies to improve the results obtained are developed. An example where artificial intelligence has assisted society is the growing use of artificial intelligence tools for cybersecurity. Cyberattacks are becoming increasingly complex, and data breaches are putting many people's sensitive personal information at risk. Artificial intelligence helps organisations fight cybercriminals by analysing huge amounts of data to detect potential suspicious behaviour on the Internet. Therewith, AI is harmful to society, as authoritarian states use artificial intelligence to conduct intrusive surveillance. Artificial intelligence capabilities such as facial recognition have become useful tools used by states to suppress and marginalise minorities.

Features of Developing Artificial Intelligence Systems

The main process of AI development can be divided into three stages:

– the first stage is early development from 1943 to 1970. The early development was represented by the Turing Test

in 1950, the introduction of artificial intelligence in 1956, and later by symbolism, reasoning systems, connectionism, and expert systems;

– the second stage is the development from 1980 to 2000. This stage occurred mainly between 1980 and 2000, with the rapid development of typical statistical learning, machine learning, neural networks, and pattern recognition.

– the third stage is represented by deep learning and obtaining powerful data after 2006. During this period, AI reached its third major development and continued to grow rapidly [11-14].

Artificial intelligence is a field of computer science that develops intelligent computer systems, that is, systems that have capabilities that are generally associated with the human mind – understanding speech, learning, the ability to reason, solve issues, etc. [5]. Later, artificial intelligence began to include a number of algorithms and software systems, the characteristic feature of which is the ability to solve some issues in the same way that a person would do. The main properties of artificial intelligence are language comprehension, learning, and the ability to think and, importantly, act. Artificial intelligence is a general term that covers various areas such as artificial neural networks, natural language processing, and deep learning used for predictive modelling. Creating an artificial intelligence system is different from conventional computer programming, where the software does not automatically improve itself. The principle of a good artificial intelligence mechanism: it is necessary to collect more relevant data to train the model.

In addition, it is essential to understand that designing AI systems has become not only less complex but also much cheaper. Machine learning in the Amazon system [15] is one of the examples. The technology automatically classifies products in the shopping catalogue, using product description data as a training set. One important point to note is that a well-understanding of statistics is a favourable provision for artificial intelligence. The steps for developing an AI system are presented in Figure 2.

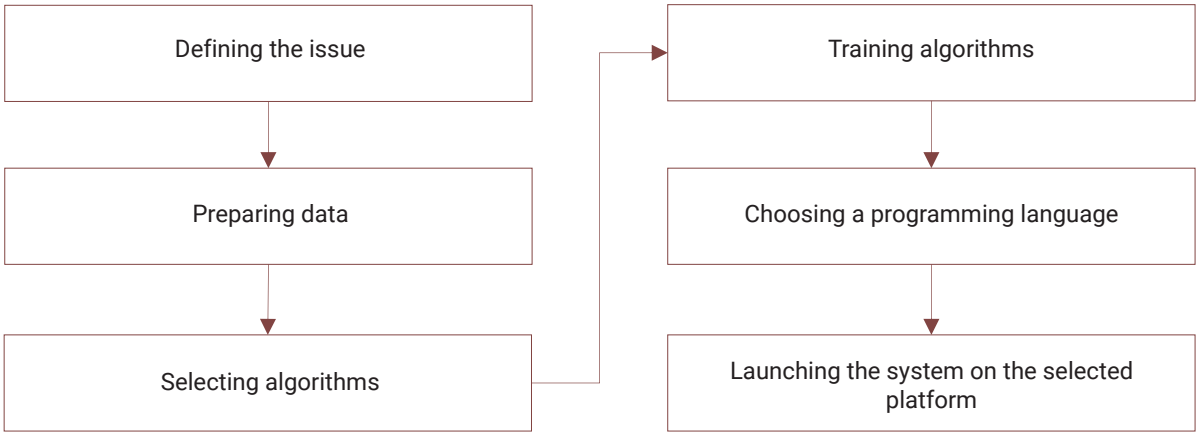

Figure 2. AI system development steps

Each of the steps to prepare the system includes many sub-items. Namely:

1. Defining the issue. Firstly, the main questions are "what should be solved?" and "what is the desired result?". However, it should be remembered that artificial intelligence cannot be a panacea itself. This is a tool, not the solution itself. There are several methods and numerous issues that need to be solved using artificial intelligence tools.

2. Preparing data. Data is divided into two categories: structured and unstructured [16]. Structured data follows a rigid format to ensure consistency of processing and facilitate analysis. For example, signing up a customer's first name, last name, date of birth, and so on. Unstructured data is all other data. They are stored in a non-uniform pattern. This category can include audio, images, videos, words, and infographics. Examples of such data are emails, phone conversations, WhatsApp messages, and WeChat messages. Enabling computers to analyse unstructured data and access more information than structured data is one of the biggest utilities and breakthroughs in artificial intelligence. It is generally believed that the key elements of AI are complex algorithms. However, the key part of artificial intelligence toolkits is data cleaning. As a rule, researchers spend 80% of their time cleaning, moving, checking, and organising data even before actually using or writing a single algorithm [17].

Enterprises and large firms have their own personal databases, and the data may not be prepared for the AI tools implementation. It is very common that data is stored in closed sources. This may lead to duplication of information that may correspond or contradict. Data storage can ultimately restrict a firm's rapid understanding of its internal events and information. Before launching models, it is necessary to ensure that the data has been organised and cleaned up. In practice, it is required to check consistency, determine the chronological order, add labels where necessary, and so on. Generally, the more data is processed, the more likely it is to provide a result to solve a specific issue.

3. Selecting an algorithm. An important point when creating an artificial intelligence system is to analyse various common types of algorithms, which also depend on the chosen learning type:

1) supervised learning: classification and regression. Basically, classification refers to predicting data labels, and regression refers to predicting quantity. An example of using a classification algorithm is a case when it is necessary to determine whether the loan can be outstanding. The regression algorithm may be used if it is required to quantify the expected loss for these outstanding loans. In this context, the question of value is raised. Once the issue is identified, an algorithm can be selected. These examples are simplified and far from actual practice. There are other algorithms for controlled learning, such as random forest, naive Bayesian classifier, support vector machine, and logistic regression;

2) unsupervised learning and enhanced learning. The algorithms can be diverse and classified into several categories, such as clustering, when the algorithm groups objects together, association, when it finds relationships between objects, dimensionality reduction, where it reduces the number of variables to reduce noise.

4. Training algorithms. After selecting the algorithms, the model has to be taught how to apply them. The critical step here is the accuracy of the model. Although there are no generally accepted or internationalised thresholds, it is important to establish the accuracy of the model within a given selection. Setting a minimum allowable threshold and applying statistical discipline is a key need, and it is necessary to retrain the model, as models may need some fine-tuning.

5. Selecting a programming language. The choice depends on the needs and various factors. There are various programming languages, from classic C++ and Java to Python & R. Python & R are the most popular coding languages as they offer a powerful set of tools, including many machine learning libraries for users.

6. Selecting a platform. Currently, there are ready-made platforms that provide all the services, instead of buying a separate service, database, and so on. A ready-made platform – machine learning as a service – is one of the most useful parts of the infrastructure that has helped spread machine learning. These platforms are designed to simplify and facilitate machine learning, frequently offering advanced analytics that can be used together with different algorithms and languages. Rapid deployment is also key to the success of platforms. The platforms are generally involved in data pre-processing, model training, and estimation prediction, and other issues. Among the most popular ones, there are Microsoft Azure, Google Cloud Prediction API, TensorFlow, Ayasdi, and others.

AI systems have many variations, such as rule-based systems with symbolic representations that work on inferences. There are also systems based on an artificial neural network that work on the interface with other neurons and communication weights. Despite the differences, all systems have four common features:

1. *Representativeness*. All artificial intelligence systems have such an important feature as knowledge representation. Rule-based systems, frame-based systems, and semantic networks use a sequence of if-then rules, while artificial neural networks use connections along with connection weights.

2. *Learning*. All systems have the ability to learn, through which they automatically accumulate knowledge from the environment, for example, by obtaining rules for a rule-based expert system, or by determining the appropriate weights of connections in an artificial neural network.

3. *Rules*. System rules can be implicit or explicit. If the rules are explicit, the rules are created by the knowledge engineer, for example, for an expert system, and if they are implicit, they can be in the form of connection weights in a neural network.

4. *Search*. The search can take many forms, such as finding a sequence of states that lead to a faster solution.

Artificial intelligence is becoming increasingly important in the information technology sector and there are no obstacles to its development. With its machine and deep learning capabilities, this technology is transforming many industries, making them more efficient, productive, and focused on the core tasks that most require people's attention. The impact of artificial intelligence on modern life is hard to ignore:

– transportation: while it may take decades or more to improve this field, autonomous cars will transport people from place to place in the future;

– manufacturing: artificial intelligence-based robots work together with humans to perform a limited range of tasks, such as folding and stacking, and predictive analysis sensors ensure smooth operation of the equipment;

– healthcare: diseases are diagnosed faster and more accurately, improved drug discovery, virtual assistants to doctors and nurses who monitor patients, and big data analysis helps create more personalised patient maps;

– education: textbooks are digitised with AI, virtual teachers assist human instructors at the initial stage, the facial analysis measures students' emotions to adapt the experience to suit their individual needs;

– Mass media: journalism also applies artificial intelligence tools and will benefit from them. Bloomberg uses cyborg technology to quickly understand complex financial statements;

– customer service: Google is working on an assistant with artificial intelligence tools that can make calls to organise appointments. In addition to words, the system will be able to understand context and nuances.

AI as a Prerequisite for Economic Development: Advantages, Disadvantages, Risks

In addition to the above-mentioned fields, AI methods are used in the following technologies: smart sensors; Internet of Things; natural language processing; deep learning; recognition of texts, speech, images; business intelligence; intelligent information security systems; machine translation; other technologies and development areas. Many people still associate artificial intelligence with science fiction dystopias, but this characteristic is decreasing as artificial

intelligence develops and becomes more common in everyday life. While AI adoption in mainstream society is a new phenomenon, the concept itself is not new. The modern AI field appeared in 1956, but considerable advances in the development of an artificial intelligence system and its transformation into a technological reality took decades [18].

Artificial intelligence is widely used in business. In fact, most people interact with artificial intelligence in one form or another on a daily basis. As artificial intelligence technologies spread, they are becoming a prerequisite for enterprises that desire to maintain competitiveness. Instead of serving as a substitute for human intelligence and ingenuity, AI is generally seen as an auxiliary tool. Although it is currently difficult for artificial intelligence to perform "smart" tasks in the real world, it can process and analyse data sets much faster than the human brain. Artificial intelligence software can produce synthesised action courses and present them to the user.

Artificial intelligence as software appeared several years ago. This is a form of software that makes decisions independently, and it can operate even in situations not provided for by programmers. Artificial intelligence has broader decision-making capabilities, unlike conventional software. These traits make artificial intelligence extremely valuable in many industries, whether it is used to efficiently navigate visitors and employees at the corporate campus or perform a complex task such as monitoring a wind turbine to predict when it will need repairs. In this way, people can use artificial intelligence to help identify the possible consequences of each action and simplify the decision-making process. The possibilities of using artificial intelligence in the future are crucial. It is difficult to predict the development areas of this technology, but most experts see that computers handle "smart" tasks even easier as time passes [14]. This means that robots will be extremely useful in everyday life.

Artificial intelligence is capable of doing things that were once considered impossible, such as self-driving cars [19]. Cars without steering wheels exist exclusively due to access to training data and fast GPUs, which are key factors. Training self-driving cars requires a huge amount of accurate data, and speed is essential in this process. Five years ago, CPUs were too slow, but the introduction of GPUs provided new opportunities. The use of artificial intelligence in various cases arises an important question as to whether machines will replace human resources. Some experts strongly deny that artificial intelligence will automate so many processes that millions of people will be left unemployed [20], while other experts consider this an urgent issue [21].

The current state and future trends, uncertainty and possible failures of artificial intelligence and big data can be traced in the following areas:

1. Political: at present, it is extremely difficult to study and evaluate the power of artificial intelligence, and if implemented in autonomous systems, it can be potentially dangerous. Political data is about accountability, transparency, security, control, and public debate. Such data should be based on ethics. Artificial intelligence can lead to better governance, more discussions, and new policy actors and processes.

2. Socio-economic: big data is changing the role of data, generally working with sensitive information, and providing better data protection in the long run. AI reduces the cost of forecasting, replaces a person responsible for this activity. Technology will lead to an increase in the amount of data, economic growth, and distortions in the labour market.

3. Geopolitical: AI increases competition between the US and China and gives both more power. Europe is attempting to build a business and find its strengths. Artificial intelligence can lead to changes in the international system of relations, hierarchies and networks, which will become more powerful, and deception in real life will be more difficult.

4. Technological: AI development is invested in and researched. This technology is aimed at emulating the brain, and can also be designed by other artificial intelligence. This will require long-term funding, overcoming many technical obstacles, and so on.

The AI purpose is to increase human capabilities and help to make proactive decisions with far-reaching consequences. From a philosophical standpoint, AI can help people live more meaningful lives, free from routine work, and manage a complex network of interconnected individuals, companies, and states to function in a way that benefits humanity. At the moment, the AI goal is to apply all the different tools and techniques that have been invented over the past thousand years to simplify human efforts and help make better decisions. Currently, AI is mainly used by companies to improve the efficiency of their processes, automate tasks that require large resources, and make business forecasts based on reliable data, not sensations. Similar to all technologies that have emerged before, research and development costs must be subsidised by corporations and government agencies before they become available to people.

AI advantages: reducing human error; artificial intelligence systems work continuously, without vacations; artificial intelligence-based digital assistants help perform common everyday tasks; systems that use artificial intelligence make decisions based on data and evidence; artificial intelligence offers intelligent automation. Artificial intelligence has some drawbacks [21]:

1. Since artificial intelligence is updated daily, hardware and software must be updated over time to meet the latest requirements. Machines require repair and maintenance, which is costly.

2. Artificial intelligence makes people lazy: due to its programmes that automate most of the work. People tend to become addicted to these inventions, which can cause issues for future generations.

3. Unemployment: as artificial intelligence replaces most repetitive tasks with robots, there is less human intervention, which will cause a considerable issue related to

employment standards. Each organisation aims to replace qualified specialists with AI-driven robots that can perform such work with greater efficiency.

4. Lack of emotion: there is no doubt that machines are much better when it comes to working effectively, but they cannot replace the human connection within a team. Machines cannot develop communication with people, which is an important attribute of team management.

5. Lack of thinking: machines can only perform the tasks they are designed for or programmed for, for everything else, they tend to crash or produce irrelevant results.

6. Lack of ethics: ethics and morality are important categories of human relationships that are difficult to incorporate into AI. The rapid AI progress has raised a number of concerns that one day it will grow rapidly and eventually destroy humanity.

The rapid AI adoption, despite being promising, highlights the risks involved, and as the takeover trend accelerates, businesses and governments are rushing to develop standards and provisions that increase trust, protect digital consumer rights, and promote responsible growth. The use of artificial intelligence can also carry some risks:

1. AI accuracy: to bridge the gap between the potential of artificial intelligence and risks, stakeholders in artificial intelligence require increased regulation and guidance on managing technology and the consequences of wrong decisions. Since governments do not take into account the potential impacts and risks of artificial intelligence, regulations and guidelines should provide a broad new framework that effectively promotes trust and reliance on automation.

2. Lack of technical knowledge: to integrate, deploy, and implement artificial intelligence applications in an enterprise, an organisation must obtain knowledge of current achievements and technologies, as well as their shortcomings. The lack of technical know-how hinders AI adoption in most organisations.

3. Price factor: small and medium-sized organisations struggle a lot with the introduction of artificial intelligence technologies due to their price. Even large firms such as Facebook, Apple, Microsoft, Google, Amazon (FAMGA) allocate a separate budget for the adoption and implementation of artificial intelligence technologies.

4. Data collection and storage: one of the biggest challenges of artificial intelligence is data collection and storage. Artificial intelligence business systems depend on sensor data as input. Irrelevant and large data sets can cause interference because they are difficult to store and analyse. Artificial intelligence performs best with a large amount of high-quality data. The algorithm becomes more efficient as the corresponding data grows.

5. Technology adoption requires specialists such as scientists, data engineers, and other subject matter experts. These experts are well-paid and rare in the modern market. Small and medium-sized enterprises have a limited budget to attract labour in accordance with the project requirements.

6. Lack of computing speed: artificial intelligence, machine learning, and deep learning solutions require a high level of computing speed offered only by high-end processors. The higher infrastructure and pricing requirements associated with these processors have become an obstacle to the overall adoption of the technology. As the amount of data available for processing increases exponentially, the speed requirements for computing will increase along with it. It is absolutely necessary to develop a next-generation computing infrastructure solution.

7. Proper use of consumer data and data confidentiality: when artificial intelligence enters common streams, attention to privacy and responsible use of customer data will be a key component of the new regulation.

8. Discrimination and bias in decision making: AI use is increasingly based on confidential personal information, which raises public concerns about how social or model bias may influence decisions and ultimately lead to consumer discrimination.

In conclusion, artificial intelligence and automation will play a crucial role in developing new business models of the 21st century and they are expected to be the focus of attention more than ever before this year. There is no time to ignore the inevitable need for businesses to apply full-scale artificial intelligence innovations, as it may result in being left behind while fast-growing competitors and bold new players rewrite the rules of success.

Conclusions

The AI field provides various opportunities for many developers. However, this technology is still in its infancy stage. Given this, the AI field is developing very quickly, and in the near future, there is a probability that such systems will be able to perform very complex tasks. The article considered trends and prospects for the development of artificial intelligence systems, as well as defined an algorithm for creating artificial intelligence. Creating an artificial intelligence system is a time-consuming process that depends on the correct approach to solving issues, the choice of tools and algorithms. To design a good system that will effectively fulfil purposes, it is necessary to collect as much data as possible about the research tools. For example, to assess equipment failure, it is required to collect its indicators and information from sensors for further assessment of bottlenecks and possible issues.

Currently, AI is mainly used by companies to improve the efficiency of their processes, automate tasks that require large resources, and make business forecasts based on reliable data, not sensations. AI development is determined by the constant improvement of all information processes. Increasingly more companies and spheres of public life automate their work through the introduction of modern information tools. An important question remains as to the effectiveness of artificial intelligence and its ability to create more problems or solutions. Artificial intelligence has become the next big thing in technology. Organisations around the world are developing breakthrough innovations

in the field of artificial intelligence and machine learning. Artificial intelligence affects not only the future of every industry and every individual but has also become a major driver of new technologies such as big data, robotics, and the Internet of Things. Given the pace of growth, it will continue to act as a technology innovator for the foreseeable future. As these technologies continue to evolve, they will have an increasing impact on social conditions and life quality.

References

[1] Monett, D., Lewis, C.W., & Thórisson, K.R. (2020). Introduction to the JAGI Special Issue "On Defining Artificial Intelligence" – commentaries and author's response. *Journal of Artificial General Intelligence,* 11(2), 1-100.

[2] Zheng, N. (2019). The new era of artificial intelligence. *Chinese Journal of Intelligent Science and Technology,* 1(1), article number 1.

[3] Poola, I. (2017). How artificial intelligence in impacting real life every day. *International Journal of Advance Research and Development*, 2(10), 96-100.

[4] Lu, H. (2018). Brain intelligence: Go beyond artificial intelligence. *Mobile Networks and Applications*, 23(2), 368-375.

[5] Acemoglu, D., & Restrepo, P. (2019). Artificial intelligence, automation, and work. In A. Agrawal, J. Gans, & A. Goldfarb (Eds.), *The economics of artificial intelligence* (pp.197-236). Chicago: University of Chicago Press.

[6] Liu, H. (2020). Research on library data management reform: Discussion on McKinsey 7S system thinking model. In *6th International Conference on Information Management (ICIM)* (pp. 295-298). Piscataway: IEEE.

[7] Verhulst, S.G. (2018). Where and when AI and CI meet: Exploring the intersection of artificial and collective intelligence towards the goal of innovating how we govern. *AI & Society,* 33(2), 293-297.

[8] Alloghani, M., Al-Jumeily, D., & Mustafina, J. (2020). A systematic review on supervised and unsupervised machine learning algorithms for data science. In M. Berry, A. Mohamed, & B. Yap (Eds.), *Supervised and unsupervised learning for data science* (pp. 3-21). Luxembourg: Springer.

[9] Bělohlávek, R., Dauben, J.W., & Klir, G.J. (2017). *Fuzzy logic and mathematics: A historical perspective.* Oxford: Oxford University Press.

[10] Vallor, S., & Bekey, G.A. (2017). Artificial intelligence and the ethics of self-learning robots. In P. Lin, K. Abney, & R. Jenkins (Eds.), *Robot Ethics 2.0* (pp. 338-353). Oxford: Oxford University Press.

[11] Kolodziejczyk, T., Toscano, R., Fouvry, S., & Morales-Espejel, G.E. (2010). Artificial intelligence as efficient technique for ball bearing fretting wear damage prediction. *Wear,* 268(1), 309-315.

[12] Miller, A. (2019). The intrinsically linked future for human and artificial intelligence interaction. *Journal of Big Data,* 6(1), article number 38.

[13] Mehmood, M.U., Chun, D., Zeeshan, Z., Han, H., Jeon, G., & Chen, K. (2019). A review of the applications of artificial intelligence and big data to buildings for energy-efficiency and a comfortable indoor living environment. *Energy & Buildings,* 202, article number 109383.

[14] Haenlein, M., & Kaplan, A. (2019). A brief history of artificial intelligence: On the past, present, and future of artificial intelligence. *California Management Review*, 61(4), 5-14.

[15] Nandal, N., Tanwar, R., & Pruthi, J. (2020). Machine learning based aspect level sentiment analysis for Amazon products. *Spatial Information Research,* 28(5), 601-607.

[16] Papadakis, G., Tsekouras, L., Thanos, E., & Giannakopoulos, G. (2018). The return of JedAI: End-to-end entity resolution for structured and semi-structured data. *Proceedings of the VLDB Endowment,* 11(12), 1950-1953.

[17] Mehdizadeh, S., Fathian, F., Safari, M.J.S., & Adamowski, J.F. (2019). Comparative assessment of time series and artificial intelligence models to estimate monthly streamflow: A local and external data analysis approach. *Journal of Hydrology*, 579, article number 124225.

[18] Inozemtsev, V., Ivleva, M., & Ivlev, V. (2017). Artificial intelligence and the problem of computer representation of knowledge. *Advances in Social Science, Education and Humanities Research*, 124, 1151-1157.

[19] Menon, V.G., Jacob, S., Joseph, S., Sehdev, P., Khosravi, M.R., & Al-Turjman, F. (2020). An IoT-enabled intelligent automobile system for smart cities. *Internet of Things*, 56, article number 100213.

[20] Zhao, Y., Li, T., Zhang, X., & Zhang, C. (2019). Artificial intelligence-based fault detection and diagnosis methods for building energy systems: Advantages, challenges and the future. *Renewable and Sustainable Energy Reviews,* 109, 85-101.

[21] Walczak, S. (2019). Artificial neural networks. In M. Khosrow-Pour (Ed.), *Advanced methodologies and technologies in artificial intelligence, computer simulation, and human-computer interaction* (pp. 13-22). Hershey: IGI Global.

Процес створення штучного інтелекту: тенденції та перспективи розвитку

Євген Борисович Козак

ТОВ «GAN»
ТОВ «Memery Crystal»
EC4A 2DY, вул. Флит, 165, м. Лондон, Великобританія

Технічний університет Молдови
2004, бульвар Штефан чел Маре, 168, м. Кишинів, Республіка Молдова

Анотація. Актуальність досліджень обумовлена стрімким розвитком штучного інтелекту. Це важлива технологія, що підтримує повсякденну соціальну, технічну та економічну діяльність. Штучний інтелект дає змогу комп'ютерам навчатися на власному досвіді, адаптуватися до заданих параметрів і виконувати ті завдання, які раніше були під силу тільки людині. У зв'язку з цим, дана стаття розроблена для виявлення тенденцій та перспектив розвитку штучного інтелекту. Також важливим завданням роботи виступає виділення принципів побудови систем штучного інтелекту. Розробка системи штучного інтелекту відрізняється від побудови звичайної системи, оскільки вимагає системного підходу, аналізу великих даних і забезпечення навчання моделі. Побудова системи штучного інтелекту – це ретельний процес зворотного проектування людських рис та можливостей машини, і використання їхніх обчислювальних здібностей, щоб перевершити те, на що люди здатні. Провідним підходом до дослідження цієї проблеми є аналіз літератури, що дає змогу комплексно розглянути питання розробки штучного інтелекту. У даній роботі розглянуті сучасні основи штучного інтелекту та різні репрезентативні програми. У контексті сучасного цифрового світу штучний інтелект є властивістю машин, комп'ютерних програм та систем виконувати інтелектуальні й творчі функції людини, самостійно знаходити шляхи вирішення проблем, вміти робити висновки та приймати рішення. Матеріали статті представляють практичну цінність для критичного аналізу того, на що здатний сьогодні штучний інтелект, чому він все ще не може досягти людського інтелекту та які відкриті виклики існують перед ним, щоб досягти та перевершити рівень інтелекту людини

Ключові слова: штучний інтелект, інформаційні технології, алгоритм, розвиток технології, експертні системи

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Features of Establishment and Development of Motivational Culture at Enterprises in Modern Economic Conditions

Iryna S. Lebedynets*, Yuliia M. Zhurakivska

Academician Yuriy Bugay International Scientific and Technical University
02094, 3 Magnitogorsky Lane, Kyiv, Ukraine

Abstract. The paper investigates the inherent features of motivational culture's establishment and development at enterprises in modern economic conditions. The study traces the pressing problems of motivation of the team's work, establishes their impact on the efficiency of the enterprise's functioning. The relevance of the research is determined by the fact that the issues of motivation and team development in modern scientific research are considered in sufficient detail but the problem of motivation for personnel development, which is one of the components of the establishment of motivational culture and a prerequisite for development, cannot be considered fully solved. That is why the development of motivational culture in enterprises is an extremely necessary scientific and practical task that requires a modern solution. The purpose of this study is to consider the features of the establishment of motivational culture at enterprises in modern economic conditions by analysing the international scientific practice of team management, as well as improving motivational methods of team professional development in a modern enterprise. The main method of research was the analysis of documentation, namely monographs, statistical data, scientific papers, and textbooks. Using the method of analysis, the paper processed and systematised the features of the establishment and development of motivational culture at enterprises in modern economic conditions. The study covers and summarises the current motivational methods, considers the systematic diagnosis of the state of motivational culture at the enterprise. The conceptual foundations of the establishment and development of motivational culture, a model of the motivational system of enterprise management in modern economic conditions are proposed. The tasks set in the study and the results of their solution form the methodological and scientific-practical basis for improving the incentive system for professional development of personnel based on the development of effective methods of motivational culture. The developed recommendations are of interest to modern enterprises in current economic conditions and the country's economy as a whole and provide an opportunity to certify the prospects for further research work in this area

Keywords: motivational culture, enterprise, corporate culture, improving the motivation process

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*Corresponding author

Introduction

The human role in the process of economic development is constantly growing. Nowadays, it is evident that the main resource of any enterprise is its employees. However, not all directors of such enterprises understand how difficult it is to manage this resource. The management of a company or enterprise is the management of the personnel who work there. The essence of leadership is reduced to a systematic influence on the consciousness and subconscious of personnel [1]. The modern dynamically fast economy determines that enterprises and organisations are forced to continuously evolve not to be left out of progress and business.

Despite the variability of methods that are allowed to motivate workers, the head of the enterprise must choose how to encourage each worker to implement the main task – the survival of the enterprise in a tough competition. If this choice is made successfully, then the head of an enterprise gets the prospect of coordinating the efforts of many employees and at the same time fulfilling the potential opportunities of a group of employees to develop the prosperity of the enterprise and society as a whole. Constantly being influenced by the external environment, getting used to changes, a modern enterprise needs to be able to organise and build up potential that can provide not only an appropriate and adequate response to the actions of the external environment, but also bring the prospect of transforming the surrounding reality, effectively manage the activities and development of considerable parts and subsystems of the enterprise [2].

Now the degree of competitiveness of an enterprise increasingly depends on the degree of superiority in the field of practical management, and among administrative tasks, the most important and least successfully solved is the task of productive team management. Its essence is to claim to increase the productivity by raising the employee's own interest in the consequences of their own work; the main mechanism of this process is motivation. There are no bad workers: if a worker does not work well, it means that in the present labour relationship, it is poorly performed work that optimally satisfies his requirements. The positions of the employees are always the best for them: actions are constantly focused on obtaining the greatest material and spiritual benefit, and the employees will not do anything without thereby satisfying one of their central needs. The art of management is to bring this own optimality to the service of the enterprise, its missions and goals. This is exactly what motivation is for [3].

The main method of mobilising human resources is staff motivation. The purpose of the motivation process is to get the most out of using the available labour resources. Stable changes in the economic and political sectors of Ukraine simultaneously create both considerable opportunities and serious threats for each employee, which causes a noticeable level of uncertainty in the company's activities [4].

The system of personnel incentive is one of the most important components of both the team management system at the enterprise and the security system of entrepreneurial practice. The unmistakably developed systematicity of motivation gives the right not only to strengthen the employee's ability to achieve the success of their own goal but also determines the employee's satisfaction in the process of work through the satisfaction of their requirements and ensures reliable operation of the entire enterprise. In modern conditions, the efficiency of the enterprise is ensured by the mental wealth and professional competence of the team. One of the most important forms of motivation in any enterprise is material incentives for work. This is the process of using and forming systems of wage division according to the pattern of division by the number and quality of work [1].

The modern practice of foreign and Ukrainian enterprises confirms the trend towards considerable changes in the team motivation system. Workers of today's enterprises are characterised by different value orientations of motivation for work. At the same time, the motives of self-fulfilment and self-development come to the fore. Non-material incentives for the development of the team at the enterprise are primarily aimed at satisfying the motive of maintaining the social status of the worker in the working team by securing their workplace; increasing the status of the worker through obtaining a higher responsible place; strengthening the worker's interest in the process of mastering new knowledge, skills, and abilities; deepening interest in communication with specialists at the enterprise.

Non-material motivation is aimed at increasing the loyalty of the team at the enterprise, while reducing the cost of covering the labour costs of workers. By non-material, the authors mean such incentives for high-performance work, which do not take the form of monetary payments but may require the company as a labour investment, namely: the prospect of development and training, career planning, health care, or subsidised meals. Non-material ways of motivation also include credit. The essence of individual credit is that workers who have achieved considerable results in the implementation of their own functions are mentioned in reports to the top management of the enterprise or personally introduced to it, receive the right to sign responsible papers in the development of which they took part, and are personally congratulated by the directorate on the occasion of holidays or family dates [5].

The purpose of this paper is to consider the features of the establishment and development of motivational culture at enterprises in modern economic conditions by analysing and substantiating the importance and necessity of including motivational culture in a number of the most important key competencies of any enterprise that seeks to function effectively nowadays.

Materials and Methods

The works of the following well-known Ukrainian and foreign researchers are devoted to the study of motivational culture at enterprises in modern economic conditions in theoretical and practical aspects: Akhmetshin, J. Mueller, S. Chikunov, E. Fedchenko and O. Pronskaya [1], A. Aydinli,

M. Bender, A. Chasiotis, F. van de Vijver and Z. Cemalcilar [6], Yu. Chelakova and N. Nikonoshina [7], M. Hitka, S. Lorincova, M. Vetrakova and Z. Musova [8], L. Li, X. Shi and Z. Jiang [2], and many others. The scientific works of these researchers became the theoretical basis at the time of writing this paper.

The research methodology is based on a systematic approach that traces the motivational culture as an independent unit. This approach directs research into the context of a holistic multi-stage process of motivational culture at the enterprise, focuses attention on the content and purpose of the entire system – to consider the features of the establishment and development of motivational culture at enterprises in modern economic conditions.

The research on the topic "the features of the establishment and development of motivational culture at enterprises in modern economic conditions" took place in two stages. At the first stage, such fundamental concepts as "motivation process", "enterprise management", "motivational culture" were characterised and the essence and specifics of the above terms and definitions were covered. The main difficulties of the development and establishment of motivational culture are identified. For an effective analysis of the features of the development of motivational culture in a modern enterprise, the following research methods were used: theoretical (analysis of scientific, sociological, psychological, and educational literature on the problems of the material under study), the method of analysis and synthesis, induction and deduction, logical analysis, as well as the positions of objective scientific classification.

In accordance with the tasks of this stage of research, an analysis method was applied, which is aimed at extracting and recording information from a printed scientific source, which will later be used to analyse research issues. The subject of analysis of scientific sources includes those characteristics and attributes of the essence of the phenomenon under study that correspond to the purpose and objectives of the study. Many empirical studies of the current time use the method of analysis of scientific sources. At the second stage of the study, using logical analysis, as well as the position of scientific objectivity and systematisation, the justification for the introduction and use of methods of modern motivational culture in enterprises was analysed. This method made it possible to master the partial sides of the phenomenon and object, to make a number of scientific abstractions. The following combination leads to the development of a more in-depth essence of the whole. This method is used to process complex objects or facts. At the third stage, the theoretical provisions of the entire study on the topic "the features of the establishment and development of motivational culture at enterprises in modern economic conditions" were clarified and their results were summed up. Processing, theoretical generalisation, and systematisation of the results of the study, arrangement of the research materials in a whole paper were carried out. Evidentiality and reasonableness of the conclusions of the whole study of the topic "features of the establishment and development of motivational culture in enterprises in modern economic conditions", the use of this approach in modern enterprises is provided by the methodological and theoretical rationality of all initial positions; the integrity of general scientific and certain research methods, the adequacy of relevance and purpose, tasks and logic of the research; the combination of logical analysis, scientific objectivity, and systematisation.

Results

One of the main factors that give the right to achieve effective motivation of an employee with the assistance of a group and collective values and rules is the development of a conscious corporate culture. These value orientations are transmitted by the members of the enterprise through symbolic means of the spiritual and material environment of the enterprise.

Motivational culture is based on ideas, judgments, and fundamental values that are shared by members of the enterprise. They can be completely different, including depending on what is at their core: the interests of the enterprise as a whole or the interests of its individual members. This is the foundation that characterises everything else. Values lead to a style of behaviour. And only the surface layer is external symbols, customs, corporate events. It is only a consequence of the other two, and has no independent value [9].

Motivation is conventionally considered one of the fundamental goals of management. It is necessary to substantiate its place and importance in the corporate culture system. Motivation in the functional sense is a management function that occurs through the use of various incentives to orient the potential of the team to fulfill the goals of the enterprise. The nature of motivational organisational work is always exceptional and covers both the specifics of the external environment and the sociocultural features of a particular enterprise. Thus, each company has its own unique corporate incentive system. Corporate culture also forms the corporate incentive system in a modern enterprise.

The corporate incentive system is a set of interrelated methods of team motivation created at the enterprise to fulfil its strategic goals, which, for their part, are formulated taking into account the factors of the internal and external environment of this enterprise. The corporate incentive system can be affected by both motivational management influences and subjective factors that reflect the personal management style of the enterprise, its strategic attitude to the team (as an expense or as a characteristic and rather important resource). Personal factors include the degree of development of managers' peculiar skill – the ability to motivate the team. The starting point for developing a corporate incentive system is to determine the company's development strategy. Accordingly, it is necessary to link the strategy and tactics of team motivation with the strategy of the enterprise. The next stage in the development of a corporate incentive system is the development of the organisation's personnel strategy, which includes, among other things, motivational management [10].

Another important stage is the creation of a corporate culture. Motive as a spiritual incentive of the worker to activity is the main motive for the beginning and implementation of certain systematic actions. Motives arise under the influence of instincts, demands, and interests of a particular person. Instinct expresses innate, unconscious manifestations of its reaction to the state of the environment. The need is caused by both physical (for example, the need to breathe), and socio-psychological factors (for example, a desire to communicate with others). Interest manifests itself as a conscious consequence of the development of a person's individuality, transforming, for example, the natural instinct of interest in successive events in the environment. Guided by requirements and preferences, a person purposefully chooses an activity, developing in which, builds up knowledge, evaluates personal preferences, acquires and develops skills [5].

The whole set of external influences on the worker, from the environment and living conditions to initiation and coercion by various subjects, also largely determines the actions performed by them. An external systematic influence on a person, forcing them to a particular reaction, is usually called an incentive, acting, for example, in the form of paying for the consequences of the work performed. Incentives act on motives, improving or localising their manifestations in the form of an attitude to the judgment of the environment of certain actions. Entering into interaction with incentives, motives, for their part, can not only characterise and express the personal abilities of the worker as much as possible, but in some incidents to strengthen, weaken or, in exceptional circumstances, fully compensate for their perception of even such a dismissive influence, which has a powerful incentive, as a danger to life.

While developing, the worker concludes that most of their requirements and interests are most successfully traded in a well-coordinated structure of an enterprise. Based on their own reasons on the one hand and the totality of the influence of incentives on the opposite, the employee chooses a specific enterprise, the attitude to which becomes the main impetus in their attraction to collective functioning. Thus, the employee is motivated by personal motives and external incentives to establish certain relationships with the company of interest to them, for example, getting their first job, the graduate, on the one hand, tries to fully and responsibly implement their own duties in a real position, and on the other, wants to satisfy personal physical, professional, and other interests as much as possible [11].

Finding themselves with similar goals in their chosen enterprise, the former graduate becomes a worker who accepts both legally established and unofficially formed relationships at the enterprise and, above all, their motivational culture. It largely characterises the activity, relationships, and behaviour of the worker at the enterprise, and in one way or another affects the satisfaction of their requirements and interests. At the same time, the totality of motives that reflects the spiritual preferences, orientation, and passions of the worker becomes the starting point for activating their actions in the enterprise. The interaction of motives and incentives determines the purposeful and conscious positioning of each worker in the enterprise, determining compliance with the established rules, performing specific actions, perceiving the judgment of management, colleagues, and everyone around them, forming and showing a personal attitude.

The development and use of motives and incentives during the establishment of influence and improvement of motivational culture are quite strongly interrelated, which repeatedly gives the right to mix these definitions. Meanwhile, the essence and systematicity of their formulation, use, and interaction, which have been quite well known for a long time and are distinguished by a clearly formalised ratio, are most thoroughly reflected by considering further factors. Consideration of the relationship between motives and incentives in the establishment, application, and improvement of motivational culture is of exceptional importance for evaluating the company's performance. In contrast to the actions of personal motives, which are more or less amenable to the conscious motives of the worker's activity, incentives as external universal tools naturally force them to precise actions. Incentive as an external direct compulsion of the worker to a clear action not only responds to their existing motives, but also simultaneously begins and improves new motivational motives, for example, the taboo on smoking during the working day as an incentive gradually begins the personal incentive of the worker to a healthy lifestyle as a motive [3]. In this way, professional specialisation, business style, spiritual values, and culture of employee behaviour can arise and improve. At the same time, incentives, bypassing motivation, can easily force the employee to clear behaviour, despite their requirements, interest, and personal attitude. Thus, in particular, the introduction of interactive systematicity of monitoring the implementation of work easily generates discipline of performance in the worker, regardless of the degree of their personal discipline and ability to organise. In general, by designating and fulfilling corporate goals through the employee's incentive, processing an expressive programme of activities, and actually formulating a mission, the enterprise influences the development and elevation of a motivational culture, purposefully deepening the overall palette of team motives.

In a motivational culture, incentives are a factor of unquestionable compliance with clear rules, compliance with certain norms, and the implementation of a legible action programme. The composition and content of such plans can be diverse and depends on the goals formed by the company, established rules, and well-known values, the systematicity of management and the level of development of self-management, the culture of activity, and other factors, the implementation of these actions at the enterprise determines the degree of development of motivational culture, the effectiveness of selection, adaptation, combination, and use of appropriate motives and incentives [12].

In the current motivational culture, the worker may have motivations that go beyond their personal interests. The motives that manage it reflect corporate influence,

largely characterising such manifestations of motivational culture as, for example, the degree of subordination and responsibility. The development of a set of personal motives in the worker, which are determined by the interaction of personal interests and influences, is called motivation. At the enterprise, it arises, improves, and is applied in further main configurations, such as the development of a reference system of motives of the worker's activity, which is adapted to a certain situation; initiation as the creation of agreements for the personal manifestation of worker's constructive motives; activation as a planned impact on the already coordinated system of worker's motivation; motivation as an expression and research, the use of worker's personal motives, which caused their certain position.

The above actions establish the range of methods of motivating the worker within the established motivational culture. In considerable judgment and application, along with them, such manifestations of motivational culture as corporate relationships, moral and psychological climate, and behaviour style with colleagues are included in motivation. All this forms the manifestations of all the variety of motives in real mental, national, and social conditions. One can learn more about the theories, ideas, models, and mechanisms of motivation developed in the works of many scientists in the network resources. Motivation, fulfiling the physiological, psychological, social necessity in meeting certain requirements, preferences, moods of the worker, depends on both unbiased and personal factors, easily determining the manifestations of motivational culture. It is essential to recall that its consequences can include a wide variety of configurations and expressions, leading to proper changes in the motivational culture. Thus, for example, social activity manifests itself both in the business style or ingenuity of the worker, and even adventurism, determining the proper reaction of the enterprise [4].

Procedurally, motivation is distinguished as a mentally reasoned, systematic motivation of the worker who listens and consumes his reflective, mental, associative, and other reactions. This formulation accompanies the distinction between process and system, unbiased and personal, physical and mental components of motivational culture, delivering the prospect of constructive union and equivalent use of their resources at the enterprise. It is precisely this way that a mentally conscious, purposeful, problem-based, functionally adapted human reaction to the environment fundamentally distinguishes it from the typed, instinctive, subconscious reaction of an animal to a situation [13].

The motivational culture of a truly active enterprise depicts, characterises, and uses the content and consequences of motivating the activities of a particular worker. In such conditions, the worker acts as an individual, guided by personal motives in the conditions of purposeful activity and development of a particular enterprise. Clearly, the success of the goals of such an enterprise is seriously determined by the productive activities of each of its participants and the successful interaction of the entire team, which is largely reflected in the actual motivational culture.

The development, analysis, and application of advantages of the employee's personal motivation to reproduce and perform the action that needs to be implemented is the main task of the enterprise and its management. The successful solution of such a problem largely depends on the interaction of the advantages of motivating the worker's activity with the configurations of its manifestation, mobilisation, and use. It originates from each worker's rapid desire to provide the necessary conditions for systematic activity [14].

Discussion

Motivational culture is largely born, created, and improved in the process and as a result of cumulative motivation, emphasising, for example, as an increasingly accepted priority of youth, the improvement of personal life. Various configurations of incentives for workers who implement such motivation are included, for example, by European enterprises, and become effective incentives for raising a motivational culture. They form constructive resources of worker's strategic motivation, which are most contrastingly revealed by the leadership of studying the environment as a condition for effective functioning and raising human potential.

In contrast, such motivation is manifested in the attraction of each qualified worker to stable professional communication and positions him in the company, which provides an increase in competence, improvement of specialisation, and expansion of work communication. Thus, in particular, forums and competitions for the title of the best worker, held at almost all stages of all spheres of national economy, create a specific environment for positive positioning of each worker in the projection on the highest professional success. For those workers who are strategically and constructively motivated for stable professional self-improvement, even the role of a spectator at such competitions represents an important incentive to participate, get acquainted, and communicate in such an innovative environment. Certainly, the record results in these competitions are of interest not only to a limited circle of specialists or potential consumers of goods and services, but actually to every participant in society who is really interested in the current level of both product manufacturing and social development. Throughout the entire labour phase, each worker develops, improves, and updates a particular range of motives for encouraging action, reflecting his promising aspirations, preferences, labour and social attitudes. The implementation of these motives ensures the development, application, and modernisation of such methods of improving motivational culture as supporting the manifestation of their own and collective initiative, creating an atmosphere of cooperation, ensuring the self-fulfilment of the worker's abilities, creating conditions for the rise of inventive practice, eliminating managerial and other obstacles to the development, implementation, dissemination, and use of innovations, etc. [15].

At the same time, it is obvious that a part of society develops and cultivates a destructive motivation to avoid real action, which reflects a low level of motivational culture, if it is generally allowed to speak about it in this case. It is

rather their incentive that confirms the lack of a motivational culture that encourages everyone to express themselves creatively. Expressions of negative motivation can also include a number of other attitudes that do not respond well to the atmosphere of active cooperation of the motivational culture. Thus, for example, within the framework of the formed conservative model of motivational culture in many companies, the innovative influences of the organisers often face the familiar opposition that gave rise to the introduction of a term "introduction" inherent in Ukraine, which defines a set of actions to overcome the alleged inertia of resistance to innovation [6].

Mobilisation, use, and modernisation of the general mechanism of motivation and stimulation constantly improve the existing motivational culture. Thus, the agreement of self-expression and charity as the elevation and fulfilment of creative and humanistic foundations of the individual reflects the desire to fulfil one of the privileged motives of human life – the birth and upbringing of a new generation. It manifests itself, for example, in the promotion of motivational culture to start a family, raise children, participate in their education, professional orientation, social development based on a conscious and systematic investment of material and mental resources of the organisation in its human capital. The key subtlety of the general mechanism of motivation and stimulation is the judgment of the quality and productivity of work, which characterises the social status of an employee by the degree of payment for the successfully performed work.

The factor of social stability ensures the preservation and elevation of the motivation mechanism, which characterises, for example, the development of an atmosphere of trust and partnership in the company. The resources of socio-economic recovery mobilised by the mechanism ensure the development of personal, corporate, and social-economic capabilities in the form of divisions, accumulations, investments in the development of enterprise resources. They are represented by tools that connect the resources of influence of the state and enterprise based on ensuring the employee's participation in the profits and ownership of the enterprise. This gives the right to constructively mobilise and use the tools of employee incentives in a natural combination with the motivation of the team. The comparison of the place and role of motives as adapted advantages of motivation and incentives as universal tools of influence reflects the relationship of stimulation and motivation in the motivational culture, which formulates the philosophy of self-organisation of the worker as a systematic and conscious classification of his perception in the form of ordering visions and mastering actions. It is such self-organisation that builds a holistic development of the worker's visions, focused on an adequate assessment of their own characteristics, systematic acquisition of skills, accumulation of knowledge, obtaining motivational culture and consolidating social status [6].

The management order that has developed over many years has led to the emergence of the phenomenon of workers' economic alienation from the methods of manufacturing products. This is manifested in the fact that in the conditions of social ownership, the fundamental functions of economic management were fulfiled not by direct producers of physical goods, but by the state represented by various bodies. At the same time, the profits of labour communities and independent workers actually did not depend on the efficiency of using resources, which made the leadership stop treating them as subordinates, and the national possessions are perceived by them as no one's land. In these conditions, more than ever, the problem that economics and practice are still unable to solve appears sharply: how to interest workers, push them to work efficiently, save their own work, and implement the tasks assigned to them appropriately and effectively. The implementation of the provisions of radical economic reform, a way out of the economic crisis is impossible without developing a mechanism for motivating work in the central cell of the national economy – the labour staff of the enterprise [16].

An outstanding American management specialist A. Maslow divides all the needs of employees of enterprises into primary and secondary. To the primary, he ascribes physiological needs, as well as the needs for security, to the secondary, he ascribes a social need (the need to join a group), the need for respect or self-respect, the need for self-fulfilment (Fig. 1) [17].

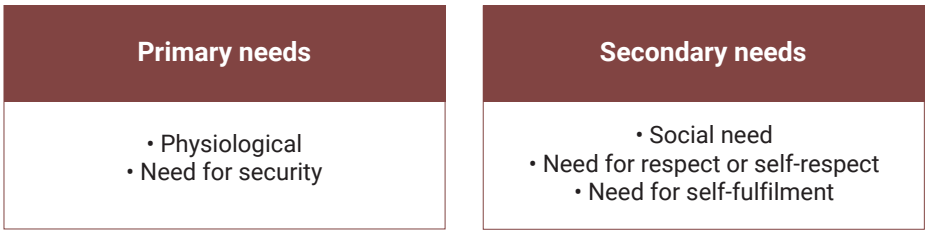

Figure 1. Needs of employees of enterprises according to A. Maslow

Motivation is understood as the process of encouraging oneself and others to practice to achieve their own goals or the goals of an enterprise. It covers a set of external and internal conditions that formulate the degree of activity of the subject and the area of their activity. For many years, motivation was understood rather narrowly: as payment for work, most often in the form of rewards and honors. However, today in countries with civilized economies, motivation is studied as a factor of increasing production, the order of individual's education, as well as a factor of social stability of the team.

Modern methods of activating the human factor in the enterprise can be classified as follows: programmes of professional development of labour capacity, according to

experts, an increase in work costs by several percent causes the same expansion of production as capital growth; programmes that provide for greater involvement of workers in the management of the enterprise; programmes designed to rebuild the course of work itself, they are obliged to improve the course of work, make a creative climate for staff; programmes that cover a range of issues related to material incentives (Fig. 2).

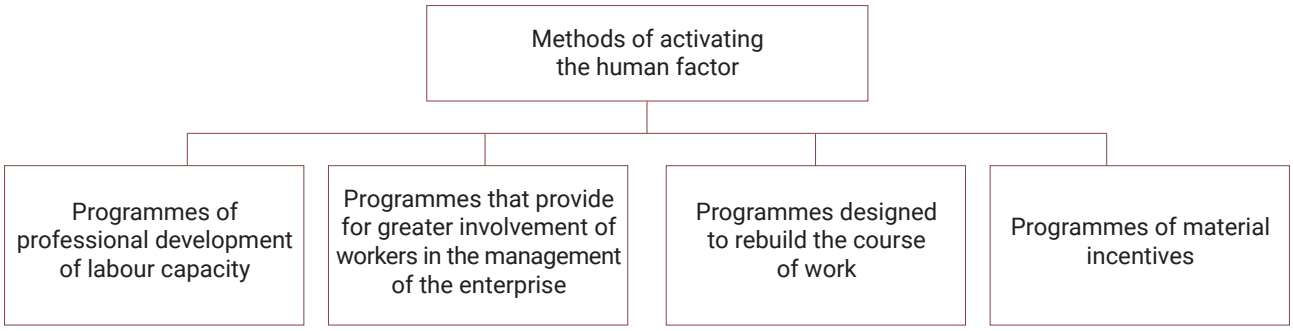

Figure 2. Methods of activating the human factor in the enterprise

One of the main factors that characterise the employee's attitude to their own work and its consequences is material incentives. To prepare an effective mechanism of material incentives, it is necessary, on the one hand, to accurately determine the amount of funds to pay for work, on the other – to link the payment for the work of each employee with the final result achieved [13].

The transition to market relations, the rise of various forms of ownership, the democratisation of all aspects of social existence requires a change in the organisation of distribution relations and, above all, in terms of payment for work. The essence of a thorough reform of economic management is the transition from mostly managerial to economic management methods. Therefore, the main task of economic science and practice is to prepare such a mechanism of material incentives that would direct collectives of enterprises and individual workers to achieve high final national economic consequences.

In the process of elaborating on these issues, it is necessary to proceed from the fact that the material interests of workers are strongly connected with multifaceted requirements: material, moral, and physical. The material needs of workers are revealed in the need to reflect the conditions of human existence as a whole. They are improved together with production. Without requirements, there can be no production. Since the interests are based on the conditions of material life and the needs of employees, they are objective, and the motives for their existence are material needs [18]. Material interests, depicting the unity of the objective and subjective, are transformed into a powerful factor of social progress only after their recognition. Conscious interest may not coincide with the objectively existing one but only appear in the form of a clear perception of it. Until the latter is recognised, it expresses only the requirements of an individual worker, staff, or society. In order for an interest to turn into a material incentive, it must be recognised. Only in this case this category acts as an incentive factor in useful activities.

Material interest is an objective connection between the prospect of satisfying their needs and the regularity of solving certain economic problems realised by workers. Thus, stimulation is a means of activating interests, a configuration of the fulfilment of economic relations between workers in the process of performing duties and dividing material goods. To ensure the area of all configurations of material interests (own and collective), the procedure for material incentives should be based on certain principles. The effectiveness of material incentives is affected by many factors that can be conditionally divided into three groups: the production of general national economic prerequisites; the theoretical development of the idea of material incentives in market conditions; the development of a mechanism for forming a payment fund for work, which ensures the establishment of an unconditional relationship between the achieved consequences of work and the amount of expenses for its payment.

The workers' involvement in the management of the enterprise, the development of general forms of enterprises and payment for work determine the regularity of raising the objectivity of its cost, linking the payment for work with the final calculations achieved. Such an assessment should take into account the amount of work invested, measured by the length of working hours and the efficiency of manufacturing at the enterprise. To prepare such a mechanism for evaluating work means to find a source for solving the global problem of consciously including the law of saving time in the motivational mechanism of management [19]. The transition to market relations implies the following expansion of the production independence, the abolition of various restrictions in stimulating workers. However, it should be borne in mind that in the conditions of a comprehensive monopolism of producers and trade, shortage of goods and services, a drop in production volumes, which has already become a stable phenomenon, the independence of production turns into an uncontrolled increase in payments. This, in turn, provokes an artificial increase in payment for work, which accelerates the course of increasing the cash supply with their commodity coverage.

These negative phenomena in the development of the economy are caused by the fact that at the stage of transition

to the market, the government management of enterprises is reduced to zero. The introduction of contractual, free prices in the agreements of monopolism, the lack of state inspection on the development of the wage fund led to the fact that with a reduction in the volume of products or services produced and a decrease in production efficiency, there was a sharp increase in wages. The current socio-economic situation requires the natural development of such a mechanism for managing the economy and wages, which would restrain an unjustified increase in payments for these purposes [20].

Conclusions

Motivational culture is a set of phenomena of physical and spiritual existence of the company's personnel: the dominant moral principles and values, customs that arise from the moment of creation of the enterprise and are shared by the majority of its employees. The employee is the foundation of the enterprise, its essence and its fundamental wealth. However, from the point of view of management, it is not allowed to talk about the employee as a whole since all employees are different. Employees behave differently, have different skills, different attitudes to their own work, to the enterprise, to their duties; employees have different requirements, their motives for activities can differ considerably. Finally, employees do not perceive the reality of the people around them and themselves in this environment equally. All this suggests that personnel management at the enterprise is quite complex but at the same time responsible and valuable for the fate of the entire enterprise. A manager must know a lot about their own employees to successfully work in their position.

HR management is important for all firms – large and small, industrial and service. Motivation is one of the serious components of both the personnel management system at the enterprise and the business security system. A carefully considered incentive system will give firms the right to attract highly qualified workers who will be interested in achieving the company's goals.

Today, there are a large number of ways to motivate the team, but there are also needs for modern mechanisms that will encourage the team to work effectively and reveal the abilities of each worker. With the structure of the incentive system focused on the formation of qualified personnel, it is necessary to move from motivation in the direction of external influences to the development of workers' motivational structure. As the study shows, in modern enterprises, the purpose of culture is especially important since to create a single diversified enterprise, it is necessary that all employees adhere to the main ethical patterns and postulates of faith. The influence of motivational culture on the functioning of the system is even more considerable, primarily because the solution of the issue of effective interaction between management and staff within the enterprise is simply impossible without observing certain dominant behaviours.

Summing up the research, let us try to characterise the motivating factors of labour organisation that lead to meeting the requirements of all parties. In the workplace, it is necessary to reveal the philosophy of a single team: it is not allowed to destroy emerging informal groups if they do not cause a specific loss to the goals of the enterprise. In fact, every employee has a personal point of view on how to improve their own activities. Referring to the interested assistance of enterprise management without being afraid of sanctions, it is worth organising the work so that the employees do not lose the desire to implement their own plans. Thus, in what form and in what way workers receive information, how they assess their actual importance in the eyes of management is one of the main features of the development of motivational culture and its positive direction. Therefore, it is not allowed to make decisions regarding changes in workers' activities without their knowledge, even if the changes are reasonable, as well as make it difficult to access the necessary information. Informing about the quality of the team's work should be prompt and timely. The employee of the enterprise should be given the maximum potential degree of self-control. Most employees want to acquire new knowledge in the course of their activities. That is why it is so important to provide subordinates with the prospect of learning, stimulate and improve their creative abilities.

References

[1] Akhmetshin, E.M., Mueller, J.E., Chikunov, S.O., Fedchenko, E.A., & Pronskaya, O.N. (2019). Innovative technologies in entrepreneurship education: The case of European and Asian countries. *Journal of Entrepreneurship Education*, 22(1). Retrieved from https://www.abacademies.org/articles/innovative-technologies-in-entrepreneurship-education-the-case-of-european-and-asian-countries-7827.html.

[2] Li, L., Shi, X., & Jiang, Z. (2018). A study on the countermeasures of the development of cultural ecology and creative industry in Hebei Province in the Beijing-Tianjin-Hebei collaborative environment. *Ekoloji*, 27(106), 1387-1397.

[3] Galiev, I., Khafizov, C., Adigamov, N., & Khusainov, R. (2018). Increase of efficiency of tractors use in agricultural production. *Engineering for Rural Development*, 17, 373-377.

[4] Taran, N.V., Krasnorutskyy, O.O., Reznik, N.P., Slobodianyk, A.M., & Guley, S.A. (2020). Analysis of future of technologies in the agricultural sector. *International Journal of Advanced Science and Technology,* 29(6s), 1022-1029.

[5] Adom, K., & Anambane, G. (2020). Understanding the role of culture and gender stereotypes in women entrepreneurship through the lens of the stereotype threat theory. *Journal of Entrepreneurship in Emerging Economies*, 12(1), 100-124.

[6] Aydinli, A., Bender, M., Chasiotis, A., van de Vijver, F.J.R., & Cemalcilar, Z. (2016). Implicit and explicit prosocial motivation as antecedents of volunteering: The moderating role of parenthood. *Personality and Individual Differences,* 74, 127-132.

[7] Chelakova, Yu.A., & Nikonoshina, N.A. (2020). Features of immune regulation in working at the enterprise for the production of phthalic anhydride. *Meditsina Truda i Promyshlennaia Ekologiia*, 60(11), 881-883.

[8] Hitka, M., Lorincova, S., Vetrakova, M., & Musova, Z. (2018). The impact of motivation on corporate culture in small and medium-sized wood-processing enterprises in Slovakia. In B. Glavonjic (Ed.), *Increasing the use of wood in the global bio-economy* (pp. 168-176). Belgrade: University of Belgrade.
[9] Borisov, A.I., & Alekseev, A.M. (2020). Industry 4.0 – new challenges for production. *IOP Conference Series: Materials Science and Engineering*, 919, article number 022016.
[10] Aboelfotoh, S.F., & Hikal, N.A. (2019). A review of cyber-security measuring and assessment methods for modern enterprises. *International Journal on Informatics Visualization,* 3(2), 157-176.
[11] O'Neil, N.J., Scott, S., Relph, R., & Ponnusamy, E. (2021). Approaches to incorporating green chemistry and safety into laboratory culture. *Journal of Chemical Education,* 98(1), 84-91.
[12] Cho, Y., Park, J., Han, S.J., Sung, M., & Park, C. (2020). Women entrepreneurs in South Korea: Motivations, challenges and career success. *European Journal of Training and Development*, 45(2/3), 97-119.
[13] Izotova, T.V., Djikovich, Y.V., Chasovskaya, V.V., Shepeleva, O.P., & Grigoriev, A.A. (2019). Planning and management of finances at enterprises of the landscape gardening economy of Russia on the example of St. Petersburg: Features, trends and problems. *IOP Conference Series: Earth and Environmental Science,* 316(1), article number 012014.
[14] Gupta, N., Kelley, M., Haagsma, A., Glier, J., Harrison, W., Mannes, B., Champagne, P., Wade, S., & Yugulis, M. (2019). Assessment of options for the development of a stacked storage complex in the Northern Michigan Basin, USA. *International Journal of Greenhouse Gas Control*, 88, 430-446.
[15] Saniuk, S., Grabowska, S., & Gajdzik, B. (2020). Social expectations and market changes in the context of developing the industry 4.0 concept. *Sustainability,* 12(4), article number 1362.
[16] Hushko, S., Temchenko, O., Kryshtopa, I., Temchenko, H., Maksymova, I., & Huk, O. (2018). Modelling of management activity of the organization considering the impact of implicit factors in business processes. *Eastern-European Journal of Enterprise Technologies*, 1/3(91), 13-21.
[17] Keahey, J. (2019). Sustainable heritage development in the South African Cederberg. *Geoforum*, 104, 36-45.
[18] Klimek, D. (2020). Sustainable enterprise capital management. *Economies,* 8(1), article number 12.
[19] Aamer, A.M., & El-Zine, N.A. (2020). Tertiary learners' motivational intensity and desire to learn the French language: Evidence from a non-francophone country. *IAFOR Journal of Education: Language Learning in Education*, 8(1), 101-114.
[20] Aksenov, V., Tsarev, N., & Maksimova, E. (2020). Implementation of zero liquid discharge systems in Russian industry. *IOP Conference Series: Materials Science and Engineering,* 972, article number 012033.

Особливості формування та розвитку мотиваційної культури на підприємствах в сучасних умовах господарювання

Ірина Сергіївна Лебединець, Юлія Миколаївна Жураківська

Міжнародний науково-технічний університет імені академіка Юрія Бугая
02094, пров. Магнітогорський, 3, м. Київ, Україна

Анотація. Стаття присвячена дослідженню особливостей формування та розвитку мотиваційної культури на підприємствах у сучасних умовах господарювання. У статті простежено насущні проблеми мотивації праці колективу, установлено їхній вплив на ефективність функціонування підприємства. Актуальність дослідження полягає в тому, що питання мотивації та формування колективу в сучасних наукових дослідженнях розглянуті доволі докладно, однак проблему мотивації розвитку персоналу, що є однією зі складових формування мотиваційної культури й передумовою розвитку, не можна вважати до кінця вирішеною. Саме тому розвиток мотиваційної культури на підприємствах є вкрай необхідним науково-практичним завданням, що потребує сучасного рішення. Мета цієї наукової статті полягає в розгляді особливостей формування мотиваційної культури на підприємствах у сучасних умовах господарювання за допомогою аналізу міжнародної наукової практики управління колективом в умовах сьогодення, а також покращення мотиваційних методів професійного розвитку колективу на сучасному підприємстві. Основним методом дослідження був використаний аналіз документації, а саме монографій, статистичних даних, наукових робіт і підручників. За допомогою методу аналізу в статті були опрацьовані і систематизовані особливості формування та розвитку мотиваційної культури на підприємствах у сучасних умовах господарювання. Розкрито та узагальнено сьогочасні мотиваційні методи, розглянуто систематичність проведення діагностики стану мотиваційної культури на підприємстві. Запропоновано концептуальні основи формування та розвитку мотиваційної культури, модель мотиваційної системи управління підприємством у сучасних умовах господарювання. Поставлені в науковій роботі завдання та результати їхнього вирішення становлять методичну та науково-практичну основу покращення системи мотивації професійного розвитку персоналу на підставі формування дієвих методів мотиваційної культури. Розроблені рекомендації становлять зацікавленість для сучасних підприємств у сучасних умовах господарювання та економіки країни загалом і дають можливість засвідчувати про перспективу подальшої дослідницької роботи в цьому спрямуванні

Ключові слова: мотиваційна культура, підприємство, корпоративна культура, вдосконалення процесу мотивації

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Trends in the Economic Development of Democratic Kampuchea (1975-1979)

Denis Ye. Kupriyanov*

Regional Center for Professional Education in Building Technologies of the Kharkiv Region
61121, 39 Vladislav Zubenko Str., Kharkiv, Ukraine

Abstract. The relevance of the study is conditioned by the need to examine individual historical stages of Cambodia's economic development to establish the basis for further improvement of the economic system. The purpose of the research was to analyse analytically the development of the economy of Democratic Kampuchea and the role of friendly countries in it. The study on the stated subject was conducted using general scientific theoretical research methods, in particular, methods of analysis, synthesis, and comparison. The article examines the economy of Democratic Kampuchea in the middle of the second half of the 70s. It is determined that after gaining full independence from the French colonialists, followed by the struggle for independence against the Americans, and then the Khmer Rouge era, there was a need to restore and improve the country's economy. The study described the general state of the key industries of Democratic Kampuchea, in particular, light, food, agricultural engineering, heavy, electronic, construction, forestry, chemical, rubber, and military; the principles of conducting trade relations with the countries of the socialist and capitalist camps, and the development features of agriculture under the rule of the Khmer Rouge. The results of the analysis showed that during this period the republic managed to restore agriculture and ensure its subsequent growth, and the updated industry was already fully functioning with the help of the friend countries. The practical value of the study is determined by the integral characteristic of the economic system of Democratic Kampuchea, which contributes to the functional solution of the economic problems of modern Cambodia

Keywords: agriculture, economic relations, industry, harvest statistics, socialist and capitalist ideologies

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Introduction

From the first days of the liberation of Phnom Penh and the end of the civil war with the victory of the Communists in 1975, Cambodia (at that time Democratic Kampuchea) was taken over by representatives of the Communist Party of Kampuchea, who were popularly called the "Khmer Rouge". The Khmer Rouge decided to abolish all currencies and markets, believing that the remnants of capitalism (and inequality) would not survive without money in circulation, and anyone who trades currency for food or supplies will be beaten or executed for a single violation of the new decree. Notably, many Cambodians still violated these laws and created underground labour camps throughout the country, which exchanged surplus rice for gold and jewellery.

Many scientists specify that the liquidation of the financial system still had a positive impact on the country's economy and contributed to solving the economic problems of Kampuchea, that is, the settlement of debt imposed by the former government of France and the United States, especially since money was virtually worthless at that time [1]. The liquidation also solved internal economic problems: due to the oppressive "socialist" regime of Norodom Sihanouk, the peasantry was mired in debt, by the beginning of the 1960s the usurious debts of the peasants totalled a billion riels, which is one-fifth of the total value of agricultural products [1], and the situation continued to worsen – as a result, the problems with the debt of the peasantry were solved by one decree. Furthermore, after the elimination of money, peasants and workers depended directly on food, which was a good motivation to work better and led to the restoration and recovery of the country's economy.

It is worth noting that the industrial sector of the economy of Democratic Kampuchea was dominated by two industries at once: agricultural engineering and light industry (Fig. 1).

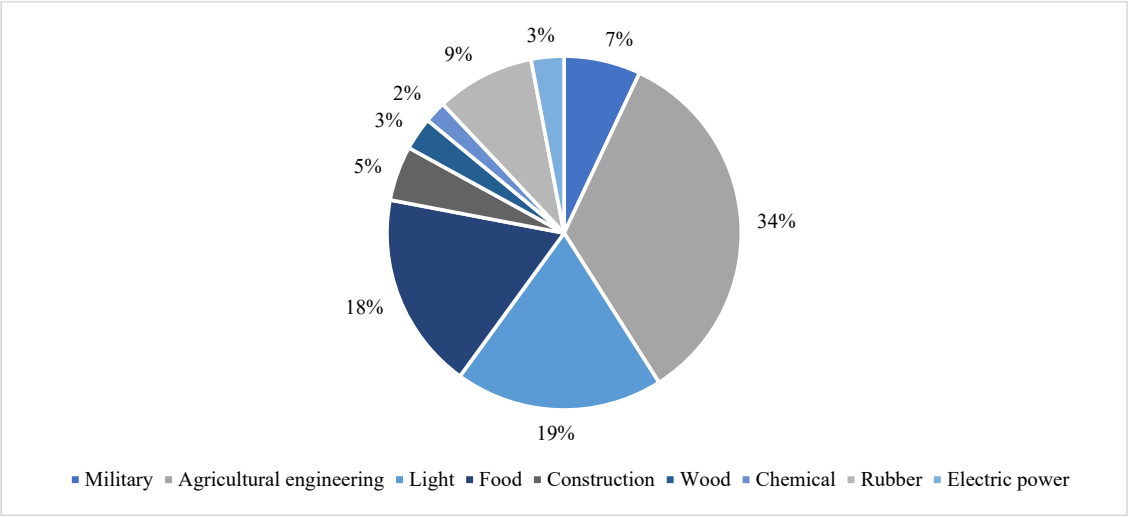

Figure 1. Diagram of the share of different industries in Democratic Kampuchea (including small enterprises)

Before independence, the entire industry of Kampuchea was mostly small, since the French colonisers were not going to develop the periphery – the French were only interested in rubber and latex. After gaining independence, Prince Norodom Sihanouk was in charge of the country development, not by his own efforts, but by the forces of the countries of the two opposing blocs in the world: the socialist and capitalist states had an incomparable influence on the development of Kampuchea. For example, China helped to build textile, paper, plywood factories and a cement plant in the country free of charge; Czechoslovakia paid for the construction of sugar, tractor-automobile, tire, and rubber plants, Czechoslovak specialists participated in their construction; the French built an oil refinery, and the Americans developed social infrastructure [2]. However, the policy of intervention and control of Sihanouk led to the fact that by the end of the 1960s, investment in Kampuchea virtually ceased [2]. After the overthrow of Sihanouk by the pro-American General Lon Nol and the subsequent civil war with the bombing of the Americans, there could be no investments, except the French-built latex factories in Phnom Penh in the middle of the first half of the 1970s [3]. The Khmer Rouge received not only an undeveloped but also a destroyed country with most of the industry demolished and about a third of the roads crushed, which raises the question of how to restore the country's economy in the following years.

The purpose of this study is to examine the features of the restoration of the economy of Democratic Kampuchea after independence; the development of international trade with the countries of the socialist and capitalist camps; the participation of friendly countries in the improvement of the economic state of the republic.

General characteristics of the industries of Democratic Kampuchea

Light industry. The victory in the civil war of the Khmer Rouge did not lead to deindustrialisation, as is erroneously claimed (such information came from Vietnamese propaganda), but to a new stage of industrial development: in

1976, incredibly rapid growth began, mainly due to foreign specialists, donated and purchased equipment. Most of the light industry enterprises were distributed in the Southwestern zone (on the site of today's Kandal province), where the capital of Kampuchea – Phnom Penh was located, as well as in the Northwestern zone, in the "rice bowl" of Cambodia – Battambang. In Battambang, light industry enterprises were built by the Chinese and the French back in the 1960s: the French built a garment and clothing factory, and the Chinese built textile factories. Battambang was in the orbit of the Khmer Rouge at the beginning of the civil war, and a considerable part of the peasants of the province supported them from the very beginning of the uprising. Despite the fact that the Revolutionary Army of Kampuchea was confidently advancing in the province up to a certain point, the battle for the city of Battambang itself dragged on for a long time, in particular, because the citizens provided all possible assistance to the Lon Nol supporters [1]. The province, similarly to the rest of the country, was bombed by American aircraft and suffered serious destruction. After the victory, most of the urban population was sent to the province, and only factory workers and civil servants remained in the city. Under the Communists, small agricultural enterprises were located in towns and villages, but Battambang was filled with enterprises with more qualified products [3]. New enterprises began to appear in the city, mainly producing clothing and goods for agriculture. Moreover, at the beginning of the Khmer Rouge rule, old factories were restored. Enterprises producing clothing, shoes, hats, and fabrics were tasked to eliminate the shortage of clothing and shoes by 1980, and by 1978 they had succeeded [4]. Light industry occupied second place in the industrial economy after agriculture.

Food industry. The food industry was in third place in terms of dominance in the industrial sector of the economy. Kampuchea exported many different food products, which were processed and produced in properly equipped factories. The food industry also ranked third in the country in terms of the number of enterprises. Food enterprises processed fish, meat, vegetables, fruits, berries, various cereals, nuts, industrial crops, etc. These enterprises produced canned food, fish and vegetable sauces, vegetable oil, ground spices, sugar, salt, coffee, natural dyes, tobacco, and much more. Even before the Khmer Rouge, many food enterprises appeared in the country: a brewery in Kampong Som, built in the 1960s by one of the countries of the socialist bloc and operating to this day, a cane sugar processing plant built by Czechoslovakia in Kampong Speu, rice processing enterprises operated. During the communist rule, new food processing enterprises began to be built: rice and other food processing enterprises appeared in Battambang, and a fish processing plant built by North Korean advisers appeared in Kampong Som. In general, with the support of North Korean, Chinese, and Albanian assistants, enterprises for processing sesame oil in Pailin, factories for the production of fish sauce along the Mekong River and near Tonle Sap Lake, enterprises for the production of beverages, processing of vegetable oil, tobacco, cotton, alcohol, and other products have appeared. Moreover, by 1980, it was planned to build dozens of more new factories for export to the countries of the socialist camp [3].

Agricultural engineering industry. The industrial sector of the economy was dominated by agricultural engineering, which is not surprising, given the Cambodian specific features of communism. However, it would be more precise to name it the tool industry, since, for the most part, it dominated the economy, in fact, it made up the majority of the economy due to artisanal, rather than large-scale factory production. In 1975-1976, more than a hundred factory enterprises resumed their work [2], but only a fifth began to produce for agriculture. Most of the newly opened enterprises were relatively medium-sized enterprises and, most likely, continued to produce what they used to in the pre-war period. Only about 15-20 enterprises were reoriented to the production of agricultural tools and equipment. This can be evidenced by the fact that most of the well-known enterprises continued to operate after the war, and very little is known about the rest at best.

Construction of new large factories and enterprises for the production of agricultural equipment and tools began throughout the country, and thousands of small enterprises were deployed along with them. It is possible to outline a tractor and car assembly plant built in Kampong Som, which was one of the first built by the Czechoslovaks in the early 1960s, a truck assembly plant built by the French, and factories built by the Cambodians themselves for the production of spare parts for tractors, bicycles, and cars, a separate bicycle production plant, mechanical plants, and various enterprises for the repair of agricultural machinery: tractors, trucks, and other equipment [3]. Most associations of communes of districts and subdistricts, called "higher-level cooperatives" (these cooperatives completely replaced lower-level cooperatives in 1977) [5] had their own small enterprises. They were mainly engaged in the artisanal and manual production of agricultural tools (scissors, knives, axes, ploughs, etc.), dishes were also produced there – this was mandatory prescribed in the Four-Year Plan [4]. Small enterprises, of which there were more than a thousand in the country, were equipped with modern machines and even processing units.

Heavy industry. In Democratic Kampuchea, in addition to light industry enterprises, there were also heavy industry enterprises. In 1975, there were about twenty heavy industry facilities in the country, some of them: an oil refinery in Kampong Som, a cement plant in Kampot, a tire and rubber plant in Tahmau, a truck assembly plant in Kampong Som, a latex plant in Phnom Penh, the Kirirom hydroelectric power plant. All these enterprises were built by foreigners: an oil refinery, a latex plant, a truck assembly plant – by the French, a tire and rubber plant – by the Czechoslovaks, a cement plant – by the Chinese, a hydroelectric power plant – by the Yugoslavs [6]. After the victory in the Khmer Rouge civil war, starting in 1976, when the sale of rice and other agricultural products began to bring

the first income, and the country mostly recovered from the war, incredibly rapid industrial growth began. Regarding the number of heavy industry factories at the end of 1978, before the invasion of Vietnam, there were more than three hundred facilities, these were power plants and hydroelectric power plants, metallurgical and mechanical plants, sawmills, enterprises for latex processing, production of rubber and tires, construction materials factories, and so on – this is four times more than it was under the rule of Norodom Sihanouk and three and a half times less than it was under the "democracy" of Lon Nol.

Electric power industry and electronic industry. Even during the reign of the "Buddhist socialist" Norodom Sihanouk, several electric power enterprises were built in the country, about ten in total. Some of them are the Kamchai hydroelectric power station built by Soviet specialists [6], east of Kampong Som, which supplied electricity to Kampong Som, Kampot, and other neighbouring cities, the Kirirom hydroelectric power station built by the Yugoslavs (restored by the first of all hydroelectric power stations, in fact), the Prakthnot hydroelectric power station built by international economic organisations [6], and the power plant built by the French in Kampong Som. Besides the point, dams were also built next to these hydroelectric power plants, the dam of the latter provided regular irrigation from 70 thousand to 90 thousand hectares of land [4]. During the war, the power plant in Kampong Som and the city itself were seriously damaged, and the hydroelectric power plants were simply abandoned. At this time, in the capital of the country, Phnom Penh, electricity was supplied every other day and for several hours, in other cities, there was no electricity at all. Kampong Som was particularly hard hit during the war: the city was the last stronghold of American troops who left Cambodia in a hurry and a huge warehouse of food and weapons. The infrastructure was destroyed during the war, and the American bombing, arranged as a result of the Mayaguez incident, aggravated the situation: the port was seriously damaged, the oil refinery was destroyed, and other industrial facilities of the city were also affected.

First, with the help of Chinese specialists and North Korean advisers, a port and a power plant, a tractor-auto assembly plant were re-established in the city, later, clothing factories, a truck assembly plant, and other enterprises were restored; new enterprises were built, the Kampong Som-Phnom Penh road built by the Americans was reconstructed. After the victory of the Communists in the civil war, one of the first enterprises was restored by the Kirirom hydroelectric power station, North Korean specialists reconstructed the power plant in Kampong Som and then the remaining electric power enterprises, yet not all of them were re-established. The Khmer Rouge paid great attention to the electric power industry, constantly buying electric generators from socialist and capitalist countries. Furthermore, the socialist countries themselves provided electrical equipment to Kampuchea: China supplied three industrial diesel-electric generators in 1975 as aid, and North Korea supplied hydroelectric generators for irrigation facilities in 1975-1976. In Hong Kong, through which 90% of foreign trade turnover with capitalist countries passed, electric generators and equipment for electric power enterprises were also purchased [6]. In Kampuchea, there were factories for the production of electric batteries, mechanical and electrical items and equipment, with priority given to the latter: the share of production of electric machines in Kampuchea exceeded the share of some other countries in the Asian region.

Construction and forestry industry. The first full-fledged large-scale construction enterprise appeared in Cambodia in the 1960s – it was a cement plant in Kampot, built by the Chinese. This plant became the main supplier of building materials in the country, however, being at a standstill, by the end of the 1960s, the country stopped developing, and the subsequent civil war destroyed the plant. After the victory of the Khmer Rouge, the cement plant was restored by Chinese specialists in the first order, which opened the way to the revival of the country destroyed by the war [3]. Next, a factory for the production of glass and glass containers was restored, also built by the Chinese in the 1960s. Later, the construction of new factories began. According to the Four-Year Plan, factories and plants that produce cement, fibre cement, bricks, tiles, sand, gravel and process stone were to appear in the country. In the middle of the second half of the 1970s, Kampuchea purchased equipment in China for the construction of a brick factory. Most likely, in the future, factories for the production of tiles, processing of sand, gravel, stone, blocks, sheet metal, and others would have been built, if Kampuchea had not been occupied by Vietnam.

There were also forest-related enterprises in Kampuchea. There were several sawmills in the country, plywood and paper factories built by the Chinese in the 1960s, as well as furniture factories and handicraft enterprises that produce tables, chairs, cabinets, and other furniture. Kampuchea has extensively exported valuable tropical wood species to China, Albania, and Thailand. For example, only in 1975, 2.2 thousand tons of valuable wood were delivered to China. The Communist Party has set a requirement for the enterprises of the paper industry to produce educational and office supplies to a sufficient extent.

Chemical and rubber industry. In the chemical industry, as some sources show, everything was scarce. Most of them produced organic fertilisers, the production of which most likely accounted for the lion's share of the production of the entire chemical industry. The production of natural fertilisers in 1977 was approximately 5.6 million tons, and by 1980 the production was expected to grow to about 8.9 million tons [5]. By the end of 1978, Kampuchea was producing approximately 6.9 million tons of organic fertilisers per year. This is not little, for comparison, Ukraine produced a little more mineral fertilizers, on the eve of joining the WTO. However, there was a production of ammonium, calcium chloride, paint, acids necessary for enterprises (for example, the same acids for rubber processing enterprises), and other things. Soap and dye factories operated in the country along with other enterprises manufacturing hygiene products. The rubber industry was in a different situation.

Even in the colonial era, enterprises for the extraction and processing of rubber appeared in Cambodia, due to the fact that Cambodian rubber was in demand in France. After gaining independence from France, several more rubber industry enterprises appeared in Cambodia: a tire factory and a tire-rubber plant, both built by the Czechoslovaks in the 1960s, but this applies to large enterprises, there were also small private enterprises engaged in the processing of rubber and related substances. Moreover, in the first half of the 1970s, the French deployed latex factories in Phnom Penh, which were the only ones in the country that earned hard currency. After the victory in the civil war, the Communists were fully engaged in the development of the rubber industry. Rubber was one of the main sources of currency for which the Khmer Rouge bought equipment, medicines, and so on. Gradually, the increase in rubber production began, with the help of Chinese specialists. From 1977 to 1980, the Khmer Rouge expected to receive seventy million dollars from the sale of rubber, this money was to go to the construction of industrial facilities, including the development of the rubber industry. New factories were being restored, expanded, and built in the Eastern and Northern zones. Since 1977, the full-scale development of rubber processing plants of all types has begun. It was also necessary to provide for industry and agriculture. Much attention was paid to the production of tires, as stated in the Four-Year Plan.

Military industry. Before the Communists came to power, there were only two large military enterprises in the country which were accurately known – a factory for the repair of military equipment and a factory for the production of cartridges, the latter was built in 1969 by the Czechoslovak state company "Sellier & Bellot" [7], the military equipment, perhaps, was indirectly produced at two more enterprises: the tractor-car assembly plant built by the Czechoslovaks and the truck assembly plant built by the French, both were located in Kampong Som. Everything else was either purchased by the royal government, and then by the Lon Nol government from the friendly countries, or was acquired as a gift. The royal army with outdated French weapons had to be re-equipped. Thus, in addition to military specialists, planes, anti-aircraft guns, firearms, and other means came from the Soviet Union [6]. Later, the army increased considerably, and more than one hundred and thirty thousandth army of General Lon Nol had to be armed for the war against the communists and the peasants supporting them, for which the Americans provided the general with funds in the amount of $ 1.8 billion [6], but the army was still armed in large numbers with the same outdated weapons, despite the rich trophies.

After the victory of the Khmer Rouge in the war, with the help of Chinese specialists, it was planned to build about forty factories and enterprises for military purposes: for the production of gunpowder, weapons, ammunition, armoured structures, military vehicles, artillery, tanks, and so on [3]. Chinese specialists restored a factory for the production of cartridges, expanded the capacity of a factory for the repair of military equipment, and began the construction of new military enterprises, in particular, it was planned to build a completely new, large weapons production plant in the suburbs of Phnom Penh, which was supposed to employ two thousand workers [3]. However, according to statistics, the Chinese were more concerned about military infrastructure facilities, such as bases, airfields, etc., than the military-industrial complex [8]. For example, the military airfield in Kampong Chhnang Krang Leav, which was the main receiver of Chinese aid, was built by Chinese specialists [9], they also restored and expanded the naval base in Kampong Som, repaired roads, built bases and ports along the Mekong River, and even the Revolutionary Army of Kampuchea was armed not so much with its own weapons as with Chinese ones. Certainly, Kampuchea had certain military enterprises, however, for the most part, those were mainly repair enterprises.

In addition to the above-mentioned branches of the Kampuchea industry, there were a couple of other industries: mining and metallurgical [4]. Regarding these industries, it is known that they existed and operated poorly – metallurgical enterprises were still not launched, and despite the great efforts of the Chinese, it was not possible to create a full-fledged metallurgical industry in Kampuchea, and the mining industry, in general, was neglected due to development of light and heavy industry, and although the country was mining precious stones, coal, iron, and other minerals, mining was carried out at colonial small enterprises by the efforts of local authorities [10]. There was another branch – medical. Despite the fact that a pharmacological factory built with the support of Chinese specialists operated in the country, and the Four-Year Plan separately indicated the need for the production of medical things, such as bandages, scalpels, glasses, and other things for which medical equipment was purchased, little is known about this industry. There was never a reason to build a medical industry in the country: medicines in the country were either traditional medicine or imported, and medical equipment for treatment began to be purchased en masse only under the communists. In Kampuchea, there were attempts to build an oil refining industry based on an oil refinery previously built by the French. Nevertheless, the American bombing during the Mayaguez incident severely damaged the oil refinery, which is why all attempts by Chinese specialists to restore and put the plant into operation were unsuccessful. In December 1977, the head design Institute of the People's Republic of China prepared submittals for the construction of a new oil refinery [3], but the plant was never built.

International trade of Democratic Kampuchea with the countries of the Socialist camp

Democratic Kampuchea traded a lot and very actively. For trade with the socialist countries, the Kampuchea Foreign Trade Company (KFTC) was established, the main partners of which were Chinese foreign trade organisations. It should be noted that none of the KFTC accounts contained money. Payment for goods was made in various forms, mostly based on mutual settlements, at a time when money did not move.

To conduct foreign trade financial operations, the Bank for Foreign Trade was established, which closely cooperated with the Central Bank of China [3]. China paid for the lion's share of Democratic Kampuchea imports from capitalist and socialist countries.

The People's Republic of China. In the first year of the Communists' coming to power, 2.4 thousand tons of rubber, 2.2 thousand tons of valuable wood, 200 tons of black pepper, 113 tons of coconuts, and 39 tons of medicinal plant seeds were exported to China [10]. Kampuchea exported to China a huge variety of different products and goods: rice, rubber, fish, shrimp, meat, beans, green beans, sugar, pepper, fruits, valuable wood species, natural dyes, herbal products of traditional medicine, rare minerals, various skins, elephant tusks, buffalo and deer horns, copra, crepe, kapok, lotus seeds, strychnine, white sesame, coffee beans, and much more. In turn, various equipment was imported from China for the construction of railways, brick factories, bicycles, and other industrial enterprises. Moreover, medicines, petroleum products, kerosene, fabrics and threads, clothing, light industry products, steel, cast iron, coke, mineral fertilizers, wheat, tractors, bulldozers, diesel locomotives, electric generators, tugs, road rollers, electric saws, movie cameras, movies, film projectors, hoes, shovels, bicycles, various tools, and many other goods were purchased [3]. At the end of 1978, that is, before the Vietnamese invasion, the volume of trade turnover was more than forty-two million dollars, where the share of China's exports was twenty-five million, and Kampuchea – seventeen million dollars. China was the primary partner for Kampuchea even under the monarchical regime of Norodom Sihanouk and during the Sino-Soviet split [11].

Among other things, China provided Kampuchea with a loan in the amount of about twenty-five million dollars for the purchase of equipment and petroleum products from China, as well as twenty million dollars to cover the liability of Democratic Kampuchea in foreign trade with the countries of the capitalist camp. Formally, the agreement stipulated the terms of an interest-free loan with payment within five to six years. The loan repayment period could be extended up to thirty years [3].

The Democratic People's Republic of Korea. Trade relations between Kampuchea and Korea began on November 24, 1977, when Democratic Kampuchea and the DPRK signed the first trade agreement, which provided for mutual settlement in pounds sterling and equivalent trade exchange of five million pounds sterling on each side. Kampuchea exported a lot of agricultural and textile products to North Korea, but most of them were crepe, rubber, white sesame, and soy, and Kampuchea imported from North Korea products of the engineering, steel, chemical and textile industries, minerals, lathes, drills, and all kinds of tools up to the most basic [3]. Democratic Kampuchea and the DPRK regularly exchanged trade and economic, government, and public delegations. North Korea was generally the second trading partner of Kampuchea, second only to China in trade [9].

People's Socialist Republic of Albania. Despite the active support of the Khmer Rouge by the Albanians during the war, Kampuchea-Albanian relations developed very sluggishly. In fact, in the matter of diplomacy, everything was limited to the visits of trade and economic delegations of Democratic Kampuchea to Albania and vice versa. The first visit of such a trade and economic delegation took place in October 1976 and this was the first time that a delegation of Democratic Kampuchea visited a European country, the following year Albanian delegations visited Kampuchea. Albania had its own embassy in Phnom Penh, which actively maintained contacts between the two countries, until the deterioration of relations in 1978. Trade was rather as modest as diplomacy between the two countries. Nevertheless, Kampuchea exported rubber, coconuts, and valuable hard tropical wood species to Albania in a decent amount. The import was not so large: Kampuchea imported tractors, other agricultural equipment, and feature films of Albanian production [3]. However, there is reason to believe that trade between the two countries was barter [12].

The Socialist Federal Republic of Yugoslavia. The first discussions about the possible trade of Kampuchea with Yugoslavia began in August 1976, when the summit of the Non-Aligned Movement took place in Colombo, at the same time, the Chairman of the State Presidium of Democratic Kampuchea, Khieu Samphan, and the President of Yugoslavia, Broz Tito, met and talked about possible cooperation. After that, in early autumn, Kampuchea diplomats visited Yugoslavia twice, including Foreign Minister Ieng Sary himself, as a result of which the first trade agreements were concluded [3]. In February 1977, following the visit of the trade and economic delegation of Yugoslavia to Democratic Kampuchea, an agreement on trade and economic cooperation was signed. The first Yugoslav ship arrived in Kampuchea with a cargo of tractors and other agricultural and industrial equipment in December 1976, in the amount of three million dollars. After that, imports from Yugoslavia expanded slightly, and fabrics needed for the Kampuchea light industry began to be supplied from Yugoslavia to Kampuchea. Kampuchea itself mostly supplied only rice. The Yugoslav Red Cross, along with other branches of the Red Cross, sent medicines to Kampuchea free of charge. The Red Cross generally supplied medicines and purchase funds to Kampuchea even before the war, as an example: the Swiss Red Cross provided twenty-eight thousand Swiss francs to the Khmer after the outbreak of the civil war [13]. Cambodia had deeply cooperated with Yugoslavia even before the war, it was also the founder of the Non-Aligned Movement along with Yugoslavia, and Tito himself was very good friends with Sihanouk. After the war and the rise of the Communist Party of Kampuchea to power, relations continued to improve. It got to the point that the Yugoslav leaders promised to provide Kampuchea with economic assistance in the amount of two billion dollars [3], but this never happened.

The Socialist Republic of Romania. The Romanian Embassy in Phnom Penh appeared in October 1976. Romania

was the only Warsaw Pact country that was considered a friendly country by the Khmer Rouge. Trade relations did not have time to gain large-scale momentum, as the leaders of both countries expected. Romania virtually did not buy anything from Kampuchea, but sold canned fish to it and planned to build a large fish cannery for processing fish somewhere near the Kampuchea coast, for which Romanian fishermen had to catch fish [3]. However, there is evidence that Kampuchea bought much more goods from Romania, including firearms and even military river vessels, and in 1979 it intended to sign a "full-scale military-technical cooperation agreement", allegedly involving the supply of firearms, air defence equipment, artillery pieces, etc., in exchange for a number of goods: from rice and rubber to precious stones of the Kampuchea mountains [14].

Trade relations of Democratic Kampuchea with the countries of the capitalist camp

Kampuchea also traded quite actively with capitalist countries. To create a platform for trade with capitalist countries, in October 1976, Khmer Rouge emissaries secretly arrived in Hong Kong, where the Kampuchea foreign trade firm Ren Fung was then established. The invoices of this firm for the purchases made were paid by one of the Chinese banks in Hong Kong, serving the foreign trade operations of the PRC, and the firm itself was a shell through which Kampuchea purchased goods in the west. The intelligence agencies of the United States and Great Britain, knowing that the Khmer Rouge were in charge of the Ren Fung firm, did not prevent its transactions with Western businessmen [3].

Great Britain and Hong Kong. The main trading partner among the capitalist countries was Great Britain. 90% of the foreign trade turnover with the countries of the capitalist camp passed through British Hong Kong, which in 1976-78 reached almost twenty-five million dollars [11]. Kampuchea bought medicines, potatoes, flour, petroleum products, mineral fertilisers, electrical equipment, products of the chemical, metallurgical, and engineering industries, complete equipment for a pharmaceutical factory, industrial facilities, film equipment, spare parts for cars from the British in Hong Kong; in 1977-78, an unknown British company sold large quantities of chemical industry products necessary for the production of rubber to the Khmer Rouge: citric and formic acid, aluminium sulfate, insecticides, potash alum, as well as special chemicals for processing rubber [15].

Democratic Kampuchea supplied rubber, rice, corn, fish, wood, skins of various animals to British Hong Kong, most of them were panther and tiger skins, and other goods of plant and animal origin [3]. However, only a certain part of the goods supplied by Kampuchea to Hong Kong was bought up by British companies, many other goods were bought up by local trading firms in Hong Kong: large, medium, and small trading companies literally flooded the Kampuchea emissaries with requests for the purchase of forest and agricultural products: fish, ordinary and red corn, rice, cows, buffaloes, meat, as well as rubber [9]. Britain, in general, was the second capitalist country that began to trade with Kampuchea, Thailand was the first, and the United States became the third country.

The United States of America. At that time, the leadership of the United States made a lot of efforts to normalise relations with Democratic Kampuchea, despite the recent war in which the Americans played a fatal role. To normalise relations, despite the economic sanctions embargo Democratic Kampuchea adopted by the US House of Representatives in 1977, the US government conducted trade with Kampuchea, while giving protection to businessmen who want to sell their products in Kampuchea and organisations who want to help Kampuchea.

For the first time, Kampuchea bought goods from the American market in 1976, when four hundred tons of antimalarial medicines were purchased from the American pharmaceutical company Montrose Chemical Corporation, for which Kampuchea paid 450 thousand dollars. This purchase was the first step towards improving relations between Kampuchea and the United States. At the end of 1976, there was a trade deal between Kampuchea and the United States for the supply of DDT insecticide to Kampuchea in the amount of 455 thousand dollars, approximately 162.5 tons [1]. For American suppliers, this was an extremely profitable deal, since DDT was banned in the United States in 1972 [1]. It was also a good deal for Kampuchea since this famous chemical allowed reducing the incidence of malaria, especially characteristic of the northwestern part of the country, where the most malarial jungles are located. In 1977, Kampuchea had already agreed with several American companies on the supply of medical equipment and medicines to Kampuchea, despite the embargo [3]. America, which bombed Cambodia and made hundreds of thousands of people disabled, supplied Cambodia with medicines and medical equipment to Kampuchea hospitals to treat these same people with disabilities. American charitable organisations began to supply medicines to Kampuchea in batches, "American Friends Service Committee" donated more than one batch of medicines to Kampuchea through China [3]. Although it is a denied fact.

Thailand. Initially, the Khmer Rouge was hostile to Thailand, based on territorial disputes and historical enmity. However, from the very beginning, Kampuchea and Thailand were on quite favourable terms. On April 24, 1975, the Khmer Rouge withdrew the entire civilian population from Poipet under the pretext of a hypothetical attack on the city by Thai troops, but the attack did not follow, and the next day local Communist Party functionaries sent a delegation to negotiate with official Thai representatives about the conditions of border trade. The local communists behaved quite gently with the Thai local authorities. Perhaps this was due to the remoteness of Phnom Penh and weak central government at that time, or the result of some political differences between local and central leaders, as evidenced by the shooting of the secretary of the Northwestern Zone Ros Nhim on charges of spying for Thailand in 1977.

Thailand suddenly became the very first country with which Kampuchea began to trade. Cross-border trade was in full swing: gasoline, rice, medicines, salt, and clothing were mostly transported from Thailand to Kampuchea, for which the Khmer Rouge paid with American dollars and even gold products [3]. Until the end of 1975, Khmer and Thais, as well as official representatives of the local authorities of the two countries, crossed the Khmer-Thai border quite freely. Thai and Kampuchea border guards did not interfere with border trade. Moreover, Thai businessmen from the city of Aranyaprathet provided a loan of 20 million baht to local representatives of the Communist Party in Poipet [3]. During the official visit to Bangkok of the Minister of Foreign Affairs of Democratic Kampuchea, Ieng Sari, in October 1975, a joint communique was signed, which expressed the intention to exchange ambassadors and create mixed communication groups at the border. The development of bilateral trade was also discussed. The Khmer Rouge intended to buy sugar, refined oil, and a lot of salt in Thailand. Thailand was to become the main supplier of salt for the Kampuchea fish processing enterprises. For its part, Kampuchea intended to supply wood and smoked fish to Thailand [3].

Economic agreements and treaties were concluded between Kampuchea and Thailand from the very beginning of Communist rule until their overthrow, with the exception of one temporary period between 1976-1977. From Thailand, Kampuchea received sugar, flour, potatoes, carrots, soybeans, lettuce, radishes, peanuts, cabbage and lettuce seeds, salt, clothing, raincoats, knives, axes, sickles, charcoal, penicillin, quinine, vitamins, petroleum products, sulfuric acid, mechanical equipment, spare parts, paints, fabrics, nylon bags, and other goods. Kampuchea exported rice and rubber to Thailand along with raw and smoked fish. Relations between Democratic Kampuchea and Thailand improved to the point that in September there were negotiations on the extradition of Lon Nol criminals, but a month later a right-wing coup took place in Thailand and the new right-wing military leadership turned Thailand away from Kampuchea, which sharply worsened relations with the latter. However, a year later, relations were restored, and the active trade continued.

Singapore. After the Communists won the Vietnam and Cambodia wars, the governments of Southeast Asian countries began to fear that communism would spread to them, which is why they constantly treated the Red Countries of Indochina with caution and hostility. Such relations were inconvenient for Kampuchea. In the spring of 1977, the Foreign Minister of Democratic Kampuchea, Ieng Sari, met with the Deputy Prime Minister of Singapore and assured him of the extreme unwillingness of Kampuchea to create a so-called "Indochina Union" with Vietnam. Therewith, he confirmed the intention of Kampuchea to develop good-neighbourly political and trade relations with the ASEAN countries and Singapore [3] which was considered by the Khmer Rouge as an important market for the sale of Kampuchea rice. After that, rice supplies went to Singapore. However, the trade and economic cooperation between Kampuchea and Singapore was not limited only to the supply of rice: Kampuchea also supplied rubber and fruit to Singapore. In May 1977, the delegation of Democratic Kampuchea discussed in Singapore the prospects for the development of bilateral cooperation in the fields of maritime navigation and telecommunications, with the latter Kampuchea had trouble. In 1978, a Kampuchea commercial centre was opened in Singapore, intended to establish trade relations with Western European countries [3], perhaps Singapore would have become a second Hong Kong for Kampuchea.

Madagascar. The Khmer Rouge considered Africa not only as a promising continent for the revolutionary struggle, for which they invited and trained some African revolutionary groups but also as an important market for rice. Deliveries to Africa of Kampuchea rice, which was paid for in a freely convertible currency, began in 1977, but the Khmer Rouge managed to sell only the first batch sent to Madagascar. Further promising trade was interrupted by tension with Vietnam and the further Vietnamese occupation, the details of which are unknown [3].

Features of public agriculture in Democratic Kampuchea

In 1975, Cambodia was in a poor state: a five-year civil war destroyed all agriculture, the countryside was littered with mines, some of it with poisonous chemicals "Agen Orange", a third of the infrastructure was demolished, furthermore, more than two million refugees from villages moved to the cities because of the war and bombing. The Khmer Rouge began their rule by evacuating the urban population to the countryside to take them to places where food was produced, primarily rice. This was more feasible than delivering rice to cities to which there were no roads suitable for transportation in large quantities [1]. The evacuated citizens, mostly peasant refugees who had fled from the war to the cities, arrived in the countryside to collect rice. Most of the refugees returned to the same place from where they came, while others who did not inspire confidence in the new government went to the north to clear the jungle [1]. Citizens who were not refugees were sent to various parts of the country by distribution for work and re-education, and the attitude towards them varied in different regions. However, some of the citizens still returned back to the cities – these were workers of enterprises that the country urgently needed [4].

By the end of 1975, the first post-war rice was harvested, which amounted to about seven hundred thousand tons and was used to feed the Cambodians: members of the agricultural communes were allocated 250 grams of rice per day, and workers of industrial enterprises 350 grams per day [8]. In the following years, as the yields increased, the daily consumption rates of rice increased. In the same year, with the great help of China and the resulting fairly rapid recovery of agriculture, rice yields in Kampuchea began to gradually increase.

The growth in rural workers was expected to lead

first to a rapid recovery from the war, and then to an increase in the yields of rice and other crops. The most striking example of the effectiveness of resettlement is the Northwestern zone, the population of which grew from 908 thousand in 1968 to 1.79 million people [1]. In the northwest, many irrigation structures were built (according to some sources, more than a hundred), tens of thousands of hectares of new land were developed, moreover, jungles began to be cleared to get more land [1] (although the idea turned out to be too large-scale and difficult to reach). Battambang, a northwestern province and one of the components of the Northwestern zone (present-day Pursat, Pailin, and Battambang provinces), is still called the "rice bowl of Cambodia" since it produces the most rice in the country (Fig. 2, 3).

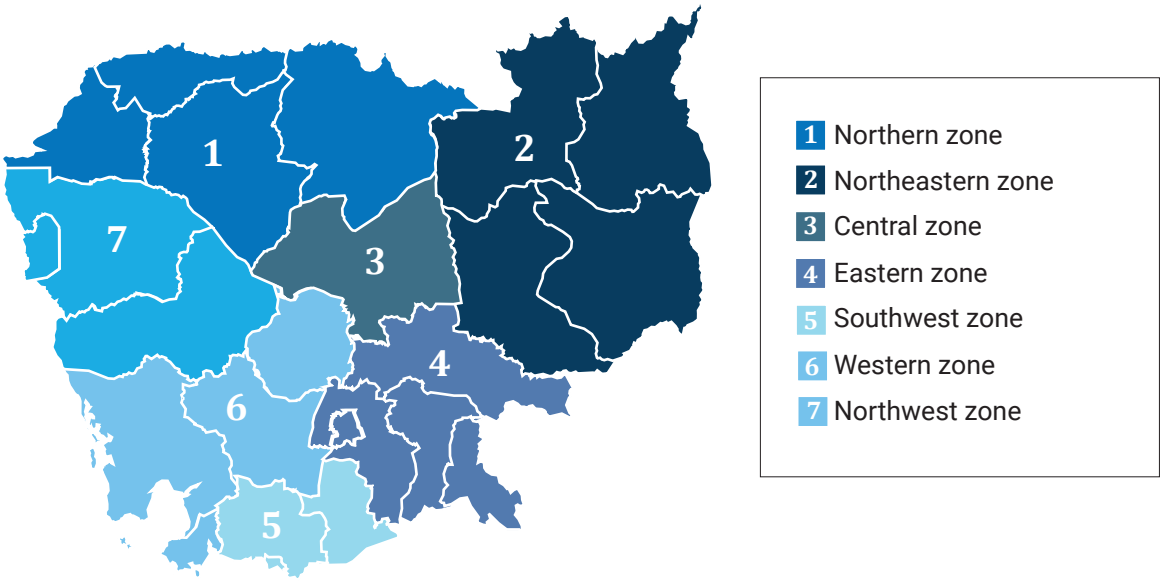

Figure 2. Map of rice production efficiency in Democratic Kampuchea (according to the past administrative division)

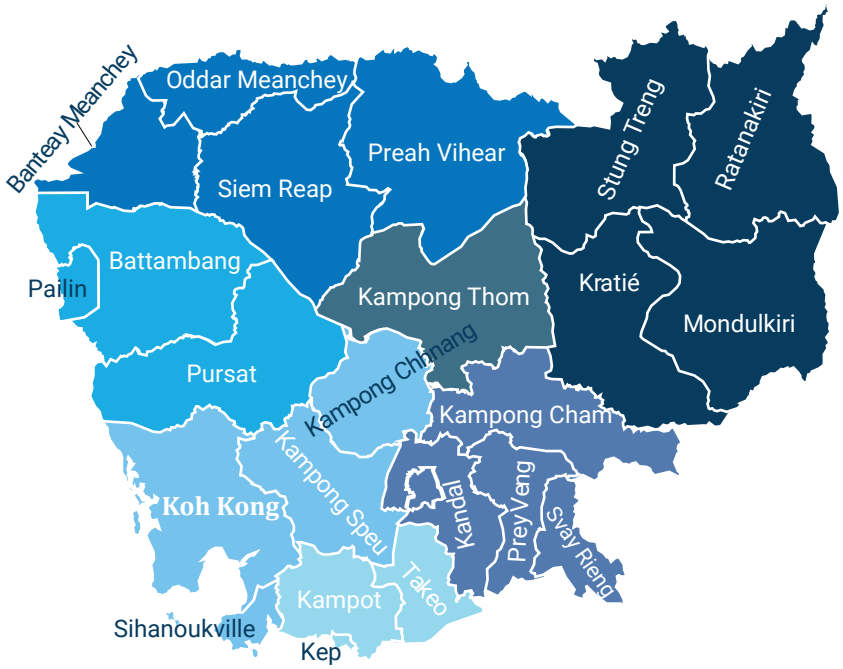

Figure 3. Map of rice production efficiency in Democratic Kampuchea (according to the modern administrative division)

At the end of the 70s, there were 50 thousand hectares of high-quality land in the province (that is, from which rice was harvested twice a year). The "Party's Four-year plan for building socialism in all spheres" assumed an increase in the area of arable high-quality land from 60 thousand hectares in 1977 to 200 thousand hectares in 1980, which was supposed to provide 40% of the total double rice harvest in the country and 45% of all exported rice [1], especially

considering that Battambang is the "Cambodian rice bowl". According to the same plan, a network of dams and canals was built, as well as reservoirs throughout the country, which was necessary for the improvement of the territory where rice was extracted [4]. This was a huge success: in 1977, there was a drought in the country, but with the irrigation facilities it caused much less damage than it potentially could. According to the plans, the annual rice harvest at that time was supposed to reach 4.6 million tons, of which 1.3 million tons would be intended for export, and 3.3 million tons for domestic consumption [3].

The pre-war level of harvest of rice remained at the level of about 2.4 million tons of rice in 1960-1969, until it fell to about 600 thousand tons of rice in 1970, 500 thousand tons of rice in 1971, 400 thousand tons in 1972 and 1973, and 250 thousand tons of rice in 1974 [12]. In general, the harvest in Cambodia for 1975 was about a million tons of rice, of which only seven hundred thousand tons were directly subordinate to the central government (this was due to the fact that the central government in Phnom Penh at that moment had not yet established itself in the whole country, the power of the central government would finally be established only in 1976), in 1976, the rice harvest reached the pre-war level – 2.3 million tons of rice, in 1977, the yield virtually reached three million tons of rice, which was unattainable before the New history of Cambodia, in 1978, the yield was about 2.7 million tons of rice, and in 1979 it fell again – to 700 thousand tons of rice [16] (Fig. 4, 5).

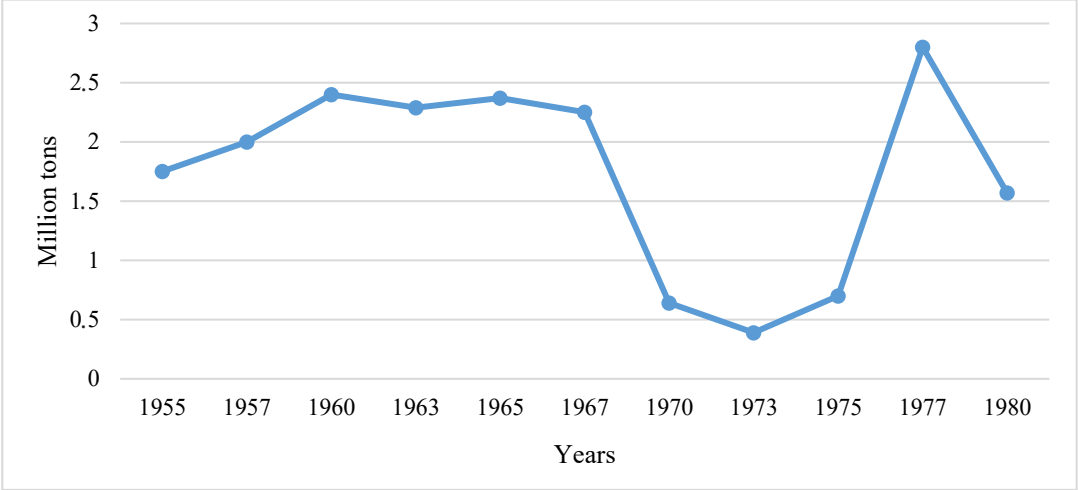

Figure 4. Statistics of rice harvesting in Cambodia from 1955 to 1980 (by Governments)
Note: These graphs represent approximate data and may be inconsistent

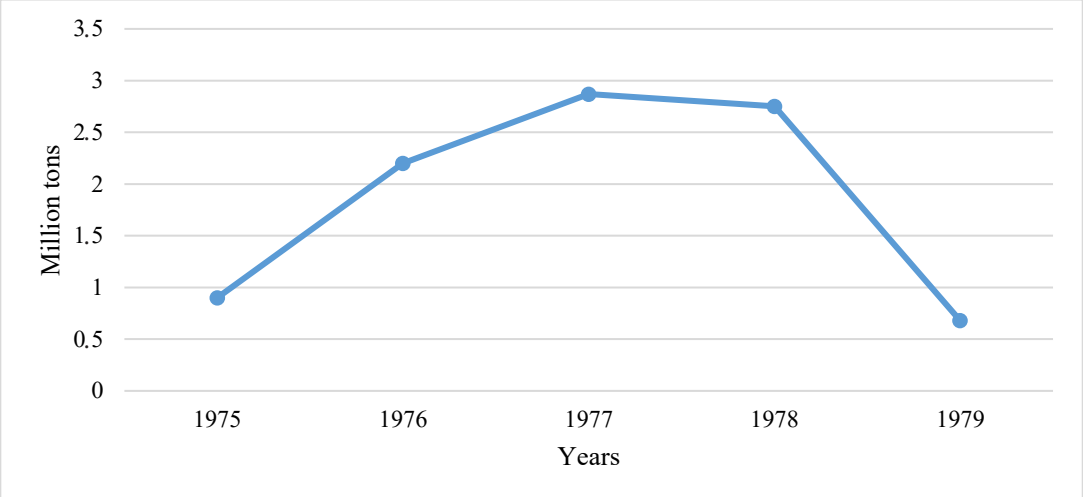

Figure 5. Statistics on the growth of rice production in Democratic Kampuchea
Note: These graphs represent approximate data and may be inconsistent

Back in 1976, two agreements on trade and economic cooperation were signed between China and Kampuchea, according to which in 1976 Kampuchea sold 150 thousand tons of rice to China, and in 1977 – 480 thousand tons [16]. The Foreign Minister of Democratic Kampuchea, Ieng Sari, explained the increase in rice exports: "For the first time, we have surplus rice that we can export. We are already able to fully meet our own food needs". There was a surplus of rice in Kampuchea, which increased annually. In 1976-1977, Kampuchea donated more than three thousand tons of rice

to Laos, thereby solving the problem of hunger created by Thailand, which declared an economic blockade of socialist Laos [3].

Corn and legumes in Kampuchea were referred to as "additional crops" – the so-called plant crops, which constituted the human diet, in addition to the most common plant – rice. Since these crops were additional, that is, secondary, they were assigned a secondary role in the Four-Year Plan, despite the fact that the plan indicated the demand for corn, in particular red corn, as well as legumes, as important for food and export, since they were exported to China and Thailand in large quantities, there was no question about increasing and expanding the land left after the war for beans and corn, unlike vegetables and fruits. For the export of corn, beans, other cereals, vegetables, and fruits, in general, it was expected to receive twenty-nine million dollars, which, in contrast to the planned seventy million dollars from the export of most of the rubber and a huge variety of "additional crops", demonstrates the Khmer Rouge's disinterest in large exports of the popular tropical fruits. Most of the corn and legumes grew in the "rice bowl" of Cambodia-Battambang (Northwestern Zone) and in Kampong Thom (Eastern Zone), along the Mekong River.

The pre-war harvest of various types of corn in 1969 totalled approximately 500 thousand tons, yet after the war, the corn harvest amounted to about 240 thousand tons in 1975, in subsequent years, the corn harvest remained near the level of 250 thousand tons [16]. There are no data about the yield of legumes in these years. However, there is information about the yield of grain crops in general: in 1969, the yield of grain crops, including legumes, was more than two million tons of grain, by 1975, the yield of grain decreased more than four times – to 450 thousand tons, in the future, after a slight increase in the next two years by 15%, that is, to 520 thousand tons, in 1978, the grain harvest was less than 400 thousand [16], most likely due to a reduction in the amount of land for grain.

Fruits and vegetables were outlined by the Four-year Plan as necessary for the sustenance of the population. According to the Four-year plan, everyone had to be 100% provided with fresh, dried, and canned vegetables, the export of vegetables was not planned, unlike fruits: bananas, papayas, mangoes, oranges, cream apples, lemons, pineapples, jackfruit, mangosteen, and durian were to be exported, they were also exported to China and Singapore. More land was allocated for vegetables and fruits than for corn, in particular, the number of territories for root crops doubled – from 6.9 thousand hectares in 1975 to 13.4 thousand hectares in 1978 (Table 1) [4]. Notably, great attention was paid to the fruit, since most of the money from the sale of fruits (about seven-eight million dollars of eleven million) would be spent on the construction of railways across the country, and the event was supposed to cost about a hundred million dollars. Unlike fruits, vegetables were exclusively for domestic consumption, although more than five thousand hectares of additional land were allocated for vegetables in total, much less attention was paid to vegetables than to beans.

Table 1. The area of allocated land for root and fruit crops in 1975-1978

	1975	1976	1977	1978
Root crops	6,900 ha	9,420 ha	12,500 ha	13,400 ha
Fruit crops	74,000 ha	74,000 ha	73,500 ha	64,000 ha

As for *fisheries*, most fish were caught in the provinces adjacent to the largest lake in Indochina – Tonle Sap, which flows into the largest river of Kampuchea – the Mekong. Especially large fish production took place in the Western and Eastern zones (the provinces of Kampong Chhnang and Kampong Cham, respectively), where the river flows into the lake. The lake itself is generally called the "Cambodian Inland Sea", and its name is translated from Khmer as "Big Lake". Annually, during the rainy season, the lake overflows for tens of kilometres, which supplies the nearest lands with fertile silt and makes the surrounding lands extremely fertile. Perhaps even more fertile than the Ukrainian chernozem. The lake is extremely rich in fish: Tonle Sap Lake is one of the most productive freshwater lakes for fish production in the world [17] (Fig. 6).

Furthermore, fish were caught in the Central Zone (Kampong Thom Province): there was a wide production of wild fish, and in coastal zones, such as the Southeastern, there was a production of sea fish. Various types of fish were exported: dried to China, smoked to Thailand, ordinary to Hong Kong to British markets. There were old fish processing plants operating in the country and new ones were opened in large quantities, for example: with the support of the Koreans, a fish processing plant was opened in Kampong Som. The Kampuchea Communists may have paid greater attention to the fishing industry than it seems in the Four-Year plan, based on the fact that they prioritised attracting investment in the fishing industry, and in contrast to the limited information about other agricultural sectors, there is a lot of information about how Romanians, Chinese, Albanians, North Koreans, and even the Yugoslavs intended to build factories and enterprises in the fishing industry.

Salt mining in the southwest was established long before the Khmer Rouge, and it was water salt, under the Khmer Rouge, salt mines began to open, which in total employed about 2-3 thousand people, however, this was not enough. It is so insufficient that the Khmer Rouge bought salt, a lot of salt from Thailand, for their fish factories.

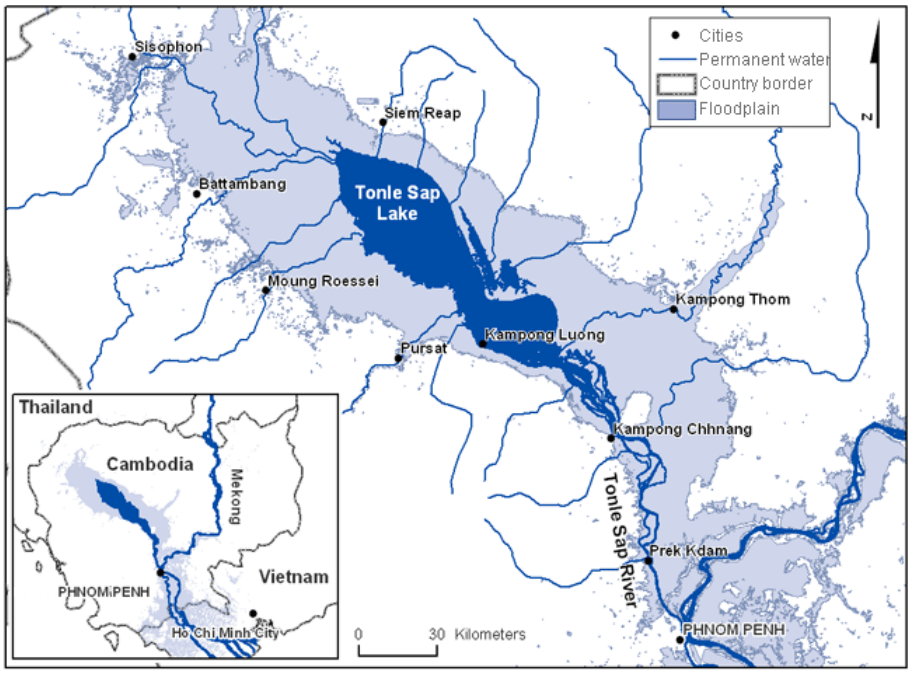

Figure 6. Map of the Tonle Sap Lake spill in Democratic Kampuchea

In Cambodia, the *production of pepper is well established*, unlike salt, which was constantly lacking. Even in the colonial era, large plantation farms were located in the Southwest and northwest. The largest amount of pepper was grown in the Southwestern zone (modern Kampot province), where there are huge plantations of the famous exquisite Kampot pepper, as well as the production of various spices, seasonings, and sauces has been established in the province since medieval times. The provinces of Battambang and Kandal produced spices on a lower scale. In modern Kampot, a variety of peppers are grown: capsicum, medicinal peppers, chilli pepper, the Kampot pepper, and others. Pepper was widely exported not only to China and British Hong Kong but also to many other countries, as can be confirmed by the fact that there was a great demand for it.

Sugar canes have been available in Kampuchea since ancient times. They are located in the modern provinces of Kampong Cham, Kampong Speu, and Battambang, moreover, in Kampuchea there are sugar and palm trees located in the provinces of Kampong Speu and Kampong Chhnang, which allow producing sugar and some traditional medicines [18]. Sugar extraction and production conventionally occupy priority positions for the peasantry in Cambodia, since two hectares of fruits and sugar palms cultivated for a whole year in Kampong Thom along the Mekong River brought more income than five hectares of rice fields in the areas of regular irrigation in Svay Rieng [18]. Sugar cane production in 1969 was 700 thousand tons, and in the war and post-war period, sugar cane production fell to 550 thousand tons (Fig. 7), which means a slight decline in production in wartime, unlike palm sugar – its harvest in 1969 was about 55 thousand tons, and in the post-war period of 1975 it was a little more than 30 thousand tons, the growth of palm sugar production during the reign of the Khmer Rouge was only 1.5-2% per year [18]. The development of palm-sugar enterprises was not expected, the Khmer Rouge paid more attention to cane sugar, which is also easier to extract.

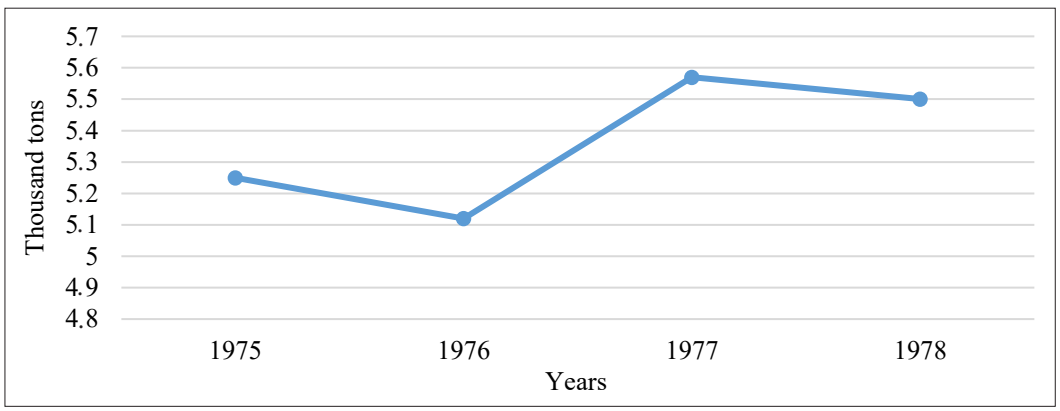

Figure 7. Statistics on the growth of sugar cane production in Democratic Kampuchea

Industrial rubber mining in Cambodia was initiated at the beginning of the 20th century with the "Rubber Fever" in Brazil, which led to the immigration of hundreds of thousands of Brazilians and Europeans who wanted to enrich themselves and collected rubber from Amazonian trees. The "rubber boom", as it is also called, spurred the development of rubber plantations around the world, since there was no desire to buy rubber from Brazilians and overpay when rubber trees have been growing in Southeast Asia for centuries and are still growing today. Thus, the British began to improve their plantations in Malaysia, and the French in Indochina, which affected the numerical and qualitative development of the factory proletariat in the future.

Natural rubber was the second main agricultural product in Kampuchea. Despite the fact that a huge number of rubber plantations were destroyed during the civil war, they were quickly rebuilt, just as quickly as rice plantations. After their restoration, rubber production increased two or three times annually: in 1975, about two and a half thousand tons of rubber were extracted, in 1976 – 7-8 thousand tons, in 1977 – 15 thousand tons, and in 1978 more than 25 thousand tons were produced (Fig. 8). During all this time, more than 55 thousand tons of natural rubber were extracted [3]. In 1975, almost two and a half thousand tons of rubber were delivered to China, in 1977 Kampuchea sold seven thousand tons of rubber to China, and in 1978 – about twenty thousand tons. Constant deliveries were also made to other countries.

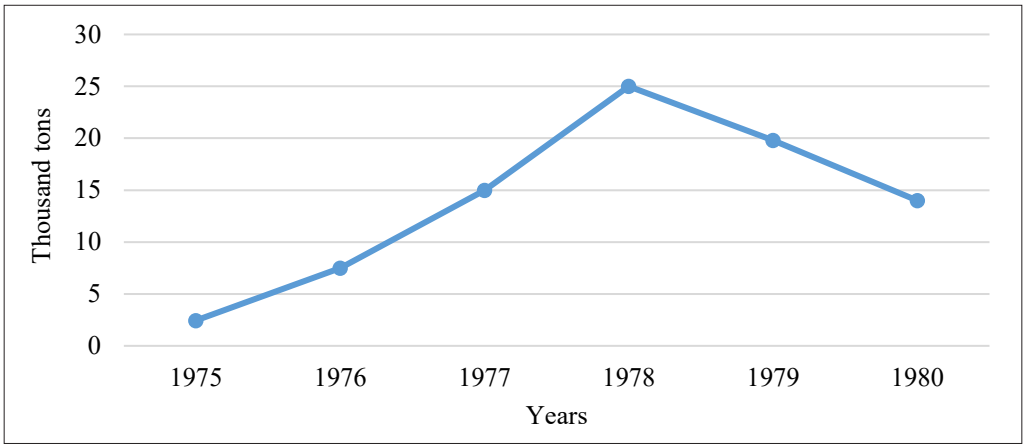

Figure 8. Statistics on the growth of rubber production in Democratic Kampuchea
Note: These graphs represent approximate data and may be inconsistent

In total, by 1980 it was expected to produce about 70 thousand tons of rubber (which is slightly more than the pre-war level of about 69 thousand tons) and to get about seventy million dollars on their sale. Mining was especially widespread in the Eastern Zone (modern province of Prey Veng). There was also rubber mining in the Northeastern Zone (Stung Treng province), which the Communists occupied at the beginning of the civil war and in which, despite the bombing, rubber was being mined [3]. It also produced latex and crepe.

Foreign aid in the context of the economic development of Democratic Kampuchea

The assistance of China, North Korea, and Albania to Democratic Kampuchea should also be mentioned. From 1976 to 1977, China actively supplied not only rice but also agricultural and industrial machinery. However, this assistance was much more modest, in contrast to military assistance. Thousands of Chinese specialists helped to restore destroyed factories and other infrastructure [3]. The number of Chinese technicians and advisers in Kampuchea increased to 15 thousand people by the end of 1978. They continued their work even after the beginning of the invasion of Vietnam and were evacuated only in early January, after receiving reports from the BBC about the unfavourable situation in the country [9; 19]. In general, China pledged to provide military, non-military, and financial assistance to Kampuchea in the amount of about one billion USD, which was the largest promise of assistance in the history of the PRC at that time [9]. The Chinese did not act disinterestedly: In 1975, the Khmer Rouge concluded a secret agreement with the Chinese, according to which they promised to pay for Chinese weapons with future supplies of rubber from Cambodia to China [3]. For Chinese aid, the Khmer Rouge had to supply goods to China at low prices, which certainly caused the Khmer Rouge to suffer heavy losses [9].

Koreans and Albanians also helped Kampuchea. North Korea supplied clothing, medicines, agricultural machinery, irrigation equipment (in particular hydroelectric generators), and sent specialists. Albania required assistance as well, so it only sent advisers and specialists, who, however, made a considerable contribution to the restoration of the country [3]. The North Koreans did the same: products of the steel, engineering, chemical, and textile industries, minerals, lathes, drills, and all kinds of tools were widely purchased from North Korea. The Khmer Rouge's relations with the Tirana were poor: the Khmer Rouge were annoyed that the Albanians were teaching them how to "build socialism", although they themselves were ready to teach everyone this, after the occupation of Kampuchea,

Albania recognised the People's Republic of Kampuchea, which completely undermined all the positive attitude of the Khmer Rouge to the Albanians. With regard to self-sufficiency and independence, the behaviour of Khieu Samphan during his visit to China in August 1975 is very indicative, when the Chinese were ready to discuss gratuitous assistance to Kampuchea, but Khieu Samphan insisted on signing an ordinary trade agreement [3].

It is worth mentioning Czechoslovaks, who made an invaluable contribution to the development of not only Cambodia but also a number of Asian, African, and even Latin American countries. About five Czechoslovak factories were built in Cambodia for about half a million dollars, which is the smallest part of all facilities that Czechoslovakia built in Asia: a number of power plants and factories were built in India, one of which, in Ranchi, cost 250 million crowns. Furthermore, Czechoslovakia provided loans to developing countries at 2% per annum and for a period of up to 12 years [20]. Regarding the socialist bloc countries, the assistance of the Soviet Union to developing countries is the only one that exceeds Czechoslovakia.

Conclusions

This study examines the state of the economy of Democratic Kampuchea in 1975-1979. According to the results of the study, in the second half of the 1970s, the Communist Party of Kampuchea still managed to restore agriculture and other domestic industry. The Khmer Rouge organised the Cambodians into communes, in the first year of their rule, they managed to collect enough rice to provide the peasants and workers who had returned to the cities with food, the standards of which grew annually. The industrial sector of the economy of Democratic Kampuchea was dominated by two industries at once: agricultural engineering and the light industry.

The victory in the civil war of the Khmer Rouge led to a new stage of industrial development. In 1976, an incredibly rapid growth began. The enormous role of friendly countries such as China, North Korea, Albania, Czechoslovakia, Romania, Yugoslavia and countries of the socialist and capitalist camps in the restoration of the economy of Democratic Kampuchea is substantiated. It was discovered that China helped to build textile, paper, plywood factories and a cement plant in the country free of charge; Czechoslovakia paid for the construction of sugar, tractor-automobile, tire, and rubber plants, Czechoslovak specialists participated in their construction; the French built an oil refinery, and the Americans developed social infrastructure. Furthermore, Democratic Kampuchea managed to develop trade relations with the countries of two opposing blocs: socialist and capitalist states. The prospects for further research are to conduct a comparative analysis of the economic development of individual historical periods of Cambodia establishment.

References

[1] Verkhoturov, D. (2018). *War on radio interception. Essays on the communist war in Cambodia.* Moscow: Samizdat.
[2] Ross, R.R. (1990). *Cambodia: A country study.* Washington: Library of Congress.
[3] Samorodnyi, O. (2013). *Pol Pot. Is Cambodia an empire on the bones?* Moscow: Algorithm.
[4] Chandler, D.P., Kiernan, B., & Boua, Ch. (1988). *Pol Pot plans the future. Confidential leadership documents from Democratic Kampuchea, 1976-1977.* New Haven: Yale Center for International and Area Studies.
[5] Dy, K., Chandler, D., & Cougill, W. (2007). *A history of Democratic Kampuchea (1975-1979).* New Haven: Documentation center of Cambodia.
[6] Okorokov, A. (2012). *Secret wars of the USSR. Soviet military experts in local conflicts of the 20th century.* Moscow: Veche.
[7] Carlow, T. (1974). *Cambodian army ammunition plant.* Fairfax: The American Rifleman.
[8] Tyner, J.A., & Rice, S. (2015). To live and let die: Food, famine, and administrative violence in Democratic Kampuchea, 1975-1979. *Political Geography*, 48, 1-10.
[9] Mertha, A. (2014). *Brothers in arms. Chinese aid to the Khmer Rouge, 1975-1979.* New York: Cornell University Press.
[10] Galway, M. (2019). Specters of dependency: Hou yuon and the origins of Cambodia's marxist vision (1955-1975). *Cross-Currents,* 8(2), 589-633.
[11] Kharitonova, A. (2018). Visits of official delegations from the Kingdom of Cambodia in the USSR as an element of the Norodom Sihanouk's foreign policy strategy (1953-1970). *Proceedings of Petrozavodsk State University*, 5(174), 17-22.
[12] Albania–Cambodia, from hero to zero. (2018). Retrieved from cambodiatokampuchea.wordpress.com/2018/08/16/albaniacambodia-from-hero-to-zero/.
[13] Vietnam – Cambodia – Laos – Japan – The President of the ICRC in Czechoslovakia – Missions in Central Europe. (1966). Retrieved from https://international-review.icrc.org/sites/default/files/S0020860400087842a.pdf.
[14] Podymov, A., & Chichkin, A. (2021). *Ceausescu and Pol Pot: The enemy of my enemy is my friend.* Retrieved from https://topwar.ru/178904-chaushesku-i-pol-pot-vrag-moego-vraga-moj-drug.html.
[15] Tyner, J.A., & Will, R. (2015). Nature and post-conflict violence: water management under the Communist Party of Kampuchea, 1975-1979. *Transactions of the Institute of British Geographers*, 40(3), 362-374.
[16] Mosyakov, D. (2010). *History of Cambodia XX century.* Moscow: Institute of Oriental Studies RAS.
[17] Cambodia. 1.4. Hydrology. (2021). Retrieved from http://www.wepa-db.net/policies/state/cambodia/overview1_4.htm.

[18] Jaggery and confectionary. (2021). Retrieved from http://apeda.gov.in/apedawebsite/SubHead_Products/Jaggery_and_Confectionary.htm.
[19] Mahanty, S. (2019). Shadow economies and the state: A comparison of cassava and timber networks on the Cambodia-Vietnam Frontier. *Journal of Contemporary Asia*, 49(2), 193-215.
[20] Platoshkin, N. (2016). *Spring and autumn of Czechoslovak socialism. Czechoslovakia in 1938-1968 Part 2: Autumn of Czechoslovak socialism. 1948-1968.* Moscow: Dmitry Pozharsky University Press.

Тенденції економічного розвитку Демократичної Кампучії (1975–1979 рр.)

Денис Євгенович Купріянов

Регіональний центр професійної освіти будівельних технологій Харківської області
61121, вул. Владислава Зубенка, 39, м. Харків, Україна

Анотація. Актуальність наукової роботи визначається потребою в дослідженні окремих історичних етапів економічного розвитку Камбоджі для формування підґрунтя подальшого вдосконалення економічної системи. Метою роботи було аналітично проаналізувати становлення економіки Демократичної Кампучії та роль дружніх країн в її формуванні. Вивчення обраної тематики проводилось із використанням загальнонаукових методів дослідження, зокрема аналізу, синтезу та порівняння. У статті розглянуто економіку Демократичної Кампучії середини другої половини 70-х років. Визначено, що після здобуття повної незалежності від французьких колонізаторів з подальшою боротьбою за незалежність проти американців й початком ери Червоних кхмерів, виникла потреба у відновленні та оздоровленні економіки держави. У процесі дослідження було описано загальний стан ключових галузей промисловості Демократичної Кампучії, зокрема легкої, харчової, сільськогосподарської машинобудівної, важкої, електронної, будівельної, лісової, хімічної, гумової та військової; принципи ведення торгових відносин з країнами соціалістичного та капіталістичного табору, а також особливості розвитку сільського господарства в умовах правління Червоних кхмерів. Результати аналізу показали, що в цей період республіці вдалось відновити сільське господарство й забезпечити його подальший розвиток, а оновлена промисловість вже повноцінно функціонувала за підтримки країн-друзів. Практична цінність наукової роботи визначена цілісною характеристикою економічної системи Демократичної Кампучії, що сприяє функціональному вирішенню економічних проблем сучасної Камбоджі

Ключові слова: сільське господарство, економічні відносини, промисловість, статистика урожайності, соціалістична та капіталістична ідеології

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The Influence of Leadership Style, Work Motivation and Work Environment on Employees' Job Satisfaction

Suprayitno*, Rahayu Triastity, Lina Zakiya

Slamet Riyadi University
57136, 18 Jl. Sumpah Pemuda, Surakarta, Jawa Tengah, Indonesia

Abstract. Human resources play an important and strategic role in determining company policy. Superior human resources are required to carry out their duties in a quality and good manner. Human resources need to be well-managed and emphasised so that employees can feel satisfaction at work. Job satisfaction is vital upon measuring the work performance. If the employee is satisfied with the job, the work performance will be better. Job satisfaction also becomes an indicator for the company survival. The purpose of this study is to analyse the significance of the influence of leadership style, work motivation, and work environment on employees' job satisfaction. This type of study is survey research on the employees at PT Tri Usaha Sejahtera Pratama company. The study population included 800 people. The research sample was 80 employees, which comprised 32 male and 48 female respondents. The sample is taken using the proportional cluster random sampling technique with criteria based on their education background and working period. The data collection technique used a questionnaire. The data analysis technique used multiple linear regression analysis, T-test, model accuracy test and coefficient of determination. The results showed that all variables, including leadership style, work motivation, and work environment have positive influence towards employees' job satisfaction. The leadership style, work motivation, and work environment have an essential effect on job satisfaction of the employees at PT Tri Usaha Sejahtera Pratama company. Therefore, it can be concluded that job satisfaction at PT Tri Usaha Sejahtera Pratama company can be measured using three variables: leadership style, work motivation, and work environment

Keywords: human resource management, company policy, indicators of job satisfaction, the work performance of the employees

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*Corresponding author

Introduction

Human resources play a vital and strategic role in determining the company policies. Superior human resources are required to perform their duties with a good quality. Human resources need to be managed and emphasised properly by the company to achieve the expected performance of company. "Employees who have job satisfaction will do a better work" [1], meaning that employees who feel satisfied at work will try their best to complete their work; therefore, employee satisfaction is a crucial factor that the company needs to pay attention to.

Job satisfaction is important for a company, because generally job satisfaction relates to how company is able to make its employees survive in company. Job satisfaction requires support from capable and wise leaders in managerial decision-making. The leadership style will encourage employee performance improvement because the right leadership style will improve employee morale, creativity, and work attitude. "Leaders should have skills to convey the ideas to push their subordinates, provide or receive information for the progress of organisation and common interests. Therefore, the employees can do their jobs properly" [2]. In his research, H. Darmawan [3] shows that leadership style has a substantial effect on job satisfaction. This result contradicts the study by Walisah and Oktavianti [4], in that the leadership style has no effect on employees' job satisfaction.

The other factor that can affect employees' job satisfaction is work motivation. Work motivation is essential for companies because with proper incentives, employees are willing to work hard and express enthusiasm to achieve high performance. Therefore, to make employees have a high level of job satisfaction, the company should ensure work motivation. "Motivation is the provision of a driving force that creates enthusiasm for individuals to effectively work together, and make every effort to achieve job satisfaction" [1]. Employees with high work motivation get compensated relatively to their efforts, which creates a sense of satisfaction in employees. Company survival is extremely dependent on high level of job satisfaction among its employees. In their study, Wirawan [5] stated that work motivation has a substantial effect on job satisfaction. This result contradicts the conclusion of N.E. Fengky, B. Tewal and B. Lumanauw [6] who state in their study that work motivation has no significant effect on job satisfaction.

The optimal results can be achieved if employees perform their activities well, which is achieved through an appropriate working environment. "The creation of work environment supporting work performance leads to a satisfaction of an employee in organisation; therefore, employees will remain in the company and become its important asset" [7]. Employee satisfaction increases when employees feel satisfied with their work environment. A comfortable work environment can mitigate a felling of boredom at work. This comfort will certainly increase work motivation and generate employees' job satisfaction. A.S. Widya, M. Indrawati and Hidayat [8] stated in their research that work environment has considerable effect on job satisfaction. This conclusion is contrary to the one made by Pareraway, A. Steelyasinta, C. Kojo and F. Roring [9], who stated that the work environment has no significant effect on job satisfaction.

PT Tri Usaha Sejahtera Pratama company is a company producing plastic sacks and plastic cement bags with local and export marketing targets, committed to deliver high-quality products with reliable processes, high levels of performance, and strong organisation. Based on the observations at PT Tri Usaha Sejahtera Pratama company, there are several cases when an employee comes and leaves. This indicates dissatisfaction among the employees, which points to an issue with achieving job satisfaction. The issues with job satisfaction occur due to the small bonuses received by employees that are not commensurate with the received salary, and workload of employees is consider to be heavy. Another factor is the lack of supervision of employees by their superiors, which directly affects communication between leaders and subordinates, making it suboptimal and decreasing the employees' job satisfaction.

Therefore, *the purpose of the present study* is to analyse the influence of leadership style, work motivation, and work environment on employees' job satisfaction, using the example of PT Tri Usaha Sejahtera Pratama company. The study also aims to identify whether these factors affect the employees' job satisfaction or not.

Theoretical Framework

Human resource management

Human resource management can be defined as the science and art on regulating the relations and role of the workforce to become effective and efficient in the use of human capabilities to achieve the goals in every company [1, p. 4]. Human resource management can also be defined as the utilisation of human resources within the organisation, which is realised through the functions of human resource planning, career planning and development, compensation and welfare, occupational safety and health, and industrial relations [10]. Based on the explanation above, human resource management is management that specifically relating to the field of employment, pursuing the goal of improving the effectiveness and efficiency of personnel to achieve the intended purpose of a company.

Leadership style

Leadership style is a behavioural norm used by a person to influence the behaviour of others in an expected way [11]. "Leadership style is a set of characteristics the leaders use to influence their subordinates to achieve organisational goals" [12]. "Leadership style is a pattern of behaviour and strategies frequently exercised by the leader" [5]. Based on this interpretation, leadership style is one of the ways used by a leader to influence, direct, and control the behaviour of others to achieve a particular result.

Work motivation

Work motivation is a feeling that encourages a person to work. In the other words, it can be regarded as work encouragement [2]. Work motivation is the provision of driving force that creates work enthusiasm in a person, encouraging them to effectively cooperate with others and make every effort to achieve job satisfaction [1]. Based on several definitions provided above, it can be concluded that work motivation is an impulse which can stimulate a person to engage in certain activities in pursuit of their goals. Work motivation is vital for employee productivity.

Work environment

The work environment is a place where every employee in the company can engage in their daily activities. A safe and conducive work environment can facilitate convenience at work. Work environment is everything that surrounds workers and can affect their performance, including lighting, noise reduction, hygiene standards, and security arrangements [13]. Work environment includes materials, surroundings where a person works, their work methods, and work arrangements both as individuals or as a group [14]. Work environment is a place to work that affects employees' performance and their quality of life. A good work environment can encourage employees to be happy at work and increase a sense of responsibility to do a better job to increase employee productivity [15]. Based on this explanation, it can be concluded that work environment is a place around employees that can affect employees in performing their work.

Methodology

The present study investigates a survey of employees at PT Tri Usaha Sejahtera Pratama company. The total study population is 800 people. The research sample included 80 employees using *proportional cluster random sampling technique*. The indicator of leadership style variable in this study refers to V. Rivai's statement [12], including *idealised influence, inspirational motivation, intellectual simulation, and individualised consideration.* According to Maslow's hierarchy of needs in the context of M. Hasibuan's study [1] motivation indicators include physical needs, safety and security needs, social needs, self-esteem needs, self-fulfilment needs. The indicators of work environment in this study refer to the opinion of Sedarmayanti [14], who divided them into physical and non-physical work environment. S. Martoyo [2] distinguished the following indicators of job satisfaction: Pay, Job, Career Opportunities, Supervisor, Co-Workers.

The respondents in this survey were 32 men (40.0%) and 48 women (60.0%). 46 respondents (57.5%) were people with high school education, 24 respondents (30.0%) – with Diploma education, 10 respondents (12.5%) – with undergraduate education, and none of the respondents had education level S2 (0.0%). 30 respondents (37.5%) were people with a working period of 1-3 years and 50 respondents (62.5%) – with a working period of 4-5 years.

The test results include Leadership Style variable (X1), covered in 8 questions, Work Motivation (X2), covered in 10 questions, Work Environment variable (X3), covered in 10 questions, and Job Satisfaction variable (Y), covered in 10 questions. The test results indicated that every questionnaire obtained value $p<0.05$. Therefore, the test is declared as valid. Based on the results of reliability test showing Cronbach's reliability value for all variables (leadership style, work motivation, work environment, and job satisfaction) > critical value (0.60), in this study every variable was determined to be reliable.

Results and Discussion

Classic assumption test

To establish the presence of multicollinearity, the study used SPSS for *Windows Release 22* data processing software and Variance Inflation Factor (VIF). If the tolerance value of independent variable exceeds 0.10 and the VIF value is under 10, then multicollinearity is absent.

Multiple linear regression

Multiple linear regression test result is presented in Table 2 below.

Table 1. Classic assumption test results

Classic Assumption Test	Test Result	Conclusion
Multicollinearity test	*Tolerance* (0.685)>0.10 VIF (1.460)<10 *Tolerance* (0.600)>0.10 VIF (1.666)<10 *Tolerance* (0.612)>0.10 VIF (1.634)<10	No multicollinearity
Autocorrelation test	p(0.368)>0.05	No autocorrelation
Heteroscedasticity test	p(0.946)>0.05 p(0.466)>0.05 p(0.853)>0.05	No heteroscedasticity
Normality test	p(0.200)>0.05	Residuals are normally distributed

Table 2. Multiple linear regression test results

Model	Unstandardised coefficients β	t	Sig.
(Constant)	0.449	0.099	0.921
Leadership style	0.507	3.683	0.000
Work motivation	0.320	2.523	0.014
Working environment	0.286	2.951	0.004

$Y=0.449+0.507X_1+0.320X_2+0.286X_3$.

The constant (0.449) is positive, meaning that if the independent variables (leadership style, work motivation, and working environment) are equal to zero (0) then employees' job satisfaction is positive.

β_1 (0.507) is positive, meaning that if the leadership style variable improves, the employees' job satisfaction also increases, with the assumption that the work motivation and work environment variables are considered as constant.

β_2 (0.320) is positive, meaning that if the work motivation variable improves, the employees' job satisfaction also increases, with the assumption that the leadership style and work environment variables are considered as constant.

β_3 (0.286) is positive, meaning that if the work environment variable improves, the employees' job satisfaction increases, with the assumption that the leadership style and work motivation variables are considered as constant.

T-test (significance test) and F-test (model accuracy test)

The results of the t-test leadership style variable obtained value p(0.000)<0.05, meaning that leadership style has a considerable effect on job satisfaction at PT Tri Usaha Sejahtera Pratama company. Therefore, the H1 hypothesis is proven to be true. The results of t-test on work motivation variable obtained value p(0.014)<0.05, meaning that work motivation has a significant effect on job satisfaction at PT Tri Usaha Sejahtera Pratama company; therefore, the H2 hypothesis is proven to be true. The results of the t-test on work environment variable obtained value p(0.004)<0.05, meaning that the work environment has a significant effect on job satisfaction of employees at PT Tri Usaha Sejahtera Pratama company; therefore, the H3 hypothesis is proven to be true.

Whereas the results of model accuracy test obtained value p(0.000)<0.05, then the H0 hypothesis is rejected, meaning that the model is appropriate to predict the influence of leadership style, work motivation, and work environment on employees' job satisfaction at PT Tri Usaha Sejahtera Pratama company.

The coefficient determination analysis (R^2)

The results of multiple linear regression testing in this study obtained a coefficient determination (*Adjusted* R^2) of 0.524, meaning that the influence of leadership style, work motivation, and work environment variables on job satisfaction of the employees at PT Tri Usaha Sejahtera Pratama company is 52.4%, while the remaining 47.6% are influenced by other variables that were not examined in this study, such as compensation, work discipline, organisational culture, and organisational commitment.

The results indicated that leadership style had a considerable effect on employees' job satisfaction at PT Tri Usaha Sejahtera Pratama company; therefore, the H1 hypothesis was proven to be true. The value of coefficient regression is positive. Thus, the better the leadership style, the higher the level of employees' job satisfaction. These results support the conclusions drawn by H. Saleem [16], H. Darmawan [3], S. Pawirosumarto, P.K. Sarjana and R. Gunawan [17], Bahriansyah et al. [18], who stated in their studies that leadership style has a considerable effect on employees' job satisfaction.

The study results demonstrate that work motivation has a significant effect on an employees' job satisfaction. Therefore, the H2 hypothesis is proven to be true. The value of the regression coefficient is positive, thus, the better the employee's work motivation, the higher the level of employees' job satisfaction. These results support the conclusions made by I.D.G.K. Wirawan and I.N. Sudharma [19], I.K.R. Sudiarditha, A.A. Waspodo and N.A. Triani [20], R.Y. Wuwungan, R.N. Taroreh and Y. Uhing [21], whose studies indicate that work motivation has a significant effect on employees' job satisfaction.

The study results also found that work environment has a significant effect on employees' job satisfaction. Therefore, the H3 hypothesis is proven to be true. The value of regression coefficient is positive. Thus, the better the work environment, the higher the level of employees' job satisfaction. These results support the conclusions drawn by I.K.R. Sudiarditha, A.A. Waspodo and N.A. Triani [20], R.Y. Wuwungan, R.N. Taroreh and Y. Uhing [21], S. Pawirosumarto, P.K. Sarjana and R. Gunawan [17], A.S. Widya, M. Indrawati and Hidayat [8] in their studies, indicating that the work environment has a significant effect on employees' job satisfaction.

Conclusions

Based on the study results above, it can be concluded that employees' job satisfaction is affected by certain factors, including leadership style, work motivation, and work environment. This can be seen through the significance effect of leadership style towards job satisfaction of employees at PT Tri Usaha Sejahtera Pratama company. A good leadership style helps encourage and motivate the employees and incentivise them to work harder. Work motivation also has a considerable effect on employees' job satisfaction at Tri Usaha

Pratama company. High motivation on the part of the employees makes their work efficient and highly productive. Last but not least, work environment is also important in terms of employees' job satisfaction at Tri Usaha Sejahtera Pratama company. If the work environment has a bad atmosphere, the work performance of the employees will decrease, but if the work environment has a good atmosphere, then, vice versa, the work performance will significantly improve.

References

[1] Hasibuan, M. (2016). *Manajemen sumber daya manusia*. Jakarta: Bumi Aksara.
[2] Martoyo, S. (2014). *Manajemen sumber daya manusia.* Yogyakarta: BPFE.
[3] Darmawan, H. (2018). Pengaruh gaya kepemimpinan dan motivasi kerja terhadap kepuasan kerja karyawan (studi kasus pada PT Inovasi Teknologi). *Jurnal Ekonomi*, 21(1), 76-90. doi: 10.24912/je.v21i1.383.
[4] Walisah, & Oktavianti. (2016). Pengaruh gaya kepemimpinan, motivasi dan budaya organisasi terhadap kepuasan kerja karyawan di PT. Cibavision Batam. *Jurnal BENING*, 3(1), 28-39. doi: 10.33373/bening.v3i1.931.
[5] Wirawan. (2013). *Kepemimpinan: Teori, psikologi, perilaku organisasi, aplikasi dan penelitian*. Jakarta: Raja Grafindo Persada.
[6] Fengky, N.E., Tewal, B., & Lumanauw, B. (2017). Pengaruh motivasi kerja, disiplin, dan insentif terhadap kepuasan kerja karyawan. *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis Dan Akuntansi*, 5(1), 1-10. doi: 10.35794/emba.5.1.2017.15311
[7] Suwanto, & Priansa, D.J. (2016). Manajemen SDM dalam organisasi publik dan bisnis. In *Perpustakaan komisi aparatus sipil negara*. Bandung: Alfabeta.
[8] Widya, A.S., Indrawati, M., & Hidayat. (2018). Pengaruh lingkungan kerja, insentif finansial dan insentif non finansial terhadap kepuasan kerja pada Dinas peternakan dan perikanan kabupaten Bojonegoro. *Jurnal Manajemen Dan Administrasi Publik*, 1(4), 1-11. doi: 10.37507/map.v1i04.149.
[9] Pareraway, Steelyasinta, A., Kojo, C., & Roring, F. (2018). Pengaruh lingkungan kerja, pelatihan, dan pemberdayaan SDM terhadap kepuasan kerja karyawan PT. PLN (Persero) wilayah Suluttenggo. *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis Dan Akuntansi*, 6(3), 1828-1837. doi: 10.35794/emba.v6i3.20665.
[10] Marwansyah. (2016). *Manajemen sumber daya manusia*. Bandung: Alfabeta.
[11] Thoha, M. (2013). *Kepemimpinan dalam manajemen.* Jakarta: Raja Grafindo Persada.
[12] Rivai, V. (2014). *Manajemen sumber daya manusia untuk perusahaan dari teori ke praktik.* Jakarta: Raja Grafindo Persada.
[13] Reksohadiprodjo, S., & Gitosudarmo, I. (2014). *Manajemen produksi.* Yogyakarta: BPFE.
[14] Sedarmayanti. (2014). *Sumber daya manusia dan produktivitas kerja.* Jakarta: Mandar Maju.
[15] Moekijat. (2017). *Manajemen tenaga kerja dan hubungan kerja*. Bandung: Pioner Jaya.
[16] Saleem, H. (2015). The impact of leadership styles on job satisfaction and mediating role of perceived organisational politics. *Procedia – Social and Behavioural Sciences*, 172(6), 563-569. doi: 10.1016/j.sbspro.2015.01.403.
[17] Pawirosumarto, S., Sarjana, P.K., & Gunawan, R. (2017). The effect of work environment, leadership style, and organisational culture towards job satisfaction and its implication towards employee performance in Parador Hotels and Resorts, Indonesia. *International Journal of Law and Management,* 59(6), 1337-1358. doi: 10.1108/IJLMA-10-2016-0085.
[18] Bahriansyah, Nurnajamuddin, M., Budiandriani, & Dani, I. (2018). The influence of leadership, motivation and competenceon job satisfaction and performance on Madrasah Tsanawiyah Negeri Teachers in Makassar. *Journal of Research in Business and Management*, 6(3), 31-35.
[19] Wirawan, I.D.G.K., & Sudharma, I.N. (2015). Pengaruh komunikasi, motivasi dan lingkungan, kerja fisik terhadap kepuasan kerja pegawai sekretariat daerah kota Denpasar. *E-Jurnal Manajemen UNUD*, 4(10), 3037-3062.
[20] Sudiarditha, I.K.R., Waspodo, A.A., & Triani, N.A. (2017). Pengaruh lingkungan kerja dan motivasi kerja terhadap kepuasan kerja karyawan pada Direktorat Umum Lembaga Pelayanan Publik Televisi Republik Indonesia. *Jurnal Manajemen*, 20(2), 278-292. doi: 10.24912/jm.v20i2.48.
[21] Wuwungan, R.Y., Taroreh, R.N., & Uhing, Y. (2017). Pengaruh lingkungan kerja Dan motivasi kerja terhadap kepuasan kerja karyawan Cinemaxx Lippo Plaza Manado. *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis Dan Akuntansi,* 5(2), 298-307. doi: 10.35794/emba.5.2.2017.15617.

Вплив стилю керівництва, мотивації роботи та робочого середовища на рівень задоволеності роботою працівників

Супрайтно, Рахаю Тріастіти, Ліна Закія

Університет Сламета Ріяді
57136, Жл. Сумпах Пемуда, 18, м. Суракарта, Центральна Ява, Індонезія

Анотація. Людські ресурси відіграють важливу та стратегічну роль у визначенні політики компанії. Щоб якісно та професійно були виконані робочі обов'язки, потрібен кращий кількісний і якісний склад працівників кадрової служби організації. Людськими ресурсами потрібно добре управляти та наголошувати, щоб співробітники відчували задоволення від роботи. Задоволення роботою є життєво важливим для вимірювання результатів роботи. Якщо працівник задоволений роботою – результативність роботи буде кращою. Задоволеність роботою також стає показником виживання компанії. Мета цього дослідження – проаналізувати важливість впливу стилю керівництва, мотивації роботи та робочого середовища на задоволеність працівниками роботою. Цей вид дослідження є опитувальним дослідженням серед співробітників компанії PT Tri Usaha Sejahtera Pratama. Кількість працівників становить 800 осіб. Вибірка дослідження складала 80 працівників, до складу яких входили 32 чоловіки та 48 жінок. Вибірка проводилась з використанням методу пропорційної кластерної випадкової вибірки з критеріями, що ґрунтуються на їх освіті та періоді роботи. Методика збору даних використовувала опитувальник. Методика аналізу даних використовувала множинний лінійний регресійний аналіз, Т-тест, перевірку точності моделі та коефіцієнт детермінації. Результати показали, що всі змінні, включаючи стиль керівництва, мотивацію роботи та робоче середовище, мають позитивний вплив на задоволеність працівниками роботою. Стиль керівництва, мотивація роботи та робоче середовище істотно впливають на задоволеність роботою працівників компанії PT Tri Usaha Sejahtera Pratama. Отже, можна зробити висновок, що рівень задоволеності роботою в компанії PT Tri Usaha Sejahtera Pratama можна оцінити за допомогою трьох змінних: стиль керівництва, мотивація роботи та робоче середовище

Ключові слова: управління людськими ресурсами, політика компанії, показники задоволеності роботою, продуктивність праці співробітників

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Content and Functional Purpose of the Duty in Modern Conditions

Halyna B. Pohrishchuk, Ruslan Ye. Voloshchuk*

Vinnytsia Education and Research Institute of Economics of West Ukrainian National University
21017, 37 Honta Str., Vinnytsia, Ukraine

Abstract. The duty as a source of budget formation and a regulator of foreign trade activity contributes to improving the macroeconomic situation and the state's entry into the international trade community. Therefore, the study of the essence and functional purpose of the duty becomes particularly relevant since it makes it possible to increase the efficiency of its functioning in modern conditions. The purpose of the study is to consider the tax and foreign trade nature of the duty, establish its essence and specific characteristics, identify the main functions and substantiate changes in the roles of duty functions in modern conditions. The specifics of the scientific tasks that make up the subject of research required the use of a set of special methods (general scientific and private scientific, theoretical and empirical), the use of which helped identifying the content of the duty, consider its functional purpose and establish the reasons for the weakening of the role of duty functions in different countries of the world. In the course of the study, two approaches to the interpretation of the essence of duty were established: as a tax and as a specific foreign trade payment. The author's definition of the duty was proposed and its main essential characteristics were clarified. It has been established that there are no unified approaches to the definition of duty functions in the scientific literature, and only two main ones (fiscal and regulatory) are substantiated. It was also covered that due to the entry of most countries into the World Trade Organisation and the establishment of restrictions on the growth of customs rates, the regulatory function of the duty is weakening. It was established that in developed countries, due to international restrictions on the application of custom rates, the role of the fiscal function of duty has decreased. It was determined that in less developed countries, in conditions of limited budget revenue sources, the fiscal function of duty continues to be the main one. The practical value of the study lies in the fact that clarifying the content and functions of duty in modern conditions makes it possible to increase the effectiveness of customs tariff regulation to protect national interests during the intensification of international integration processes

Keywords: duty, foreign trade, protectionism, free trade, treasury, regulation

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*Corresponding author

Introduction

One of the key roles in state regulation of foreign economic activity is played by the duty. According to Ukrainian and foreign practice, the duty is an important factor in the economic development of the state, a necessary condition for the functioning of the national economy, and a source of budget revenues. Trough the duty, the state can regulate the import or export of goods, put goods of Ukrainian and foreign producers on an equal economic footing, conduct economic, fiscal, monetary, scientific, technical, and environmental policies, and mutually coordinate the interests of foreign economic entities and the state. In modern conditions, the issues of the economic nature of the duty and the functions performed by it are being updated, which, in turn, determine the effectiveness of its functioning.

The issue of the functioning of duty has been studied by many Ukrainian and foreign scientists. In particular, the etymology of the concept of "duty" was studied by a collective of authors edited by O. Melnichuk [1]. The legal nature and characteristics of the duty were considered by the authors of the Customs Code of Ukraine [2], the Tax Code of Ukraine [3], The Budget Code of Ukraine [4], the Law of Ukraine "On the Custom Tariff of Ukraine", certain types of duties were determined by the authors of the Law of Ukraine "On the Application of Special Measures Concerning Imports into Ukraine" [5], the Law of Ukraine "On Protection of National Producers from Dumped Imports" [6], the Law of Ukraine "On Protection of National Producers from Subsidised Imports" [7], and the General Agreement on Tariffs and Trade of 1994 [8]. The theory of functioning and practice of duty collection was described by the authors of manuals and textbooks on customs law and customs affairs. Thus, O. Grebelnik [9] and L. Tararyshkina [10] focused on the mechanism of applying the customs tariff, the criteria for classifying duties, and the specifics of levying import duties as a tax on foreign trade. L. Sidelnikova and N. Kostina [11] studied the economic content of duty, its advantages and disadvantages, and elements of customs taxation. M. Kucheryavenko [12], O. Bakaeva, G. Matvienko [13] considered the economic and legal nature of the duty and its essential characteristics as a tax and as an instrument of the state's foreign trade policy. N. Zlepko chose duty as the subject of thesis research [14] and studied the theoretical and financial and political foundations of the doctrine of duty, evaluated the effectiveness of the functioning of customs and tariff mechanism in Ukraine and substantiated the improvement of customs and tariff regulation in the context of nationally favourable integration into the world economic space.

Some scientists focused their attention on the functional purpose of the duty, in particular O. Jabiev [15], V. Storozhchuk [16], O. Sukharev [17], M. Razgildieva [18], and A. Chernysh [19]. The transformation of duty functions in modern conditions in the context of strengthening international integration ties and weakening state regulation in the foreign economic sphere was described by G. Simovich [20], J. Brown, P. Johnson, and D. Phillips [21], and S. Partasarati [22]. Despite a large number of studies, many questions about theoretical and practical basis for the functioning of the duty are debatable, in particular, scientists did not manage to form a comprehensive approach to substantiating the content of the duty, to highlight its specific characteristics and functions, which determined the relevance and purpose of the study.

The purpose of the study consists in considering various approaches to determining the content and functions of the duty, summarising them and substantiating the author's position on the essence of the duty and its functional purpose. To achieve this purpose, the following tasks must be completed: to study the tax and foreign trade nature of the duty and to specify its content based on this; to consider the views of scientists on the functions of the duty and identify the main ones; to analyse the receipt of duties to the budgets of different countries and explain the transformation of its functions in modern conditions.

Methodology

The research materials are scientific literature and works of modern scientists containing materials that characterise the theoretical and practical foundations of the functioning of the duty and serve as a way to create initial ideas and concepts about the content and functions of the duty in modern conditions. The methodological basis of the research is determined by the use of a number of general scientific and private scientific, theoretical and empirical methods of cognition based on the categories and principles of dialectics. The dialectical method of cognition allowed considering the essence and functions of duty in its development.

The use of theoretical research methods made it possible to delve into the very nature of the duty, substantiate its internal content, generalise the main functions, and highlight the specifics of functioning. Among the main theoretical methods of cognition that were used in the study, the following can be distinguished: analysis – to identify the tax and foreign trade nature of duty, to distinguish its functions; synthesis – to combine the tax and foreign trade nature of duty and substantiate its specific characteristics; induction – to draw conclusions about the essence of duty, taking into account its partial manifestations as a tax and foreign trade payment; deduction – to identify specific features of duty based on its content; generalisation – to identify and fix the main characteristics and functions of duty; abstraction – to highlight and transform individual parties, characteristics and functions of duty into an independent object of consideration; concretisation – to clarify the main functions of duty; formalisation – to find an integral, interrelated, multidimensional, and unified definition of the concept of "duty"; comparison (comparativism) – to determine the general and distinctive features of duty as a tax payment and duty as a specific foreign trade payment, as well as to compare the functions of duty in different countries of the world.

The use of empirical research methods allowed conducting a comparative analysis of the functions of duties

in different countries of the world, as well as summarising and describing the results. The main empirical methods of cognition that have found their application in the study include: monitoring – to monitor the receipt of duties in the budgets of foreign countries and Ukraine, the results of which were used to explain the reasons for the transformation of duty functions; statistical method – to selectively study statistical patterns regarding customs revenues to budgets and their extension to substantiate the functions of duty; the study and generalisation of experience – to study Ukrainian and foreign experience in the functioning of duty. The methods used in the study did not exclude the possibility, in some cases, of simply stating the facts in order to give the relevant reasoning of the necessary evidentiary force.

The research was conducted as a logical process that covered two main stages – theoretical and empirical. The theoretical stage of the study consisted in collecting, systematising, and summarising facts about the functioning of the duty. At this stage, the content and nature of the duty was considered, its purpose was determined, a critical analysis of the duty functions was carried out, and only two main ones were identified – fiscal and regulatory. The empirical stage of the study provided for an in-depth analysis of the functions of the duty, with insight into its essence and nature, with cognition and formulation of regularities of transformations of the functional purpose of the duty in modern conditions.

Results and Discussion

Theoretical conceptualisation of the duty

Duty as payment for the transportation of goods across the state border has a long history and is used in many languages. According to the etymological dictionary of the Ukrainian language, there are Russian terms related to the Ukrainian term "мито" such as "мыто", "мыт"; in Belarusian – "мыта", "мыт"; in old Russian – "мыто", "мытъ"; in Polish and Slovak – "myto", that is, paid remuneration, bonus; in Bulgarian – "мито", that is, bribe; bribery; in Slovenian – "mito", that is rent; in old Slavic – мито, that is, "salary; profit; money; gift; bribe". All these definitions come from Germanic languages, in particular from the Old German "muta" – customs, tax, fee [1, p. 467].

In modern conditions, definition of the term "duty" is enshrined in Article 271 of the Customs Code of Ukraine, according to which duty is "a national tax established by the Tax Code of Ukraine and the Customs Code of Ukraine, which is calculated and paid in accordance with the Customs Code of Ukraine, Law of Ukraine, and international treaties, the consent to bindingness of which is provided by the Verkhovna Rada of Ukraine" [2]. Legislative establishments consider this definition all-embracing since in other legislative acts related to the collection of duties, in particular the Tax [3] and Budget Codes of Ukraine [4], as well as the law of Ukraine "On the Customs Tariff of Ukraine" [23], such interpretations are not given.

However, in the process of more detailed familiarisation with the current legislation, it becomes obvious that a scientific understanding of the nature and specifics of the functioning of the duty is necessary since the effectiveness of its application may depend on it. At the same time, it is worth noting the lack of consensus among scientists to the understanding of the essence of duty since one part of the researchers focuses on the tax nature of the duty, while the other part of the authors focuses on the foreign trade nature of the duty. Thus, a number of scientists consider duty as a national indirect tax, which was summarised and reflected in Table 1.

Table 1. Approaches to the interpretation of duty as a national indirect tax

Author(s)	Definition of the duty
N.I. Atamanchuk	Duty – "a national, mandatory indirect tax on goods crossing the customs border of the country, which is included in the price of such goods (products)" [24, p. 9]
L.O. Batanova, I.O. Kukharuk	Duty is a national tax "collected by the revenue and duties authorities of Ukraine in cases stipulated by the legislation on state customs affairs when moving goods across the customs border of Ukraine" [25, p. 160-161]
O.P. Hrebelnyk	Duty – "a type of state indirect tax that is collected on the import, export, and transit of goods, commercial and industrial profits, property, valuables, and items that cross the border at points determined by the state under the control of Customs Services" [9, p. 123]
N.P. Zlepko	Duty – "an indirect tax on foreign trade collected on goods that cross the customs border of the country, according to the national customs tariff and/or other legally established customs tariffs" [14, p. 29]
V.M. Kozhevnikova	Duty is an indirect tax that is collected on foreign trade turnover when goods cross the customs border [26, p. 31]
Yu.I. Turyansky	Duty – "indirect tax on foreign trade operations, withheld from goods that cross the customs border at the legally established rates of the single customs tariff" [27, p. 153]

Scientists who interpret the duty as a type of national indirect tax distinguish its tax characteristics, including [11, p. 216; 28, p. 62; 29, p. 99]:

1. Historicity. The duty arose and developed at the same time with other taxes, when in addition to the conventional objects of taxation (property, capital, income, profit, etc.), another object was found – goods moved across the state border.

2. Legality. The duty is introduced by the state, in particular in Ukraine, it is established by the Tax Code of Ukraine [3], is levied based on the Customs Code of Ukraine [2], and is collected to the budget based on the Budget Code of Ukraine [4].

3. Bindingness. Payment of the duty does not contain signs of voluntariness, is mandatory, and is provided by state and government coercion.

4. Non-equivalence. Duty is not a fee for the provision of certain services by the state and is charged without counter-satisfaction with the needs or interests of the payer.

5. General character. Duty is collected to the budget and used to meet state needs, but it is not intended to finance specific tasks.

6. One-sidedness. Duty is set by the state and excludes the possibility of the payer to agree on the amount, grounds, terms, and other aspects of its collection.

A number of scientists note that the duty is a specific foreign trade payment, which have been summarised and reflected in Table 2.

Table 2. Approaches to the interpretation of duty as a specific foreign trade payment

Author(s)	Definition of the duty
M.P. Kucheryavenko	Duty – "a type of customs payment levied on goods that are moved across the customs border of the country (imported, exported, or transited)" [12, p. 331]
Yu.V. Onishchik	Duty – "a mandatory non-tax payment collected by regulatory authorities from individuals and legal entities in connection with the exercise of their right to move goods across the customs border of Ukraine in accordance with the Customs Code of Ukraine, Law of Ukraine, and international treaties, the consent to bindingness of which is provided by the Verkhovna Rada of Ukraine" [30, p. 26]
O.M. Radchenko	Duty – "mandatory payment collected by customs authorities in connection with the movement of goods across the customs border" [31, p. 270]
L.I. Tararishkina	Duty is a mandatory contribution (payment) levied by customs authorities during the import and export of goods and is a compulsory condition for their movement across the customs border [10, p. 59]
N.I. Khimicheva	Duty – "a payment related to the receipt by a particular person of the right to use certain benefits related to the movement of goods across the customs border" [13, p. 189]
A.Ya. Chernysh,	Duty – "indirect tax on foreign trade operations, withheld from goods that cross the customs border at the legally established rates of the single customs tariff" [27, p. 153]
L.O. Zhigun	Duty – "a mandatory contribution (payment) collected by customs authorities when importing goods into the customs territory or exporting goods from this territory and is an integral condition for such import or export" [32, p. 175]

Scientists who define duty as a specific payment associated with foreign trade activity pay attention to its specific features, including [29, p. 100; 33, p. 40; 34, p. 77]:

1. The duty is regulated by customs law, not tax law. Thus, in Ukraine, the collection of import, export, and seasonal duties is regulated by the Customs Code of Ukraine [2], special duty – by the Law of Ukraine "On the Application of Special Measures for Imports to Ukraine" [5], anti-dumping duty – by the Law of Ukraine "On the Protection of National Producers from Dumping Imports" [6], countervailing duty – by the Law of Ukraine "On the Protection of National Producers from Subsidised Imports" [7], additional import duty – by Article XII of the general agreement on tariffs and trade of 1994 (GATT-1994) and agreements on the provisions of GATT-1994 regarding the balance of payments [8].

2. The duty usually performs a regulatory function, not fiscal, which is the main one for taxes. Thus, the Customs Code of Ukraine, in addition to import, export, and seasonal duties, which have a certain fiscal importance, establishes a number of special types of duties (special, anti-dumping, countervailing, and additional import duties), which have a purely regulatory value, related to the protection of the economic interests of the state and Ukrainian producers in the case of import of goods into the customs territory of Ukraine [2].

3. Duty is a one-time payment, unlike taxes, which are characterised by regular payment. The obligation to pay the duty arises only if it is necessary for the subject to enter into customs legal relations. The Customs Code of Ukraine defines the grounds for the obligation "to pay duties in case of import of goods into the customs territory of Ukraine; in

case of illegal movement of goods located on the territory of the free customs zone or in a customs warehouse; in case of export of goods from the customs territory of Ukraine, as well as after the completion of customs clearance of goods and their release, if as a result of checking the customs declaration or based on the results of a documentary check, the customs body independently determines additional tax obligations to the taxpayer" [2].

4. The duty is usually paid by declarants, that is, persons who declare objects of taxation, while taxes are levied on persons who own certain objects of taxation. The Customs Code of Ukraine also contains a list of other persons, except for declarants, who are required to pay duties [2].

5. The duty is characterised by specific mechanisms for implementing compulsory collection that differ from taxes. This is manifested in the fact that the payer to some extent voluntarily enters into customs relations and, thus, assumes the obligation to pay the duty. Accordingly, the risk of financial (punitive) sanctions is reduced since the customs authorities will not take appropriate customs actions in favour of this payer if the latter refuses to assume customs duties.

6. Duties are administered by the customs authorities, and taxes are levied by the tax authorities. Thus, the Customs Code of Ukraine "includes such tasks of customs authorities as ensuring the collection of duties, monitoring the correctness of calculation, timeliness and completeness of its payment, applying measures for its compulsory collection within the limits of powers defined by current legislation, organising the application of guarantees to ensure payment of duties, interaction with banking institutions and independent financial intermediaries that provide such guarantees" [2].

The authors agree with D.V. Chermyaninov who believes that the duty is a unique mandatory foreign trade payment, which is characterised by specific features, such as [35, p. 174]:

– availability of an independent tax object;

– dependence of the size on the cost or quantitative characteristics of the taxable object;

– payment of a duty (or security of payment) is an action necessary to obtain permission from the customs authorities to use goods in accordance with the declared customs regime;

– the amount of duty paid by the declarant during customs clearance of the goods is included in its value for further sale.

Taking into account the tax and foreign trade nature of the duty, the authors propose to consider it as a specific tax on goods moved across the customs border of the state, which is levied to meet the fiscal and economic needs of the state and the entrepreneurial interests of national producers.

Duty functions and their characteristics

An important aspect of the study of the essence of duty is the definition of functions that cover its content and properties from the point of view of its social purpose. It is worth noting that there is no consensus among scientists in highlighting the functions of duty, which is reflected in Table 3. At the same time, the discussions on the number, composition, and interpretation of the latter are held.

Table 3. Approaches to defining duty functions

Author(s) / Function	Fiscal	Stimulating	Protective	Regulatory	Control	Balancing	Political	Integrative
N.I. Atamanchuk [24, p. 10]	+	+	+	+	+	-	+	+
L. Batanova, I. Kukharuk [25, p. 162]	+	+	+	+	-	+	-	-
O.P. Hrebelnyk [9, p. 157]	+	+	+	+	-	-	+	-
I.A. Hutsul [36, p. 110]	+	-	-	+	-	-	-	-
O.P. Dzhabiev [15, p. 51]	+	-	+	+	-	-	-	-
A.A. Dubinina, S.V. Sorokina, O.I. Zelnichenko [37, p. 51]	+	+	+	-	-	-	-	-
N.P. Zlepko [14, p. 32]	+	-	-	+	-	-	-	-
O.P. Kireev [38, p. 204]	+	-	+	-	-	+	-	-
S.V. Lazuk [28, p. 62]	+	+	+	-	-	-	-	-
O.M. Radchenko [31, p. 271]	+	-	-	+	-	-	-	-
L.P. Sidelnykova, N.M. Kostina [11, p. 216]	-	-	-	-	-	-	-	-
V.M. Storozhchuk [16, p. 31]	+	+	+	+	-	-	+	+
A.N. Sukharev [17, p. 2398]	+	-	+	-	-	+	-	-
Yu.V. Tararyshkin [39, p. 22, 25]	+	-	+	+	-	-	-	+
Yu.I. Turyansky [27, p. 154]	+	-	-	+	+	-	-	-
L.I. Tararyshkina [10, p. 49]	+	+	+	+	-	-	-	-
A.Ya. Chernyish, L.A. Zhigun [32, p. 178]	+	-	-	+	+	-	-	-

According to Table 3, it is evident that the researchers distinguish nine different functions of duty. However, among the latter, there are some that the duty cannot fulfil a priori. Thus, N.I. Atamanchuk [24, p. 10], Ya.I. Turyansky [27, p. 154], A.Ya. Chernyish and L.O. Zhigun [32, p. 178] distinguish the control function of duty. According to these scientists, owing to the duty, the state influences the order of movement of goods across the customs border. However, it is worth noting that the duty cannot perform a control function since control actions are carried out by specially authorised institutions of state power – customs authorities. Thus, according to the Customs Code of Ukraine, "customs authorities carry out customs control and perform customs formalities regarding goods, commercial vehicles that move across the customs border of Ukraine" [2]. Moreover, the influence due to duty concerns the regulatory process rather than control.

For their part, N.I. Atamanchuk [24, p. 10], O.P. Hrebelnyk [9, p. 157], and Yu.V. Tararyshkin [39, p. 25] consider the integrative function of duty, the essence of which is to deepen international customs cooperation in connection with the integration of a certain country into the world economic space. However, the duty performs this function only in those countries that are members of specific associations, in particular the European Union or the Eurasian Economic Union. Actually, the integration function makes it possible to unite the customs territories of states within the framework of a union entity, and the duty acts as a financial guarantor of the functioning of the common customs territory. Furthermore, N.I. Atamanchuk [24, p. 10] and V.M. Storozhchuk [16, p. 31] distinguish the political function of duty, which is manifested in the economic influence on other countries through stimulating or, conversely, restrictive actions. In the first case, the authors cite customs benefits, and in the second – various customs barriers. However, in the authors' opinion, the implementation of any economic impact is a manifestation of the regulatory function of the duty, at least even with political overtones, so it is not entirely relevant to single out the political component of regulation separately.

Many scientists distinguish the protective and balancing functions of the duty. However, the authors of this study agree with O.M. Sukharev, that the protective and balancing functions solve the problems of regulating the national economy, so, in general (collectively) they can be designated as subfunctions of the regulatory function [17]. The protectionist (protective) function is aimed at protecting national producers from unwanted competition from foreign goods and, at the same time, supporting national production, employment and well-being of the population. The balancing function creates obstacles to the excessive export of national goods abroad and, at the same time, contributes to an increase in the consumption of such goods within the country [39, p. 2399].

As can be seen, in the process of determining the functions of the duty, it is necessary to take into account its dual nature. Thus, the tax nature of the duty determines the performance of its fiscal function, that is, filling the state budget. Ensuring the fiscal interests of the state occurs owing to a variety of techniques that are used as part of the constant struggle between protectionism and free trading. The first approach is to create the most favourable conditions for the development of national production and the national market, which is achieved by setting high duty rates on imported goods. At the same time, the second approach involves the introduction of low duty rates and is aimed at encouraging the import of foreign goods into the national market in every possible way. According to D.V. Chermyaninov, in addition to the fact that each of the approaches either weakens or strengthens international cooperation, it can influence the filling of the budget in his own way, namely [35, p. 175]:

1. Fiscal consequences of the policy of protectionism: state budget revenues from duties are reduced (due to a decrease in the volume of imports of goods); state budget revenues from taxes that tax the profits of participants in foreign trade relations are also reduced (due to an increase in duty rates, profit from foreign trade decreases); however, state budget revenues from taxes that tax the profits of national producers are growing (as a result of the lack of competition, the profits of national producers are growing).

2. Fiscal consequences of the free-trade policy: state budget revenues from duties are growing (due to an increase in the volume of imports of goods); state budget revenues from taxes that tax the profits of participants in foreign trade relations are also growing (due to a reduction in duty rates, profit from foreign trade is growing); however, state budget revenues from taxes that tax the profits of national producers are decreasing (as a result of increased competition, there is a reduction in the profits of national producers).

At first glance, it seems that the more revenue the budget receives from the duty, the better. However, the high share of customs revenues weakens budget sustainability. According to N. Otgonsaykhan, if export duties predominate in budget revenues, this indicates that the budget depends on the level of prices for export goods; if import duties predominate, then reducing their rates in the context of globalisation and integration leads to a decrease in budget revenues and can cause a budget deficit. In addition, an objective consequence of applying high duty rates in the fiscal interests of the state is the evasion of participants in foreign economic activity from paying it [40, p. 50].

It is worth noting that the foreign economic nature of the duty determines the performance of its regulatory function, that is, the impact on foreign trade operations towards either protectionism or free trading. The regulatory function makes it possible to coordinate the choice of forms and methods for developing and improving export-import operations, as well as to influence commodity flows within and outside the state. Thus, the regulatory function, according to the authors of the paper, finds its expression in several subfunctions:

– incentive – promotion of export-import operations with specific goods, with certain product groups, agreements with individual countries and even with interstate associations, which contributes to the creation of export-oriented and import-substituting production;

– stabilisation – creating equal conditions of competition

for foreign and national goods without establishing advantages for one or the other;

– balancing – support in the national market of the necessary ratio of foreign goods sales profitability and production of national goods, and efficiency of their consumption, as well as the profitability of supply of the same goods for export and national market;

– protective – ensuring the security of certain sectors of the national economy from the competition of foreign goods by creating a cost barrier and creating favourable conditions for national producers to make a profit on the national market as one of the conditions for successful entry into the foreign market.

Taking into account the regulatory function of the duty, its rates should be set at such a level as to promote the formation of prices that would encourage national producers to manufacture goods with a high share of added value, improve product quality, reduce costs, and increase the technical level of production.

Scientists, in particular M.B. Razgildiev, raise the question of the priority and secondary importance of the fiscal and regulatory function of duty [18, p. 11]. V.E. Novikov claims that the fiscal function of the duty when importing goods, analogues of which are produced in this country, and when exporting goods that are simultaneously supplied to the national market, is subject to its regulatory function. When importing goods whose analogues are not produced in the country, the fiscal function, for the most part, becomes independent. Duties on such goods are established taking into account the possibilities of their use to increase state budget revenues [19, p. 306]. According to the authors of the study, the effect of the regulatory function is manifested precisely in the process of collecting duties, that is, the implementation of its fiscal function. A different conclusion is possible only if this refers to exemption from paying the duty in cases of certain categories of payers. In general, the authors agree with the statement that the regulatory function of the duty is manifested through the fiscal function since by collecting the duty, one can influence economic processes in the right area for the state.

Transformation of duty functions in modern conditions

Since the beginning of its existence, the duty has mainly served a fiscal function for several centuries. However, changes in political and economic conditions affected the intensity of state regulation in the foreign economic sphere, which inevitably affected the level of customs revenues in the budget. Thus, before the end of World War II, most states pursued a policy of protectionism, in which the average level of import duties ranged from 20 to 30%. However, as noted by V.D. Mylovydov and N.V.K. Asker-Zade, with the General Agreement on Tariffs and Trade (GATT) signed in 1947 [26], which since 1995 was renamed the World Trade Organisation (WTO), the level of protectionism in international trade began to decrease [41, p. 39].

During the negotiations of the Uruguay GATT round (1986-1994), its participants agreed on another eighth reduction by a third in all participating states of duty rates, as well as their "binding", that is, making commitments not to raise them unilaterally in the future. Developed countries have committed to "bind" 97% of the total number of duties while developing countries – 73% (the levels of "binding" in most states are noticeably higher than the actual rates of duty under the Most-Favoured-Nation treatment) [42, p. 18-19]. Eventually, a gradual transition from protectionism to free-trading can be stated. This situation leads to weakening of the regulatory function of the duty since its rates are regulated at the international level and tend to gradually decrease. Despite the reduction in duty rates, the growth in international trade volumes had a positive impact on the receipt of duties to the budgets of many countries around the world, which is reflected in Table 4.

Table 4. Receipt of duties to the budgets of different countries, billion dollars. USA

Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Australia	5.4	7.3	8.5	9.0	9.8	10.6	10.6	12.0	11.9	12.1
Argentina	2,921.0	3,554.1	656.5	4,300.8	3,699.7	3,831.6	3,814.0	4,266.3	3,812.0	3,379.5
Brazil	11,977	15,955	15,864	17,074	15,560	11,670	8,972	10,116	11,105	10,857
United Kingdom	4.7	4.9	4.8	4.8	5.1	4.9	4.7	4.6	4.6	4.5
Indonesia	2,202.4	2,879.6	3,031.3	3,036.4	2,724.6	2,330.9	2,440.5	2,620.3	2,748.7	2,607.3
Spain	2.1	2.3	1.9	1.9	2.2	2.1	2.2	2.3	2.4	2.3
Italy	3.0	3.2	2.7	2.5	2.7	2.5	2.5	2.6	2.7	2.6
Canada	3.3	3.9	4.0	4.1	4.1	4.1	4.1	4.3	5.1	4.1
Kenya	728.3	785.9	886.4	969.7	1,307.3	1,298.1	1,253.6	1,282.9	1,389.6	1,593.5
China	29,952	39,606	44,103	42,458	46,284	41,122	39,187	44,355	43,044	41,481
Netherlands	2.3	2.6	2.3	2.3	2.7	2.5	2.6	2.7	3.0	3.0
Germany	5.6	6.3	5.7	5.6	6.1	5.8	5.6	5.7	5.9	5.7
South Africa	3,441.1	4,264.4	4,564.0	4,434.5	3,859.8	3,447.6	3,224.2	3,556.7	4,073.9	4,027.6
Poland	0.5	0.6	0.6	0.6	0.7	0.8	0.8	0.9	1.1	1.2
USA	28.6	31.9	33.5	35.5	37.4	38.1	37.5	38.5	53.3	78.2

Table 4, Continued

Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ukraine	1.1	1.5	1.7	1.7	1.1	1.8	0.8	0.9	1.0	1.2
Philippines	5,746.9	6,120.7	6,864.2	7,183.8	8,318.0	8,077.2	8,345.9	9,090.3	11,262.7	11,969.1
France	2.9	3.7	3.3	3.5	3.4	3.0	2.9	3.0	3.4	3.2
Switzerland	1.0	1.2	1.1	1.1	1.2	1.1	1.2	1.1	1.1	1.2
Sweden	0.8	0.8	0.7	0.8	0.8	0.7	0.7	0.7	0.8	0.7
Japan	9.0	11.0	11.2	10.6	10.1	8.7	8.6	9.1	9.7	9.5
EU	27,422	30,895	27,856	26,852	29,224	27,571	27,656	28,702	29,993	29,898

Source: compiled by the authors based on [43-45]

The data in Table 4 show insignificant customs revenues to the budgets of EU countries, which is associated with the specifics of the formation of the joint EU budget. Thus, the latter's own income is formed at the expense of duties levied under the single customs tariff on imports of products from non-EU countries. EU member states transfer import duties to the EU budget, leaving at their disposal only 20% (from 2021 – 25%), which cover the cost of maintaining customs authorities. The European Commission applies a system of inspections to control the collection of import duties in the member states and, thus, ensures the timeliness and completeness of customs revenues to the EU budget [20, p. 247; 21, p. 2]. Foreign experience shows that the duty in developed countries has practically lost its fiscal function but has retained it in less developed countries, as demonstrated in Table 5.

Table 5. Share of duty receipts in tax revenues of budgets of different countries, %

Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Australia	1.6	1.8	2.0	2.1	2.5	3.0	2.9	3.0	2.9	2.8
Argentina	2.4	2.3	2.1	2.3	2.1	1.9	2.2	2.2	2.6	2.7
Brazil	1.7	1.8	2.0	2.1	2.0	2.0	1.6	1.5	1.8	1.8
United Kingdom	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Indonesia	2.6	2.7	2.6	2.7	2.5	2.2	2.2	2.2	2.2	2.1
Spain	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5
Italy	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Canada	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.7
Kenya	10.6	10.3	10.7	10.2	11.6	11.1	10.2	9.4	9.6	9.6
China	4.9	5.2	5.1	4.6	4.6	4.0	3.9	3.9	3.5	3.3
Netherlands	0.8	0.8	0.8	0.7	0.8	0.9	0.9	0.9	0.8	0.9
Germany	0.5	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4
South Africa	3.6	3.9	4.3	4.5	4.0	3.8	3.8	3.6	3.8	3.6
Poland	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6
USA	0.8	0.9	0.9	0.8	0.8	0.8	0.8	0.7	1.1	1.5
Ukraine	3.9	3.5	3.7	3.8	3.4	7.9	3.1	3.0	2.7	2.8
Philippines	19.5	18.0	17.4	16.3	17.5	16.2	16.1	16.5	18.7	18.0
France	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Switzerland	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Sweden	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Japan	0.6	0.6	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.6
EU	17.4	18.5	16.8	14.5	16.5	18.1	18.9	22.0	17.8	18.5

Source: compiled by the authors based on [43-45]

The data in Table 5 reflect a small share of the duty in tax revenues of developed countries' budgets – within 3%, which indicates a decrease in the role of the fiscal function of the duty. The authors agree with O.P. Dzhabiev, that this is due to the spread in international practice of applying special types of duties (seasonal, special, anti-dumping, countervailing) instead of increasing the rates of import and export duties [15, p. 52]. In general, in developed countries, it is not common to consider the duty as an ordinary tax levied to replenish the revenue side of the state budget from the point of view of generally recognised principles, rules, and norms of international trade and international

law. However, in less developed countries, revenue from duties accounts for a significant share of budget revenues. This is due to the underdevelopment of national production and low incomes of the population, which narrows the internal tax potential in such countries. In addition, according to S. Parthasarathi, foreign trade is easier to tax since the administrative costs of monitoring, evaluating, and collecting duties on goods that pass through a limited number of customs posts are relatively small [22, p. 295]. Accordingly, many non-developed countries depend on duties, especially on imports, to generate budget revenues. Therefore, in these countries, the fiscal function of the duty was not weakened.

Thus, in difficult economic conditions, the most reliable source of budget formation is the duty. Accordingly, in developed countries, the importance of the fiscal function of the duty is small, and in less developed countries it plays one of the leading roles.

Conclusions

The duty plays a considerable role in foreign economic relations. Its proper use is an important factor in economic development and a necessary condition for the existence of an economically strong state. However, the duty is a specific payment that has both a tax and foreign trade nature. Having considered the views of scientists on the essence of the duty, the authors have come to the conclusion that it should be considered as a specific tax on goods moved across the customs border of the state, which is levied to meet the fiscal and economic needs of the state and the entrepreneurial interests of national producers.

The content and social purpose of the duty are reflected in the functions performed by it. Eventually, it is not necessary to single out a large number of duty functions since they all perform two main functions – fiscal and regulatory. The fiscal function lies in ensuring the formation of the state budget and reflects the tax nature of the duty. The regulatory function provides for optimising the commodity structure of exports and imports, establishing a ratio of foreign exchange earnings and state expenditures, and creating conditions for the transition to a qualitatively higher level of integration processes in the world economy, reflecting the foreign trade nature of duties. In modern conditions, the functions of the duty are being transformed. Thus, in developed countries, the fiscal function of duties is weakened, while in less developed countries this function remains the main one. As a result of the entry of most countries into the World Trade Organisation, which provides for progressive liberalisation of customs and tariff regulation of international trade up to the complete abolition of import duties, there is a gradual weakening of the regulatory function of the duty.

References

[1] Melnychuk, O.S., Kolomiiets, V.T., Lukinova, T.B., Skliarenko, V.H., & Tkachenko, O.B. (Eds.). (1989). *Etymological dictionary of the Ukrainian language* (Vol. 3). Kyiv: Naukova Dumka.
[2] Customs Code of Ukraine. (2012, March). Retrieved from https://zakon.rada.gov.ua/laws/show/4495-17/ed20120313#Text.
[3] Tax Code of Ukraine. (2010, December). Retrieved from https://zakon.rada.gov.ua/laws/show/2755-17#Text.
[4] Budget Code of Ukraine. (2010, July). Retrieved from https://zakon.rada.gov.ua/laws/show/2456-17/ed20210101#Text.
[5] Law of Ukraine No. 332-XIV "On Application of Special Measures Concerning Import to Ukraine". (1998, December). Retrieved from https://zakon.rada.gov.ua/laws/show/332-14#Text.
[6] Law of Ukraine No. 330-XIV "On Protection of Domestic Producers from Dumped Import". (1998, December). Retrieved from https://zakon.rada.gov.ua/laws/show/330-14#Text.
[7] Law of Ukraine No. 331-XIV "On Protection of National Producers from Subsidized Import". (1998, December). Retrieved from https://zakon.rada.gov.ua/laws/show/331-14#Text.
[8] General Agreement on Tariffs and Trade 1994. (1994, April). Retrieved from https://zakon.rada.gov.ua/laws/show/981_003#Text.
[9] Hrebelnyk, O.P. (2010). *Customs business* (4th ed.). Kyiv: Center of Educational Literature.
[10] Tsyikunov, I.V. (Eds.). (2015). *Customs business.* Minsk: Vyisheyshaya shkola.
[11] Sidelnykova, L.P., & Kostina, N.M. (2013). *Tax system* (2nd ed.). Kyiv: Lira-K.
[12] Kucheryavenko, N.P. (1997). *Tax law*. Kharkiv: Legas.
[13] Bakaeva, O.Yu., & Matvienko, G.V. (2003). *Customs business.* Moscow: Yurist.
[14] Zlepko, N.P. (2005). *Customs duty as a fiscal resource of the state budget and an instrument of financial policy* (Doctoral dissertation, Ternopil Academy of National Economy, Ternopil, Ukraine).
[15] Dzhabiev, A.P. (2015). Economic, trade and political role of customs duties. *Economic Horizons*, 3, 50-53.
[16] Storozhchuk, V.M. (2017). Transformation of customs tariff functions under conditions of liberalisation of tariff-based regulation. *Scientific Bulletin of Kherson State University. Series "Economic Sciences",* 1(23), 30-34.
[17] Sukharev, A.N. (2017). The fiscal function of customs duties: Implementation practices in Russia. *Finance and Credit,* 23(40), 2398-2407.
[18] Razgildieva, M.B. (2018). The regulatory function of customs duties as a means of ensuring financial security. *Finance and Management*, 3, 8-18.
[19] Chernysh, A.Ya. (Ed.). (2013). *Economics of customs business*. Moscow: Izdatelstvo Rossiyskoy Tamozhennoy Akademii.

[20] Šimović, H. (2005). The European union budget. *Financial Theory and Practice*, 29(3), 245-262.
[21] Browne, J., Johnson, P., & Phillips, D. (2016). *The budget of the European Union.* London: Institute for Fiscal Studies.
[22] Parthasarathi, S. (2021). *Taxation history, theory, law and administration.* Berlin: Springer.
[23] Law of Ukraine No. 674-IX "On the Customs Tariff of Ukraine". (2020, June). Retrieved from https://zakon.rada.gov.ua/laws/show/674-20#Text.
[24] Atamanchuk, N.I. (2018). Concept, features and specifics of customs dutiesas indirect tax. *Legal Position*, 2(21), 7-12.
[25] Batanova, L.O., & Kukharuk, I.O. (2018). The problematic aspects of applying duties in Ukraine. *Lex Portus*, 2, 158-168.
[26] Kozhevnikova, V.N. (2008). Essence and modern treatment of customs duty. *Izvestiya of Irkutsk State Economics Academy*, 2(58), 28-31.
[27] Turyansky, Yu.I. (2014). Customs duties of fiscal and economic tools of foreign trade regulation. *Scientific Bulletin of Kherson State University. Series "Economic Sciences",* 1(7), 152-156.
[28] Lazuk, S.V. (2011). Charging fees as implementation of state functions. *Current Problems of State and Law,* 62, 198-204.
[29] Svinuhov, V.G., Beresnev, V.V., & Senotrusova, V.V. (2009). Customs duty in the system of Russian law. *Modern Law,* 6, 98-100.
[30] Onischyk, Yu.V. (2016). Legal construction of "customs payments": Problems of modern interpretation. *Journal of Academy of Labor, Social Relations and Tourism*, 3-4, 23-28.
[31] Radchenko, O.M. (2018). Financial and legal nature of customs payments. *Juridical Scientific and Electronic Journal,* 2, 269-272.
[32] Chernyish, A.Ya., & Zhigun, L.A. (2012). *Theory of the economics of customs business*. Moscow: Izdatelstvo Rossiyskoy Tamozhennoy Akademii.
[33] Vyshnovetskyy, V.M. (2009). Duty in the mandatory payments. *Legal Herald,* 4(13), 38-41.
[34] Getmantsev, D.O. (2013). Position of duty in a taxation system. *Scientific Bulletin of the International Humanities University. Series: Jurisprudence*, 6-2(2), 75-77.
[35] Chermyaninov, D.V. (2010). The nature and mechanism of the customs duty. *Nalogi i Finansovoe Pravo*, 10, 170-178.
[36] Hutsul, I. (2017). Fiscal outcomes and price effects of imposing duty. *World of Finance*, 2(51), 108-117.
[37] Dubinina, A.A., Sorokina, S.V., & Zelnichenko, O.I. (2010). *Customs business*. Kyiv: Center of Educational Literature.
[38] Kireev, A.P. (1997). *International economics* (Vol. 1). Moscow: Mezhdunarodnye otnosheniya.
[39] Tararyshkin, Yu.V. (2019). Customs duties as regulator of foreign economic activity and part of financial mechanism of the Eurasian Economic Union. *Belarusian State Economic University Bulletin*, 5, 20-31.
[40] Otgonsaikhan, N. (2013). The role of customs duties in the formation of the state budget of Mongolia. *Izvestiya of Irkutsk State Economics Academy,* 1, 97-101.
[41] Milovidov, V.D., & Asker-zade, N.V.K. (2020). Protectionism 2.0: New reality of the age of globalisation. *Mirovaya Ekonomika i Mezhdunarodnye Otnosheniya*, 64(8), 37-45.
[42] Obolenskii, V.P. (2018). From legitimate protectionism to trade wars? *Mirovaya Ekonomika i Mezhdunarodnye Otnosheniya,* 62(9), 18-25.
[43] Official website of the OECD.Stat. (2021). Retrieved from https://stats.oecd.org/index.aspx?DataSetCode=REV.
[44] Official website of the World Bank Open Data (2021). Retrieved from https://data.worldbank.org/indicator/GC.TAX.IMPT.CN?end=2019&start=1972&view=map.
[45] Official website of The State Treasury Service of Ukraine (2021). Retrieved from https://www.treasury.gov.ua/ua/file-storage/vikonannya-derzhavnogo-byudzhetu.

Зміст і функціональне призначення мита в сучасних умовах

Галина Борисівна Погріщук, Руслан Євгенійович Волощук

Вінницький навчально-науковий інститут економіки
Західноукраїнського національного університету
21017, вул. Гонти, 37, м. Вінниця, Україна

Анотація. Мито як джерело формування бюджету та регулятор зовнішньоторговельної діяльності сприяє покращенню макроекономічної ситуації та входженню держави до міжнародної торговельної спільноти. Тому вивчення сутності та функціонального призначення мита набуває особливої актуальності, адже дає змогу підвищити ефективність його функціонування в сучасних умовах. Мета дослідження полягає у розгляді податкової та зовнішньоторговельної природи мита, з'ясуванні його сутності та специфічних характеристик, виокремленні головних функцій та обґрунтуванні зміни ролей функцій мита в сучасних умовах. Специфіка наукових завдань, що становлять предмет дослідження, вимагала використання комплексу спеціальних методів (загальнонаукових і приватно наукових, теоретичних і емпіричних), застосування яких допомогло з'ясувати зміст мита, розглянути його функціональне призначення та встановити причини послаблення ролі функцій мита в різних країнах світу. Під час дослідження виокремлено два підходи до тлумачення сутності мита: як податку та як специфічного зовнішньоторговельного платежу. Запропоновано авторське визначення мита та з'ясовано його основні сутнісні характеристики. Встановлено, що в науковій літературі відсутні єдині підходи до виокремлення функцій мита та обґрунтовано виділення тільки двох основних (фіскальної та регулювальної). Виявлено, що у зв'язку із входженням більшості країн у Світову організацію торгівлі та встановленням обмежень на зростання митних ставок, відбувається послаблення регулювальної функції мита. З'ясовано, що у розвинених країнах в зв'язку із міжнародними обмеженнями щодо застосування митних ставок, відбулося зниження ролі фіскальної функції мита. Визначено, що у менш розвинених країнах в умовах обмеженості доходних джерел бюджету, фіскальна функція мита продовжує залишатись основною. Практична цінність дослідження полягає в тому, що з'ясування змісту та функцій мита в сучасних умовах дає змогу підвищувати ефективність митно-тарифного регулювання з метою захисту національних інтересів у період інтенсифікації міжнародних інтеграційних процесів

Ключові слова: мито, зовнішня торгівля, протекціонізм, фритредерство, фіск, регулювання

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89600, вул. Ужгородська, 26, м. Мукачево
Закарпатська область, Україна
тел./факс: (03131) 2-11-09, (03131) 2-11-09
E-mail: info@economics-msu.com.ua
www: https://economics-msu.com.ua/uk