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Management of the Competitiveness of the Region in the Context of Sustainable Development Based on the Concept of "Evidence-Based Policy"

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Abstract:

Competitiveness is an important factor of economic development, reflecting the ability to achieve and maintain high rates, thereby determining the economic growth of the country, competing in the international arena, and managing all necessary resources. Many scientists consider this concept, but, nevertheless, there is still no specific method for assessing the competitiveness of the country's regions. Therefore, the author considers methods of assessing competitiveness at the regional level in Kazakhstan using statistical data on the Karaganda region from the data of JSC "Kazpost".
The purpose of the study is to analyze the management of the region's competitiveness in the context of sustainable development of Kazakhstan based on the concept of "Evidence-based policy" and develop recommendations for further improvement of measures aimed at protecting the environment on the materials of JSC Kazpost.

***Keywords*:** competitiveness; globalization; integration; regional development; regional competitiveness; industrial production; environment; Evidence-based policy.

JEL Classification: Q56; Q59; R11.

Introduction

The importance of regions as subjects of activity has a certain tendency recently, and the participation of local authorities also has an active participation in foreign economic activity, supporting foreign companies on their territory, creating conditions for effective foreign economic activity.

To implement effective interaction on the world stage, each of the regions is forced to develop a specific strategy for market behavior that would contribute to the multilateral development of foreign economic relations.

In modern conditions of globalization and integration of all processes, as well as the strengthening of the regionalization of foreign economic activity, both from a theoretical and practical point of view, it is necessary to reconsider the role and importance of individual regions as economic entities, as well as the place of strategic management of the region's EA in general strategy of regional development. This is especially important due to the fact that not all subjects of the Republic of Kazakhstan have the resources and potential for the effective implementation of foreign economic activity. This has led to a deepening of the economic differentiation of Kazakhstan's regions, creates obstacles to transformations in the state, and complicates the process of forming a single market and the socio-economic development of the country.

1. Literature Review

The strengthening of globalization and integration processes in the foreign economic activity of countries and regions has led both to the formation of progressive factors and conditions for development, and to the complication of many phenomena, in particular, the structure of the world market and the conditions that form it. Because of this, foreign economic relations must be coordinated and regulated both at the national and regional levels. Such regulation, based on the establishment of certain norms and rules of economic behavior, can only be carried out by certain state structures, as well as specially created institutions.

The need to ensure competitiveness in the context of the intensification of globalization and integration processes, the escalation of problems of trade and economic interaction between Kazakhstan and leading states, the active formation of a unified concept for the implementation of policy within the framework of the Eurasian Economic Union determines the relevance of further search for methods and ways to manage the competitiveness of the region in the context of sustainable development of Kazakhstan based on the concept of "Evidence-based policy" and the development of recommendations for its further improvement.

A study of the experience of economically developed states in implementing a policy to increase the competitiveness of the region will allow us to conclude that it is necessary to develop an adaptive system of measures and tools for state regulation, timely changes in priority areas for implementing the policy in accordance with the realities and challenges of the global economy.

Between business (micro) and national (macro) levels of competitiveness lies the concept of regional competitiveness, which is gradually gaining more attention due to the growing importance of regions as key elements of economic growth and wealth creation.

Regional competitiveness should not be seen as a microeconomic or macroeconomic concept, but it should be understood that a region is not just an accumulation of enterprises and not a reduced version of national competitiveness. Regions have their own competitiveness models (Gardiner *et al.* 2018).

One of the broadest and most cited definitions of regional competitiveness is that put forward by Meyer-Stamer, which sees it as the ability of a place or region to generate high, growing income and improve the average standard of living of the people living there. This definition is rooted in the close relationship between competitiveness and regional prosperity, characterizing competitive regions not only in terms of products, such as productivity, but also in general economic terms, as a sustained or increased level of comparative prosperity (Huggins 2018; Bristow 2017).

Factors affecting regional competitiveness can be summarized as different types of capital such as production, human, socio-cultural, infrastructure and intellectual. Therefore, regions should focus on improving competitiveness in these factors and thereby improve the level of development and quality of life and ensure a direct impact on the productivity of firms and employment levels.

Sánchez de la Vega *et al.* (2019) use similar terms, defining regional competitiveness as the ability of a region to offer an attractive, sustainable environment for businesses and citizens to settle and work.

In any case, there is a two-way relationship between the competitiveness of the region and the competitiveness of business: enterprises with best practices contribute to increasing the competitiveness of the territory, and the region contributes to increasing the competitiveness of enterprises by creating favorable conditions for their activities (García Nicolás 2018).

In short, the growing interest in endogenous development processes, both local and regional, along with the recognition of their role in the growth and well-being of countries, means that it is especially important to analyze regional competitiveness, understood as the ability to provide an enabling environment for business, whether through territory-specific factors (such as natural resources), or by acquiring or expanding other tangible or intangible benefits that enhance and strengthen the competitive base, with the ultimate goal of improving the well-being of the population. Despite population and economic growth over the past 50 years, the world has changed. The advent of the Internet, platform-based business models, the continued growth of multinational organizations, and more have expanded the ability of companies to connect economic activities across countries and regions (Knight *et al.* 2020).

The regional problem of developing economic competitiveness is becoming increasingly relevant, which is largely influenced by the segregation of the economic environment. The search for optimal approaches to managing such a complex object as regional economic competitiveness is relevant (Chaynikov *et al.* 2020).

Concepts of regional competitiveness provide a wide range of perspectives from many scholars, examining both theories of competitiveness development and practical experience.

Birney (2019) examines regional competitiveness in the Northern Ireland context of increasing comparative productivity, noting the necessity and complexity of measuring regional competitiveness.

Kitson *et al.* (2017) analyzes regional competitiveness from the perspective of firm competitiveness, and Wokoun *et al.* (2018) relates regional competitiveness-as a derivative of the macroeconomic component.

The ability of regions to generate relatively high levels of income and employment is taken into account by the European Commission.

Other authors believe that regional competitiveness is related to the dynamics of economic growth. For example, some authors believe that unemployment and GRP per capita are important indicators (Turok 2018; Zhidebekkyzy *et al.* 2020).

According to Dijkstra & Annoni (2018) a region's competitiveness is manifested in its ability to provide firms and residents with attractive and quality living and working conditions. Using DEA models to measure competitiveness, Koisova *et al.* (2019) believes that efficiency to determine the level of rational use of basic resources to achieve a high level of competitiveness is the key to the high level of income of the inhabitants of the region.

Stressing the need for social, cultural and institutional factors Boschma (2020) believes that it matters in shaping the competitiveness of the region. Whereas Kresl & Letri (2017) distinguish the following types of regional competitiveness factors:

- economic factors - production factors, infrastructure and economic structure;
- strategic factors - management efficiency, development strategy, public-private partnership and the ability of the authorities to adapt to the influence of the external environment.

Therefore, the assessment of the region's competitiveness can be based on determining certain standards, such as the level of socio-economic development and investment attractiveness of regions.

Achieving effective management improvement is always supported by the use of advanced ideas, tools, processes and organizational forms of management. The main thing in the new management paradigm is a new quality of management, due to the emergence of new requirements for the productivity and efficiency of business units at any level, accompanied by an increase in the content, complexity and variety of tasks to be solved. The quality of management cannot be the result of individual measures, it is a matter of consistency in ensuring the competitiveness and efficiency of managing departments.

To develop a system for managing the competitiveness of the regional economy, it is necessary, first of all, to establish the main methodological requirements for its development:

- firstly, the system should be part of the general socio-economic system of the region and be considered as its subsystem, which is the object of analysis and synthesis;
- secondly, the system must be scientifically substantiated;
- thirdly, the development of the system should be based on strategic goals (Semenov *et al.* 2017).

However, it should be noted that the development of competitiveness management systems is usually considered in many works at the level of the enterprise, goods and services. A brief analysis of works in the field of developing object-based competitiveness management systems shows that, despite their significant number, this issue remains unresolved at the regional level and requires further development (Zakharova *et al.* 2018).

Regional competitiveness can be perceived through the prism of the advantage of one region over others, achieved through material resources and intellectual potential. Competitiveness also refers to the ability of a region to generate high and growing incomes and growing means of support for its inhabitants (Skórska 2020).

Currently, regional competition is becoming more and more sophisticated. Those regions that rely on new methods of management and successfully reveal their hidden potential win. Achieving market advantage depends on the optimal use of resources and carries the risk associated with the difference in time between the design and development stages of a competitive process. However, success compensates for all previous hardships and suffering. Eventually, the region becomes more attractive and competitive compared to others, which increases the interest of potential stakeholders. Their attention can be the key to the socio-economic growth of the region and improving the quality of life (Czudec 2017).

At present, in order for the firm to be competitive in the struggle with leading firms, completely new approaches to the organization of production and management are required than those that managers were guided by in the past. And first of all, according to Postrelova A.V. (2018), new approaches are needed in investment policy, when carrying out technical reconstruction at the enterprise, in the process of introducing new equipment and technology.

In order to improve the import substitution policy using the potential of the EAEU, Kheyfets B.A., Chernova V.Yu. (2019) note the need for "smart" selective import substitution, the most important direction of which is export orientation, which will increase competitiveness in the global economy, and will also help deepen mutual ties between the EAEU countries.

So, for example, in managing the competitiveness of the agro-industrial complex, the emphasis has recently been placed on the bioeconomy based on the use of renewable biological resources to create new products. The concept of bioeconomy covers all sectors of the economy, including agriculture, which supplies renewable resources: plants, animals, microorganisms and their products. Zhemkov A.I., Kondrashkin M.A., Zhuravleva N.N. (2019) in their studies on the bioeconomy in agriculture, agriculture and forestry, fisheries and aquaculture, as well as biotechnological conversion of biomass and biogenic waste, are the central starting point of a multifaceted new value chain. Processing industries process renewable resources into various products, partly by the industrial application of biotechnological and microbiological processes.

A number of serious barriers impede the quality assurance of the development of the industry:

First of all, the issue of low labor productivity in the industry remains relevant. The main reasons for such a low indicator include issues of insufficient technical equipment, implementation, transfer of effective agricultural technologies and their availability for small and medium-sized farms.

Vartanova M.L., Drobot E.V. (2018) in their research, they analyze the features of the introduction and development of effective, digital technologies in agriculture, where low productivity and high costs are identified as the key problem of the agro-industrial complex. The authors also identified promising areas for the digitalization of the agro-industrial complex.

Another important issue affecting both labor productivity in agriculture and ensuring the country's food security is the weak interaction between agroscience and the business community. Indicative here are the data provided by the Ministry of Agriculture of the Republic of Kazakhstan that in the industry only 8% of the results of scientific and technical activities are introduced into production.

An important role is also played by a high level of integration and cooperation in the production, processing and sale of agricultural products, which on a cluster basis ensures a high level of competitiveness of the industry in world markets. The specifics of the mechanism of state support for agriculture in developed countries is the displacement of anti-market instruments of agricultural policy and the increasing importance of measures that comply with WTO rules. All these measures can be used in Kazakhstan, which will increase the competitiveness of agricultural products without violating WTO requirements (Dokholyan *et al.* 2017).

When locating industrial production, a comprehensive consideration of natural conditions becomes important, however, as well as for the agro-industrial complex, since crop yields and animal productivity are higher in regions that have the most favorable soil and climatic conditions.

Regional economic (Ballas *et al.* 2017) and demographic (Wolff and Wiechmann 2018; Gurrutxaga 2020) development paths are becoming increasingly heterogeneous, as evidenced by Danko and Hanink (2018).

Knowledge about the impact of regional economic well-being on global resource use and environmental emissions has increased significantly in recent years. The key point, according to Yang, L., Wang, Y., Wang, R. *et al.* (2020) is to take into account the environmental impact based on consumption, which is associated with regional consumption, with the exploitation of natural resources and environmental impacts, both within the region and beyond, as well as the demographic situation, both in the country and in the region.

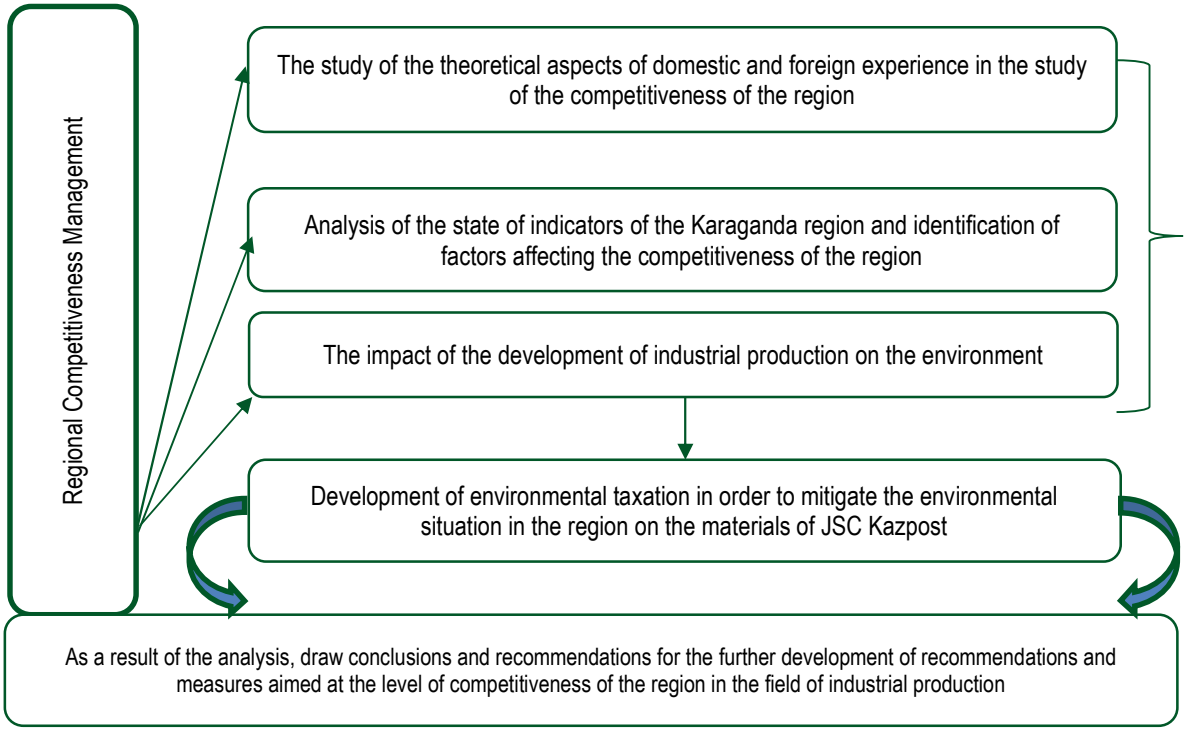
Understanding potential patterns in future population levels is critical to predicting and planning for changing age structures, resource and health needs, and ecological and economic landscapes.

2. Research Questions

Based on the assessment of the competitiveness of the region, analyze the impact of various factors that affect the level of GRP in the Karaganda region for further development of recommendations and measures aimed at the level of competitiveness of the region in the field of industrial production, since the level of industrial production has always been and continues to be a determining factor in economic and socio-political stability of the region (Fig. 1).

For rational planning of the use of investments attracted to industrial production, rational allocation is necessary, which is based on the most important principles that reflect the objective requirements for the development of social relations, where environmental factors play an important role. Based on the data of the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan, the author analyzed the influence of various factors on the level of GRP in the Karaganda region using correlation and regression analysis. This analysis contributes to the further development of recommendations and measures aimed at the level of competitiveness of the region in the field of industrial production.

Figure 1. Research Questions



Source: compiled by authors

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The factors affecting regional competitiveness can be summarized and include production, human, socio-cultural, infrastructural, and intellectual indicators. Therefore, regions should focus on improving competitiveness on these factors and thereby improve the level of development and quality of life and provide a direct impact on firm productivity and employment levels. But along with these factors, environmental factors also play an important role, which also affect the quality of life of the population of a particular region.

3. Environmental Impact

Natural factors have a significant impact on the technology of work, methods of pest and disease control, types of tractors and agricultural machines on the amount of costs per unit of output. The production of products should be located in those zones where its continuous growth is achieved, and the costs of socially necessary labor for its production and transportation are the smallest. For this purpose, an analysis is made of the costs of labor and

material and monetary resources per unit of production in dynamics over a number of years for natural zones and economic regions.

So, for example, the serious problems that agricultural production constantly faces (including climatic features), as well as its specific features, increase the lag of agricultural enterprises in the application of modern management tools. Strategic planning has not yet entered the practice of most agribusiness entities. However, without the development of a science-based strategy for the development of the industry at all levels of management, it is impossible to overcome the crisis and lay the foundation for its outstripping development.

Increased air pollution negatively affects human health and ecosystem stability. This indicator makes it possible to assess the impact on the environment of individual sectors, in particular: energy, transport, industry, agriculture and waste management activities. This indicator indicates the degree of the existing and expected anthropogenic impact of emissions of harmful substances on the environment, and also allows you to determine the degree of achievement of target values.

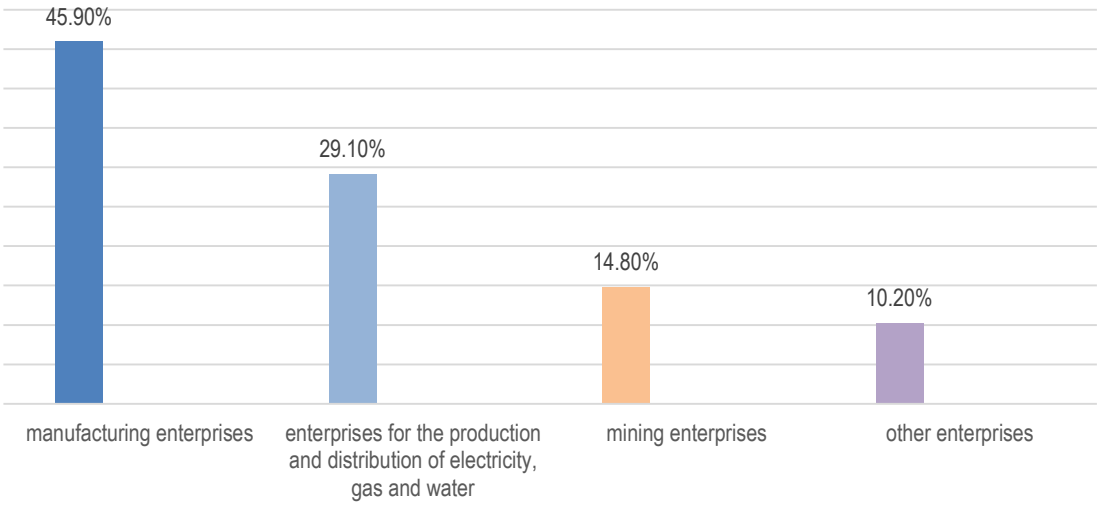
This indicator makes it possible not only to determine the degree of anthropogenic pressure on the atmospheric air as a whole, but also to assess the impact on the environment from stationary and mobile sources, including by type of economic activity, as well as from households. Therefore, to ensure the sustainability of integration between production and processing, additional measures are needed:

- assistance in the development of waste-free technology, which allows increasing income from the sale of final products, which creates conditions for increasing the share of industrial enterprises in the distribution of final income, in particular, it is possible to use the possibilities of public and private partnerships;
- construction of large processing enterprises with non-waste technology on the basis of public and private partnerships, for the development of agricultural engineering.

The main air pollutants in the Republic of Kazakhstan are thermal power plants and a number of industries, such as mining, construction, chemical, oil and gas processing. The reasons for the high level of pollution in the cities of the Republic of Kazakhstan are:

- an increase in air pollution by road transport, which is due to the high growth rate of the number of vehicles in the territory of the Republic. This problem is most relevant for large cities of the republic, where the contribution of vehicles to air pollution reaches 60% or more of the total citywide emissions;
- decentralized heat supply from individual heat sources (industrial and municipal boiler houses, heating furnaces) makes a significant contribution to air pollution (Figure 2).

Figure 2. Contribution of enterprises to air pollution

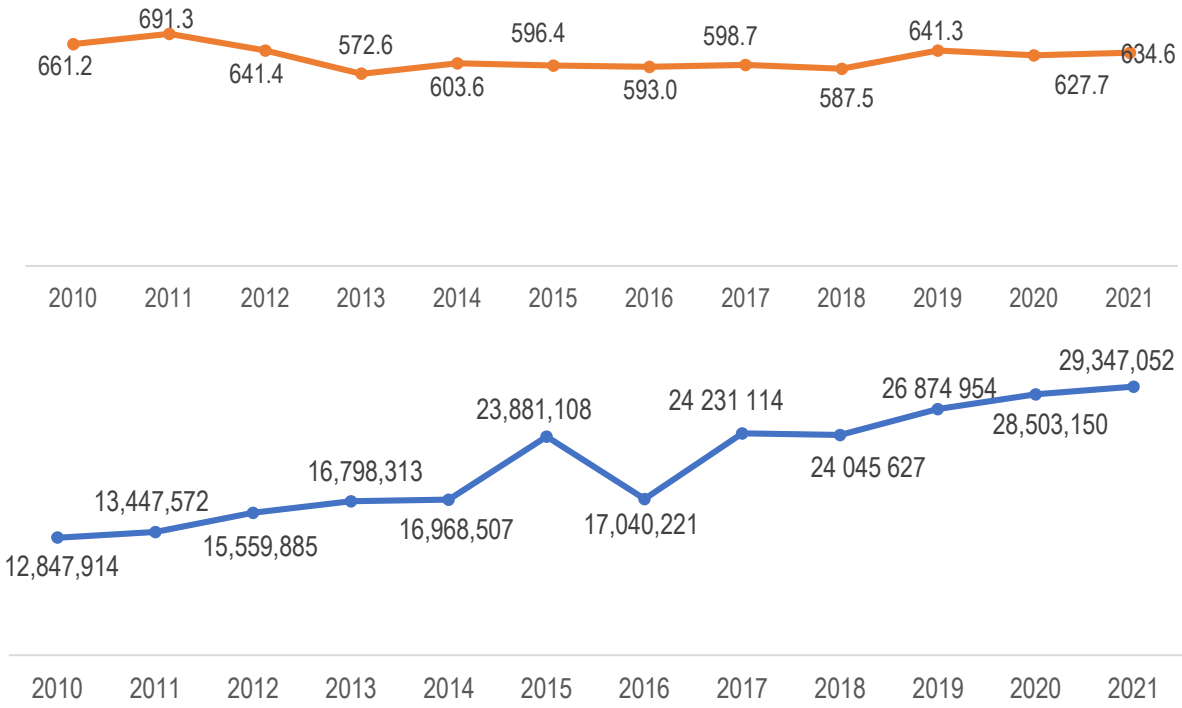


Source: compiled by authors

In the Republic of Kazakhstan, the most industrialized and, as a result, the most polluted are the Karaganda, Pavlodar, Atyrau, Aktobe and East Kazakhstan regions.

Pollution of water and soil with natural hydrocarbons due to the growing anthropogenic load on the environment of oil producing and oil refineries is currently an urgent problem (Figure 3).

Figure 3. Dynamics of indicators of emissions of pollutants into the atmosphere and current costs for environmental protection by enterprises of the Karaganda region (thousand tons)



Source: compiled by authors according to http://www.stat.gov.kz

Kazakhstan is facing serious environmental challenges that affect the regional economy and shape new realities. Such challenges include land degradation and desertification, mismanagement of urban infrastructure, industrial and historical waste, air pollution and depletion of water resources, which negatively affect both the population and the development of the economy.

Table 1. Indicators of environmental taxation in the Republic of Kazakhstan

Type of environmental tax	Un.	2016	2017	2018	2019	2020
Energy taxes	Thousand tenge	849052365,6	1213029 733,2	1654232 346,1	1706402804,8	881692071,6
Transport taxes		50494764,9	64334011,1	72060566,9	78318677,5	63439188,2
Pollution taxes		67216275,7	72528707,3	87125547,6	100809615,2	85593121,1
Resource taxes		182369080,1	284612858,7	335135667,3	394415327,2	359187842,0
Total environmental taxes		1149132486,3	1634505 310,4	2148554128,0	2279946424,8	1389912223,0
Share of environmental taxes in GDP						
Energy taxes	%	1,8	2,2	2,7	2,5	1,2
Transport taxes		0,1	0,1	0,1	0,1	0,1
Pollution taxes		0,1	0,1	0,1	0,1	0,1
Resource taxes		0,4	0,5	0,5	0,6	0,5
Total environmental taxes		2,4	3,0	3,5	3,3	2,0
Structure of environmental taxes						
Energy taxes	in % of the total	73,9	74,2	77,0	74,9	63,4
Transport taxes		4,4	3,9	3,4	3,4	4,6
Pollution taxes		5,8	4,4	4,1	4,4	6,2
Resource taxes		15,9	17,4	15,6	17,3	25,8
Total environmental taxes		100,0	100,0	100,0	100,0	100,0

Source: compiled by authors

More than 70% of irrigation water is lost due to dilapidated irrigation infrastructure, and 50% of existing glaciers are expected to melt by the end of the century, causing floods and mudflows. At the same time, policies and investments in climate change adaptation, sustainable waste and water management, biodiversity conservation is insufficient and require more attention.

In this regard, it is necessary to pay attention to environmental taxation, especially in those industries where the indicators of environmental pollution due to the development of industrial production are most pronounced (Table 1).

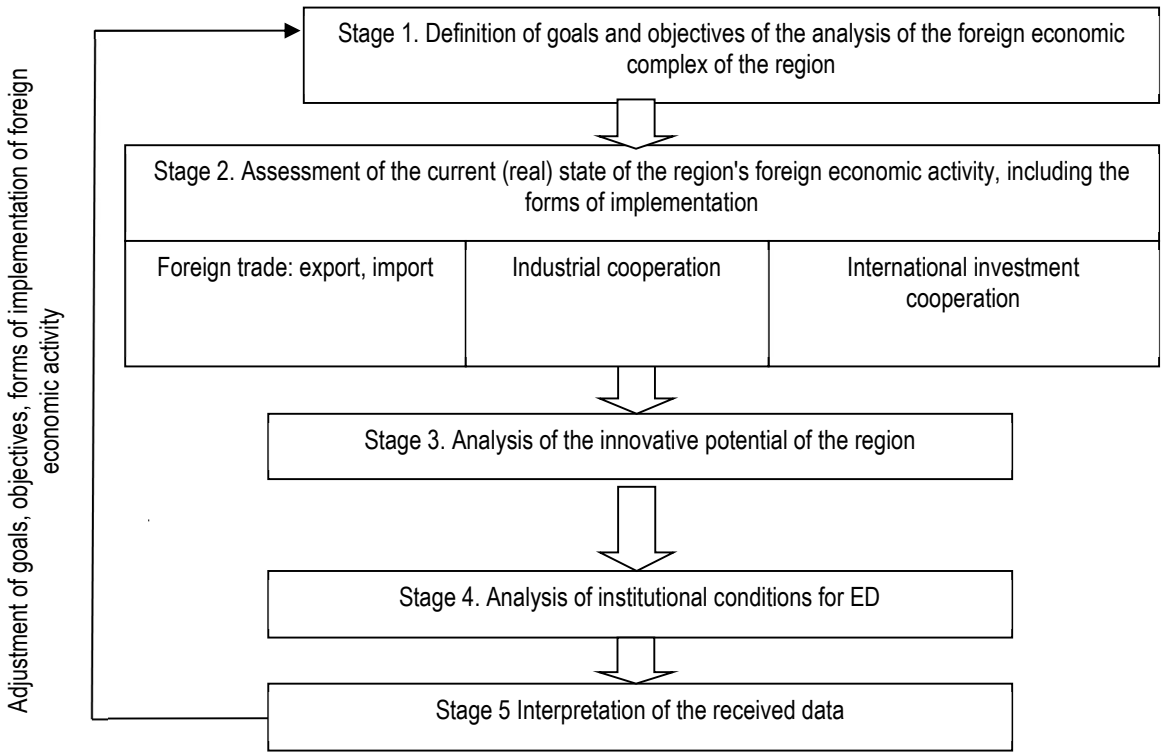
In the development of the distribution of production by zones and the deepening of specialization, the goal is to achieve high efficiency, *i.e.* produce the desired product at the lowest cost. This is achieved by manufacturing low-cost products, high selling prices and a high level of production profitability.

Thus, depending on the soil and climatic conditions and the competent location of production, the competitiveness of the regions of manufactured products depends. The validity of decision-making on organizational and economic mechanisms in conditions of limited resources will ensure the achievement of competitive, cost-effective production. In this regard, the development and application of economic and mathematical methods and models for solving emerging production and economic problems becomes relevant.

4. Methodology

The methodological approach to assessing the activities of the region includes a methodology for analyzing the current state of regional ED, assessing the institutional conditions and innovative potential of the region as elements that ensure the formation of the region's competitive advantages in the international markets for goods and services and in the foreign economic sphere as a whole. This approach involves the successive passage of several stages, presented in Figure 4, where an important element of an effective mechanism for managing the region's foreign economic activity is the availability of a reliable and high-quality methodology for assessing the current state of ED, identifying possible threats to its implementation, as well as determining development prospects.

Figure 4. Algorithm for assessing the state of the region's activities



Source: compiled by authors

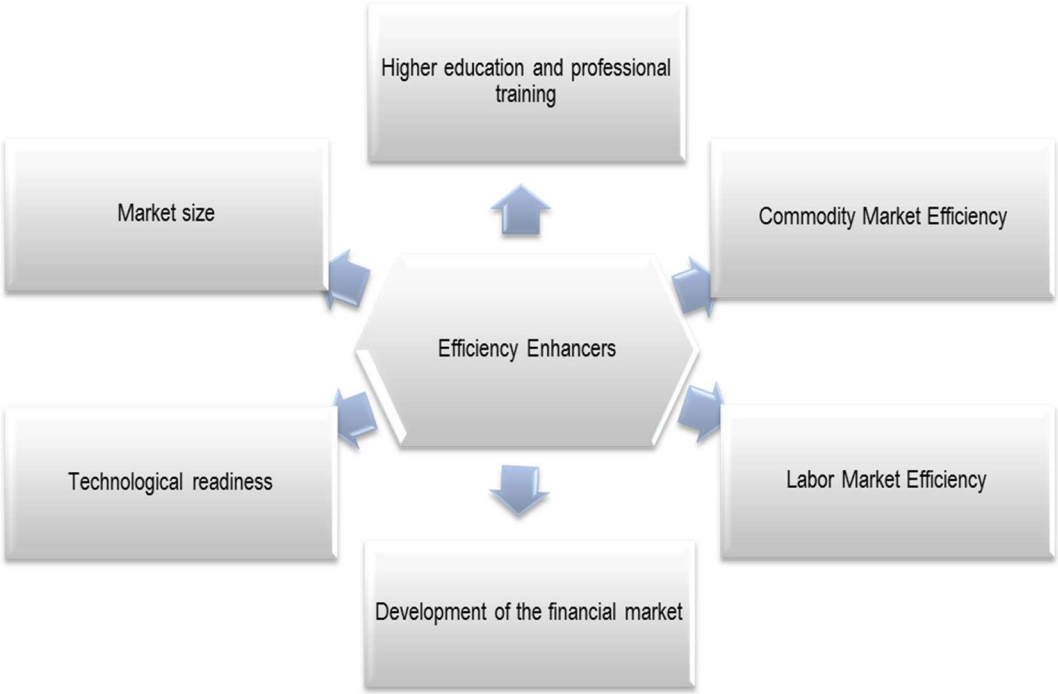
The components of the investment attractiveness of the regions can be indicators that meet the requirements of domestic and foreign investors:

- absolute and relative indicators of the economic potential of the regions, including, along with the characteristics of their production and resource potential, indicators of the state of production and social infrastructures;

- indicators of income and consumption of material goods and services by the population, forming in unity and mutual conditionality the concept of "level and quality of life of the population", which allow taking into account, when assessing the investment attractiveness of regions, the level of not only economic, but also social efficiency:
- indicators of the development of new forms of economic relations, expressing the process of reforming the economy and the whole society, the development of market economic relations, market infrastructure. the process of structural restructuring of the economy and the formation of its social orientation;
- indicators of the economic security of the regions, which are of interest to the investor in terms of the level of guarantees for the protection of his interests from social conflicts, criminogenic, environmental and other risk factors.

The concept of "competitiveness" includes static and dynamic components (Figure 5).

Figure 5. Indicators of efficiency enhancers



Source: compiled by authors

While a country's productivity determines its ability to maintain a high level of income, it is also one of the central determinants of its return on investment, which is one of the key factors that explain the growth potential of an economy. The methodology of JSC "Institute for Economic Research", based on the methodology of the WEF, includes an analysis of 3 sub-factors of competitiveness, which evaluates 12 factors that make up the competitiveness of the regions of the Republic of Kazakhstan. These sub-factors are: basic factors, competitiveness enhancers, indicators of innovation and development. The methodology assesses the competitiveness of each region using 169 indicators, including statistical data and data from a survey of entrepreneurs.

In this regard, urgent measures are needed to ensure the possibility of a rapid change in environmental conditions, which will undoubtedly affect the demographic situation of the population.

5. Analysis and Results

In its activities, JSC Kazpost adheres to environmental management, therefore, in order to ensure business sustainability and effective management of quality, health and safety, ecology and energy efficiency issues, the company has implemented and operates an integrated management system. This need was caused by the fact that employees of post offices work with substances that affect the state of the environment, and these aspects of production activities are regulated by the ISO 14001 environmental management standard.

The OHSAS 18001 occupational safety and health management system regulates the creation of appropriate conditions for the activities of employees, and there are also professional risks in the work of the postal service that need to be minimized.

The integrated management system is an integral part of the Company's management system and complies with the requirements of the following international standards:

- ISO 9001:2015 - quality management system
- ISO 14001:2015 - environmental management system
- ISO 450001:2018 – health and safety management system

The Company's activities do not have a significant impact on biodiversity in the areas of its presence. There are no objects located in the territories of state national natural parks or reserves, in specially protected natural areas. Heating of production facilities located in district centers and rural settlements of regional centers, where there is no possibility of connection to the district heating system, is carried out from autonomous heat sources operating on carbon fuels (coal, diesel fuel, natural gas).

At the end of the 1st half of 2021 actual emissions from stationary sources of pollution were recorded in the amount of about 108.1 tons (483.0 tons in the same period in 2020). During the reporting period, there are no excess emissions of pollutants (Table 2).

Table 2. Amount of emissions into the atmosphere, thousand tons

Indicator	2018	2019	2020	2021
Air emissions	0,835	0,792	0,764	0,767
NO2	0,060	0,057	0,055	0,056
SO2	0,106	0,101	0,097	0,099
Solid particles	0,371	0,352	0,340	0,339
Others	0,298	0,282	0,272	0,272

Source: compiled by authors

Mandatory tax payments to the budget (payment for emissions into the environment) were made in accordance with tax legislation. There are no facts of non-compliance with environmental legislation and regulatory requirements and the imposition of penalties for the reporting period (Table 3).

Table 3. Tax payments for issues, thousand tenge

Indicator	2018	2019	2020	2021
Issue payments	25395,74	24422,87	26955,80	27467,62

Source: compiled by authors

The company approved the Strategy for the implementation of investment activities in relation to "green" investments, in which it identified three main areas:

- introduction of alternative, environmentally friendly heating;
- energy saving and energy efficiency improvement;
- development of "clean" transport.

Within the framework of sustainable development projects, in order to increase the awareness of employees about respect for the environment and the introduction of an environmental culture, the Green Office initiative was implemented. Waste paper collection points are organized in the offices of the central office and branches. Memorandums of cooperation were signed with organizations for the transfer of waste paper for processing free of charge.

Branches provide sanitary cleaning and beautification of the territories of post offices. The resulting solid household and other industrial wastes are removed in a timely manner, in accordance with the agreements concluded with specialized organizations (Table 4).

Table 4. Non-hazardous waste disposed at the landfill, thousand tenge

Indicator	2018	2019	2020	2021
Municipal solid waste	6,0	5,94	5,9	6,1

Source: compiled by authors

Adapting to climate change will require an adequate decision-making process – planning for the long term and considering a range of climate and socio-economic scenarios. In the future, Kazpost JSC plans to switch to the use of renewable energy sources, in particular, to solar and wind energy, with their economically feasible use, which will significantly reduce costs and harmful emissions into the environment.

Countries can reduce the physical and financial risks associated with variable and extreme weather. They can also protect the most vulnerable groups in this regard. Some established practices, such as insurance and social protection, need to be expanded, while others, such as urban and infrastructure planning, need to be

changed. Such adaptation measures would also be useful outside the context of climate change. Promising initiatives are already emerging but implementing them on the scale required will require funds, effort, ingenuity and awareness.

Kazakhstan clearly needs the right strategy for adaptation to climate change, and the development of a special section in the country's obligations under the Paris Agreement - which means prioritizing adaptation measures in national programs and legislation of the Republic of Kazakhstan

Improvement of the environmental situation will require revision of environmental legislation and standards based on international practice. The main focus will be:

- made for recycling, introduced the principle of "polluter pays", based on the proven fact of causing harm to the environment.
- a system of incentives for integrated environmental permits has been introduced to replace the command and control regulation of enterprises that pollute the environment, based on a system of penalties and fines, and an environmental impact assessment process has been introduced.

This change is aimed at accelerated economic development of the regions of Kazakhstan by increasing their independence and ensuring a basic standard of living for the population in all regions. The process of urbanization will become more uniform. The locomotives of change will be not only agglomerations, but also medium-sized cities. As a result, the socio-economic gap and imbalance between regions will decrease, including the demographic gap between regions.

Table 5. Dynamics of the considered indicators

Year	GRP, million tenge	Volume of innovative products, million tenge	Productivity there, GVA per employee, thousand tenge	Indices of physical volume of industrial production, %	Number of operating enterprises, units	Investments in fixed capital, million tenge	Employment of the population, total in the Karaganda region, thousand people
2010	1 872 842,3	14 897,7	2 402,7	104,3	15 346,0	211 085,0	704,3
2011	2 387 705,2	14 388,6	2 992,2	102,8	14 700,0	253 048,0	700,4
2012	2 446 510,3	30 891,5	3 070,3	97,6	14 786,0	323 816,0	703,0
2013	2 621 888,8	53 731,2	3 240,3	102,1	15 454,0	405 015,0	707,2
2014	2 899 976,8	21 578,1	3 810,7	103,7	16 375,0	411 852,0	678,4
2015	3 107 085,6	18 442,5	4 044,9	106,8	17 649,0	343 351,0	670,0
2016	3 712 055,9	31 327,2	4 836,1	105,1	18 664,0	317 571,0	656,4
2017	4 284 362,6	32 048,0	5 720,7	105,5	19 931,0	363 267,0	652,4
2018	4 734 402,0	54 778,0	6 238,4	100,9	20 953,0	489 030,0	654,0
2019	5 388 260,6	74 007,0	7 072,8	101,4	21 873,0	811 433,0	648,9
2020	6 099 856,2	145 720,6	8 189,0	101,2	22 825,0	945 898,0	641,8
2021*	5 945 729,1*	131 523,4*	8 049,0*	98,2*	22 123,0*	914 523,0*	621,6*

Source: compiled by authors according to http://www.stat.gov.kz

Table 6. Growth rates of the considered indicators

Year	GRP growth rate, %	The growth rate of the volume of innovative products, %	The rate of productivity growth there, GVA per employee, %	The growth rate of the index of the physical volume of industrial production, %	Growth rate of the number of operating enterprises, %	Growth rate of investment in fixed capital, %	The growth rate of employment of the population, in total in the Karaganda region, %
2011	27,491	-3,417	24,535	2,800	-4,210	19,880	-0,554
2012	2,463	114,694	2,610	-2,400	0,585	27,966	0,371
2013	7,169	73,935	5,537	2,100	4,518	25,076	0,597
2014	10,606	-59,841	17,603	3,700	5,960	1,688	-4,072
2015	7,142	-14,531	6,146	6,800	7,780	-16,632	-1,238
2016	19,471	69,864	19,560	5,100	5,751	-7,508	-2,030
2017	15,418	2,301	18,292	5,500	6,788	14,389	-0,609
2018	10,504	70,925	9,050	0,900	5,128	34,620	0,245
2019	13,811	35,104	13,375	1,400	4,391	65,927	-0,780
2020	13,206	96,901	15,782	1,200	4,352	16,571	-1,094
2021	13,102	96,830	15,782	1,200	4,352	15,372	-1,094

Source: compiled by authors according to http://www.stat.gov.kz

Let's define the factors that influence the internal regional product. To do this, we use the correlation-regression analysis.

Statistical data used for analysis since 2010 by 2020 are presented in Table 5.

The results of data approximation using the least squares method are presented in Table 6.

Let's put forward a hypothesis about the existence of a relationship between the GRP indicator (million tenge) and the following factors:

- volume of innovative products, million tenge
- labor productivity, GVA per employee (thousand tenge);
- index of physical volume of industrial output (%);
- the number of operating enterprises (units);
- investments in fixed assets (million tenge);
- employment of the population, total in the Karaganda region (thousand people).

The results of the regression analysis applied to the growth rates of the initial data (Table 7) show that a statistically significant and reliable relationship is observed between GRP, labor productivity, GVA per employed person and employment in the Karaganda region.

Table 7. Results of the GRP Growth Rate Equation Estimation

R	0,963
R^2	0,928
Adjusted R^2	0,908
Fisher test	45,238 ($p-value = 0{,}0001$)
Variables	
Rate of increase ВРП, % – dependent variable	
Constant	0,115
	Regression coefficients
Rate of productivity growth there, GVA per employee, %	1,074***
Growth rate of employment in the Karaganda region, %	1,763**
* p<0,1; ** p<0,05; *** p<0,01	

Source: compiled by authors

Conclusion

The results of the regression analysis applied to the growth rates of the initial data showed that a statistically significant and reliable relationship is observed between GRP, labor productivity, GVA per employed person and employment in the Karaganda region.

Analysis of the obtained parameters of the multiple linear regression equation allows us to draw the following conclusions:

- an increase in the rate of growth in productivity there, GVA per employed person by 1% will contribute to an increase in the growth rate of GRP by an average of 1.074%;
- an increase in the growth rate of employment in the Karaganda region by 1% will contribute to an increase in the growth rate of GRP by an average of 1.763%.

The state of the economy of the regions of Kazakhstan at present clearly shows the weakness of the regional level of management, and the severity of the accumulated problems requires a fundamentally new approach to management, which provides for the implementation of completely different principles, functions, methods and tools.

Regions ensure the sustainable development of the country's economy, based on a certain set of criteria (determination using the principles of evidence-based policy). Such justifications, which are also relevant to the management of regions, include:

- the results of scientific research, statistical and quantitative data, the results of the application of "best practices", big data, etc.;
- consultations with stakeholders, which include representatives of civil society, public opinion polls, the results of field research;
- "unofficial data", including the practical experience of decision makers, the opinions of individual experts and officials.

The competitiveness of regions does not fully influence the achievement of the main goal - improving the quality of life of the population. This is due to the lack of a strategic component in the general characteristics of the

process of managing the region's competitiveness. And in this regard, the importance of developing a mechanism for managing the competitiveness of the region based on evidence is increasing. Data, strategic documents, regulations in this case are presented as a set of initial data necessary to manage regional strategic competitiveness. The study of the initial data will provide an opportunity to build an effective decision-making process based on the choice of the best of the alternatives. Such a choice is formed by comparing the existing potential of a particular region with the opportunities and threats of its external environment, as well as with global changes in the external environment.

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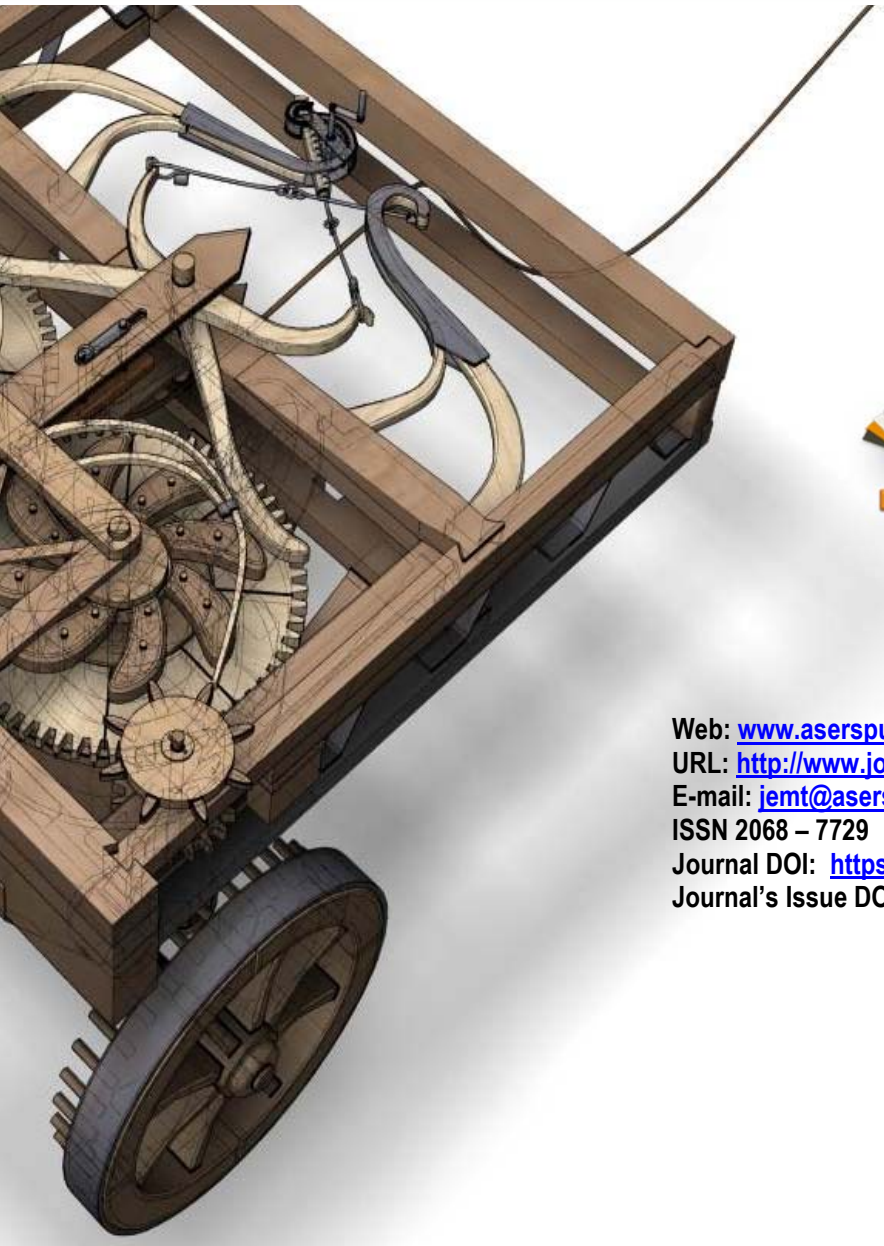

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