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Ways of optimization and cost reduction of the enterprise

Abstract

Object: Optimization and cost reduction of the enterprise as a type of activity are in the process of their formation and is manifested primarily in the abundance of models of both local processes and the development of "global" strategies.

Methods: The analysis of activity of the enterprises of various spheres shows that, despite abundance of publications on optimization of expenses, it is seldom when enterprise can show a sample of the organization of this process. Contrariwise, the number of unprofitable enterprises indicates that there are serious problems in the organization of the system of optimization and cost reduction. The article uses content analysis.

Findings: The strategy of cost optimization sets such tasks as identifying areas of cost reduction as a factor in improving economic performance, determining ways to reduce costs for the main stages of the economic cycle of the product, as well as the calculation of costs for the operating segments and production units of the enterprise.

Conclusions: Taking into account that article is devoted to the optimization and, as a consequence, to cost reduction in the enterprise, the author substantiates the necessity for the optimization process and reveals the basic principles of cost optimization in the enterprise. Special attention is paid to the methods and methods of cost optimization, their advantages and disadvantages are revealed.

Keywords: cost optimization, enterprise, cost reduction measures, cost management, cost analysis.

Introduction

In the context of developing market relations with the instability of the external environment in enterprises there is a need for effective management to minimize their own costs. The problems of reducing costs in the enterprise, finding ways to solve them are complex and interesting issues of the modern economy of the enterprise.

The purpose of any enterprise is to achieve an economic effect of the activity, which can be expressed depending on the aims of the establishment and activities both through profit and through the achievement of any social, environmental and other improvements. But only by comprehensively analyzing the costs of the organization and correctly determining the reserves for their reduction, it is possible to achieve this goal.

Cost optimization is the process of finding and implementing the most effective way to manage finances. There are no businesses, firms or enterprises can exist without costs. It is no secret that the costs should be useful: the company is profitable when the money spent leads to profit. In such cases, cost optimization helps to increase profitability, avoid economic problems and keep the company even in crisis times (Dan Steinhoff, John F. Burgess,1993).

Every enterprise can be represented in the form of a chain of processes. It receives some resources, which, passing this sequence, are modified, acquiring the form of a product or service at the output. At the same time, each link in the chain is a specific function that requires certain resources to perform and has its own cost. Based on this understanding, both cost reduction and optimization should begin with an analysis of business processes.

Hypothesis. Costs reducing, optimization and identifying their cost compliance solve the problem of reducing the resources spent and increasing labor productivity.

Literature Rewiew

The problems of management and cost optimization dedicated to the work of many foreign scientists, namely, I.A. Basmanov, S.P. Gavrilovskaya, K. Druri, D. Doyle, H. Horngren, D. Foster, G. Cokins, A.D. Sheremet, N.G. Danilochkina, S.A. Nikolaeva, V.E. Kerimov and others.

I.A. Basmanov believes that "... optimization of production costs and their reduction are independent, separate from each other concepts that are inherent in various both subjects of study and methods of knowledge".

S.P. Gavrilovskaya in his work justifies the need to form a card of profitability of products and recommendations for multi-factor cost optimization in order to improve cost management.

In his book "Management accounting for business solutions" K. Drury one of the four sections is devoted to cost management. In this section, along with the already known approaches to cost management, the author identifies several new ones.

A significant place in the work of D. Doyle is given to the outsourcing mechanism, which is considered as one of the effective tools for optimization of internal expenses (Doyle D., 2002).

Scientists Ch.T. Horngren, J. Foster outline the features of profit optimization by assigning deviations in the standard-cost system to the cost of the period (Horngren Ch., Foster G., Datar S., 2005).

Gary Kokins identified the need of effective combining elements of different systems of cost management and the achievement of a synergy effect (Cokins Gary, 2013).

Other famous scientists also support an integrated cost management system. So, A.D. Sheremet notes that at the moment "there is an objective integration of management methods into a single management accounting system" (Sheremet A.D., 2004). An overview of the possible combinations of effective cost management methods and tools can be found in H.D. Danilochkina (Danilochkina N.G., 1999). S.A. Nikolaeva, V.E. Kerimov adhere to the integrated approach in the construction of cost management systems.

At the same time, the study of the works of these authors showed that to date, the main methodological and applied problems of developing methods of sustainability through cost optimization for effective management decisions were beyond the scope of system research. And already existing scientific developments are not adapted to the practice of enterprises, which undoubtedly has a huge impact on the development of the economic environment as a whole.

Methods

The problem of cost optimization is very relevant in contemporary economic conditions, as its solution allows each individual company to survive in a tough market competition, to build a strong company that will have a good economic potential. This is due to the fact that the achievement of high results of the enterprise and profit maximization cannot be achieved without effective cost management. At the same time, today there is a lack of methodological base, on the basis of which it would be possible to assess the impact of costs on the condition of the enterprise, due to the fact that domestic methods of evaluation allow to identify the impact of costs on sustainability only on the basis of financial statements (formalized data), while informal data (quality of management, organizational structure, level of management and production personnel of the enterprise, the availability of budgeting system) are not taken into account, and, accordingly, do not influence on the overall assessment of the stability of the enterprise.

The purpose of any optimization is not only costs reduction, but increasing the efficiency of the enterprise. The concept of "cost reduction" is inseparable from the concept of "cost effectiveness". To develop cost-cutting measures, it is necessary to understand how costs are generated in each direction, how business processes are designed, and what should be done to reduce them. For this purpose, certain cost reduction plans are drawn up, which usually include those cost items that need to be reduced (Denisov D.V., 2019).

The methodological basis of the research is the dialectical method, General scientific and special methods were also used.

Results

Cost optimization is the main element of the cost management system. If enterprise doesn’t optimize costs, it simply won’t be able to survive in a rapidly changing environment. The effectiveness of cost reduction depends on how revenue and expenditure are recorded. Management activities carried out in conditions of economic downturn should be close to the approaches typical for anti-crisis management, strategic management, project management and risk management at the same time.

Cost optimization is the main element of the cost management system. If the company doesn't optimize costs it simply will not be able to survive in a rapidly changing environment. The effectiveness of cost reduction depends on how revenue and expenditure are recorded (John K. Shank, Vijay Govindarajan, 1989).

In practice, there are three principles that should be followed in order to avoid unnecessary spending:

1) planning;

2) control;

3) discipline.

Planning. A very common mistake in the planning is control of only expenses, without regard to income. It is necessary to control not only the spending of available money, but also to pay special attention to the sources of income. Otherwise, the company faces a shortage of funds and the need to attract loans, which can eventually lead to bankruptcy. Incoming and outgoing cash flows should be planned in advance (Kotlyarov, S.A., 2002). Cost optimization will be more successful if the Manager always has the planned amount of income and expenses for the next month, quarter, year. In the short term, some investments may seem costly, but they will yield greater benefits in the future.

Control. The head of the enterprise should always receive objective information about the state of the business. Cost control is impossible without the latter. At large enterprises, it is advisable to create a Department to work on cost reduction and optimization, which studies the factors affecting the costs, checks the compliance of technical processes in the enterprise with the established standards, finds out the causes of failures, monitors the presence of failures during the shipment or receipt of goods, reveals the packing of the warehouse. After collecting information about all costs, its analysis is carried out, then — the reduction and optimization of the identified costs. The head of the enterprise plans and approves a program to reduce costs, which includes activities of various sizes: from changing suppliers to improving the efficiency of work with customers (Mayer E., 2013).

Discipline. Further, the strategy chosen and approved by the head is reflected in the budget of the enterprise, and to deviate from it only in exceptional cases. Compliance with the rules is assessed by the financial services, which monitor the validity of costs and prevent unnecessary spending. Decisions on the cost of funds should be made by only a few responsible persons.

Optimization of costs does not mean taking actions to the detriment of the interests of the enterprise. The task of reducing costs should be solved in the best way, by comparing costs and revenues with each other. The issue can be solved in several directions:

1. Cost reduction from internal resources (direct reduction). Such actions can include increasing productivity, reducing material costs, reducing management costs, as well as reducing the staff of the enterprise.

2. Reduction of production costs (relative reduction). This can be achieved by increasing production. In this case, on the producing of one detail will be spent less money.

3. Formation of the offer due to the conducted marketing research. In this case, the growth of the volume of purchases by customers is stimulated and an influx of new customers is formed.

4. Formation of the strict financial discipline. In this case, a limited number of people may give an "approval" for expenses.

The Manager can use three possible ways of optimization in his optimization activity of costs of the enterprise:

1. Systematic cost reduction, which involves a gradual (over several years) cost reduction. This cost reduction is connected with the improvement of three areas of activity:

– investment. Investments that are invested in the purchase of new equipment and the introduction of new modern technologies are necessary for the enterprise to solve problems and improve production. Investment projects should undergo a serious selection, due to the fact that such investment projects spend a large amount of money. This requires full justification of the feasibility of such investment. The head of the company must clearly and accurately understand whether his costs will pay off in the future, and what will be the profit (Nooraie Vahid, Parast S.A., 2016).

– purchases. Purchases are the main share of the company's costs. The process of procurement management is to find more profitable suppliers, since it is from vendor depends on how effectively they meet the needs in raw materials, etc. (Umirzakova D.K., Megis N., 2017).

– production process. In some enterprises, the technology of "lean production" is used to effectively costs reduce. All costs are estimated from the customer's point of view and the company has to either get rid of those processes that are not approved by the buyer, or reduce the cost on them (Nidhi, M.B., Anil, B.B., 2011).

All these three processes form the most significant share of the company's costs, and therefore managers try to reduce them gradually, so that they have less impact on the final activity of the enterprise, i.e. profit.

2. Rapid reduction requires work to reduce costs within weeks or months. Rapid cost reduction involves reducing fixed and variable costs of the enterprise, that is, on this way to reduce costs, there is a reduction in the cost of raw materials and materials. The increase in the cost of consumption of materials (basic and auxiliary) is due to the rise in the cost of purchased raw materials, the rise in the cost of auxiliary materials and the growth of utilities.

The most effective solution to reduce costs is to revise contracts with suppliers. The company begins to look for companies that can offer lower prices for raw materials and can also provide deferrals on payments (Vasina A., 2019). To reduce such costs as the costs on materials and raw materials, it is possible to carry out the following activities:

– review the terms of contracts with existing suppliers;

– search for new suppliers;

– search for high-quality but inexpensive components in the production;

– help suppliers to reduce their costs;

– procurement of materials, together with another buyer from the same supplier;

– independent production of necessary materials;

– introduction of resource-saving technological processes that contribute saving on the cost of raw materials (Dutta, P.A., Mishra, A.A., Khandelwal, S.B., Katthawala, I.B., 2020).

In parallel with the search process, there is a reduction in the number of overhead costs: the cost of electricity, transport, heating, etc. the cost of electricity can be reduced in the control of energy consumption by limiting the lighting of the room in the dark, if it does not interfere with the production process, the transition to economical methods of lighting and equipment. With regard to transport costs, the number of service vehicles should be reduced, and fuel consumption for these vehicles should be more closely monitored. Reducing heating costs, for example, can be done by installing steam generators(Jae K. Shim, Joel G. Siegel, 2000).

Another way is to reduce the wage fund. A more acceptable way to reduce costs is to reduce wages, but in order to prevent employees from being unwilling to work, it is necessary to provide them with social benefits: free food, extended health insurance, etc. (Lebedev V.G., Drozdova T.G., Kustarev V.P., 2010). To solve the problem of activation of valuation processes in enterprises the most effective option of rationing costs based on existing methods are developed:

1) Microelement regulation — is the regulation of labor with the help of pre-designed microelements of the labor process. The essence of microelement rationing is that the most complex and diverse in nature labor actions are combinations of simple or primary elements.

2) Experimental and analytical regulation is carried out on the basis of the study of labor processes directly in production conditions.

3) Settlement and analytical regulation — labor standards are established on the basis of standard of the mode of operation of machines and time standards for the implementation of individual elements of the operation, developed differentiated for different organizational and technical conditions on the basis of numerous observations.

Application of typical standards (norms) assumes systematization of conditions of performance of each labor process on the basis of carrying out their certification.

3. Express reduction is a reduction that can be carried out within a few days. With this reduction in costs, it is necessary as soon as possible to stop paying for some items and to determine the cost of significance. All costs are divided into:

– high priority (payment of wages to employees, purchase of raw materials for production). Such costs are necessary for the enterprise to continue its activities.

– priority (mobile payment, advertising). If company stops payments under this article, the work of the company will go astray.

– acceptable (benefits for employees, payment of sanatorium treatment to staff). If the company does not have free funds, these payments can be suspended, but it is preferable to keep them.

– unnecessary (payment for a private flight for the head of the company). Cancellation of such expenses will not adversely affect the company's operations.

When choosing an express cost reduction on the first place payments stop on the "unnecessary" article and sharply limit the permissible. High-priority and priority costs should not be reduced, because when they are reduced, there is a danger of stopping the operating activity and harming the normal conduct of business.

3. Express reduction is a reduction that can be carried out within a few days. With such reduction in costs, it is necessary as soon as possible to stop paying for some items and to determine the cost of significance. They can be high-priority, priority, acceptable and unnecessary. Of these costs, it is necessary to abandon unnecessary costs, because they do not bear any profit to the enterprise (payment for rest to the head of the enterprise). Further, it is necessary to reduce the financing of eligible costs (payment for sanatorium treatment of employees). High-priority and priority costs should not be reduced, because when they are reduced, there is a danger of stopping operating activities and harming the normal conduct of business.

One of possible ways to reduce costs is are models to improve their efficiency. These models have both advantages and disadvantages. There are three main efficiency models:

1) "net" cost reduction is cost reduction by getting rid of unproductive costs. The main savings are due to fixed costs (Erdavletova F.K., 2016);

2) "intensification" of costs — there is even a slight increase in costs, but more significantly increases and increases revenue. As a rule, this occurs when new equipment is introduced, technologies that increase the productivity of the equipment, and consequently, revenue;

3) "fixing " costs — when the revenue increases costs are not increased. As a rule, this is either an increase in the price of products, or an equivalent increasing of productive costs and a decrease in unproductive (Gagarski V., 2019)

The directions of cost reduction programs are very diverse. These include:

– introduction of new more economical technologies(Drury C., 2006).

– application of more modern organizational concepts;

– outsourcing — refusal of own production of some products or services and transition to purchase from third parties;

– in contrast to outsourcing, the transition from procurement of a number of products and services on the side to their own production;

– invention and innovation.

The successful implementation of the cost reduction program and the creation of a mechanism for regular cost optimization will allow the company to improve business efficiency or use low product prices as one of the key advantages in the competition.

In fact, the company has many different activities, costs, it interacts with a large number of suppliers, partners, customers, it employs staff with certain qualifications, so it is advisable not to follow a particular model of cost reduction, and apply them to the situation that has developed in the enterprise. And each company through certain losses and errors determines the most effective methods of optimizing the cost of the enterprise.

When drawing up a plan of measures to optimize costs, the Manager needs to remember that the situational solution of the problem is not always the best choice. By following the optimization rules, company can achieve the maximum effect with the least tolls:

1. Costs do not always need to be reduced; most often they need to be effectively managed, that is, to reduce the total costs you need to increase the amount of costs in any particular direction.

2. Costs are minimized for best results. The efficiency rule says that one unit of cost must provide the maximum result.

3. The desire to minimize costs is not always useful. It may be optimal to slightly reduce costs and maintain them at the required level.

4. Optimization of budget expenditures is impossible without financial investments.

5. Cost optimization should be ongoing. New items of expenditure affect the profit of the enterprise, so cost tracking should be a mandatory task, reporting on the implementation of which is submitted to the management of the enterprise.

Thus, the optimization of income and expenses are two procedures that go hand in hand. Uncontrolled costs will not bring income to the enterprise, and profit growth is directly related to the cost control.

All optimization processes should start from the head of the enterprise who should carry out any optimization actions, starting with himself, and put an equal sign between the reputation of the enterprise and personal reputation.

Of course, all employees of the enterprise and outsourcers can be forced to compensate, to fine or to collect a penalty for losses, for errors and shortcomings, but in general for the mistakes of the head of the enterprise he has to pay by himself.

As an application tool to optimize costs and expenses arising from errors of project managers, company can use:

– the classical method of calculation of penalties, allowing to estimate the costs of erroneous actions in real terms;

– one of the methods of calculation of reserves and extensive nature (ER, Extensive Resources), where ER is the value of the unconditional loss the fault of the head, multiplied by the actual resource allocation.

Further, in case of unfavorable conditions, managers need to pay special attention directly to business processes, due to the fact that the average period of solving the problem by managers is several times greater than the time spent by enterprise managers to solve the same tasks.

Two heads are much easier can find the points of intersection of interests, rather than Director and Manager. This approach saves time and money, allows to create a long-term picture of cooperation and is based on greater trust. Therefore, the leaders of one company are trying to come up with a proposal for cooperation to the head of another company and discuss the details of cooperation directly with him, especially in solving such problems and the occurrence of such conditions as:

– establishment of business contacts in the organization of new business;

– project implementation;

– resolution of important and urgent issues;

– occurrence of unfavorable conditions for one of the parties to the agreement;

– interaction with partners and key clients in crisis.

As a rule, the Director sees the prospect of development of the enterprise in advance and his main task is to ensure the management of end — to-end processes. In practice, there are eight keys, end-to-end business processes:

1) customer relationship management;

2) consumer service management;

3) demand management;

4) execution of orders;

5) material flow control;

6) procurement management;

7) product development, value creation;

8) management of recurrent material flows.

Unlike conventional budgeting, crisis management involves managing end-to-end processes, giving not only a complete picture of the state of affairs, but also an idea of the dynamics of changes in key parameters. This is what allows you to make quick optimization decisions in the process, not on the basis of the activity.

Often, business leaders in establishing business contacts and decision-making are often guided by personal preferences and dislikes. However, it is necessary to adhere to a realistic view of the organization of work and the state of affairs, as well as objectively assess the business qualities of employees and partners. However, establishment of relationships on this basis does not give any special guarantees, especially in the event of adverse conditions. Moreover, interaction with partners is often complicated by the desire of entrepreneurs to conclude various "gentlemen's agreements". Management of enterprises and projects requires the ability not to take wishful thinking, to establish contacts, guided by the interests of the company, not personal sympathies, to reasonably determine the goals and evaluate the results.

Setting the task to optimize costs, it is necessary to assess the structure of the processes taking place in the enterprise, for their compliance with time-tested approaches, methods and disciplines, including:

– analysis of economic activity of the enterprise;

– marketing analysis;

– working capital management (including inventory management). Unfortunately, the incompetence of managers in the management of working capital in the activities of many enterprises leads to chaotic or ill-conceived, undocumented distribution of funds and resources. This is a fairly common cause of the crisis situation within the enterprise.

Circulating capital management is a set of tasks that ensure the process of transition (strategy of transfer) of the enterprise from the current state to the planned one. The main indicators of efficiency of use of current

assets are: the value of current assets and equity, the structure of working capital, the turnover of individual elements of working capital, the duration of the financial cycle, the return on working capital before tax.

Knowing that there is a certain dependence of working capital and profit, experienced managers constantly monitor the dynamics of profit changes depending on the size of working capital, thus being able to make timely decisions on the launch of new projects and the implementation of appropriate investments.

The main methods of "getting rid of ballast" include:

– necessity to assess reserves of an extensive nature, when the amount of additional attraction or the amount of unconditional loss of resources is known;

– analysis of logistic value. Carrying out this analysis gives an idea of what the company costs content (storage, accounting, etc.) ballast;

– structuring of inventories;

– optimization of inventories. Illiquid goods can be used as a "loss-making leader", i.e. goods sold at a loss, to attract buyers;

– assessment of profile and non-core parts of the enterprise. Focusing on the core of the enterprise and transferring peripheral aspects to subcontractors, increases efficiency and effectiveness, allowing both management and workers to deal with the most important elements and not to waste effort and experience on less important aspects.

Discussion

The head of the enterprise in his work should know the profitability and control the dynamics of its change. The level of profitability required by the investor or co-owner of the enterprise's equity capital can be considered as a necessary level of profitability for the enterprise. This level depends on the level of profitability of competing investments and the ratio of risk investments in own projects of the enterprise and alternative products of the stock market. It is obvious that with frequently changing prices, rates, quotes, etc. it is necessary to ensure constant monitoring of profits and monitor the dynamics of changes in profitability, for example, by tracking indicators such as:

– return on current assets;

– return on net equity;

– the total profitability of the enterprise (before tax).

Inadequate market pricing can lead to partial or complete "paralysis" of the enterprise. Pricing strategies and methods are one of the most important and voluminous areas of cost management.

In addition to the above, a business Manager who wants to optimize costs should have key information about value chains and supply chains. For the present reality it is typical that the supply chain management deals the Director or authorized person, or no one engaged.

A precise knowledge of the operations occurring along the entire length of the supply chain and defining relationships between them enables managers not only to focus on planning for future expenses and their optimization, but also on the increase of income and increase the share of market presence.

The Manager should clearly assess the opportunities, risks, advantages and disadvantages of integration with other partners, as well as develop joint solutions to overcome difficulties and neutralize system competitors. This approach will allow not to be under pressure of third companies, but to successfully use the coincidence of interests in the work, turning it into a center of profit generation.

Conclusions.

Thus, analyzing all of the above, cost optimization of the company can be performed in the following ways:

1. Saving on raw materials, the main rule of which is to reduce costs not at the expense of quality. The ideal solution is not to reduce the quality of materials, but to revise contracts with suppliers, search for more profitable offers.

2. Analysis and cost reduction for electricity, transport, telecommunications. The transport workshop can be outsourced if the main activity of the company is not related to the provision of transport services. It is possible to reduce energy costs in traditional ways: the transition to energy-saving equipment, flow control.

3. Optimization of the wage fund, reduction of staff. Part of the functions of the company is sometimes more profitable to give them to outsource. Not all staff is beneficial to leave in the enterprise: for example, a person for cleaning only 1–2 times a week.

4. And, the so-called universal ways of optimization of the company's costs. At any enterprise, there is opportunity to optimize or reduce the following costs:

1) the costs of maintaining high status visibility (unreasonably expensive office, elegant car for the head of the company, expensive office phones);

2) production losses (reduction of fuel, raw materials, electricity);

3) the hidden, implicit costs, eliminating the costs of missed opportunities (more rational allocation of machinery in manufacturing, use of human resources).

The result of the optimization of unnecessary costs will be the output of the efficiency of the enterprise to a new level.

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Кәсіпорынды оңтайландыру және шығындарды төмендету жолдары

Аннотация

Мақсаты: кәсіпорынды оңтайландыру және шығындарды төмендету қызметі ретінде оның қалыптасу үдерісін және ең алдымен, жергілікті үдерістердің үлгілері мен «жаһандық» стратегияларды әзірлеу.

Әдісі: әртүрлі салалардағы кәсіпорындардың қызметін талдау, шығындарды оңтайландыру бойынша жарияланымдардың көп болуына қарамастан, компания бұл процесті ұйымдастырудың үлгісін сирек көрсете алады. Керісінше, зиянды кәсіпорындардың саны шығынды азайту және оңтайландыру жүйесін ұйымдастыруда елеулі проблемалар бар екенін көрсетеді. Мақалада контент талдау жүргізілген.

Қорытынды: шығындарды оңтайландыру стратегиясы шығынды экономикалық тиімділікті арттыру факторы ретінде анықтауға, өнімнің бизнес циклінің негізгі кезеңдеріне жұмсалатын шығындарды қысқарту жолдарын анықтайтын және кәсіпорынның өндірістік сегменттері мен өндірістік бөлімшелеріне шығындарды есептеуге арналған міндеттерді белгілейді.

Тұжырымдама: мақала оңтайландыру мәселелеріне және соның салдарынан кәсіпорындағы шығындарды төмендету мәселелеріне арналғанын ескере отырып, авторлар оңтайландыру процесінің қажеттілігін негіздейді және кәсіпорындағы шығындарды оңтайландырудың негізгі принциптерін ашады. Шығындарды оңтайландыру әдістері мен тәсілдеріне ерекше көңіл бөлінген, олардың артықшылықтары мен кемшіліктері анықталған.

Кілт сөздер: шығындарды оңтайландыру, кәсіпорын, кәсіпорынның шығынын төмендету іс-шарасы, шығындарды басқару, шығындарды талдау.

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Пути оптимизации и снижения затрат на предприятии

Аннотация

Цель: оптимизация и снижение затрат предприятия как вид деятельности находятся в процессе своего становления и проявляются, прежде всего, в изобилии моделей как локальных процессов, так и разработки “глобальных” стратегий.

Методы: анализ деятельности предприятий различных сфер показывает, что, несмотря на обилие публикаций по оптимизации затрат, редко, какое предприятие может продемонстрировать образец организации этого процесса. Напротив, количество убыточных предприятий свидетельствует о том, что существуют серьезные проблемы в организации системы оптимизации и снижения затрат. В статье использован контент-анализ.

Результаты: стратегия оптимизации затрат показала направления снижения затрат как факторов повышения экономических результатов деятельности, определение способов снижения затрат по основным этапам экономического цикла продукта, а также расчет затрат по операционным сегментам и производственным подразделениям предприятия.

Выводы: учитывая, что статья посвящена вопросам оптимизации и, как следствие, снижения затрат на предприятии, авторы обосновывают необходимость процесса оптимизации и раскрывают основные принципы оптимизации затрат на предприятии. Особое внимание уделяется методам и способам оптимизации затрат, выявляются их преимущества и недостатки.

Ключевые слова: оптимизация затрат, предприятие, мероприятия по снижению затрат, управление затратами, анализ затрат.

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The effectiveness of realization of regional innovative policy: problems and ways of development

Abstract

Object: assessment of the effectiveness of regional economic policy implementation in the Republic of Kazakhstan, which allows to assess the General trends and features of regional development, their advantages and disadvantages for achieving their economic stability and development.

Methods: During the research, rationing of indicators based on traditional linear scaling was used to obtain relative data, on the basis of which regional ratings for all estimated indicators for 2013–2017 were determine.

Results: The need for innovative development of the economy of Kazakhstan has actualized issues related to the efficiency of the national economy and factors affecting it, and therefore it is analyzed the dynamics of the main macroeconomic indicators in the country in recent years. The assessment of the level of development of regions on the basis of macroeconomic indicators was carried out in order to determine functional tasks, the solution of which is most important for regional development.

Conclusions: In general, it is emphasized that the socio-economic development of the regions has a significant impact on the quality of life and well-being of the population, as well as on the development of the economic potential of the region and its innovative and investment attractiveness, which generally affects the country's welfare.

Keywords: innovative activity, state regulation of the economy, innovative policy, public-private partnership, gross domestic product, purchasing power parity, gross regional product, subjects of innovative activity

Introduction

In modern conditions, one of the strategic directions of state regulation of the economy is the implementation of innovative policy in order to ensure the sustainable development of the country by mastering the production of fundamentally new types of products and technologies, expanding on this basis the markets for domestic goods.

The development and implementation of innovative policy is based on the formation of national innovative system, which is created to unite the efforts of all levels of government, scientific and technical organizations and the business sector of the economy to accelerate the use of science and technology, realization of the country's strategic national priorities (Naklonov, 2015). Due to the need to develop the economy of Kazakhstan it is actualized the tasks related to the effectiveness of the national economy and the factors that have the impact on it.

Hypothesis: in the context of globalization, the innovative activity of the region becomes an integral element of the innovative system of the state, and this suggests that the effective organization of the interaction of these systems is the basis for ensuring the ongoing innovative development of the regional economy and improving the quality of life of its population.

Literature Review

The economy of any country, including Kazakhstan, today cannot develop in isolation from the economies of other states, most of which have already formed, highly developed innovative infrastructure and rich experience in the formation of it. It is such innovative experience that is needed to study and multiplication; it has for the Republic of Kazakhstan the greatest interest.

Based on the experience of developed countries, it is possible to conclude that it is impossible to rely entirely on self-regulation in the market in scientific and technological development.

Due to the fact that the socio-economic perspectives in the development of any country depends increasingly on the way in which the innovative process is carried out in the country, the use of innovations in any enterprise or region acquires a social character (Bekniyazova, 2017).

At the same time, the priority of use of the centralized methods of management in the innovative sphere is proved by world experience, for example in Bavaria, according to Science and Engineering Indicators 2016.

Dynamic economic and social development in most countries is based first of all on innovative activity, the results of which accepted strategically important character (Organization for Economic Co-operation and Development OECD). High technologies in the economy suggest an effective innovative system and the formation of institutions supporting innovative activity. So, in the top ten countries with innovative economies in 2016 such countries as Finland, the USA, Sweden, South Korea, Japan, UK, Netherlands, Australia, Canada, Singapore. Then it is followed India, China (MSTI databases. Organization for Economic Co-operation and Development, 2016). In foreign countries, the production of high-tech products covered only 50–55 macro technologies (Science, technology and innovation in Europe 2016).

The mechanisms of development of activity in the innovative sphere in accordance to international experience are the following strategies:

1) strategy of active state intervention;

2) strategy of decentralized (indirect) regulation;

3) mixed strategy.

The strategy of active state intervention is intensified innovative activity in countries such as Japan, France, the Netherlands, etc. In these countries, innovative activity is the main factor of economic growth. Within this strategy it is carried out financial support of universities by the state, it is provided preferential for organizations that carried out developments and scientific research (Maastricht Economic and Social Research Institute on Innovation and Technology — MERIT 2016). Choosing this strategy it is needed to make appropriate changes in the legislation of the country, as well as in its external policy.

The strategy of decentralized or indirect regulation supposes use of more complex mechanism of public participation in the innovative and scientific sphere.

It is supposed in use of this strategy the preservation by the state the title role in the carrying out of innovative activity, but there is no directive tough policy in this regard, which are representative for the state strategy of active intervention in the economy. In the foreground there are high-tech enterprises and research organizations.

The value of the state comes down to formation of favorable conditions for the development of innovative activity of all NIS participants. This strategy was developed in such countries as Britain, the USA and in other countries.

Mixed strategy combined the characteristics of two above mentioned strategies. This strategy is used mostly in countries where significant share of the economy is represented by the public sector, and the policy of the country itself is aimed at maintaining a high level of export potential in the industries (Edgington, 2018).

In this case, the government in relation to the state-owned enterprises uses the strategy of active intervention, and to the remaining enterprises it uses the strategy of decentralized or indirect control. As an example of this practice could act Sweden (Gassman et al., 2016).

The specific impact of the processes of globalization and regionalization in the innovative sphere is pronounced in international scientific and technical cooperation. So, the most important trend in recent decades has been the development of scientific and technical connections between the states and their regions.

The study of scientific sources made it possible to conclude that the European Union has a great experience in the sphere of the state regulation of innovative activity, first of all, the experience of international cooperation in the innovative sphere as the largest political and economic union that aims at regional integration, and European countries are at the forefront of their own innovative development (Hurtley, 2017).

The mechanisms by which regional authorities introduce innovative technologies are specific in each country, but there are general trends. There is a focus of innovative policy on stimulating the internationalization of realizing research, developments and knowledge-intensive production.

The realization of large research projects due to their length, complexity, high cost isn't always possible within only one country. In this regard, the expansion of international cooperation and integration in the innovative sphere for many industrial countries becomes the most important strategic model for economic growth.

Innovative cooperation makes it possible to apply financial and production resources, competitive advantages of other countries, contributing to the exploitation of capital investments and increase of labor

productivity, allowing the realization of large innovative projects, which is very difficult without cooperation efforts (European private equity and venture capital association).

Confirmation of this global trend is that it is set contours of carried out innovative policy in the EU-28 countries by common European directions in R&D development (Lundwall, 2017).

At the supranational level in the last decade it is enhanced systemic approach to innovative activity's carrying out, based on international cooperation, focusing on the diffusion of knowledge and the improvement of education's quality for creation of more competitive and sustainable industry and the economy as a whole. In the strategy "Europe 2020 it is paid great attention to the unification of the EU countries' efforts for the purpose of forming and practical introduction of innovations that will give the opportunities to use new ideas in the production of new services, goods (Appelt, 2018).

In turn, in the Republic of Kazakhstan there are similar problems of reforming the innovative sphere with the Baltic States (Latvia, Lithuania, Estonia), the experience of solving of which is of great interest for Kazakhstan.

So, for example, in Latvia, the greatest problem of restraint of innovative activity is the fact that small and medium business dominating in the country and covering about 94 % of all enterprises don't have enough funds and qualified personnel to invest in innovative projects (Fageberg et al., 2018).

Used in foreign countries a wide range of mechanisms of stimulation of the development of innovative activity are united by number of such features, which include the following:

1. Mechanisms of indirect participation through the creation of tax and other preferences to innovative active enterprises, among which the most actively used deductions of costs on R&D from taxable income, as well as the formation of innovative infrastructure, etc.

2. Mechanisms of direct state participation in innovative activity: provision of government credits for innovative companies at preferential rates, provision of the state order for R&D for priority sectors of the economy, direct financing by the state of scientific research, etc.

In general, in order to advance the innovative activity in the economically developed and developing foreign countries the state has great importance for the formation of innovative infrastructure, including the creation of information system in the country, what makes it possible to increase economic development of countries.

In Kazakhstan, methods and instruments of innovative state support are actively being formed. In stimulating development of innovative activity, a big role at present stage is devoted to the state. At the same time, the following disadvantages are typical for NIS development mechanisms in Kazakhstan in comparison with developed countries.

– in the use of indirect measures in regulating the problem is a formally formed, but in fact not functioning innovative infrastructure that doesn't help complete the stage of R&D and realize the connection between industry and universities;

– insufficient measures of indirect state support for innovative firms, including inadequate for formed national innovative business measures on venture financing, tax credit, etc.;

– insignificant direct financing of performed fundamental research, especially experimental design works, as a result of which many universities have no opportunity to bring their laboratory samples and inventions to the industrial stage.

It should be noted that today in Kazakhstan for the formation of effective NIS there are great advantages, including the availability of basic infrastructure and financial, material, labor resources, political and economic stability (Bekniyazova D.S. et al., 2016).

Thus, it should be understood that at present time there are tendencies in the appearance of similar purposes and tasks in innovative policy in the considered countries, but due to the country specific features, there are differences between them.

However, taking into account the experience of foreign countries in the innovative sphere, the presence of the mechanism of active interaction among the participants in the innovative process, which stimulates the development of the national and regional innovative system of the country, taking into account the mentality and national characteristics, is of primary importance for the regions of the Republic of Kazakhstan (Kashuk et al., 2018).

Due to the need to develop the economy of Kazakhstan it is actualized the tasks related to the effectiveness of the national economy and the factors that have the impact on it.

The Republic of Kazakhstan ranks ninth place in the world in terms of territory and second place in the CIS countries, 62 place in terms of population and 42 place in terms of gross domestic product (further GDP) on PPP (purchasing power parity).

The Republic of Kazakhstan includes 14 regions, as well as the capital city — Nur-Sultan city and the city of the republican significance — Almaty city. The economy of the Republic of Kazakhstan is the largest among the countries of Central Asia (second only from the Russian Federation), since 2015 the country is the member of the Eurasian Economic Union.

It is exported by the Republic of Kazakhstan raw materials, which are produced by the mining, metallurgical, fuel and chemical industries. In the structure of exports in Kazakhstan, the major share is occupied by oil and oil products (18 %), exports of non-ferrous metals (17 %), ferrous metals (16 %), etc. In the structure of the republic's import it is mainly machinery and equipment, food products and metal products (Duisen G.M. et al, 2018).

The dynamics of the basic macroeconomic indicators in the republic for 2013–2017 years are shown in Table 1.

Table 1. Basic macroeconomic indicators of the Republic of Kazakhstan for 2013–2017 years

Indicators	2013	2014	2015	2016	2017	Growth rate in 2013–2017, %
Gross domestic product, mln. USD	236633	221418	184387	137278	162887	68.8
GDP growth rate, in percentage	6,0	-6.7	-18.9	-30.5	3.9	65.0
GDP per capita according to PPP, USD	13890.8	12806.7	10509.9	7714.8	9030.3	65.0
Inflation, in percentage	4.8	7.4	13.6	8.5	7.1	147.9
Unemployment rate, in percentage	5,2	5.0	5.1	5.0	4.9	94.2
Investments in fixed assets, mln. USD	33293.2	36784.9	31681.4	22686.2	26903.6	80.8
Export, bln. USD	85.6	80.3	45.7	36.8	48.3	56.4
The price of oil, USD	108.56	99.0	51.2	41.9	55.5	51.1
Import, bln. USD	50.8	43.6	30.2	25.2	29.3	57.7
Note — Compiled by the authors based on Committee on Statistics of the Republic of Kazakhstan						

The economy of the Republic of Kazakhstan for 2013–2017 was characterized by a gradual reduction in 2014–2016 years in the gross domestic product growth rate of the country, the reason for which was a generally negative global macroeconomic situation.

The internal reasons for the weakening of the GDP growth rates are increased inflation (doubling in 2014–2015), the weakening of the national currency — KZT against the world's foreign currencies. This situation mitigated a quite optimistic situation in the domestic market of the republic. It is continued in the country active increase of the consumption of services and goods in the domestic market, due to the growing number of people in the country.

In recent years, in the country it is observed a rapid growth in the service sector, increase by 10.8 % in output of agricultural products due to a large grain harvest, as well as to the beginning of oil and gas condensate production at the new Kashagan gas and oilfield.

The main reason for the decline in export in 2015–2017 is world oil prices. So, in 2015, the price for brent crude oil in the averaged was 52.35 USD per barrel, sharply declining by 46.68 USD per barrel compared to 2014.

It seems that one of the most important aspects of innovative policy is the regional component. The regional innovative policy is understood as a set of established goals and priorities for the development of research and innovative activity in the region, ways and methods of achieving them based on the interaction of regional and state authorities.

Changes in the nature of new technologies and in the global economy have led to the increase in the importance of regions as places of economic activity (A. Isaksen, 2016; A. Isaksen, 2018).

Methods

The scientific methodology assumes the systematic approach to problem solving, providing the unity of qualitative and quantitative methods in the process of research.

The qualitative content analysis, monographic method makes it possible to carry out the research object detailed study based on extensive scientific literature review and law, the method of comparative and logical synthesis and analysis.

The socio-economic development of the regions has a significant impact on the quality of life and well-being of the population, as well as on the development of the potential of the regional economy and its innovative and investment attractiveness.

The carrying out of assessment of the level of regional development makes it possible to determine the functional tasks, the solution of which is of the greatest importance for regional development, as well as the positions according to which more active actions are needed to correct regional development (Gordeyeva Ye.A., 2018).

To assess the level of socio-economic regional development, the following macroeconomic indicators are offered:

– volume of industrial products;
– investments in fixed assets;
– real disposable income of the population;
– average monthly accrued nominal wage;
– consumer price index (further CPI);
– economically active population;
– the level of unemployment (to the economically active population).

The analysis of macroeconomic indicators of the development of regions was carried out in the dynamics for 2013–2017.

Based on the results of the analysis, based on the data of the Ministry of National Economy of the Republic of Kazakhstan Committee on Statistics, general consolidated rating of the regions of Kazakhstan has been constructed that characterizes the position of the region in the republic among other regions of the country and reflects the level of development of the region as a whole for 2013–2017, presented in Table 2.

Table 2. Rating assessment of the regions of the Republic of Kazakhstan according to the level of economic development in accordance with the analysis data for 2013–2017

Region	Volume of industrial products, mln. KZT	Investment in fixed assets, mln. KZT	Disposable income of the population, KZT	Average monthly nominal wage, KZT	Consumer price index (CPI)	Economically active population, thousand people	Unemployment rate, in percentage	Total	Region Rating
Nur-Sultan c.	12	10	1	3	16	9	7	60	3
Almaty c.	10	13	3	5	12	4	13	61	4
Akmola region	13	16	10	15	9	10	9	91	14
Aktobe region	7	14	8	12	3	10	9	69	8
Almaty region	11	13	10	15	4	3	8	69	9
Atyrau region	1	7	2	2	9	15	10	48	1
West-Kazakhstan region	5	14	7	9	7	14	9	71	10
Jambyl region	15	16	15	16	8	7	9	96	15
Karaganda region	4	14	7	10	1	5	9	53	2
Kostanay region	12	16	11	14	2	8	10	80	11
Kyzylorda region	11	15	14	12	12	13	10	86	13
Mangistau region	3	12	5	1	14	15	11	66	6
South-Kazakhstan region	10	13	16	16	10	1	12	82	12
Pavlodar region	7	12	7	11	4	11	8	66	5
North-Kazakhstan region	16	16	13	16	3	14	9	99	16
East-Kazakhstan region	7	13	8	13	10	5	9	69	7

Note — Compiled by the authors based on Committee on Statistics of the Republic of Kazakhstan

The best position is 1, the worst is 16. During the research, regional economic methods were used, in particular, the method of economic-geographical research, system analysis, balance method, methods of localization and systematization.

The indicator gross regional product (further GRP) per capita was defined as the main indicator, for which further the share of influence of each of the presented macroeconomic indicators on the socio-economic level of regional development was calculated.

The choice of GRP per capita as a base indicator is explained by the fact that this indicator most accurately reflects the level of regional socio-economic development. In order to determine the proximity of the relationship between each presented indicators and the GRP per capita indicator, the correlation analysis was carried out.

Based on obtained correlation coefficients, the share or weight of the influence of each indicator on the Gross regional product (GRP) per capita was calculated for the regions of the republic.

Further, using the rationing of indicators based on the traditional linear scaling to obtain relative data, the ratings of the regions for all assessing indicators in 2013–2017 were determined with the use the following formula (1) and the simple average arithmetic for the studying years was used, according to which the place in the rating is determined (from 1 to 16).

$$I_j^i = \frac{R_j^i - \min(R_j^i)}{\max(R_j^i) - \min(R_j^i)} \quad (1)$$

where,

i — the number of indicator, $i = 1., 2..., n$

j — the number of the region, $j = 1., 2..., n$

I_j^i — rating assessment of the j^{th} region according to the i^{th} indicator;

R_j^i — value of the i^{th} indicator for the j^{th} region;

$\max(R_j^i)$ — maximum value of i^{th} indicator;

$\min(R_j^i)$ — minimum value of i^{th} indicator.

According to the obtained values of rating assessments and determining the place in the rating of each region of the republic, it is possible to trace changes or tendencies in the development of this or that sphere in the regions of the Republic of Kazakhstan.

The calculation of the final integral rating of the socio-economic development of the j^{th} region of the Republic of Kazakhstan and, accordingly, the determination of its place in the rating, was carried out on the basis of the obtained data of rating assessment of the j^{th} region for each macroeconomic indicator in accordance with the calculated weights (shares) of influence of i^{th} indicator on gross regional product per capita by the following formula (2):

$$I_j = \frac{\sum k_j^i \cdot N_j}{n} \quad (2)$$

where,

I_j — the final integral rating of socio-economic development of the j^{th} region of the Republic of Kazakhstan;

k_j — weight (share) of the influence of the i^{th} indicator of the j^{th} region on the gross regional product per capita;

N_j — the value of the rating assessment of the j^{th} region for each macroeconomic indicator;

n — number of assessed indicators.

The best indicators of economic development have such regions of the Republic of Kazakhstan according to the rating assessment of the regions of the republic, as Atyrau, Karaganda regions and Nur-Sultan city for 2013–2017.

This situation is explained by the growth of industrial production, real money incomes of the population in these regions, the active policy of the region in saving and attracting the economically active population to the region.

The worst indicators are in such regions as North-Kazakhstan, Zhambyl regions, which indicates insufficiently formed conditions for socio-economic regional development. It should be emphasized that the main goal of the regional innovative policy should be the creation of favorable conditions for:

– the implementation of innovative activity;

– ensuring the growth of competitiveness of local products;

– the effective use of scientific and technological reserves and the solution of socio-economic development.

The legislative base, target programs, concepts are the basic methods of realization of innovative policy in the regions of Kazakhstan.

The main importance of innovative regional programs is to stimulate regional integration between various research and development (R&D) subjects, coordinate regional innovative policy, develop a common strategy, and spread the best experience in innovation creation. Regional innovative cooperation is of particular importance (Draft report of the Group of Specialists on Public-Private Partnerships about the work of the seventh UN session).

As experience shows, to the greatest extent, solving the tasks of developing an innovative economy, building up competitive products, implementing advanced technologies, and creating stable sources of budget incomes in modern conditions contributes to determining the main directions of state support for innovative activity.

The following directions of state innovative policy can be distinguished: legal regulation, direct and indirect funding, organizational support, as well as government incentives for innovation activity and innovative processes in the Republic of Kazakhstan and its regions.

In modern society, it is innovations that ensure the successful development of the economy, increase in the level and quality of life of the population. However, in our country the mechanism of effective innovative processes hasn't yet been formed (Dnishev et al., 2017).

Therefore, government regulation is the most important methods of ensuring the dynamic flow of innovative processes.

It is extremely important to set priorities for innovative development, develop innovative programs and create a regulatory framework for innovative activity. Within these directions, the state works out a series of activities aimed at increasing the contribution of science to the development of the country's economy, ensuring progressive transformations in the sphere of material production, and increasing the competitiveness of national products (Alina G.B., 2018). On the basis of the regulatory documents adopted by the state authorities of the Republic of Kazakhstan, it is possible to systematize the measures of state support for innovative activity that correspond to the listed directions (Figure 1).

Government financial support, which is usually provided by the national budget and local budgets in the form of loans, subsidies, subventions has particular importance in the conduct of scientific research, the introduction of scientific achievements in production, the creation of knowledge-intensive industries. Moreover, government funding can be divided into direct — the allocation of funds directly from the budget or distribution through special extra-budgetary funds, as well as indirect effects through the provision of tax incentives, privileges to subjects of innovative activity in accordance with the laws of the Republic of Kazakhstan.

According to the analysis, significant sources of financing science in Kazakhstan are budget funds (52.2 % in 2017) and own funds of enterprises (40.9 % in 2017). At the same time, the share of enterprises' own funds in the total amount of funding increases from 2014 to 2017. Thus, in 2017, the share of enterprises' own funds in the total amount of financing amounted to 40.9 % (in 2013 — 28.9 %) and amounted to 28187.6 mln. tenge.

Budget funds, in turn, decrease from 2013 to 2017 by 11.4 % (in 2013 — 63.6 %). In total, two sources — budget financing and own funds of enterprises in 2017 financed 93.1 % of all costs for technological innovations (in 2013 — about 92.6 %). At the expense of foreign sources accounted for only about 1 % for 2013–2017 [2].

Effective promotion of innovations can only be achieved through close cooperation of scientific, educational institutions and enterprises.

However, only by funding research activity from the budget cannot be achieved goal of focusing research on current problems of production, therefore, on the needs of the market.

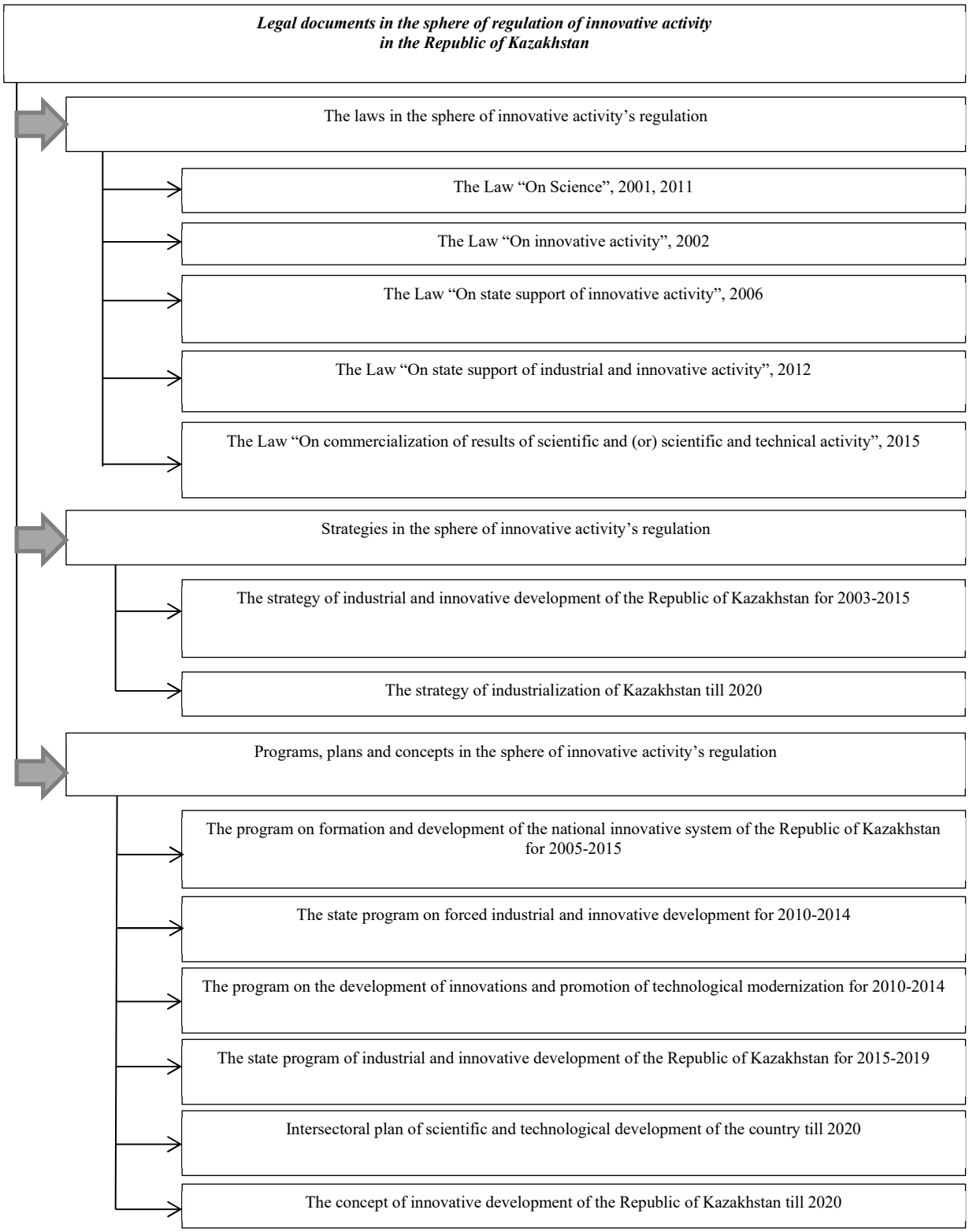

Figure 1. The total list of legal documents adopted in the Republic of Kazakhstan for regulation of innovative activity in the country

Note. Compiled by the authors based on the sources of Law of the Republic of Kazakhstan "On the state support of industrial and innovative activity; Law of the Republic of Kazakhstan "On commercialization of results of scientific and (or) scientific and technical activity"; Law of the Republic of Kazakhstan "On science"; State program of industrial and innovative development of the Republic of Kazakhstan for 2015–2019

Preferential public funding raises a number of problems on the way of innovative development of the country, the key of which is the low interest of research organizations in the commercialization of development.

Therefore, business interest in research funding is required. Here, an important role is played the use of special measures of state incentives: government guarantees, government orders, and the dissemination of the idea of innovative development in order to improve the social status of scientific and innovative activity.

Despite the fact that the state budget expenditures on fundamental research and scientific-technical progress assistance (funds allocated to scientific organizations for fundamental research and the development of promising technologies and scientific-technological progress' directions) are growing every year, in reality these expenses still make up a small share in total GDP (Table 3).

Table 3. Analysis of the efficiency of the implementation of innovative activity in 2013–2017 in Kazakhstan

Indicators	2013	2014	2015	2016	2017
The volume of production of innovative products, mln. KZT	578263.1	580386.0	377196.7	445775.7	844734.9
Number of innovative-active enterprises in the country	1774	1940	2585	2879	2974
Number of staff engaged in R&D, people	23712	25793	24735	22985	22081
Expenses on the implementation of technological innovations, mln. KZT	61672.7	66347.6	69302.9	66600.1	68884.2
The volume of product per one innovation-active enterprise, mln. KZT	326.0	299.2	145.9	154.8	284.0
Volume of innovative products per one employed, mln. KZT	24.4	22.5	15.2	19.4	38.3
Efficiency of expenses on technological innovations	9.4	8.7	5.4	6.7	12.3
Note — Compiled by the authors based on Committee on Statistics of the Republic of Kazakhstan					

Considering the internal expenses of technological innovations, it can be noted a tendency for their annual gradual increase (exception — 2016). In 2017, the volume of expenses amounted to 68884.2 million tenge, which is 11.7 % higher than the 2013 level.

The increase in expenses in the specified period is associated with the intensification of industrialization processes in the republic, the modernization of enterprises, the adoption of a number of programs in the field of industrial and innovative development, within which much attention is paid to supporting the development of domestic innovations.

For the analysis of labor productivity, the author calculated additionally the volume of production per one innovative-active enterprise and the volume of innovation production per employee.

Based on the data in the table, in 2013 the volume of production per one innovative active enterprise reached its maximum value — 326.0 million tenge. In 2017, this indicator decreased by 42.0 million tenge, amounting to 284.0 million tenge in the current period.

The volume of innovative products per employee was gradually increased, which indicates an increase in labor productivity.

In the context of the regions, the leaders in the production of innovative products are the Pavlodar region, Nur-Sultan c., Shymkent c., Kostanay and East Kazakhstan regions. It should be noted that, starting from 2014, there has been a sharp increase (twice) in the volume of production of innovative products in Pavlodar region.

The analysis of the structure of expenditures on science and technology shows a relatively high level of expenditures on applied sciences (59.4 % of the total expenditures in 2017), with a much lower level of financing for the final stage of development (design activity — 24.9 %).

In developed countries, these figures are at the level of 25–30 %, while about 55–60 % of all financial resources are directed to the last stage of development and commercialization (Organization for Economic Co-operation and Development OECD 2015).

In modern international and Kazakhstan practice there is a whole arsenal of measures of state incentives for innovative development.

However, not all of them are used and not all work effectively in the regions. As a rule, local budgets aren't able to finance R&D, large innovative projects, enterprises don't have sufficient funds to re-equip production.

Not all regions of Kazakhstan have sufficient scientific potential. This confirms the fact that government support of regional innovative activity is an important aspect of the relationship between state and regional science, technology and innovative policy.

Conclusion

In Kazakhstan, which has a large-scale scientific and technical complex, the task of transition of the economy to an innovative way of development cannot be solved only by increasing the state budget spending on R&D, supporting innovative entrepreneurship, etc.

Real economic opportunities allow state authorities to solve only part of the problems in the field of science and technology associated with the preservation and effective use of the scientific and technical potential of the regions.

The regions have no smaller share of responsibility for solving these problems [8]. Despite the powers granted by the legislation of the Republic of Kazakhstan, the role of the regions in stimulating and supporting scientific activity is clearly insufficient. With the exception of a few positive examples, the share of expenditures of regional budgets allocated for the development of science and technology rarely exceeds tenths of a percent.

Therefore, without a powerful external infusion of financial resources or a change in tax policy with respect to underdeveloped regions, they will remain as recipients for many decades. Having the right to legislative activity, state authorities don't fully use this right in relation to science and technology. Not in all regions of the republic there is an established regulation of innovative activity, which should determine the direction of development of the region, coordinate actions, consolidate the relationship of subjects of innovative activity.

This is due to a clear underestimation of the role and place of science, technology and innovation in ensuring the sustainable development of the regions of Kazakhstan. Other factors hindering modern economic development through the use of:

– scientific advances are the untargeted;
– inefficient use of funds;
– the inertia of managers;
– their lack of interest in improving results.

Therefore, it seems that, along with government funding and management, it is also necessary to introduce modern management methods, financing methods used in the private business sector.

Thus, in the process of production and sale of knowledge in the form of new technologies, equipment, it is necessary to attract business representatives, because in accordance with modern trends of economic development, the development of institutions of interaction between the state, science and business in Kazakhstan and its regions is an important condition for increasing investment and innovative activity [9]. The key point of such a partnership is the coordination of the goals and needs of each of the parties.

After all, partnership is possible only when all partners are interested, and due to the interaction, they can most effectively solve the problem of reorienting the regional economy towards an innovative development way (Figure 2).

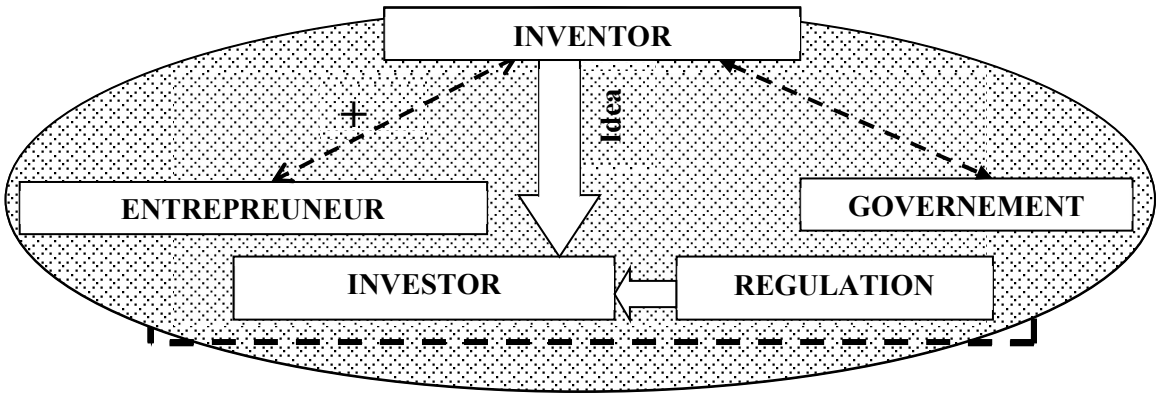

Figure 2. Model of the institutions of interaction of the state, science and business

Note – developed by the authors based on research

At the same time, each of the parties of public-private partnership contributes to the overall innovative project. In this context:

– the task of science is to offer new ideas and developments;

– the mission of the government is to create conditions for all participants, to train relevant personnel, to provide the necessary database on the developed technologies, as well as their availability for commercial enterprises, to provide tax and other benefits, guarantees;

– the role of business — project financing, materialization of scientific ideas, effective management.

The mechanism of such public-private partnership can be used to solve state problems in the field of innovative development at the level of the Republic of Kazakhstan and its regions.

In conclusion, it should be noted that closer interaction between the industrial sector of the economy, financial institutions, universities, research organizations, and state authorities will contribute to the achievement of the goals of the innovative policy, first of all, creating a favorable environment for innovations. This policy should be aimed at increasing the contribution of the research and innovation sphere to the scientific and technical progress of the country, to improving the socio-economic indicators of the regions through the effective use of their innovative potential.

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Д.С. Бекниязова, Л.И. Кашук, Л.М. Давиденко, И.П. Стеценко

Аймақтық инновациялық саясатты жүзеге асырудың тиімділігі: мәселелері мен даму жолдары

Аңдатпа

Мақсаты: аймақты дамытудың жалпы үрдістері мен ерекшеліктерін, экономикалық тұрақтылығы мен дамуына қол жеткізу үшін олардың артықшылықтары мен кемшіліктерін бағалауға мүмкіндік беретін Қазақстан Республикасындағы өңірлік экономикалық саясатты іске асырудың тиімділігін бағалау.

Әдісі: зерттеу жүргізу кезінде салыстырмалы мәліметтерді алу үшін дәстүрлі сызықтық масштабтауға негізделген көрсеткіштерді стандарттау қолданылған, олардың негізінде 2013–2017 жылдардағы барлық бағаланған индикаторлар бойынша аймақтардың рейтингтері анықталған.

Қорытынды: Қазақстанның экономикасын инновациялық дамыту қажеттілігі ұлттық экономиканың тиімділігі мен оған әсер ететін факторларға байланысты мәселелері өзекті, осыған сәйкес авторлар соңғы

жылдардағы елдегі негізгі макроэкономикалық көрсеткіштердің динамикасын талдаған. Шешімі аймақтық даму үшін маңызды болып табылатын функционалдық міндеттерді анықтау үшін макроэкономикалық көрсеткіштер негізінде аймақтардың даму деңгейіне баға берілген.

Тұжырымдама: жалпы, мақалада аймақтардың әлеуметтік-экономикалық дамуы халықтың өмір сүру сапасы мен әл-ауқатының өсуіне, сондай-ақ аймақ экономикасының әлеуеті мен оның инновациялық және инвестициялық тартымдылығының дамуына, жалпы елдің әл-ауқатына әсер ететіні баса айтылған.

Кілт сөздер: инновациялық қызмет, экономиканы мемлекеттік реттеу, инновациялық саясат, мемлекеттік-жеке меншік әріптестік, жалпы ішкі өнім, сатып алу қабілетінің паритеті, жалпы аймақтық өнім, инновациялық қызмет субъектілері.

Д.С. Бекниязова, Л.И. Кашук, Л.М. Давиденко, И.П. Стеценко

Эффективность реализации региональной инновационной политики: проблемы и пути развития

Аннотация

Цель: оценка эффективности реализации региональной экономической политики в Республике Казахстан, позволяющая оценить общие тенденции и особенности развития регионов, их преимущества и недостатки для достижения их экономической стабильности и развития.

Методы: при проведении исследования было применено нормирование показателей на базе традиционного линейного масштабирования для получения относительных данных, на базе которого определены рейтинги регионов по всем оцениваемым показателям за 2013–2017 годы.

Результаты: необходимость инновационного развития экономики Казахстана актуализировала вопросы, связанные с эффективностью национальной экономики и факторов, оказывающих воздействие на нее, в связи с чем авторами проведен анализ динамики основных макроэкономических показателей в республике за последние годы. Проведена оценка уровня развития регионов на базе макроэкономических показателей с целью определения функциональных задач, решение которых имеет наиболее важное значение для регионального развития.

Выводы: в целом, в статье подчеркивается, что социально-экономическое развитие регионов оказывает значительное воздействие на качество жизни и благосостояние населения, а также на развитие потенциала экономики региона и его инновационную и инвестиционную привлекательность, что, в целом, отражается на благосостоянии страны.

***Ключевые слова*:** инновационная деятельность, государственное регулирование экономики, инновационная политика, государственно-частное партнерство, валовый внутренний продукт, паритет покупательной способности, валовый региональный продукт, субъекты инновационной деятельности.

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Regionalization and integration of the global economy

Abstract

Object: The aim is to disclose the processes of involving most of humanity in a single system of financial, economic, socio-political and cultural ties, demanding effective ways to streamline relations in a space. Like other countries Kazakhstan is involved in the process of regionalization, Kazakhstan is also interested in free access to foreign markets. The authors of the article determined the role of Kazakhstan in the international community in matters of regionalization and integration.

Methods: The main methods: analysis, detailing, generalization.

Findings: It has been established that free economic zones, having a structural effect on the international movement of goods, services, capital, contribute to the processes of globalization and the development of economic integration.

Conclusions: During the writing of the article, the authors concluded that regionalization and integration of the economy have both positive and negative sides. On the one hand, they contribute to the convergence of national economies that interact with each other. On the other hand, it is contributing to the split of a single world market, which is leading to rivalry and competition.

Keywords: Regionalization, integration, globalization, world economy, strategic development, free economic zones, Kazakhstan.

Introduction

The relevance of the research topic is justified by the fact that studying the experience of regionalization and integration of economic processes, as well as the functioning and development of free economic zones in developed and developing countries, is important for improving the activities of free economic zones within our state, as well as with the aim of determining the ways of development of the country's economy.

At the heart of deep and stable economic relations between companies at the international level, a process such as regionalization arises. Countries with different levels of economic development, but with relatively the same problems, are entering the integration process (Bruno, 2017).

The regionalization of the world economy has become one of the most important manifestations of the process of economic integration. Regional economic groups formed on a compact area from countries that have common features in the economy, intensive economic ties, as well as common goals regarding further economic development. The key criteria regarding the economic conditions of integration are the following: the level of development of countries, their resource and technological potential; the market relations'degree of maturity, in particular national markets for goods, services, capital and labor, the scale and prospects of development of economic relations between countries. In addition, socio-cultural compatibility is important **(**Hyoung-kyu, 2012**)**.

Speaking about integration, noted that this is a common project, which is accepted by all participating countries, while they differ in the level of economic development, but each country individually seeks to provide itself with a favorable strategic perspective in the context of joint project implementation (Ignatov, 2019).

Literature Review

A sufficient number of articles and studies have been devoted to regionalization and integration. Nevertheless, systemic approaches to the theory of regionalization and integration of the world economy have not yet been fully formed, questions of determining the role of free economic zones in the structure of regional development have not been fully disclosed. There are questions on the goals of creating and developing regional blocs in relation to free economic zones, as well as the role of the state in solving these problems.

It should be noted that the work of V. Leksin, V. Doronin, M. Storper, A.J. Scott, S. Zhakupova, G. Koptaeva, G. Agabekova, G. Berdibekova and other authors is devoted to the solution of these issues. Moreover,

opinions among researchers sometimes differ. Therefore, for example, some authors believe that globalization is widely available for the regional blocks of the global economy (Moberg, 2015). Others at this point believe that without national and regional barriers there cannot be a single global economy. At the present stage of economic development, a meaningful approach is required to study the features of the development of free economic zones, to develop proposals for their use in the domestic economy.

Methods

When writing the article, the authors applied various general scientific methods: using inductive and deductive methods, the analysis of the collected material was carried out, the accumulated information was analyzed, detailed, generalized. The work used logical and systemic approaches.

Results

In regional integration associations, an effective mechanism is being formed that promotes the integration of national economies into a single whole, an organic system. The components of such a mechanism are: the charter of the organization, which determines its goals and methods of activity; supranational governing bodies; coherent economic policy.

Regional integration associations essentially differ from each other both in their territorial organization and in the depth and maturity of integration processes. In spatial terms, it can be distinguished as macro-regional, interregional, and micro-regional levels of integration (Kozlov, 2017).

At the macro-regional level, organizations are being formed that are composed of integral economies of states that are located in a rather large space. There are already several dozen of such organizations on all continents of the planet. Among the most famous are the European Union, the Asia-Pacific Economic Cooperation (APEC), the Commonwealth of Independent States (CIS), and the North American Free Trade Agreement (NAFTA).

At the interregional level, the integration process takes place in the form of cooperation between the border administrative-territorial entities of states. European regions can serve as an example (among them, with the participation of Ukrainian territorial units — the Lower Danube, the Carpathians, and others).

At the micro-regional level are formed ("special zones", "free zones", "economic zones") (SEZ, 2018).

Authors N.N. Livintsev, G.M. Kostyuninina noted that free economic zones are "a kind of foreign trade enclave, part of the country where goods are considered to be outside of the national customs territory and therefore are not subject to ordinary customs control and taxation" (Livincev, 2004).

According to the definition of M.M. Boguslavsky, "free economic zones in international practice are understood to be separate territories of states where special favorable conditions for the activities of foreign enterprises are created to solve specific economic and other problems" (Boguslavskij, 2004).

The definitions given in the literature do not have much difference between the concepts of "free economic zones" and "special economic zones", although in the early 1990's Kazakhstan adopted the concept of "free economic zones", and since 1996 the concept of "special economic zones" had been legalized (Zakon, 1996).

According to the law of the Republic of Kazakhstan "a special economic zone is a part of the territory of the Republic of Kazakhstan with precisely defined borders, on which a special legal regime of a special economic zone operates for the implementation of priority activities" (Zakon, 2019).

Thus, the authors note that so far there is no single concept of "free economic zones", since these concepts are ambiguously applied to investment and foreign trade activities.

Free economic zones have a favorable economic and geographical position in a region or part of a country where duty-free or preferential export-import regimes are established and some trade, currency and financial isolation are achieved compared to other regions of the country.

Creation of SEZ leads to the achievement of the following goals: saturation of the domestic market with high-quality products; ensuring full employment of the workforce; attraction of investments; organization of production whose products are exported; the inclusion of national economies of individual countries in international economic relations; implementation of the latest scientific and technological achievements; solving the problems of regional policy (Kozlov, 2017).

The expansion of the integration of the world economy and the openness of the economies of different countries led to the emergence of various specialized types of free economic zones. Widespread types of free economic zones are: joint venture zone, technopolis, service free economic zones, free network information zone, integrated free economic zone (Kurmanov, 2019).

Free economic zones are also grouped by the degree of integration into the global and national economies; sectorial characteristic, by the nature of ownership, but, the main grouping of free economic zones is considered a classification by the nature of activity. Despite the various groups of free economic zones, the main tasks are: increasing the international competitiveness of national production; increase in domestic goods and services; development of new types of production; scientific and technical development of the country; solving social problems; development of effective forms of organization of production, management of modern marketing activities, etc.

For example, in the territory of the Republic of Kazakhstan, the following special economic zones function: “Astana is a new city” (Astana), “Seaport Aktau” (seaport of Aktau), “Information Technology Park” (Almaty) and “Ontustik” (South Kazakhstan region). “Burabay” (Shuchinsk district), “National Industrial Petrochemical Technopark” (Atyrau region), “Khorgos — East Gate” (Almaty region), “Pavlodar” (Pavlodar region) and “Saryarka” (Karaganda region) (table).

Table Key performance indicators of some of the free economic zones of Kazakhstan, 2018

Name of SEZ	Manufacturing value, Bn. Tg.	Cumulative investment	Workspaces, persons
“Pavlodar”	91.1	35.4	1460
“Seaport Aktau”	344.1	119.3	1650
“Ontustik”	42.9	29.5	1400
“Turkistan”	12	19	1630
Note — compiled by the authors			

During the period of functioning of Kazakhstan’s SEZ, new projects and new jobs were implemented, investments were also attracted to the regions.

Today, Singapore and Irish companies, which have vast experience in managing special economic zones, show great interest for Kazakhstan. Studying the experience of the functioning and development of free economic zones in developed and developing countries is important for improving the activities of free economic zones and determining the development paths of the country's economy.

The regionalization of the global economy has become one of the most important manifestations of the integration process. According to the degree of development of the integration process, these levels or stages of regional integration are distinguished:

– preferential trade zone — at this level, trade in certain goods and services between member countries is liberalized. This form of integration is the most common in the world, it is, in particular, inherent in the CIS;

– free trade zone — tariffs are removed in trade between members of the association for all goods and services, and in trade with third countries each member of the association carries out its own tariff policy; an example is the North American Free Trade Association (NAFTA); European Free Trade Association (EFTA);

– Customs Union — members of the association establish a single tariff in trade with third countries. One of the example is the Customs Union between Russia, Belarus, and Kazakhstan;

– Common market — not only trade is liberalized but also the movement of factors of production, an example is MERCOSUR;

– economic and monetary union — a common policy is implemented in all areas of the economy and a common currency is introduced; so far, the only example is the European Union (Gorda, 2018).

Currently, there are already dozens of regional integration associations at various levels. The most important of these are:

1. Europe.

– European Union (EU): Austria, Belgium, Bulgaria, Great Britain, Greece, Denmark, Estonia, Ireland, Italy, Spain, Cyprus, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Germany, Poland, Portugal, Romania, Slovakia, Slovenia, Hungary, Finland, France, Czech Republic, Sweden — 27 countries in total.

– European Free Trade Association (EFTA): Iceland, Norway, Switzerland, Liechtenstein.

– Organization of the Black Sea Economic Cooperation (BSEC): Azerbaijan, Albania, Bulgaria, Armenia, Greece, Georgia, Moldova, Russia, Romania, Turkey, Ukraine, Serbia.

– GUAM: Georgia, Ukraine, Azerbaijan, Moldova.

– The Commonwealth of Independent States (CIS): Azerbaijan, Belarus, Armenia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Uzbekistan.

An example of the sustainable development of integration is the formation of a Common economic space (CES) of the states: Kazakhstan, Russia and Belarus, Armenia, and Kyrgyzstan. Until 2015, Russia, Belarus and Kazakhstan were members of the Customs Union, which later became the Customs Union (CU) on the basis of the EurAsEC, and subsequently became the Customs Union of the Eurasian Economic Union (CU EAEU) (Gridneva, 2018).

The Customs Union is a real and effective anti-crisis tool that increases the chances of the survival of national producers in the global crisis, protecting national economies from the negative manifestations of globalization.

Among the obvious benefits of the customs union, it is possible to highlight increased cooperation between producers, the creation of a common market, the promotion of competition and the overall activity of business, and the facilitation of movement of goods, services, labor, finance, and technology across a common territory. Economists predict an increase in the competitiveness of commodity producers of the countries participating in the customs union and a decrease in the cost of bureaucratic procedures, along with the solution of a number of social problems — employment, etc.

Of course, Kazakhstan's entry into the Customs Union a real chance for domestic entrepreneurs to develop and expand their business. The advantages of the Customs Union for Kazakhstan are obvious. First of all, among the positive aspects, it is possible to unify transport tariffs. This will allow Kazakhstan significantly reduce the cost of transit transportation of its export cargo through Russian and Belarusian territories to world markets. Kazakhstan has long raised this issue with partners, and if the plan now can be implemented, the price competitiveness of domestic goods in European markets will increase. For certain cargoes, tariffs may decrease by two or more times.

The restoration of technological chains in industry, broken since the time of the collapse of the USSR, will also bring real benefits to the economy. There are many areas in Russian industry and regional development programs in which, within the framework of the economic and territorial division that existed in the Soviet era, Kazakhstani enterprises can now fit quite easily. Within the framework of a single space, such spheres of the national economy as energy, engineering, transport, etc. can be developed.

2. Asia and the Pacific Rim.

– Asia-Pacific Economic Cooperation (APEC): Australia, Brunei, Vietnam, Indonesia, Canada, China, Republic of Korea, Kiribati, Malaysia, Mexico, Marshall Islands, New Zealand, Papua New Guinea, Peru, Russia, Singapore, USA, Thailand, Taiwan, Philippines, Chile, Japan.

– Association of Southeast Asian Nations (ASEAN): Brunei, Vietnam, Indonesia, Cambodia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand.

– "Colombo Plan" for joint economic and social development in Asia and the Pacific: Great Britain, USA, Canada, Japan, Australia, New Zealand, India, Pakistan, Sri Lanka, Afghanistan, Iraq, Nepal, Myanmar, Maldives, Bhutan, Bangladesh, Laos, Cambodia, Malaysia, Thailand, Singapore, Papua New Guinea, Indonesia, Philippines, Fiji, Republic of Korea.

– Council for Arab Economic Unity (SAEE): Egypt, Iraq, Jordan, Yemen, Kuwait, Libya, Mauritania, United Arab Emirates, Palestine, Syria, Somalia, Sudan.

– Shanghai Cooperation Organization (SCO): Russia, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, China.

3. North and South America.

– North American Free Trade Agreement (NAFTA): USA, Canada, Mexico.

– Latin American Integration Association (LAI): Argentina, Bolivia, Brazil, Venezuela, Colombia, Mexico, Paraguay, Peru, Uruguay, Chile, Ecuador.

– Southern Common Market (MERCOSUR): Argentina, Brazil, Paraguay, Uruguay.

4. Africa.

– Economic Community of West African States (ECOWAS): Benin, Burkina Faso, Côte d'Ivoire, Cape Verde, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra — Leone, Togo (Gridneva, 2018).

– Customs and Economic Union of Central Africa (UDEAC): Gabon, Cameroon, Congo, Central African Republic, Chad, Equatorial Guinea.

Discussion

World experience shows the higher and more homogeneous the level of technical, economic and social development of the participating countries, the more similarities in their economic and geopolitical goals and

interests, in economic and political structure. Integration processes is faster and developing more dynamically under these conditions, and the unification of economic and legal norms, as well as the political conditions of interaction. The important conditions for the effectiveness of integration processes include civilizational factors of mutual attraction of countries and peoples, as well as the necessary degree of mutual trust of the interacting states. The practice of regional economic integration in the modern world shows that the affiliation of integrating countries to similar types of civilizations (for example, one religion) has a positive impact on its dynamics, which creates the basis for the formation of a qualitatively new unified not only economic, but also humanitarian space within the regional community (Lagutina, 2015).

Modern international economic integration is influenced by a number of factors of world development, among which the most significant is globalization. However, if globalization is a new quality of internationalization at the highest level of development in breadth, then integration is the highest level of development of internationalization inland. Recently, regional integration has been seen in the context of globalization. Both of these main trends in the development of the modern world economy are in a complex, ambiguous, contradictory interaction. On the one hand, there has been an accelerated process of globalization of economic activity, on the other, an increase in regionalization and integration.

Under the influence of complex globalization factors, states share the traditional model of the main sovereign with supranational integration structures, within which common interests are combined to strengthen the positions of each of the states. At the same time, the risk's global nature appears: emerging alliances do not complement each other, but begin intense competition among themselves for the economic and political space. At the same time, the problem remains that strong world powers are trying to form their integration systems and are forcing others to adapt to new structures. A striking example of a modern geo-economic strategy is the United States (Moberg, 2015).

The processes of global economic development, covering all regions and sectors of the world economy, fundamentally change the relationship between external and internal factors in the development of national economies in favor of the former, which requires adaptation to unified procedures, norms and rules of behavior for the main participants in world economic activity. On the one hand, free economic zones act as an effective tool for enhancing integration processes, creating favorable conditions for the functioning of foreign and domestic capital, building up modern production potential, and on the other hand, various types of free economic zones that promote typological imperatives (the market nature of the national economy, an open economy), participate in the globalization process in accordance with their functionality, the chosen field of activity, a multifunctional role in creating the prerequisites — algorithms for adapting the national economy both to internal trends of moderate liberalization, competitiveness), and to the external inclusion of the country through a system of techno-poles in international economic relations (Zhakupova, 2015).

The creation of SEZ reflects the desire of individual territories and regions of countries for greater independence. From this point of view, the development of SEZ reflected in the following of the regions to market principles. Acting to a certain extent, regardless of the higher authorities, the regions are able to resolve the problems they face faster and more efficiently. They solve a wide variety of issues: they plan the activities of the zone, advice investors on various issues, and deal with a number of other problems.

Moreover, the work of free economic zones has its drawbacks. For example, the creation of SEZ reflects the interest of many countries of the world in greater integration into the global economy, while it may conflict with the principles of a number of international organizations, for example, the World Trade Organization (WTO) provides privileges and preferences for certain territories, which diverges with the principle of creating equal conditions for all market conditions.

There are conflicts between the countries of Eastern Europe — the new members of the European Union, where in the SEZ there are incentives for foreign investors, and the requirements of the European Union to cancel them. However, in many countries where SEZs are successfully operating and there is a lot of experience in using their potential, there have been ways to overcome the contradictions that arise from time to time between the interests of SEZs and the requirements of international organizations. If the enterprises in the SEZ are working efficiently and the mechanism, underlying the functioning of the zones is well developed, tax revenues to the budget, even if tax benefits are applied, will be provided. If any problems arise, alternative sources of tax revenue may be used. It should also be borne in mind that in a number of countries on the territory of the SEZ there are a significant number of enterprises. Together they provide a fairly substantial amount of tax revenue. If we talk about the requirements of the WTO, then we can recognize that the SEZ create unequal opportunities for the regions of the countries in which they are located. This also means the uneven involvement of the regions in world economic relations. However, on the other hand, the sides of the

country are aware of the advantages of free economic zones and strive to use them. The conflictscan be resolved by the creation of small free economic zones in various regions — local zones. They operate, for example, in Poland. The divergence of views between individual developing countries and supranational structures, their conflict is often caused by the fact that neoliberal views on the globalization process prevail in international organizations, and in many cases, they are not consistent with the capabilities and needs of the above countries. The rapid implementation of liberal reforms does not always benefit these countries; in most cases, they are not ready for drastic changes. Distrust in the SEZ also caused by the fact that in a number of developing countries a rather significant share is made up by the shadow sector of the economy. In international structures, they are afraid that they will provoke even greater development. With the effective operation of the SEZ mechanism, investments in the free zones create opportunities for the development of the legal sector.

In a number of countries, international SEZs are being created, somewhat reminiscent of offshore zones, but whose activities are more associated with the production of goods and services. Multinational firms and national companies from various countries could operate there.

Conclusions

The research results contribute to the formation of a number of conclusions and proposals on the effective use of free economic zones to accelerate the integration of national economies in the world system, to increase their competitiveness in the context of globalization.

1. Using SEZ, states will be able to defuse socio-economic tension in the country, while solving a whole range of socio-economic problems, reduce poverty and unemployment, and increase employment.

2. The concepts (“special zones”, “free zones”, “economic zones”) reflect the effective elements of the autonomous organization of world economic processes to attract investment, innovation, and new technologies.

3. Various models of SEZ are involved by “intermediaries” between participants in international integration processes and national economies.

4. The most productive models of free economic zones contribute and have a serious impact on increasing the economic activity of individual countries, on the rehabilitation of depressed regions, idle large enterprises and industrial complexes, on the removal from stagnation of certain sectors of the country's national economy, on the attraction of advanced technologies and management.

5. Using productive models of free economic zones, it is possible to increase labor productivity, expand the list of competitive products, increase export potential, ensure the development of production networks of import-substituting goods and, in general, increase the growth of the country's economy.

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Әлемдік экономиканың интеграциясы және аймақтандыру

Аңдатпа

Мақсаты: мақала авторлары адамзаттың көп бөлігін қаржылық, экономикалық, әлеуметтік-саяси және мәдени байланыстардың біртұтас жүйесіне тартылу үдерістерін ашып көрсетуге тырысқан, сонымен бірге кеңістіктегі бұрынғы тұрақтылық қатынастарын реттеудің тиімді жолдарын талап етеді. Дамыған елдер оларға қажетті тауарлар мен қызметтердің барлық жиынтығын ұсына отырып, әлеуметтік-экономикалық және ғылыми-техникалық прогрестің барлық бағыттары бойынша өздігінен алға жылжи алмайды. Бұл аймақтық интеграциялық бірлестіктердің, макроаймақ, мезоаймақ және микроаймақ деңгейіндегі ұйымдардың бірлестігінен көрінеді. Қазақстан, басқа елдер сияқты, аймақтандыру үдерісіне қатысады, сонымен қатар сыртқы нарықтарға еркін қол жеткізуге мүдделі. Мақала авторлары халықаралық қауымдастықтағы аймақтандыру және интеграция мәселелеріндегі Қазақстанның рөлін анықтаған.

Әдісі: мақаланы жазуда қолданылған негізгі әдістер: талдау, талдап тексеру, жалпылау.

Қорытынды: еркін экономикалық аймақтар тауарлардың, қызметтердің, капиталдардың халықаралық қозғалысына құрылымдық әсер ете отырып, жаһандану үдерістеріне және экономикалық интеграцияның дамуына ықпал ететіндігі анықталған.

Тұжырымдама: мақаланы жазу барысында авторлар экономиканы аймақтандыру және интеграциялаудың жағымды да, жағымсыз да жақтары бар деген қорытындыға келді. Бір жағынан, олар бір-бірімен өзара әрекеттесетін ұлттық экономикалардың жақындасуына ықпал етеді. Екінші жағынан, бәсекелестікке алып келетін біртұтас әлемдік нарықтың бөлінуіне ықпал ету.

Кілт сөздер: аймақтандыру, интеграция, жаһандану, әлемдік экономика, стратегиялық даму, еркін экономикалық аймақтар, Қазақстан.

Г.Ш. Калиакпарова, Е.Е. Гриднева, Н.М. Калманова

Регионализация и интеграция мировой экономики

Аннотация

Цель: авторы статьи ставят целью раскрыть процессы вовлечения большей части человечества в единую систему финансово-экономических, общественно-политических и культурных связей, при этом требуя эффективных способов упорядочения отношений в расширяющемся и утрачивающем прежнюю стабильность пространстве. Развитые государства не в состоянии самостоятельно продвинуться по всему фронту социально-экономического и научно-технического прогресса, обеспечивая при этом весь набор нужных для них товаров и услуг. На это указывает рост числа региональных интеграционных объединений, организаций на макрорегиональном, мезорегиональном и микрорегиональном уровнях. Казахстан, как и другие страны, втянут в процесс регионализации, он также заинтересован в свободном доступе к внешним рынкам. Авторами статьи определена роль Казахстана в мировом сообществе в вопросах регионализации и интеграции.

Методы: основными методами, примененными при написании статьи, стали: анализ, детализация, обобщение.

Результаты: установлено, что свободные экономические зоны, оказывая структурирующее влияние на международное движение товаров, услуг, капиталов, способствуют процессам глобализации и развития экономической интеграции.

Выводы: в ходе написания статьи авторами сделаны выводы, что регионализация и интеграция экономики имеют как положительные, так и отрицательные стороны. С одной стороны, они способствуют сближению национальных экономик, взаимодействующих друг с другом. С другой — содействуют расколу единого мирового рынка, приводя к соперничеству и конкуренции.

Ключевые слова: регионализация, интеграция, глобализация, мировая экономика, стратегическое развитие, свободные экономические зоны, Казахстан.

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The investment climate of the regions of Kazakhstan: issues of state regulation

Abstract

Object: The subject of the study is the study of ways to optimize regulatory mechanisms and support from the state, if the investment situation of the regions of Kazakhstan has determined as a purpose the study to show the most effective ways associated with their increase, forming the object of study

Methods: statistical analysis, integral potential, methods of integrated risks

Findings: The investment climate in the country is the main factor determining the ability of the country to attract foreign investment, as well as the development of small and medium enterprises. From this point of view, the problem of increasing the investment opportunities of the regions and acquiring on their basis the opportunities for the development of small and medium-sized enterprises is one of the most urgent. Therefore, in the article, a comparative analysis of the investment priorities of the regions reflects the relevance of the full implementation of strategically important state programs.

Conclusions: The modern mechanisms of state support and regulation of investment attraction processes, indicating the causes of imbalances in the regions of the Republic of Kazakhstan are reflected in this article. Given the diverse industrial and industrial focus of the regions, the need for ongoing support for economic diversification has been taken into account.

Keywords: regional development prospects, regional investment climate, investment attractiveness, investment activity, attracting investments, government regulation of attracting investments, improving the investment climate, state support.

Introduction

Attracting investment in the economy of Kazakhstan is an objectively necessary process. Obviously, this process will contribute to the structural modernization of the economy, the creation of new high-tech industries, the revitalization of fixed assets, the technical re-equipment of many enterprises, the training of specialists, the introduction of advanced management achievements, marketing and know-how, and the saturation of the domestic market with high-quality domestic goods and at the same time to increase exports to foreign countries.

From this point of view, the relevance of the “investment climate” of the country to attract foreign investment and increase it from the point of view of state regulation is very high.

Literature Review

By the end of the 20th century, all conclusions regarding the concept of “investment” began to be explained by a general and generalized approach to various investments aimed at increasing income. It is known that the historical evolution of the scientific nature of the investment climate manifested itself in the works of several foreign and national authors. In particular, with the names of such authors like P. Masset, J. Keynes, P. Heine, L.J. Gitman, M.D. Jonck, V.D. Nikifirova, national scientists M.T. Ospanov, T.I. Mukhambetov, N. K. Nurlanova (Saiymova et al., 2018).

A number of modern foreign authors in their works proceeded from the fact that the optimal conditions for the development of the country's economy directly depend on the investment climate (Orynbassarova, 2017, 224)

According to the national scientist N.K. Nurlanova “... the Kazakhstani regions are characterized not only by the state of natural-climatic and raw materials, but also by the diversity of their economic potential, the quality of human capital and the investment climate” (Kireeva et al., 2018).

Methods

Attracting foreign investment has a significant impact on the growth of the country's economy as a whole, but not all of them have the same effect. The variety of investments depends on the variety of motives created

to attract them. The only way to classify investor motivation was proposed by British economist John Dunning (Tchouassi, 2014).

It is classified on:

– investments in natural resources: is determined by the access of investors to the use of natural resources;

– investments aimed at the market: is determined by the ability of investors to work in the domestic or regional markets;

– investments aimed at improving efficiency: is determined by the orientation of investors to rich a profit from factors of high competitiveness in the international market (for example, one of the types of production, IT services, etc.).

The investment attractiveness of the economy of Kazakhstan is ensured by access to natural resources, sustainable development, the geostrategic location of Kazakhstan and the availability of an appropriate legislative framework (Fig. 1, 2).

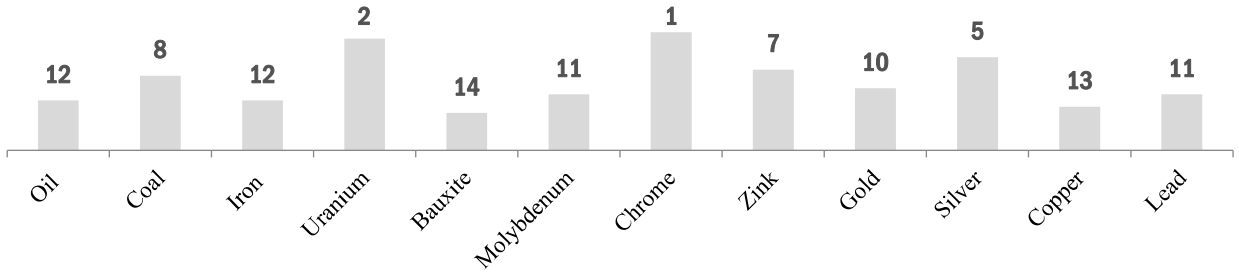

Figure 1. Place in Kazakhstan in the world rating of reserves

Note — Sources U.S. Energy Information Administration, Independent Statistics and Analysis, 2017

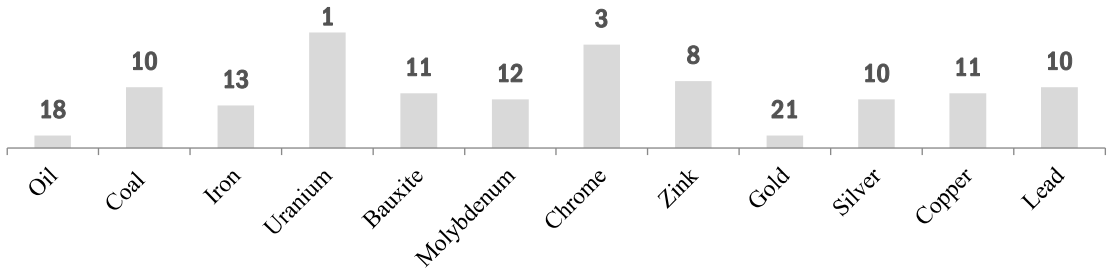

Figure 2. Kazakhstan's place in the world production rankings

Note — Sources U.S. Energy Information Administration, Independent Statistics and Analysis, 2017

Investments aimed at improving efficiency are the most effective for diversification, however, this way of attracting investment is relatively difficult.

Several approaches are known for assessing the investment attractiveness of regions. In particular, we can call the method of "total (integral) potential" (consists of 9 elements, such as consumer; production; financial; infrastructure; labor; natural-resource; institutional; innovative; tourism potential) and "integral risks" methods (consists of 6 elements, such as social; economic; financial; criminal; managerial; environmental risks). Integral assessment indicators give a rating method of the investment climate. It is based on the following formula (1):

$$IK = \frac{K_1 \cdot l_1 + K_2 \cdot l_2 + ... + K_n \cdot l_n}{\sum_{i=1}^{n} l_i} \quad (1)$$

ИК=К1·l1+К2·l2⋯+Кn·lni=1nliWhere *IK* is — Integrated Investment Climate Assessment Indicators;

K_1, K_2, ..., K_n — selected indicators including financial, economic, political;

l_1, l_2, ..., l_n — share of selected indicators.

The value "*K*" contains an interval from 0 to 10. The higher is it, the more the region has a favorable situation. Disadvantages: insufficiency of evaluated characteristics and inaccuracy in the assessment of component indicators.

Results

Improving these areas, which are recognized theoretically and practically important for attracting investment in the economy of Kazakhstan, is carried out as part of the "National Investment Strategy". This strategy is aimed at increasing and diversifying investments, forms the country's investment forecasts and contributes to the achievement of the goals of modernization and development of the economy of Kazakhstan.

The following programs have been adopted and are being implemented in our country within the framework of the state strategy to support investment: "Business Roadmap 2020", "Agribusiness 2020", "Exporter 2020", "Productivity 2020", state support for industrial and innovative development.

The main goal of the strategy is characterized by ensuring the growth and modernization of the economy of Kazakhstan by increasing the flow of foreign direct investment (FDI) and diversifying its structure (Table 1).

Analysis of the investment activity of the country's economy is achieved on the basis of the following tasks:

1. The definition of "growth points" of investment activity, which will depend on the future growth of the economy.

2. Preparation of data for predicting the state of investment activity.

Determining the directions of investment policy and investment in specific projects and programs (Abenov et al., 2019).

Table 1. Foreign direct investment breakdown, bln $.

Foreign direct investment	Key figures, year of 2016 (bln. $)	Target indicators, year of 2022 (bln, $)	Growth, %
Key figures of FDI	20.6	26	26
Focused on resources	12	13.8	15
Focused on a market	4.8	6.5	34
Focused on efficiency improvement	3.8	5.7	50
Note — Composed by the authors on the basis of the materials of the book (Putevoditel investora, 2017)			

There is every reason to fulfill these tasks and no doubt evaluate the implementation of plans and forecasts within the framework of the "National Investment Strategy", including the potential opportunities in the country given above. Along with the resource attractiveness of the country, one of the factors that directly affect another investment climate is the country's tax system. The most common benefits at this location can be estimated based on the following comparative indicators (Table 2).

Table 2. Comparative indicators of basic taxes

	Kazakhstan	Russia	China
Corporate income tax (CIT)	20 %	20 %	25 %
Value added tax (VAT)	12 %	18 %	17 %
Land tax	0.03–0.16 USA $ per 1 m^2	0,3 %, 1,5 %	–
Real-estate tax	1,5 %	2,2 %	1.2 % estimate value, 12 % leased property
Note — composed by the authors			

Under the general investment activity is understood the system of economic relations of individuals or legal entities associated with investments in fixed assets, construction and installation works and machinery, equipment, tools, as well as in housing construction (Saparova, 2015).

Features of modern directions of development of the investment process in Kazakhstan, their social content can be characterized as follows:

1. Kazakhstan is one of the main states that accept foreign capital in the post-Soviet space.

2. Despite the outstripping inflow of investments, the inflow of foreign capital into Kazakhstan is still insufficient.

Of course, foreign investment is currently contributing to the active growth of the economy in any country. They play a large role in the process of demonopolization of the economy of Kazakhstan, contribute to free competition, development of production, the formation of market mechanisms for regulation and stimulation and allowed to get out of deep inflation thanks to the measures taken.

1. One of the following cases, on which it is worth focusing attention is the fact that foreign residents contribute has mainly developed on the process of direct investment in Kazakhstan. For example, the US share

is above 36 %, the UK is 17 %. Italy — 12.8 %. Next are South Korea, China, Canada and other countries. And the share of the nearest neighboring state is only 6 % of direct investment.

2. The main form of attracting direct investment in the republic was the joint ventures of the oil and gas industry and companies separated from the existing enterprises. In this regard, it should be noted that the share of oil and gas companies in taxes and other payments covers a significant part of the state budget. In addition, revenues in the form of over-planned income tax, royalties, bonus and other types from these companies make up the major part of the National Fund.

3. The main feature of the development trends of the investment process is its focus on the extraction of raw materials.

4. The existing positive features of the investment process include the recent decline in foreign investment and the growth of domestic internal investment.

5. The next emphasis is on increasing the role of the state in financing investment activities. As world experience shows, role of the state in reducing, in whatever area from developed countries, its services for regulating investments in the most important sectors of the economy should be especially systemic.

It is advisable to be familiarized with the sources of financing after considering indicators of investment in fixed assets. So, investments in fixed assets are financed from budgetary funds, own funds, foreign investments, borrowed funds.

In terms of economic content, investments form a part of the social product aimed at creation and reconstruction of fixed assets. In general, investments in fixed assets determine the material and technical development of the national economic complex of the state and are aimed at increasing the production capacities of industry, agriculture and other sectors of the economy, as well as to meet the social needs of the population.

If we talk about the investment potential in the regions of the Republic of Kazakhstan, then the investment potential of the republic can be represented in a natural way, combining into five main regional groups:

– The Central-Eastern zone (Karaganda, East Kazakhstan, Pavlodar region) -concentrates more than 30 % of the investment potential of Kazakhstan. Of great interest to investors are coal mining, electricity, ferrous and non-ferrous metallurgy, heavy engineering;

– South- Eastern zone (Almaty and Almaty regions) — the share of the investment potential of the Republic is about 25 %. The food industry, light industry, pharmaceutical industry and mechanical engineering are developed in this region;

– The northern zone (Nur-Sultan, Akmola, Kostanay and North Kazakhstan regions) — makes up 18 % of the investment potential of Kazakhstan. In this region there is a transport-geographical position and a developed infrastructure of the economy. Bauxite and iron ore are produced here. Interest for investors is agriculture;

– The western zone (Aktyubinsk, Atyrau, Mangistau and West Kazakhstan oblasts) consist 16 % of the republican potential. First of all, this is the zone of oil and gas resources and oil and gas production, which role in the economy of Kazakhstan is constantly growing;

– The southern zone (Kyzylorda, Zhambyl and Turkestan regions) — 11 % of the total potential. It has developed agriculture, oil refining, food and chemical industries, gold and barite are being mined (Table 3).

Depending on the production orientation of economic sectors, as indicated in table 3, the degree of "investment attractiveness" can be differentiated. Along with these opportunities and potential, the necessary conditions for investing in the following areas have been optimized. In particular:

– In the framework of the "National Investment Strategy", "incentive measures" have been adopted and work in the country since 2014. In particular, incentives for priority investment projects (key priority criteria are compliance with the list recognized by priority activities (approved by the Government of the Republic of Kazakhstan) for newly established company (investment of at least $20 million) are as follows;

– The legislative stability. In particular, the stability of tax legislation in relation to types of taxes, except VAT and excise taxes;

– Simplification of the visa regime. Methods of introducing a visa-free regime in some countries, at certain intervals, benefits for hiring labor, the removal of special permits (temporary) in respect of foreign manpower etc.;

– Tax exemption (temporarily in the amount of 0 % on corporate income tax, land tax and property tax));

– Investment subsidies — cost recovery up to 30 %

– Protecting investor rights. Ombudsman Offices: in order to protect the legitimate interests and rights of investors, the Ombudsman: 1) makes decisions on issues arising in the activities of investors, as well as in relations with government bodies; 2) helps to find out-of-court and pre-trial decisions on investors` issues.

Table 3. Main economic sectors by cityes and regions

Areas	Major industries
Nur-Sultan	Field of activity; Construction and production of building materials; food industry; public services; financial sphere; social sphere
Almaty	Field of activity; construction; trade; operations with real estate; transport and communication; industry
Akmola region	Agricultural products; chemical and pharmaceuticals; production of building materials; engineering; mining of ores containing uranium and gold; non-ferrous metallurgy
Aktobe region	Ferrous metallurgy; engineering; oil producing; chemical and light industry; mining industry
Almaty region	Agricultural production; sphere of trade; food production, tourism
Atyrau region	Oil and gas; mining industry; transport and storage industry
East-Kazakhstan region	Non-ferrous metallurgy; metalworking; engineering; agricultural products
Karaganda region	Mining industry: mining of non-ferrous and ferrous metals, noble and rare metals, coal basin; chemical production; food industry; pharmacy
Kostanay region	Agriculture; mining and processing of iron ore; asbestos production
Kyzylorda region	Oil and gas production; mining; agriculture
Mangistau region	Oil and gas production; manufacture: chemical production, engineering
North Kazakhstan region	Agriculture; food industry; engineering; forestry and fisheries; manufacturing industry
Pavlodar region	Aluminum industry; coal mining; ferroalloys; electric power industry
Turkestan region	Agriculture; processing industry; uranium mining
West-Kazakhstan region	Gas production; industry; construction; transport and communication; agriculture
Zhambyl region	Agriculture; food and chemical industry; mining; manufacture
Note — Systemized and composed by the authors	

The favorable climate characterizing these incentive measures is carried out on the basis of special economic zones created within the territory of Kazakhstan.

Kazakhstan in its investment policy is focused on creating favorable conditions for investors. An investor can invest in a profitable industry located in regions with a high risk of investing, or invest in inefficient projects in “quiet” areas for an investor. To find “investment optimization” will help the distribution of the regions of Kazakhstan in the groups presented in table 4.

The objectives will be achieved on the basis of strengthening the integration of the business sector of the economy and the state, accelerating the introduction of modern investment and financial mechanisms, attracting non-state and foreign capital in the field of science and technology (Golub, 2017, 139).

In general, the investment climate of the regions consists of two main elements — indicators of investment attractiveness and investment activity.

The investment activity of the regions is largely characterized by the volume of investments in fixed assets, and the investment attractiveness directly depends on the level of “favorable” conditions created for investors in this region and their assessment by investors.

As can be seen from table 4, all regions of Kazakhstan are divided into three main groups. Each of these groups is distinguished by the characteristics of the investment climate. Optimal for the conditions of Kazakhstan is the Group, which includes Pavlodar, Atyrau and Almaty regions. They are characterized by the presence of a sufficiently high potential and medium risk (Sabirova, 2017).

Table 4. The division of the regions of the Republic of Kazakhstan by groups depending on the level of investment attractiveness

	Characteristics of the investment climate	Regions
1 group	High potential and high risk	Karaganda and East Kazakhstan region
2 group	Limited investment potential combined with possible minimal risk	Nur-Sultan, Aktobe, Zhambyl, West-Kazakhstan, Kyzylorda, Mangistau, North-Kazakhstan and Turkestan regions
3 group	High investment potential combined with medium risk	Pavlodar, Atyrau and Alamty regions
Note — composed by the authors		

The volume indicators of investments in fixed assets by regions of Kazakhstan in 2018 can be seen in figure 3 below.

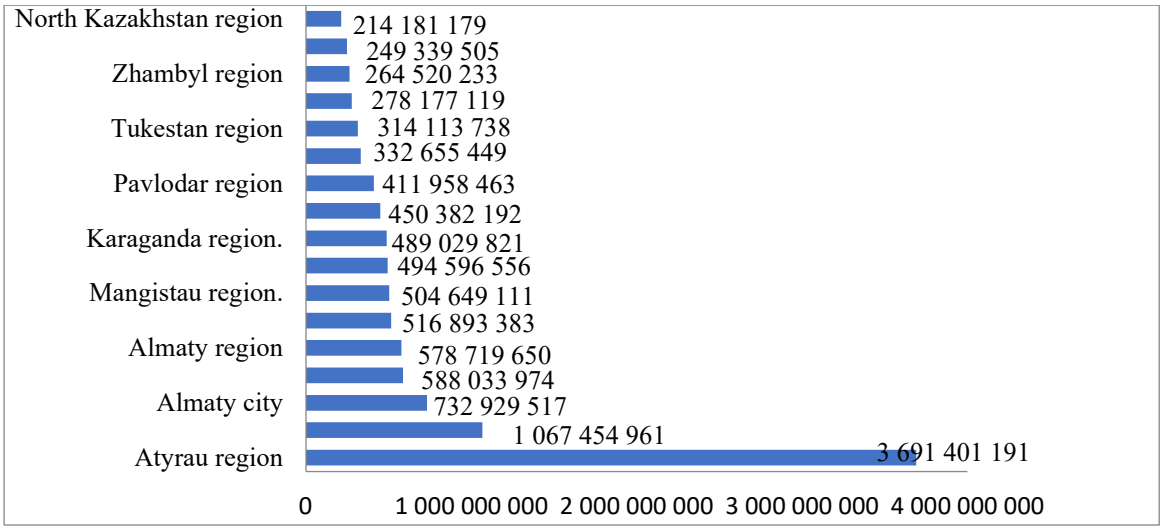

Figure 3. Volume of investments in fixed assets by regions of the Republic of Kazakhstan, year of 2018

Note — Compiled on the basis of the statistics committee of the MNE of the Republic of Kazakhstan

Based on the rating of the investment climate, the regions of Kazakhstan can be placed according to the ordinal method, as shown in table 5.

Table 5. Placement of Kazakhstan's regions by investment climate rating

Index number	Region
High potential — minimal level of risks	
1	Nur-Sultan city.
High potential — low level of risks	
2	Almaty city.
3	Atyrau region
4	East-Kazakhstan
High potential — high level of risks	
5	Karaganda region
Medium potential — minimal level of risks	
6	Aktobe region
7	Alamty region
Medium potential — low level of risks	
8	Turkestan region
9	Pavlodar region
10	Kostanay region
Medium potential — high level of risks	
11	East-Kazakhstan
12	Mangistau region
Low potential — minimal level of risks	
—	
Low potential — low level of risks	
13	Kyzylorda region
Low potential — high level of risks	
14	Akmola region
15	Zhambyl region
16	North-Kazakhstan
Note — estimated and changed by the authors	

In Kazakhstan, despite signs of growth, not only inequality in the development of the region remains, but also in further deepening, and there is no distribution of investment resources and concentration of effective

regulators. As a result, most regions of Kazakhstan need to attract large-scale investments and an effective mechanism for managing investment processes, taking into account local business requirements and the existing potential in the region (Niyazbekova, 2016).

An imbalance in the development of the region is not a unique phenomenon that is unique only to Kazakhstan. Solving this issue requires an integrated approach combining industry-specific approaches, including strategic long-term development plans, developed considering the regions and their competitive advantages, measures related to supporting entrepreneurship in order to ensure employment and increase the welfare of the population.

Discussions

The government of Kazakhstan is working on eliminating the imbalance in the development of the region. For this purpose, an action plan has been developed aimed at the effective disclosure of the economic potential of the regions, as well as improving social and physical infrastructure. The main activities under this plan include actions by the government and local authorities aimed at identifying economic growth centers around the region. In order to provide citizens with state services of a uniform quality level, regardless of their place of residence, intergovernmental relations are being improved. In connection with the increase in the investment climate in the regions of the country, it is possible to propose a common network of ongoing events and activities recognized as necessary for holding, with a breakdown, grouping:

1. Search and sponsorship measures for foreign investors in the regions: priority investor countries; establishing relationships with investors directly or through partners in priority investor countries; information and consulting support; organization of meetings at the local level; support (support) of investors in the regions.

2. Promotion of the investment image: National Investment Interactive Resource www.invest.gov.kz; database of foreign investors and investment projects www.baseinvest.kz; road show; brochures on investment opportunities in Kazakhstan; video clips; billboards; press conferences.

3. Post-investment: a center for foreign investors; ombudsman

In order for our investment climate to be more favorable, and Kazakhstan to become a leader in the volume and quality of attracted foreign investment, political will and special actions are necessary.

In the field of attracting foreign direct investment (FDI) in the international market, it is necessary to improve the quality indicators in the country in order to be successful competitive and increase the share of value added. The following could be included to this indicators:

– development level of transport infrastructure and logistics;
– transparency and predictability of the regulatory environment;
– the availability of research and development work (R&D);
– development of human resources in accordance with the needs of the economy and innovation.

Kazakhstan shows high rates of attracting FDI, especially in the extractive industries. In implementing large-scale plans to diversify the economy and develop priority sectors, the country needs foreign investors with specialized knowledge and high technology, such as strategic partners — Japan, China. In order to attract and retain such investors, it is necessary to develop a regulatory environment and law enforcement practice, infrastructure, develop human resources, actively cover investment opportunities in various sectors and further improve investment incentive measures. To increase its competitiveness and investment attractiveness, the country needs to find its place in the international economy and work out the principles of an integrated approach to attracting investors and continue to remove barriers to FDI. FDI policies should be based both on attracting new investors and on stimulating investors operating in the country.

In Kazakhstan, within the framework of economic diversification, priority sectors have been identified. The list of priority sectors can be placed as follows: metallurgy (ferrous and non-ferrous) — chemical industry (agrochemistry-production of chemicals for industry) — petrochemical industry (oil refining-petrochemicals) — mechanical engineering (automobile production — electrical equipment — agricultural machinery production — w / w d technicians — mining equipment — oil extraction and processing equipment) — production of building materials — food industry.

The work related to the development of industries can be intensified by attracting and stimulating strategic foreign investors. They can play an important role in supporting accelerated economic development through the transfer of new technologies and knowledge, as well as in the creation of a value chain involving local enterprises.

By stimulating investments in the unproductive sector of the economy, Kazakhstan seeks to further develop a diversified economy and seeks to increase the pace of economic development and employment growth in the country (Beisengaliev, Turekulova, 2015, 24).

All agroindustrial economy — all sectors in agriculture from primary production processes to finished products and bringing them to the consumer need reconstruction and modernization.

Conclusions

In the direction of attracting investment in the economy of Kazakhstan, including on the basis of economic development and the capabilities of the regions, the government provides for activities in three main areas. Such as:

– Optimization of the investment climate. Implementation of fundamental reforms in order to increase the investment competitiveness of Kazakhstan and its regions;

– Promotion of investments (provision of state support for the correct implementation, starting with advertising, etc.) and positioning in international markets;

– Privatization and public-private partnerships (measures to attract strategic investments).

The most frequently encountered difficulties of investors should be carried out in the following areas of state regulation: tax and customs legislation; visa, migration, labor legislation; legislation in the field of construction and licensing; legislation governing land relations.

At the same time, we believe that the government's regulatory measures to increase the investment climate in the regions of our country will concern the following measures:

1. It is important to take measures to create a favorable investment climate in order to attract investment in the non-resource sectors of the economy, namely: the introduction of OECD standards; expanding the range of services for the "single window"; providing guarantees from legislation for investors; diversifying sources of investment.

2. Development of the legislative and institutional framework for public-private partnerships: revision of some of the "weaknesses" of the adopted law "On PPPs": to ensure long-term urgency and stability of relations with investors, to expand the financial mechanisms of PPPs and transparency of private sector interaction with the state; "Single window" on PPP; further identification of PPP development projects and priority sectors.

3. Conducting the second stage of privatization.

This network of government regulation measures recognized in our country should contribute to the solution of the following issues:

- informing about the benefits and priorities;
- reduction of dependence in the oil and gas sector;
- the development of social infrastructure and the health system (which, in turn, eliminates the unevenness of the regions);
- improving the transparency of the regulatory environment (to improve the business climate);
- measures to encourage innovation;
- the development of new technologies, training (in order to increase innovation).

Thus, investments are considered as a universal tool for solving all issues related to overcoming the investment crisis, and should play the role of a sufficiently strong catalyst in the investment process. Kazakhstan should become a new investment hub in non-resorce sectors.

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Қазақстан аймақтарының инвестициялық ахуалы: мемлекеттік реттеу мәселелері

Аңдатпа

Мақсаты: Қазақстан аймақтарының инвестициялық ахуалы зерттеудің объектісі болып табылады, ал оларды арттыруға байланысты анағұрлым тиімді жолдарды көрсету зерттеу мақсатын анықтайды. Зерттеу пәні мемлекет тарапынан реттеу мен қолдау механизмдерін оңтайландырудың жолдарын зерделеу.

Әдісі: статистикалық талдау, жиынтық (интегралды) әлеует, интегралды тәуекел әдістері.

Қорытынды: елдегі инвестициялық ахуал шетелдік инвестицияларды тартудың, сонымен қатар, шағын және орта кәсіпкерлікті дамытудың әлеуетін анықтайтын негізгі фактор болып табылады. Осы тұрғыдан аймақтардың инвестициялық мүмкіндіктерін арттыру мәселелері және солардың негізінде шағын және орта кәсіпкерлікті дамыту мүмкіндіктеріне ие болу өзектілігі жоғары мәселелердің бірі. Сондықтан да мақалада аймақтардың инвестициялық басымдықтарын салыстырмалы талдаулар мемлекеттік қабылданған стратегиялық маңызды бағдарламалардың толыққанды жүзеге асырылу өзектілігін айшықтайды. Сонымен қатар мақалада ҚР аймақтарында инвестицияны тарту шараларын одан әрі арттырудың бағыттарын анықтай отырып, олардың ел экономикасының басты стратегияларына сәйкес жүргізілуіне баға беру мәселелері қарастырылған.

Тұжырымдама: ҚР аймақтарындағы теңгерімсіздіктің орын алу себептерін көрсете отырып, инвестицияны тарту процестерін мемлекеттік тұрғыдан қолдау мен реттеудің заманауи тетіктері көрсетілген. Аймақтардың әртүрлі өнеркәсіптік бағыттылығын ескере отырып, экономиканы әртараптандыруды үнемі қолдау қажеттілігі назарға алынған. Мақаланың басты түйіні, зерттеу барысында мемлекеттік қолдау мен реттеудің тетіктері арқылы аймақтардағы даму мен инвестициялық тартымдылықтың теңгерімсіздігін мейлінше жақындастыру бағыттарының ұсынылуы болып табылады.

Кілт сөздер: аймақтардың даму әлеуеттері, аймақтық инвестициялық ахуал, инвестициялық тартымдылық, инвестициялық белсенділік, инвестициялар тарту, инвестицияларды тартуды мемлекеттік реттеу, инвестициялық ахуалды жетілдіру, мемлекеттік қолдау.

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Инвестиционный климат регионов Казахстана: вопросы государственного регулирования

Аннотация

Цель: объектом исследования является инвестиционный климат регионов Казахстана, а демонстрация наиболее эффективных способов их увеличения определяет цель исследования. Предметом исследования выступает изучение способов оптимизации механизмов государственного регулирования и поддержки.

Методы: статистический анализ, совокупный (интегральный) потенциал, методы интегральных рисков.

Результаты: инвестиционный климат в стране является ключевым фактором в определении потенциала страны для привлечения иностранных инвестиций, а также развития малого и среднего бизнеса. В этом контексте одной из актуальных проблем является повышение инвестиционного потенциала регионов и, на их основе, возможность развития малого и среднего бизнеса. Именно поэтому сравнительный анализ инвестиционных приоритетов в регионах демонстрирует актуальность полной реализации принятых стратегически важных государственных программ. В статье также рассматриваются вопросы оценки их реализации в соответствии с ключевыми стратегиями национальной экономики, выделяются направления для дальнейшего повышения инвестиционной привлекательности в регионах Республики Казахстан.

Выводы: представлены современные механизмы государственной поддержки и регулирования процессов привлечения инвестиций, показаны причины дисбалансов в регионах Республики Казахстан. Принимая во внимание различные промышленные районы регионов, учитывается необходимость постоянно поддерживать диверсификацию экономики. В центре внимания статьи — предложить способы максимально приблизить развитие и дисбаланс инвестиционной привлекательности в регионах через механизмы государственной поддержки и регулирования в ходе исследования.

Ключевые слова: потенциал развития регионов, региональный инвестиционный климат, инвестиционная привлекательность, инвестиционная активность, привлечение инвестиций, государственное регулирование привлечения инвестиций, улучшение инвестиционного климата, государственная поддержка.

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Social infrastructure management in villages of the Republic of Kazakhstan

Abstract

Object: research of social infrastructure of villages of the Republic of Kazakhstan.

Methods: content analysis, systematization of data, comparative and logical analysis, generalization, statistical analysis, an empirical study using a survey method, economic and statistical groupings, comparative methods, methods of expert assessments, analogies, mathematical statistics, economic and mathematical, etc.

Finding: this article discusses the social infrastructure of the village as a form of management. The concept of managing the social sphere of the village is studied theoretically and the results are summarized. The article defines the features of managing the social infrastructure of rural regions. Comments of scientists from different countries of the world on the social sphere of the village are given. New principles of social policy of Kazakhstan are considered, which include the following: the state undertakes to guarantee citizens a minimum social standard; social policy is to solve problems of social imbalances in the development of regions. A summary of the system of regional standards for settlements of the Republic of Kazakhstan is given.

Conclusion: the article identifies the main problems that hinder the sustainable development of the social infrastructure of the village, and suggests ways to improve it.

Keywords*:* rural population, social environment, local governance, quality of life, social infrastructure, social sphere, rural areas.

Introduction

In modern conditions, the rural social environment is characterized by a low level of equipment with material and technical means, a low amount of services provided, and a lack of funding. The demand for social services and goods in rural areas has remained high and often unsatisfactory over the past decades, while the supply is very narrow and insufficient. As a result, the rural population completely excludes freedom of choice of household premises, high-quality education and high-quality medical care, affordable level of goods and services, which in turn negatively affects the quality of life. In the conditions of modern rural territorial space, life activity has lost stability, stability, and creativity, and rural residents have become the lowest paid category of workers. All of the above increases the relevance of attention to the management of the social environment in rural areas.

The role of social infrastructure is not only to provide decent living conditions for citizens, but also tocreate a competitive economic image of the region in the national scale. Social infrastructure affects economicsystem's efficiency, since social infrastructure branches become points of human capital development (Nakipova et al., 2017, 76).

The rural social infrastructure (hereinafter referred to as the RSI) is an integral part of the State infrastructure. "Present infrastructure operation is characterised by: governance based on unmanaged growing demand, which is both inefficient and ultimately unsustainable; lack of integration of the end-users, in terms of the variety of their wants, needs and behaviours; separate and parallel delivery of different infrastructure streams prohibiting joint solutions" (Roelich, Knoeri et al., 2015, 40).

The need to develop the basic amenities for rural areas should be considered as a part of an overall development which needs to include the economic growth, the increase in the health services, access to education and the community development itself. The provisions of sufficient and good quality of infrastructure can maintain the balance in the quality of life between rural and urban areas (Bulus & Adefila, 2014).

Research materials and methods. The article was prepared on the basis of systematization and analysis of data from scientific monographs, publications in journals and program documents. Logical judgment, comparison and alignment, embroidery and graphic representation of the material, abstracts, and other methods were used.

Literature Review

Problems of population living quality and standard have always occupied a prominent place in the works of both domestic and foreign researchers. One of the most significant internal factors of the life quality in the rural population is the social infrastructure. The creation of the social infrastructure formation and functioning theory is associated with the names of such scientists as V. Atkociuniene, G. Vaznonienė, R. Pakeltienė, I. Kiausiene, E. Frolova, A. Yessengeldina, W. Berry and others.

Issues of social infrastructure development in the agricultural sector are presented in the works of G.N. Nakipova, B.K. Spanova, W.F. Stukach, E.V. Tishin and others.

One of the most common views on the interpretation of the social environment is economic, or rather economic-industrial, which implies a synonym for the concept of "social infrastructure". E.V. Tishin gives a structural and functional definition of "social sphere" concept and considers it in two cases: through a complex of social infrastructure and its branches, and through a social space that includes many social connections, a system of public relations (Tishin, 2017).

Scientific category "infrastructure" definitions of scientists from different countries of the world regarding the social sphere in rural areas are shown in Table 1.

Table 1. The evolution of rural social infrastructure term

Atkociuniene, Vaznonienė, Pakeltienė, 2015	"rural social infrastructure as it is a territorial and spatial system of interrelated types of economic and social activity and relations creating conditions for functioning of ecosystems, creation of physical and social capitals used by the individuals and communities to satisfy individual and social needs"
Vaznonienė, Kiausiene,2018	"rural social infrastructure as social economic system it forms the living environment features, promotes or reduces the attractiveness of a living space; social infrastructure services enhance or decrease local community wellbeing depending on its development level, supply and accessibility of services"
Frolova et al., 2016	"social infrastructure is one of the dominant factors, ensuring the satisfaction of basic human needs, as well as the development of the state and its territory. Transportation facilities, housing services, the systems of social protection, health and education are the key positions in the practice of state and municipal administration, which is determined by a number of factors"
Yessengeldina, Sitenko, Seitalinova, 2014	"social infrastructure is characterized by features of settlement, production and labor, the economic mechanism, its formation and operation, and other properties as a social and territorial subsystem of society"
Berry, 2011	"processes, programs, events, services, networks, and actions that support individuals and families to meet their social and personal needs in a particular place through personal growth, social interaction, support for social services, and development (rural-ed.) communities"
Stukach, 2017	"a complex of interrelated and complementary material elements that are as accessible as possible and are spatially and temporally close to the spheres of human activity, aimed at meeting a wide range of needs of the entire rural population and creating conditions for the development of human capital"
Omarov, 2015	"a set of social objects located on the territory of a rural settlement that implement social and economic objectives, the solution of which is aimed at ensuring the life of the population …"
Note — the table is made by the authors on the basis of data of a source (Atkociuniene, et al., 2015, Vaznonienė, Kiausiene, 2018, Frolova et al., 2016, Yessengeldina et al., 2014, Berry, 2011, Stukach, 2017, Omarov, 2015)	

Thus, the above definitions, and an extended analysis of studies of the social sphere of the village — further (SSV) allow us to conclude that today there will be no unambiguous definition of this economic category, and there is no consensus on its structure.

Sustainable development of rural areas is characterized by a variety of problems. First of all, it is necessary to satisfy the needs of the present and future generations. In turn, sustainable development involves the provision of rural areas: food, agricultural raw materials, employment, preservation of the culture of rural production and life, the implementation of social development, the preservation of historically developed landscapes and environmental safety, etc. (Allahverdiyeva L.M. et al. 2019, 14)

Methods

In this article is used the well-known research methods: content analysis of existing modern sources for SSV development, systematization of data, comparative and logical analysis, generalization, statistical analysis of the dynamics of social indicators, an empirical study using a survey method.

Private methods of economic cognition were also used: questionnaires and the method of focus groups, economic and statistical groupings, comparative methods, methods of expert assessments, analogies, mathematical statistics, economic and mathematical, etc.

Results

In the message of the President "Strategy "Kazakhstan–2050": Anew Political Course of An Established State" (December 2012), it was noted that: "in our society, there is a growing demand for an updated and more effective social policy that can cope with the challenges of the time".

The new principles of social policy in Kazakhstan, among others, include the following. First, the state undertakes to guarantee citizens a minimum social standard. The main task is to prevent the growth of poverty. Poverty is defined as lack of sufficient income or meet their basic needs for food, clothing, housing, health and education, but also needs a healthy and long life, a sufficient level of education, opportunities to participate in public life, to have sufficient income to meet other socio-cultural needs. Poverty should not become a social prospect for any citizen of Kazakhstan.

Secondly, an important principle of social policy is to solve the problems of social imbalances in the regions development.

N.A. Nazarbayev noted that, first, it is necessary to strengthen the coordination of state agencies in the field of regional development. The task is to synchronize the implementation of all state and industry programs with the solution of priority tasks of regional development. In 2013 the President of Kazakhstan approved the Concept on transition Kazakhstan to "green economy", one of whose tasks also supports the reduction of "regional imbalances" as "Kazakhstan's economic development is concentrated around cities and major extractive industries".

The government of Kazakhstan has developed and approved the program "Regions Development", which solves current socio-economic problems of the regions. The implementation of the program to be carried out in 2 stages: — 1st stage — 2015 and 2017; — 2nd stage — 2017–2020 years.

At the first stage, systemic problems and factors limiting the socio-economic development of the regions was identified, a mechanism of action was developed by the regional akimats to eliminate them, and financial support was provided.

At the initial stage of the Program implementation, a method for determining the potential of rural locality (hereinafter — RL) was developed. The draft action plans and lists of investment projects have been approved by the Central government agencies and national companies of Samruk-Kazyna and KazAgro. A distinctive feature of this event is that decisions on the selection of certain projects are made by the meeting of the local community, based on the priority and relevance of solving problems. Of course, one of the key tasks of local Executive bodies that affect the business and investment climate in the region is the development and maintenance of infrastructure. In the future, in order to dynamically develop the regions of Kazakhstan, the main focus of the Program was supposed to be on the development of small cities, as well as on solving priority tasks in the centers of economic growth (regional centers, cities of regional significance, support RL).

As of January 1st, 2019, there are 6454 RL in the Republic with a total number of 7697.0 thousand people. The data in figure 9 clearly shows the picture of the annual decrease in the number of villages in Kazakhstan since 2014. Over the past five years, the number of RL in the country has decreased by 5.5 % (374 units).

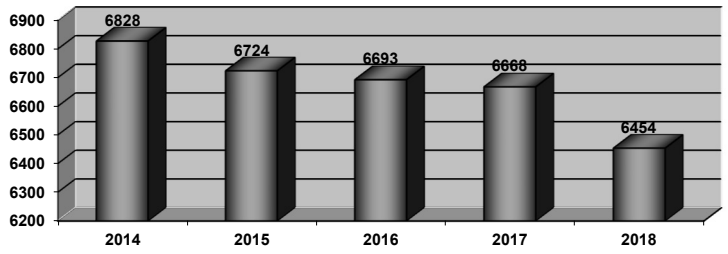

Figure 1. Number of RL in the Republic of Kazakhstan in 2014–2018

Note — compiled by the author from the source (Ofitsialnyi sait Ministerstva natsionalnoi ekonomiki [Official website of the Ministry of National Economy]. economy.gov.kz. Retrieved from http://economy.gov.kz)

The reduction of the RL and, consequently, the rural population is associated with both increased productivity in agriculture and unequal living conditions in urban and rural areas.

Thus, according to the results of 2018: the salary of workers in rural areas was 72.5 % of the urban (117.7 thousand and 162.3 thousand tenge, respectively); the poverty level (the share of people with incomes below the subsistence minimum) in rural areas-6.7 %, in the city-2.5 %; the number of doctors (per 10 thousand population) in rural areas — 14.3, in the city — 43.7; the provision of centralized water supply in rural areas — 84.4 %, in the city — 94.5 %; wastewater treatment in rural areas — 8.6 %, in the city — 68.7 %. It should also be noted that according to the international PISA rating in 2015, the quality of education among 15-year-olds in rural schools lags behind their urban peers from 0.5 to 4 years (depending on the region, language of instruction and subject). According to the results of monitoring for 2017, out of the total number of RL, 1309 corresponds to a high, 4775 — to an average, and 477 — to a low development potential. 3509 RL are small (500 people or less) and only 8.9 % of rural residents live in them. At the same time, there are 278 villages with a population of 5 thousand people or more in each.

In accordance with current state regulations, RL are generally provided with education and health facilities. Thus, according to the results of 2016–2018, 73 % of villages have educational facilities (in 2015 — 74 %, in 2014–74 %) and 80 % of villages are provided with health facilities (in 2015 — 81 %, in 2014–81 %).

The district centers are 122 RL. 311 RL were identified as reference RL, but since the implementation of the “Auyl — El besigi” Project, their number is being specified. Currently (2018, 2019), the social infrastructure of the ST does not remain without the attention Of Kazakhstan government and regional leaders, although a special Program in this direction has not been adopted.

In 2018 in the framework of the program “Rouhani Year” the Ministry of agriculture initiated the project “Auyl Ate Besigi” (“Village cradle of the nation”).

The main goal of the Project is to improve the life quality in rural areas, modernize the social environment in rural areas, and bring them up to the parameters of the system of regional standards. The Project aims to develop the social and engineering infrastructure in rural areas, ensure that rural residents have access to social benefits and public services, and generally create a more comfortable living environment.

In 2019, the following algorithm of actions was developed and implemented for the effective implementation of the Project.

First. Based on the analysis of development potentials and the current economic situation, the selection of reference rural localities where projects are planned to be implemented was carried out. At the same time, a roadmap for achieving the goals was developed for each project and locality.

Second. In 2019, together with international experts, the methodology and models for calculating indicators for prioritizing the SNP as a reference have been improved.

A reference rural locality (hereinafter — RRL) is a well-developed RL that creates an infrastructure to provide public and social services to the population living in it and to the residents of the surrounding rural localities that make up the rural cluster.

Key changes in the new methodology for determining the prospects of the RL are considered within rural clusters, rather than separately for a promising (reference) village. This allows us to form a more complete picture of the coverage of the population, especially public infrastructure.

Population estimates are based on the dynamics of the past 10 years, and not exclusively in a static state at the reporting date. According to the results of the static analysis, “population” is considered as the most significant parameter for assessing the priority of the RL, instead of the previously used indicators of agriculture.

Taking into account the geographical position of the RL using geospatial analysis in determining the priority, including proximity to tourist sites, the state border. When implementing the Project, a comprehensive approach was applied to the development of reference villages with the provision of a "Budget Filter" (priority financing of reference villages included in the Project). 90.0 billion tenge was allocated from the national budget for 2019–2021 for the Project, including 30.0 billion tenge in 2019. The distribution of funds from the Republican budget by region was carried out based on the number of rural population living in rural localities with high development potential. As a result of the project, more than 7 thousand km of inner-village streets will be built and repaired in seven years, all villagers will be provided with high-quality drinking water, and social facilities will be modernized.

Discussions

Currently, 3,477 villages with potential for development have been selected, of which 1,150 are reference and 2,327 are satellite villages, including 200 border villages. These villages are home to 6.6 million people, or 85 % of the rural population, whose development will be a priority. By region, the most villages will be covered by the project in the Turkestan region — 38 villages, in Almaty-33, East Kazakhstan region-26, least of all-in the Mangistau region-five villages.

According to the project, together with the regional akimats, in 2019, 454 infrastructure projects are being implemented in 53 villages, where almost 700 thousand people live, and the national budget provides 30 billion tenge for these purposes. Of the selected projects, 247 are aimed at the development of transport infrastructure, 135-social infrastructure and 72-housing and communal services.

The emphasis is placed on large localities — district centers with the largest number of population, where urgent infrastructure problems need to be resolved as soon as possible. The implementation of the Project in 2019 has improved the quality of life of almost 700 thousand people, or 9 % of the rural population.

The amount of funding for 1 district center averaged about 670 million tenge. Akimats of regions are recommended to allocate at least 10 % for co-financing of projects. Akimats of the regions have developed and adopted appropriate "roadmaps" for each project with deadlines for implementation with the assignment of responsible officials.

The authors of the project have developed a special standard for the quality of life of the rural population — "Auyl 4.0". It includes six items: economic, engineering, and social blocks, productive employment, residential security, and energy and ecology. According to the project, within two years, the villagers' satisfaction with living conditions should be at least 64 percent. It should be noted that during the consolidation of villages, their number will inevitably decrease. Such measures are designed to work on the effectiveness of infrastructure development, because in small and hard-to-reach villages, it is quite doubtful, and the maintenance of such villages is unprofitable.

According to the order of Elbasa, announced at the XVIII regular Congress of the "Nur Otan" party on February 27, 2019, a Draft Program "development of regions" until 2025 has already been developed on the implementation of regional policy.

In April 2019, a joint order was adopted by the Central state bodies (the Ministry of national economy, culture and sports, industry and infrastructure development of education and science, digital development, defense and aerospace industries, and health care) to approve the system of regional standards (hereinafter referred to as SRS) for localities. The SRS provides for a minimum mandatory level of accessibility of objects and services (goods) to the population, depending on the type (city, village) and size (population) of settlements (table 2).

Table 2. Summary of the SRS for localities in the Republic of Kazakhstan

№	Fundamentals	Human settlement	
		Region, city	Village
1	Purpose of use	when planning the socio-economic and regional development of a country, region, or city	In order to solve regional problems and improve the quality of life in specific localities.
2	Principles	provision of all cities with facilities and services (goods) on the principle of "20-minute walking distance" of the population to them.	Due to the small size of the SNP, this principle is observed if there are social sphere objects (hereinafter referred to as SS) in each settlement
3	Conditions	The residential area of the city is divided into planning sectors (PS) with a population of about 10 thousand people in each and place a mandatory list of infrastructure facilities and services on the territory of each PS.	Provision of villages with objects and services (goods) based on their prospects for development (district centers, centers of rural districts, other villages with a small population).
4	List of objects and services (goods)	For the planning sector in the city — 51 names	for district centers — 32 names, centers of rural districts — 23, other villages — 11

Note — compiled by the author from the source (Postanovlenie Pravitelstva Respubliki Kazakhstan ot 28 iiunia 2014 goda № 728 "Ob utverzhdenii Proghrammy razvitiia regionov do 2020 goda" [Resolution of the Government of the Republic of Kazakhstan of June 28, 2014 No. 728 "On the approval of the Program for the Development of Regions until 2020"]. adilet.zan.kz. Retrieved from http://adilet.zan.kz)

Conclusion

Summing up, we conclude that:

– one of the main problems of the social sphere is the discrepancy of social guarantees of the state and the financing of the social sphere aimed at fulfilling state guarantees; therefore, the participation of state bodies is required to solve large-scale social problems. Issues of development of health care, education, housing and utilities should be addressed at the level of state authorities of the Republic of Kazakhstan and local authorities. (Spanova 2018, p.73);

– the management of the economy in Kazakhstan has a certain specificity, due to the action of production, financial and economic, managerial, socio-psychological and spatial-territorial factors. The latter include a significant dispersion of management facilities and the presence of legislative acts regulating territorial development.

The analysis revealed a rather ambiguous picture of the implementation of rural social reform in Kazakhstan. The village has become the object of multidirectional transformations, on the one hand, positive, but largely unsystematic actions of the state through national projects and programs for rural development and agriculture, and on the other — weak attempts to implement the foundations of local self-government, not supported by the necessary resource base.

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Қазақстан Республикасы ауылдарының әлеуметтік инфрақұрылымын басқару

Аңдатпа

Мақсаты: Қазақстан Республикасы ауылдарының әлеуметтік инфрақұрылымын зерттеу.

*Әдіс*і: контент-талдау, деректерді жүйелеу, салыстырмалы және логикалық талдау, жалпылау, статистикалық талдау, сұрау әдісін қолдана отырып эмпирикалық зерттеу, экономикалық-статистикалық топтастыру, салыстырмалы әдістер, сараптамалық бағалау әдістері, ұқсастықтар, математикалық статистика, экономикалық-математикалық және т.б.

Қорытынды: мақалада ауылдың әлеуметтік инфрақұрылымы шаруашылық нысаны ретінде қарастырылған. Ауылдың әлеуметтік саласын басқару тұжырымдамасы теориялық тұрғыдан зерделенді, нәтижелері қорытылды. Мақалада ауылдық аумақтардың әлеуметтік инфрақұрылымын басқарудың ерекшеліктері айқындалған. Ауылдың әлеуметтік саласы бойынша әлемнің түрлі елдерінен келген ғалымдардың пікірлері келтірілген. Әлеуметтік саясаттың жаңа принциптері қаралды, олар мыналарды қамтиды: мемлекет азаматтарға ең төменгі әлеуметтік стандартқа кепілдік беруге міндеттенеді; әлеуметтік саясат өңірлердің дамуындағы әлеуметтік сәйкессіздік мәселелерін шешуге бағытталған. Қазақстан Республикасының елді мекендері үшін өңірлік стандарттар жүйесінің қысқаша сипаттамасы берілген.

Тұжырымдар: мақалада ауылдың әлеуметтік инфрақұрылымының тұрақты дамуына кедергі келтіретін негізгі мәселелер анықталды және оны жетілдіру жолдары ұсынылған.

Кілт сөздер: ауыл тұрғындары, әлеуметтік орта, жергілікті өзін-өзі басқару, өмір сапасы, әлеуметтік инфрақұрылым, әлеуметтік сала, ауылдық аумақтар.

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Управление социальной инфраструктурой в селах Республики Казахстан

Аннотация

Цель: исследование социальной инфраструктуры сел Республики Казахстан.

Методы: контент-анализ, систематизация данных, сравнительный и логический анализ, обобщение, статистический анализ, эмпирическое исследование с использованием метода опроса, экономико-статистические группировки, сравнительные методы, методы экспертных оценок, аналогии, математическая статистика, экономико-математические и др.

Результаты: в статье рассматривается социальная инфраструктура села как форма хозяйствования. Теоретически изучена концепция управления социальной сферой села, обобщены результаты. Определены особенности управления социальной инфраструктурой сельских территорий. Приводятся комментарии ученых из разных стран мира по социальной сфере села. Рассмотрены новые принципы социальной политики Казахстана, которые включают в себя следующее: государство обязуется гарантировать гражданам минимальный социальный стандарт; социальная политика призвана решать проблемы социальных диспропорций в развитии регионов. Кроме того, дана краткая характеристика системы региональных стандартов для населенных пунктов Республики Казахстан.

Выводы: выявлены основные проблемы, препятствующие устойчивому развитию социальной инфраструктуры села, и предложены пути ее совершенствования.

Ключевые слова: сельское население, социальная среда, местное самоуправление, качество жизни, социальная инфраструктура, социальная сфера, сельские территории.

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Development of methodological bases for the foresight model of youth entrepreneurship development

Annotation

Objective: development of methodological bases for the foresight model of youth entrepreneurship development.

Methods: methods of system based, structural and functional analysis.

Findings: specification of the specifics of the foresight method in the development of long-term development strategies with perspective extrapolation to modeling the development of youth entrepreneurship.

Conclusions: The foresight analysis of youth entrepreneurship does not have an independent character, but is a factor element of technological foresight, cluster foresight, and sociological foresight. This approach is also productive, since it allows you to use additional in-depth analysis materials and contribute to the formation of additional scenario opportunities. Therefore, the combination of a separate youth foresight and youth entrepreneurship in the framework of other foresight projects allows you to differentiate factor analysis and use all the methods of foresight research more effectively.

Keywords: foresight, youth, business, youth entrepreneurship, foresight methodology, research, potential growth.

Introduction

Epistemologically, the spread of the foresight methodology grows out of new challenges in the world economy: diversified competition; barriers to public financing; the growth and gradual dominance of scientific and technological competencies. Because the reasons of the foresight methodology has become a system generating the pressing needs of society: a strategic need for authentic forecasting perspective in conjunction with the interests of the participants in the process; subject the need to build a network of active subjects of future development of the economic system; futurological need to create an alternative map for future development; transformational need to activate the existing reserves of an economic entity, motivate changes, etc.

Literature Review

For the first time, foresight parameters began to appear at the beginning of the 20th century, when it became possible to extrapolate trends and social indicators were already formulated. The term “foresight” was first used By G. Wells in the lecture “Opening the future” (Wells, 1913). The main thesis of interest to us was the statement about the knowability of the future using scientific methods. By the middle of the 20th century, methods of system expert analysis were formed and the first simulation studies were performed. Thus, the practical need for foresight was associated with the post-industrial revolution with its tree of social and technological changes that led to a growing rational interest in the future. That is why there is a new content in decision-making, emphasizing the foresight of trends, long-term consequences of choices made in the present. In this regard, the latent definitions of this method are formed (table 1).

Table 1. General parameters of foresight as a specific method

Author	Characteristics of foresight	Dominant factor in the definition	The result of the foresight
1	2	3	4
Martin B.	“Systematic attempts to look into the long-term future of the development of science, technology, economy and society in order to anticipate strategic areas of research and the emergence of basic technologies, the use of which can bring very significant economic and social benefits”	Strategic technological foresight	Increasing economic and social benefits

Continuation of Table 1

1	2	3	4
Georgio L.	"A tool for systematic assessment of those areas of science and technology development that can have a strong impact on the competitiveness of companies, wealth creation and quality of life"	Target assessment of scientific and technological development	The growth of competitiveness, leading to an increase in wealth
Becker P.	"The process of actively learning about the future and creating a vision of medium-and long-term prospects; systematic research of the future of science, economy and society in order to support the adoption of relevant decisions and mobilize joint efforts for their implementation" (Becker, 2003)	Activation of forecast prospects	Rational strategic management
Tretyak V.P.	"Foresight is a creative technology for influencing the emerging future by coordinating the particular interests of various segments of civil society and by stimulating their activity in the use of key technologies" (Tretyak, 2007)	Consistency in the future effective use of technological innovations	Effective communication of the maximum number of subjects regarding future technological dynamics
Note — compiled by the author			

The classic definition of foresight was formulated by the American scientist Ben Martin, in which the main emphasis is on strategic technological foresight. The characteristic given by P. Becker is dominated by two accents: knowledge of the future and its system regulation for updating adequate solutions (Becker, 2003). The basic basis of this approach is rational strategic management. V.P. Tretyak believes that the main thing in foresight is the creative influence on the future of consolidated entities (Tretyak, 2007).

The applied trajectory of foresight development was built as follows. Initially, methods of understanding the future were tested and the first practical trends were formulated, in particular, in the United States — an analysis of transport development in connection with growing urbanization. Since the middle of the 30th century, a period of complex organization of research into the future technological development of the military industry and the functioning of large industrial corporations has begun. This period is marked by the formation of those methodological tools that underlie the modern applied nature of foresight. This is an effective research organization focused on the possibility of implementing the desired changes in the future. The core of this is the analysis of the probabilities of development options by extrapolating past phenomena and events, i.e. forecasting. It was during this period that stable methods of foresight were formed: the method of scenarios, the method of Delphi, the method of expert panels, the method of brainstorming. It was during this period that the landmark works on the dissemination of foresight methodology were published — "The Art of speculation" by B. Jouvenel (Jouvenel, 1967) and "The Invention of the future" by D. Gabor (Gabor, 1963).

Thus, in the essential characteristics of foresight, we can distinguish the communication relations of the following concepts: "future", "foresight", "forecasting", "planning", "competitive technologies". At the primary, visible level, we can assume that foresight is based on the foresight of the future systematization of its forecasts and the construction of strategic planning of dynamic competitive technologies. However, this is only an external view. After all, foresight is not identical to forecasting. It is not identical to forecasting or strategic planning, it is a fundamentally different phenomenon (Semikov, 2009). First, foresight projects involve diverse experts from various sectors of civil society. These are politicians, scientists, and market participants, both businessmen and consumers. Secondly, the primary pattern in the expert community of a foresight project is the formation of an identical picture of the future. Third, it is on this basis that we can project a long-term vector of effective technological breakthroughs.

These differences differentiate a number of main features inherent in foresight technology: foresight is designed to justify future trends, potential opportunities and risks; foresight is aimed at developing strategic acts of analysis of future development prospects by a qualified expert community; foresight is aimed at "action", i.e. it is an active process that distinguishes it from forecasting and for this it implements specific measures today; foresight is based on interactive methods and models of future research, so it limits possible losses in forecasts based on the future size of the market and the forecast of replacement of technologies (Gaponenko, 2009).

Methods

The main difference between foresight technologies and planning and forecasting is the transition from predictive orienting information to reverse normative planning information: the picture of the future is outlined, it is analyzed, and then the plan for achieving the future world picture is rationalized in the actual space.

Thus, the parameters of convergence of foresight and forecasting can be distinguished. So, of course, there are two common features. First, an analysis of the future state of the object, based on the variability of development. Second, the use of similar research methods (scenario planning, Delphi method, expert discussions, brainstorming, focus groups, expert panels). The core of the methods are critical technologies (Seregina, 2008).

Along with this, foresight has parameters that are different from forecasting. First, in the framework of foresight, expert groups include a wide range of development actors: the state, the business community, the scientific and technological segment, and civil society, while forecasting is carried out exclusively by scientists. Secondly, this subjective feature of foresight implementation leads to the formation of the following effects: activation of cooperative relations within the main catalysts of development, generation of a culture of foresight, ensuring the choice of implementation options based on the "vision" of the future. Third, the effectiveness of foresight is based on the readiness of society as a whole to assess the long-term prospects of the country's development, distracting from short-term market conditions.

The basic condition for successful implementation of foresight is the use of those methods that ensure the effective work of the experts involved. Any foresight program requires defining a combination of methods and sources of information to be used. The problem of choosing the most effective group of foresight methods is always relevant. The choice of methods for foresight research is influenced by a number of factors. These are the availability of resources, the final goals (results to be obtained), the nature of the subject areas under consideration, and target groups (Keenan, 2008).

The entire tree of foresight methods is diverse and differentiated by three main criteria. These are quantitative methods, qualitative methods, and synthetic methods. The most common and effective approaches in the quantitative aspect include: the method of modeling, the method of extrapolation, the method of forecasting indicators. Qualitative methods include a diversified analytical platform consisting of interviews, morphological analysis, literature reviews, a "goal tree", and a scenario method. Synthetic methods include road mapping, the Delphi method, critical technologies, game modeling, and patent analysis. The most effective methods of foresight are highlighted in table 2.

Table 2. Characteristics of foresight research methods

Methods	Usage model	Advantages	Disadvantages
1	2	3	4
The method of expert panels	Formation of a group of experts to identify the possible range of the future for a given goal, by analyzing new information and applied developments during the allocated time lag	– interdisciplinary communication that consolidates the subjects of various fields of activity in a single and continuous workflow; – justification of a strong evidence base; – highlighting the advantages and risks of possible innovations	– possible errors by experts; – lack of effective results due to a sub-optimal number of experts; – high resource cost
Delphi method	Independent survey of each expert independently to identify trends and parameters of factor dependence phenomena. The effectiveness of communication is revealed by reviewing the responses of experts anonymously for a General review of opinions, clarifying the positions of each.	– getting open expanded results; – involvement of various experts on this issue to identify various aspects of the project; – accumulation and diversification of knowledge on the project object, taking into account innovations	– disagreements of experts on fundamental points; – suboptimality of expert group selection; – high financial costs
Scenario method	Formation of alternative development options relative to the selected target dominant, a Set of scenarios involves combining forecast variations with the design of future changes	– formation of a general algorithm for solving real problems; – formation of invariance of economic entity development; – formation of strategic thinking	– risks of subjectivism; – degree of expertise of experts; – high labor costs

Continuation of Table 2

1	2	3	4
Brain-storming method	Formation of the largest possible number of solutions to the problem to stimulate rational creative channeling of elements of project promotion. The method of achieving this is joint discussion	– justification of alternative strategies for choosing the most effective idea; – speed of identifying project opportunities and risks; – motivation of professional competencies; – proven predictive technology	– impossibility of Autonomous implementation, effective only in conjunction with other methods; – blurring of expert data parameters
Method of technology road map	Creating a scenario plan for the development of technologies with fixing possible plots and critical points	– assessment of risks, opportunities and priorities; – identification of "bottlenecks" for specifying and analyzing the sequence of development; – factor Association for the implementation of the strategic plan	– high resource requirement; – need for special experts in the field of road mapping
Note — compiled by the author			

Thus, it can be stated that the most common and authentic method is the expert panel method (Sokolov, 2007). From it grow various modifications that allow you to dynamize the analytical process as a method of brainstorming, which has an additional character. On the same basis, the technology of prediction and competitive examination — the Delphi method — is growing (Higgins, 1994). The scenario method, being a traditional technology, already puts forward new requirements for the expert community — the transition to the formation of an array of real options for the development of the future under existing conditions (Volkova, 2006). The method of the technological roadmap assumes the implementation of the advantages identified in the future for a technological breakthrough (Clayton, 2005).

Thus, the initial element in foresight research is the relationship between context, content, and the approaches used. Initially, future scientific and technological results and their overall impact on certain aspects of development are highlighted.

Thus, the initial element in foresight research is the relationship between context, content, and the approaches used. Initially, future scientific and technological results and their overall impact on certain aspects of development are highlighted.

In its evolution, the foresight methodology has passed several regular stages: technological movement or expert analysis of the internal dynamics of technological evolution; innovation-market movement or a broad expert analysis of the interaction of innovative technologies and markets; social-market movement or subject analysis of the relationship of markets and social groups with the dominance of consumer interests; distributed movement, which includes the analysis of elements of a research system of coordinated special research of social and economic challenges.

Based on this, it should be noted that foresight research is based on two ideological attitudes. The first ideologeme is optimization and modernization of the existing order, the second is the possibility and motivation for fundamental changes in the existing paradigm. Hence, there are two modes of conducting foresight research. They are implemented using the basic principles of foresight. These include: future orientation, involvement of a wide range of stakeholders, coordination and interdisciplinarity, action orientation based on a combination of fact and expert assessment. In any mode, the specification of foresight research becomes a problem of "futurological literacy", i.e. the assessment of future development. This, in turn, involves the use of uncertainty and uncertainty as motivators. In this connection, a chain of parametric connections grows between the possible, probable, desirable, realistic and restructured future (Miller, 2011). All these system representations form the focus of foresight. To do this, you need to specify the following system parameters for the foresight. First, the constant study of a changing system involves the systematization of factors of internal development (analysis "from the inside in"), the output of internal modifications to the external environment and a set of transformations (analysis "from the inside out"), and, on the contrary, the external impact on the system that encourages it to transform (analysis "from the outside in"). And, secondly, in addition to this changing but known structure, the analysis of the unknown system (analysis "from outside to outside") is also necessary in foresight research, since this going beyond the boundaries of the known leads to the identification of the possibilities being born.

Thus, the formation and development of foresight technologies are not just predictive measures, but also a system of diversification analysis of the future with a return to the present program-defined range of transformational steps and creative resource parameters. Foresight as a modern technology for predicting future development, taking into account the steps and activities carried out in the present, is the most authentic way of modern strategic planning and forecasting, social dynamics and structuring public needs. Its use in the practice of modern management is a progressive reflection of the relationship between the technological level and technological pressure, the consensus of actors, the real involvement of scientific and technological personnel in the system of socio-economic needs, the state strategy in determining the horizons of prospects and the consequences of technological dynamics.

When predicting such a non-linear segment of the business environment as youth entrepreneurship, the following points should be kept in mind. First, it is a more sensitive response of youth entrepreneurship to the impulses of innovations that arise in the established system. Secondly, the variability of youth entrepreneurship, its wide sectoral and structural range. Third, the probabilistic level of both income and sustainability of this type of business. Fourth, a kind of resource matrix, in which the most important element is the quality of human capital at a low capital intensity.

Results

In this regard, the foresight project of youth entrepreneurship is quite problematic. Moreover, the problems are built on various analytical and applied levels. At the same time, the peculiarity of youth entrepreneurship conceals a large cartoon potential in modern conditions, which can be the object of predictive research. At the initial stage of forming a foresight project, its purpose and selection of methods are determined. The purpose of foresight research of youth entrepreneurship is to forecast its performance, change the configuration of this type of business, based on the changing social and technological system. This involves initially conducting brainstorming, in-depth analysis of texts, and using a comparative methodology. Moreover, there are various essential approaches to determining the goal. Thus, youth entrepreneurship can be an independent object of foresight research, with the definition of the planning horizon, possible potential models of development in a particular environment, with the selection of compression factors and expansion factors. The advantages of this approach are undeniable, as an exceptional emphasis is placed on the very nature of youth entrepreneurship. At the same time, in other foresight projects, most often in the context of technological foresight, youth entrepreneurship is used as a megatrend in the factor structure of analysis. With such an approach, youth entrepreneurship is seen as an element of technological potential growth, since it is responsible for multiplying the information business, startup growth, and so on. Both approaches have the right to exist, taking into account the difficulties of forecasting and the overall volume of work.

But for any choice of foresight for successful results it is necessary the use of authentic methods. In particular, the problem of scanning the horizon during analysis.

Horizon scanning is used at the initial stage of strategic planning. The essence of this method is expressed in the system analysis of external processes in the environment (not only current, but also potentially expected), as well as in the identification of factors, both direct action and possible in the future.

The purpose of scanning is to identify a new approach to the situation by analyzing already obvious circumstances, specifying changes, new trends and early signals of change.

Thus, the time parameters of scanning and its granularity lead to long-term diversified views of the external developing environment. For maximum results, horizon scanning should be a continuous business process based on the speed of change and direction of Megatrends. The practice of developing the economic environment demonstrates an unexpected change in strategies and the need to quickly adjust decisions.

Therefore, in the process of forming the parameters of the future, identifying strategies within the framework of horizon scanning, the following urgent tasks are solved: trends and drivers are studied; different points of view on the nature of trends and their possible implementation are compared; alternative scenarios are formed; strategy options are postulated; priorities are selected.

Youth entrepreneurship in this context can be scanned from the perspective of three clear trends. This is the inclusion of youth entrepreneurship in the socio-humanitarian component of the development of society. The more business-centric society becomes, the more youth business becomes socially oriented (it should be recognized that this is a trend in highly developed countries). The second megatrend is the convergence of country-based youth entrepreneurship into global business. This is due to the formation of a single algorithm — the information economy, in which business processes become more unified and open. The developed system of youth freelancing, which supplies not only high-quality human resources, but also new “dispersed” forms

of business, creates new risks and uncertainty — where, in what country, under what conditions, in what configuration such a business will be implemented. Finally, the sustainable spread and scaling of entrepreneurship within the framework of institutional promotion of start-ups is more widespread. In the case of a foresight study of youth start-ups, the most problematic issue is the promotion infrastructure. Business accelerators have become the most relevant institution. But difficulties with accumulating startups and their investment options make it more difficult for them to operate as part of business accelerators. This is why business catalysts are starting to function in the foresight project along with business accelerators. The advantage of a business catalyst in the future development model is expressed in two points: generating innovative start-UPS of youth entrepreneurship and getting out of the "valley of death" by effective investment at the stages of "seed" and "pre-seed" financing. The activity of the business catalyst for growing innovative projects of youth entrepreneurship consists of the following stages:

– actual formation of the project, through the selection of ideas and developments;

– analysis and expert evaluation of projects based on the principles of innovation, market competition and the adequacy of the external and internal environment;

– primary implementation of the main product of a youth startup, identification of market reaction and analysis of its prospects;

– formation of business model variants based on system analysis: marketing forecasting of potential market capacity for these products, resource limitations and overall economic efficiency;

– formation of a mechanism for searching for investors based on differentiated support of legal, accounting and expert channels;

– transfer of a part of the company to an interested investor by using its "seed" fund.

When analyzing megatrend data, the Delphi method is given key importance. In particular, the professional compilation of survey problems: the potential structure of youth business, the degree of dominance of the innovative part of youth entrepreneurship, the degree of active participation in modern infrastructure — business accelerators and business catalysts. Sometimes it is possible to conduct a Delphi survey.

The complexity of foresight analysis of youth entrepreneurship is not only in the "brainstorming" of identified megatrends. The fact is that the foresight analysis of youth entrepreneurship does not have an independent character, but is a factor element of technological foresight, cluster foresight, and sociological foresight. This approach is also productive, since it allows you to use additional in-depth analysis materials and contribute to the formation of additional scenario opportunities. Therefore, the combination of a separate youth foresight and youth entrepreneurship in the framework of other foresight projects allows you to differentiate factor analysis and use all methods of foresight research more effectively. In our opinion, when conducting an independent foresight project for youth entrepreneurship, the main focus is on the methods of "brainstorming", expert panels and the Delphi method. And when using youth entrepreneurship in broader foresight projects, the dominant models include deep text analysis, scenario analysis, horizon scanning, and the Delphi method.

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Ж.С. Хусаинова, Ж.М. Жартай

Жастар кәсіпкерлігін дамытудың форсайт-моделінің әдіснамалық негіздерін әзірлеу

Аңдатпа

Мақсаты: жастар кәсіпкерлігін дамытудың форсайт-моделінің әдіснамалық негіздерін әзірлеу.

Әдістер: жүйелік, құрылымдық-функционалдық талдау әдістері.

Нәтижелер: жастар кәсіпкерлігін дамытуды моделдеуге перспективалы экстраполяциямен ұзақ мерзімді даму стратегиясын әзірлеудегі форсайт-әдістің ерекшелігін нақтылау.

Қорытынды: жастар кәсіпкерлігінің форсайт-талдауы дербес сипатқа ие емес, ол технологиялық форсайт, кластерлік форсайт, әлеуметтік форсайттардың факторлық элементі болып табылады. Бұл тәсіл өнімді болып табылады, өйткені ол терең талдаудың қосымша материалдарын пайдалануға және қосымша сценарий мүмкіндіктерін қалыптастыруға мүмкіндік береді. Сондықтан басқа форсайт-жобалар шеңберінде жеке жастар форсайты мен жастар кәсіпкерлігін біріктіру факторлық талдауды саралауға және форсайт-зерттеулердің барлық әдістерін барынша нәтижелі пайдалануға мүмкіндік береді.

Кілт сөздер: форсайт, жастар, бизнес, жастар кәсіпкерлігі, формайт әдіснамасы, зерттеу, болашақ өсу.

Ж.С. Хусаинова, Ж.М. Жартай

Разработка методологических основ форсайт-модели развития молодежного предпринимательства

Аннотация

Цель: разработка методологических основ форсайт-модели развития молодежного предпринимательства.

Методы: методы системного, структурно-функционального анализа.

Результаты: конкретизация специфики форсайт-метода в разработке долгосрочных стратегий развития с перспективной экстраполяцией к моделированию развития молодежного предпринимательства.

Выводы: форсайт-анализ молодежного предпринимательства не носит самостоятельного характера, а является факторным элементом технологического форсайта, кластерного форсайта, социологического форсайта. Данный подход является также продуктивным, поскольку он позволяет использовать дополнительные материалы глубинного анализа и способствовать формированию дополнительных сценарных возможностей. Потому соединение отдельного молодежного форсайта и молодежного предпринимательства в рамках других форсайт-проектов позволяет дифференцировать факторный анализ и более результативно использовать все методы форсайт-исследований.

Ключевые слова: форсайт, молодежь, бизнес, молодежное предпринимательство, форсайт-методология, исследование, потенциальный рост.

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Internal audit of banks: methodological model for reducing credit risk (Logit model)

Abstract

Object: The purpose of the research work is to justify the application of a model that allows assessing the probability of a borrower's default and to propose including in the work plan and internal audit program an assessment of the probability of a borrower's default to reduce credit risk.

Methods: The article uses quantitative data, statistical model (Logit model).

Findings: As a result, during the audit of the banks' debt portfolio, the Logit model was used to assess the probability of a borrower's default. The ROC curve of this Logit model allows you to predict the default situation of the borrower for risk management purposes. Therefore, it is proposed to include an assessment of the probability of default of the borrower based on the model in the work plan and internal audit program. In conclusion, a risk-based internal audit system will help ensure the financial stability.

Conclusions: In conclusion, a risk-based internal audit system will help ensure the financial stability. Since we evaluated the debt portfolio and found that the Logit model, which was used to predict the probability of default of borrowers, can prevent risks. This is evidenced by the ROC curve of the Logit model for predicting the probability of default.

Keywords: internal audit, default, projection (prognosis), credit risk, financial instruments, Logit model, ROC-curve.

Introduction

Currently, measures that can alleviate the consequences of external impact on the country's economy are being actively searched. Monetary policy plays a big role here. It is significant to keep in mind that debt allows supporting continuity of industrial processes in the conditions of sharp fluctuations in cash flows, a decline in productivity of organizations at certain stages of the economic cycle. Phantom debts are debts that cannot be recovered by the Bank due to the poor financial condition of the borrowers. Further reduction in the volume of credit investments in the economy can cause irreparable harm to economic entities.

Restricting credit support for organizations with large and predictable sustainable credit loans can lead to disruption and aggravate the situation in the economy. In our opinion, one of the solutions to credit issues in the context of increasing credit risks is to improve the quality of credit risk management in banks. First of all, it is necessary to take into account the financial condition of the borrower, its creditworthiness, and the specifics of the financial sector (Lambekova, Syzdykova, Kuzgibekova, Kalymbetov, Amirbekuly, 2018). It also referred to the need to improve the evaluation system, including the development of a mechanism for assessing the probability of default To ensure the implementation of the new credit policy related to the adoption of IFRS 9 "Financial instruments", it is necessary to strengthen the role of internal audit. In addition, it is necessary to increase its importance as an element of the corporate governance and risk management system. The Bank expects the formation of a new methodology for assessing credit risks, so the internal audit service is assigned certain tasks. Let's look at how to include these services in the credit risk audit program. Decisions of management bodies within the framework of lending in the Bank can be reflected in the Bank's internal regulatory documents. In particular, credit policies, restrictive policies, and risk management policies (Yang 2018).

Hypothesis. Using the Logit model for assessing the probability of default of the borrower, aimed at identifying credit risk, their reduction will allow you to assess the probability of default.

Literature Review

During the audit, the internal auditor should pay attention to the Bank's approved system of credit risk indicators and the relevance and regularity of reviewing the target values of indicators (Canakoglu, Muter I, Adanur O, 2018).

The function of every single aspect adds up to make effective corporate management of the Bank. The document "Basic effective principles of Bank supervision" issued by the Basel Committee assumes that this management is based on risk (Basel Committee on Banking Supervision, 2019).

The study aims not only to assess losses that can be investigated by determining credit risk factors in the research process, but also to prevent negative impacts, both external and internal aspects, and to develop an action plan to preserve the financial stability of the banking sector.

The study is not required only for assessing losses that can be investigated by determining credit risk factors in the research process. It is also necessary to prevent negative impacts, both external and internal, and to develop an action plan to preserve the financial stability of the banking sector. As a comprehensive indicator covering credit losses due to market and credit risks, many kinds of literature have the VaR-Value-at-Risk indicator, which was discovered in the work of M. Sorzha.

In addition, M. Sorzha noted the feasibility of using an integrated approach with financial systems that have active trade-in credit assets (for example, corporate bonds).

Moreover, the "mark-to-market" principle is applied, which provides for the revaluation of assets following current market prices. However, the financial systems of many transition economies are characterized by insufficient development of the financial asset market and absence of price fluctuations. A selective approach with the choice of a specific credit risk indicator is acceptable for assessing the stability of banks with a low level of correlation between market and credit risks. Additionally, due to the ease of implementation, the low level of need for statistical data and computational loads, the partial approach is widely considered by researchers.

The partial analysis is conducted under econometric models to assess the relationship between financial stability indicators, macro indicators, and specific indicators of financial institutions. Besides, the estimation is performed using models for time series and panel data. Banks are given the right to form stricter criteria for determining default and the significance of credit obligations. This allows the Bank to treat certain categories of borrowers more differentially. In recent crisis years, research has focused on ways, methods, and models for assessing credit risks. M. Sorzha noted that the advantage of panel data is the ability to study the impact of the qualitative characteristics of countries or individual banks on the quality of loans (Vaquero, Diaz, Ramirez,2019).

One of the works using panel data is the work of j. Pasolini. The author studies the impact of macroeconomic indicators on problem loans in Scandinavian and other European countries using data from 1980 to 2002 (Pesola, 2011).

As a result, the main source of credit losses for banks in these countries was high customer debt income volatility, and the real interest rate, which is measured as the ratio of debts to GDP.

S. Pestova and T. Solntseva conducted a study of problem debts using annual data from 1997–2009 for 38 countries (Yavuz, 2002). In this regard, the authors identified the factors of formation of non-refundable problem debt. This has a negative impact on the same direction of the business and credit cycles, the weakening of the nominal exchange rate and the reduction of the real interest rate on credit risks.

In General, the internal audit service is the main risk management tool in all operating organizations [Sourour, 2019]. In addition to assessing credit risks, the panel data method is used in commercial Bank research.

Methods

Banks are given the right to form stricter criteria for determining default and the significance of credit obligations. This will allow the Bank to treat certain categories of borrowers more differentially. During the last 2008 crisis, research focused on methods, approaches, and models for assessing credit risks. At the same time, schemes based on probability estimation were used only in a limited way, since the regulator did not perceive such models (Ozten S., Kargın S., 2012).

Currently, it is necessary to improve the accuracy, efficiency and reliability of credit risk assessment in relation to various groups of borrowers and credit requirements. This requires further processing of the models. To explore the possibility of assessing the probability of a borrower's default based on the published financial statements of organizations we have created an appropriate model that has acceptable estimated capabilities. Indicators for assessing the financial condition of the borrower based on their understanding of their significance were selected (Lambekova, Nurgalieva, 2017).

The organization information for the two groups is chosen randomly according to publicly available information. Data on the financial position were obtained from the financial statements of organizations in the KASE database (KASE, 2018).

Information is received for the period from 2016 to 2018. This forecast allows predicting the probability of default of the borrower for one or two years. The regression analysis was performed in the statistical econometric package R.

Data based on the model formed in accordance with Basel recommendations must be reliable. In this case, the reliability is confirmed, first of all, by the mandatory audit report and audit of the tax authorities. The majority of organizations in industrial spheres have service of life is more than ten years.

The next stage of the study is data analysis. To study the relationship between indicators, a correlation matrix was created.

According to the hypothesis of the research work, financial stability affects the assessment of the probability of default of borrowers of the estimated coefficients.

The objective of the research work is to determine the impact of financial stability assessment coefficients on the assessment of the probability of default.

According to the relevance of the study, banks are not based on the fact that the expected credit costs were not incurred, but on its prevention.

Now let's move on to the research methodology. Procedures that ensure that research goals are considered. In particular:

– study design;

– data collection tools;

– data analysis and data collection procedures.

Study design. The model for estimating the probability of a borrower's default should be based on statistical data collected by the bank over a number of years or over several economic cycles. In most cases, this information is unavailable to external users during the course of the study. Therefore, the data was obtained from the Kazakhstan stock exchange (Naceur,2018).

Data collection. In the course of the study, data was collected from calculating coefficients of the financial statements of the list of companies in Kazakhstan stock exchange.

Data analysis, results, and discussion. To confirm hypothesis above, a Logit model was created in the Logit model R statistical package program.

Thus, the Logit model is an econometric model that is not used in simple regression analysis methods. Unlike the other models, it can only accept a limited number of dependent variable values, such as 0 or 1.

To put it another way, the most common model for assessing the probability of bankruptcy can be overviewed. These models allow you to determine an accurate assessment of possible bankruptcy risks. The model for estimating the probability of bankruptcy is the logistic inverse equation. This is why it is called the logistic backflow model (L-M) L-M (Logit model).

According to A. Gruzdev, the statistical package program R is widely used as statistical software for data analysis and is practically a standard for statistical programs (Gruzdev, 2018).

The binary variable probability of default of the borrower's PD is obtained, which takes one of two possible values for building the model as a dependent variable:

– PD = 0 if any borrower organization has a good financial position at a certain stage;

– PD = 1 if any borrower organization is in default at a certain stage.

To build a model of the probability of a creditor's default, 33 debt recipients in various industries were selected and divided into two groups. Of these, 25 are good and 8 are in case of default. Enterprise data for the two groups is selected randomly according to publicly available information. Data on the financial position is obtained from the financial statements from the KASE database. Information obtained in the period from 2016 to 2018. This forecast allows you to predict the probability of default of the borrower for one or two years.

The regression analysis was carried out in the statistical econometric package R. We selected a number of parameters that determine the level of financial stability of borrowers.

Financial stability is evaluated by indicators of liquidity, profitability, business activity presented in Table 1.

Table 1. Indicators selected for building a default assessment model

Indicator	Name	Economic content
K_pokr	Current ratio	ability to repay short term liabilities at the expense of current assets
K_avt	Autonomy coefficient/Equity ratio	independence from external sources of funding
K_ob_cc	Equity to non-current assets ratio	availability of the company's own working capital
K_d_to_e	Debt-to-equity ratio	describes the ratio of borrowed funds to equity
K_ap_oc	Equity capitalization	describes the share of fixed assets financed from equity sources
K_obor_ta	Current asset turnover ratio	reflects the amount of turnover of the company's current assets for the current period
K_ct_plat_o	The degree of solvency	characterizes the overall solvency of the enterprise
Note — compiled by the author based on the literature (Aleskerov F.T., Andrievskaja I.K., Penikas G.I., Solodkov V.M.)		

Today, mathematical assessment of Bank risks is widely used in foreign countries. Such assessments not only contribute to the prevention of risks at the time of their occurrence, but also make predictions. For example, F.T. Aleskerov presented mathematical models of Basel II risk assessment in Russian banks (Krylov, 2016).

The next stage of the study is data analysis. At the same time, organizations belong to industrial sectors, the service life of the majority is more than ten years. All necessary data is provided in Appendix D. to create a model, a set of codes is specified in Appendix E. To study the relationship between indicators, a correlation matrix was created (Figure 1).

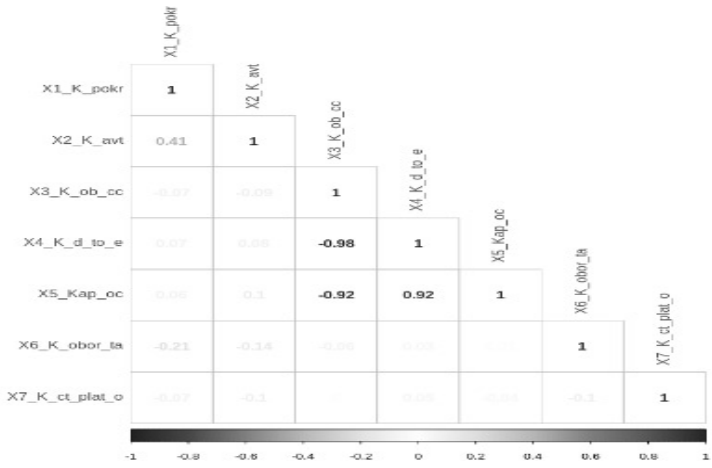

Figure 1. correlation between the factors

Note — complied by the author in the statistical batch program R on the basis of warning-calculated data

As can be seen from the correlation picture, factors X4 and X5 are multicollinear. So we remove these factors from the model. The concept of multicollinearity is fulfilled under the condition that a linear relationship between the explained variable leads to a non-confidence regression. Correlation between multicollinear factors leads to unreliable, unstable, and meaningless price dependence of multicollinear parameters. It cannot make a correct decision about parameters.

Data obtained in accordance with Basel recommendations must be reliable. In this case, the reliability is confirmed, first of all, by a mandatory audit report and an audit of the tax authorities. If all the conditions are fulfilled, the sample variances of variables with control digits are large, and the variances of random variables are small, then a good estimate can be obtained as a result.

Consideration of this issue affects the effective evaluation of regression. If the obvious indicator of two or more independent variables is a time trend, then they are in close contact and this leads to multicollinearity.

To understand the effect of the mechanism on parameters, consider the following statement. There is a linear dependence between the first and second factors (Rahmetova, 2016).

There are several ways to prevent multicollinearity:

– Removal method.

– Regression step.

In our case, we use the first method. Correlation connection without multicollinear factors is shown below (Figure 2)

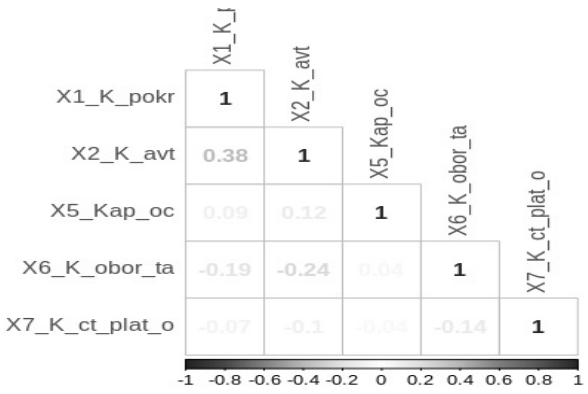

Figure 2. Correlation between the factors

Note — complied by the author in the statistical batch program R on the basis of warning-calculated data

As can be seen from the figure, for risk management purposes, we observe that the coefficient of autonomy in case of default of the borrower organization is high. Other factors also have an impact, but they are weak.

Results

As a result of the above-mentioned analyses, during the audit of the banks' loan portfolio, the Logit model was used to assess the probability of a borrower's default. Now let's build a Logit model based on this correlation (Table 2)

Table 2. Criteria for evaluating the significance of the model

Deviance Residuals:				
Min	1Q	Median	3Q	Max
–1.76205	–0.52145	–0.23519	–0.02412	2.38113
Coefficients:				
	Estimate	Std	Error z	value Pr(>|z|)
(Intercept)	1.12290	1.06782	1.052	0.2930
X1_K_pokr	–0.47052	0.47701	–0.986	0.3239
X2_K_avt	4.40686	1.41149	3.122	0.0018 **
X5_K_ap_oc a	0.60240	0.34719	1.735	0.0827.
X6_K_obor_ta	–0.56717	0.31491	–1.801	0.0717.
X7_K_ct_plat_o	–0.09600	0.05556	–1.728	0.0840.
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1.,1. ' '				
Note — complied by the author in the statistical batch program R on the basis of warning-calculated data				

As it is illustrated in the table, variables of X2_K_avt show the most statistical significance at defining default of organization. Statistical significance of variables X5_Kap_oc, X6_K_obor_ta, and X7_K_ct_plat_o has a probability of 10 % which is explained by possibility of randomness of data. Understanding the causes of default is important, but it is also important to anticipate it based on available data.

In other words, to what extent can the Logit model assume a default situation for the borrower? To answer this question, we assume the probability of default of debt-receiving organizations based on data that we have not previously seen in the model (based on 4 organizations).

Then the forecast results will be compared with the results of the test model. However, the Logit model does not give a solution as 0 (no default) or 1 (default); it gives probability of organization to be in default

We must decide the type of probability limit to be used as a boundary between 0 and 1. Selecting an upper limit reduces the number of false positives (the model assumes that the organization is defaulting, and the organization is not defaulting). It also reduces the number of real positive results (the model assumes the case of default for organizations that have been defaulted).

In each logit model, the probability of default is calculated using the General formula of the logistics function:

$$P = 1/(1 + e^{-y}), \quad (1)$$

where

P — probability of default occurrence (takes the values of 0 or 1);

e — the base of logarithm (Euler constant is equal to 2,70828);
y — integral indicator depending on the created model

Lowering the limit works in the opposite direction, increasing the number of false starts as well as the real positive number. To determine the accuracy of the forecast, it is important to set an average limit value. It is defined by the ROC curve. In other words, through a curve. In social science, the ROC curve is used to express an opinion about the quality of probability models.

We will test based on the other four companies as a test to determine the accuracy of the model. The indicators of the coefficients calculated for testing are shown in Appendix J. In Addition, the curves were used in product quality management and credit scoring. This is shown in the curve line on the figure (Figure 3).

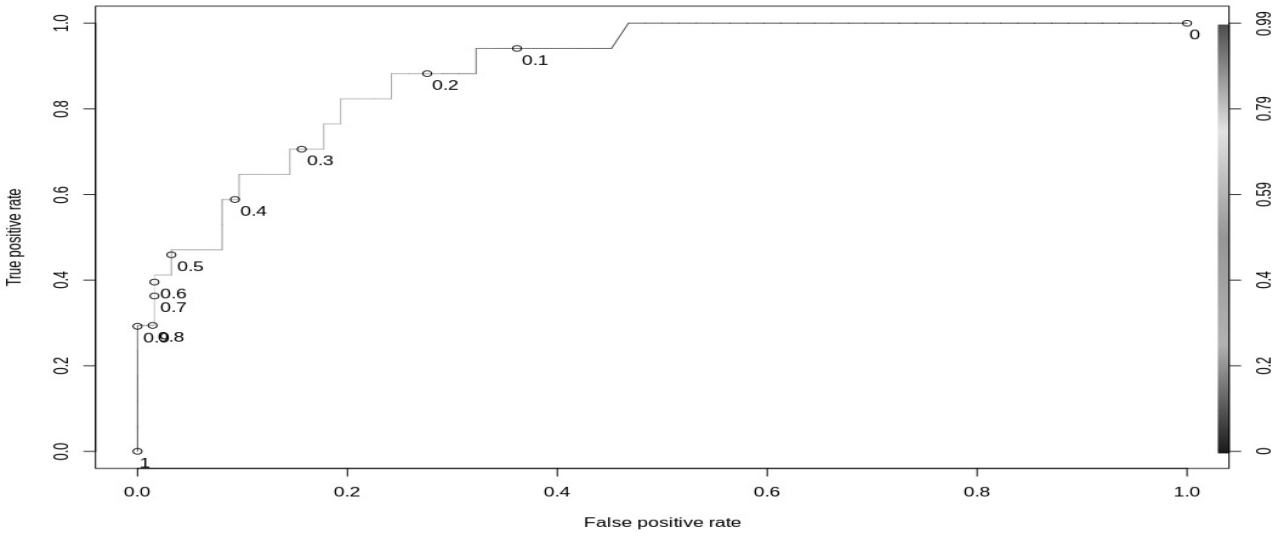

Figure 3. ROC curve in determining forecast accuracy

Note — complied by the author in the statistical batch program R on the basis of warning-calculated data

The Logit model curve above shows that the borrower is well qualified to determine the default status for risk management purposes. It is in the range of 0.3, it has reached almost 70 % of the real positive indicators. In the table below, we present a matching matrix that allows calculating the accuracy of the model (table 3)

Table 3. A matching matrix that allows you to calculate the accuracy of the model

Indicators	Forecast = 0	Forecast = 1
Fact = 0	3	3
Fact = 1	3	2
Note — complied by the author based on calculated data		

As can be seen from the results in the table, this fact coincides with the forecast that the financial condition of the borrower company is satisfactory. The case of default of the borrower does not correspond with unit of fact 1. This means that the specific financial position of the borrower company, expected in case of default, is stable. Overall, the forecast accuracy is 83 %. This means that the results of calculating the probability of default show that the proposed model can be used in practice.

Discussions

In our opinion, today the application of IFRS 9 “Financial instruments” in banks has set new challenges for internal auditors. For example, according to the implemented standard, lending or effective and high-quality methodological advice to risk management departments on risk prevention, etc.

It is very important to consider the credit risks of borrowers based on the Bank's internal ratings in accordance with the model of assessing the probability of bankruptcy. This, of course, raises the internal auditor to a new, high-quality level of credit risk management in banks.

Using models to assess the probability of a borrower's default and the amount of costs associated with a default allows banks to lend only to trusted clients, take acceptable risks, and create sufficient reserves to compensate for potential losses.

Conclusions

The role of internal audit was defined to verify the correctness of credit policy implementation in connection with the implementation of IFRS 9 "Financial instruments". At the same time, corporate governance has grown in importance as a key tool of the risk management system. Currently, it is expected that banks will be given effective advice on developing acceptable and effective methods for assessing this credit risk with the internal audit system. The Bank may provide various procedures for assessing the credit risk of the application and analyzing the creditworthiness of the borrower. Assessment of the probability of a creditor's default in banks is not yet sufficiently conducted. In this regard, we used the Logit model, aimed at preventing the expected damage in order to reduce or prevent credit risk on the debt portfolio of banks. The model is based on the financial indicators of 33 borrower organizations. And the ROC curve of the Logit model allowed us to determine the default state of the borrower company. The model has been tested, so it can be offered in banks in order to reduce credit risk.

In conclusion, a risk-based internal audit system will help ensure the financial stability of the second-tier banks, because the debt portfolio was evaluated and found that the Logit model, which was used to predict the probability of default of borrowers, is able to prevent risks. This is evidenced by the ROC curve of the Logit model for predicting the probability of default. This model, developed by internal auditors to prevent risks, is taken into account in the internal audit process.

Summing up, internal auditors contribute to the formation of a highly effective internal audit system to ensure the bank's financial stability and the way of meeting modern requirements.

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А.Н. Ламбекова, Л.А. Темирбекова, Э.Ж. Сыздыкова

Банктердегі ішкі аудит: несиелік тәуекелді азайтудың әдіснамалық моделі (логит-модель)

Андатпа

Мақсаты: несие алушының дефолт ықтималдығын бағалауға мүмкіндік беретін модельді қолдануды негіздеу және ішкі аудиттің жұмыс жоспары мен аудит бағдарламасына несиелік тәуекелді төмендету үшін қарыз алушының дефолт ықтималдығын бағалауды енгізуді ұсыну.

Әдісі: мақалада сандық деректер, статистикалық модель (Логит-модель) қолданылған.

Қорытынды: нәтижесінде банктердің несиелік портфеліне аудит жүргізу уақытында несие алушының дефолт жағдайының ықтималдығын бағалау үшін Логит-модель қолданылған. Бұл Логит-модельдің ROC қисығы тәуекелдерді басқару мақсатында несие алушының дефолт жағдайын болжауға мүмкіндік береді. Сондықтан модель негізінде несие алушының дефолт ықтималдығын бағалауды ішкі аудиттің жұмыс жоспары мен бағдарламасына енгізу ұсынылған.

Тұжырымдама: қорытындылай келе, тәуекелдерге негізделген ішкі аудит жүйесі қаржылық тұрақтылықты қамтамасыз етуге ықпал етеді. Біз несие портфелін бағалағандықтан және қарыз алушылардың дефолт ықтималдығын болжау үшін пайдаланылған Логит-модель тәуекелдерді болдырмайтынын анықтадық. Бұл туралы дефолт ықтималдығын болжау үшін Логит-модельдің ROC-қисығы көрсетеді.

Кілт сөздер: ішкі аудит, дефолт, болжау, несиелік тәуекел, қаржы құралдары, Логит-модель, ROC-қисық.

А.Н. Ламбекова, Л.А. Темирбекова, Э.Ж. Сыздыкова

Внутренний аудит банков: методологическая модель снижения кредитного риска (логит-модель)

Аннотация

Цель: обосновать применение модели, позволяющей оценить вероятность дефолта заемщика, и предложить включить в план работы программы внутреннего аудита и оценку вероятности дефолта заемщика для снижения кредитного риска.

Методы: в статье используются количественные данные, статистическая модель (логит-модель).

Результаты: в результате при проведении аудита долгового портфеля банков для оценки вероятности дефолта заемщика была использована логит-модель. Кривая ROC этой логит-модели позволяет прогнозировать ситуацию дефолта заемщика в целях управления рисками. Поэтому предлагается включить оценку вероятности дефолта заемщика на основе модели в план работы и программу внутреннего аудита.

Выводы: в заключение следует отметить, что система внутреннего аудита, основанная на рисках, будет способствовать обеспечению финансовой стабильности. Так как мы оценили долговой портфель и выяснили, что логит-модель, которая использовалась для прогнозирования вероятности дефолта заемщиков, может предотвратить риски. Об этом свидетельствует ROC-кривая логит-модели для прогнозирования вероятности дефолта.

Ключевые слова: внутренний аудит, дефолт, прогнозирование, кредитный риск, финансовые инструменты, логит-модель, ROC-кривая.

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The system of stimulation of work in modern conditions

Abstract

Object: is to develop scientifically based recommendations for improving the system of labor incentives in modern conditions based on a comprehensive analysis and evaluation of the system.

Methods: When writing the article, the following methods were used: methods of scientific analysis, synthesis, and structural analysis.

Findings: It is revealed that in modern conditions, the human resources potential of the modern economy is the most important strategic factor affecting the country's competitive advantages in the world. In the course of the study, the factors that influence the formation of the labor incentive system were classified. the main principles of building an effective motivation system in modern conditions are revealed, its types are considered, and modern theories of motivation are analyzed.

Conclusions: In the course of the study, the authors concluded that it is necessary to apply more flexible approaches to determining the level of the basic salary and the variable part of the salary, the need to link the salary with the final performance indicators of both the individual employee and the entire structural unit, as well as the enterprise as a whole.

A classification of factors that influence the formation of the labor incentive system is proposed, including two groups: external (objectively existing and independent of the company's management) and internal (formed and dependent on the company's management).

Keywords: management, stimulation, motivation, economy, management, activity, system, enterprise, personnel, process, remuneration.

Introduction

Any stimulation of labor implies exchange. The employer hires employees in order to use their knowledge, skills, and experience in the production process of making material and spiritual goods. Employees are hired to the employer to obtain from him certain socially significant benefits. The exchange must be fair, equivalent. The stimulation of labor will be effective only with an equivalent exchange.

Higher needs have receded far into the background, and the behavior of most workers is controlled by lower needs (according to Maslow's hierarchy), which is both a consequence and a reason for the formation of a specific mentality of the modern worker. Stimulation of work of the domestic enterprises is directed on formation of such behavior of the worker, which allows the organization to achieve the purposes. The process of stimulation is to create a certain work situation that would affect the needs of the individual.

The purpose of the study is to develop scientifically based recommendations for improving the system of labor incentives in modern conditions based on a comprehensive analysis and evaluation of the system. The main methods used in this study are methods of scientific analysis and synthesis, structural and factor analysis.

For effective use of available methods of influence on employees, we classify incentives according to different criteria. Classification allows you to identify the mechanism of action of each stimulus.

According to what needs are met by incentives, they can be divided into tangible and intangible. Material incentives always contain elements of commodity-money relations and are monetary and non-monetary. Monetary incentives include salary, various bonuses, additional payments, allowances. Cash payments are made in accordance with the quantity and quality of labor invested by the employee in the organization. Non-monetary payments may be made in the form of in-kind remuneration, issuance of permits, official cars, provision of official housing, in other forms.

Once you have defined the objects of impact, proceed to the elucidation of the psychological aspects of motivation. At this stage, character traits, properties of individuals, their value orientations, attitudes, ideals, personality type are investigated When developing a labor-intensive system at the enterprise, the author considers the following requirements:

1. Complexity — when developing incentive systems, various types of incentives (tangible and intangible, group and individual, positive and negative) should be used, in view of the existing approaches at the enterprise and personnel management experience.

2. Differentiation is an individual approach to stimulating different groups of workers. As we have already noted, different incentives should be used towards qualified and unqualified, young and old, male and female employees, etc.

3. Flexibility is the need for continuous monitoring and adjustment of the incentive system depending on changes in employees' motivation affected by the value changes of the society as a whole and within the working team.

4. Promptness implies a quick response of management to reducing employees' motivation, and reducing the effectiveness of incentives. The main signals of inefficiency of the incentive system include: fatigability and irritability of employees; tardiness and absenteeism; overt or covert sabotage; conflicts with management and the team; reduced interest in work; reduced loyalty to the company; violation of performance discipline; low performance results; propensity to change jobs.

Hypotheses. Research on labor incentives in recent years has shown that it has undergone negative structural changes as a system.

In modern conditions, the personnel potential of the modern economy is the most important strategic factor affecting the competitive advantages of the country in the world.

Stimulation of labor activity involves the use of all various forms and methods of regulation of labor behavior.

The human resources potential of the modern economy is the most important strategic factor affecting the country's competitive advantages in the world.

Literature Review

Based on the goal-setting theory of E. Locke, the incentive system at the enterprise should include the goals of both the company's management and the individual employee (Bazarov, 2010)

Therefore, during its development, it is necessary to carefully study what motives determine the behavior of personnel, and what incentives the enterprise can provide to employees so that they can fulfill their needs and receive material or moral benefits.

Thus, the incentive system should:

– make the employees to feel confident and secure, serve the goals of employee's satisfaction and improve the quality of work;

– orient the employee to achieve the corporate objectives and the desired result;

– combine the rigidity of the remuneration determination rules and flexibility in responding to changes in the external and internal situation in the organization;

– serve not only as the motive of work, but as a control mean (lever) for managers. Within the incentive system, the manager should be able to both encourage and punish the employee.

The management of the enterprise should to carefully study the individual needs of the employee, therefore, his motives for labor activity. With the same individual approach, it is necessary to develop an incentive system. For one category of employees, a large salary can be a good incentive, for another category, it is an opportunity to distribute their working time on their own, for the third one — the prospect for advancement in this enterprise.

Most researchers — A.Ya.Kibanov, I.A. Batkayeva, Ye.A. Mitrofanova, M.V. Lovcheva, I.A. Essaulova, A.P. Grachev, S.A. Shapiro — two types of incentives are usually distinguished: material and non-material.

In the works of the researchers listed, material incentives are considered as a set of material benefits provided to staff for the labor contribution made to the enterprise performance, and non-material incentives imply obtaining a set of benefits provided to the employee and not related to payments and substantial monetary costs of the enterprise. At the same time, material incentives are divided into monetary and non-monetary, and non-material incentives into moral, social and organizational.

D.A. Ashirov in his work “Labor: incentives – motives – motivation” (Ashirov, 2018) proposes the following classification of incentives:

1. By incentive direction:
   a) positive incentive;
   b) negative incentive.
2. By incentive resource base:
   a) economic incentives;
   b) administrative incentives;
   c) social incentives.
3. By types of incentives:
   a) material incentives;
   b) material and social;
   c) moral and psychological.
4. By way of providing a stimulating effect:
   a) direct incentives;
   b) mediate incentives;
   c) leading incentives;
   d) postponed incentives.

Let us consider this classification in more detail.

The first feature (incentive’s orientation) is reflected in the content of the managerial impact, which can be either encouraging or blaming; i.e. cause a positive and negative reaction among the staff to whom the managerial impact is addressed.

The second feature (resource bases of incentives) is associated with the essence of the subject, through which it turns out to be a stimulating effect. In this regard, various kinds of resources involved in production and management serve as a source of incentive. They include:

– economical;
– administrative;
– public.

It is obvious that the construction of the motivation and incentive system will be largely determined by the economic situation of the organization, the latter, in particular, will critical for the ratio of various resources involved in the incentive schemes used.

When it is impossible to use large-scale economic resources, you need to address to a greater degree to administrative resources, based on the rationing of employment behavior and, mainly, punishment for non-compliance with the established norms.

Community resources are expressed in various kinds of effects associated with joint activities, as well as in the mentality, manifested in labor and organizational behavior of staff.

The third feature (variety of incentives) reflects the specific representation of the incentive in management practice. Material, material and social, and moral and psychological incentives are widely used here. If with respect to the first and third types there are well-established ideas, then the second type — material and social incentives — needs to be clarified.

Material and social incentives are connected to currently received loans, insurance, participation in management and profits (entrepreneurship, pensions, etc.). It is easy to see that these incentives are associated with a certain material (financial) support, but at the same time they cannot be attributed to exclusively material incentives in the classical meaning of this concept, since they are not directly included in the salary and are not directly related to individual labor’s performance.

Such incentives can be classified as social, because they are aimed directly at improving the quality of life and improving the working conditions of staff through participation in enterprises’ activities. It can be carried out in special programs or in the creation of its own social funds.

Due to the fact that, on the one hand, this kind of incentives is based on the material (financial) base, and on the other hand it has a social orientation, it is proposed to distinguish them in a special type — material and social incentives. The analysis shows that at present this type is becoming more widespread and seems very promising.

The fourth feature (the way of providing a stimulating effect) is also insufficiently analyzed in special works. Basically it is not specially distinguished, although it takes on greater and greater importance in

management practice. This feature is based on temporary differences and the nature of connections in the incentives. The authors of the article propose to classify incentives by their temporal characteristics:

– direct;
– mediate;
– leading;
– postponed.

Direct incentives are expressed in wages and all other forms of payment for individual labor, as well as in administrative and public incentives (e.g., gratitude, reprimand, etc.). In this case, labor performance or employee's action and the incentive should be connected. In other words, cause and effect are based on a direct sequence and direct relationship.

Mediate incentives are intended to change certain conditions and circumstances associated with labor or directly related to it, in order to influence individual and collective performance of labor. Such incentives include professional development, delegation of authority, improvement of the organizational structure, improvement of working conditions, improvement of the quality of work and rest schedules, etc. It is obvious that all these features do not directly affect the increase in individual productivity and therefore they can be called indirect incentives. In other words, it is impossible to estimate exactly to what extent they will affect the employee's motivation, but it is assumed that their humanitarian focus, as well as the improvement of personnel management, will lead to positive effects.

Leading and postponed incentives differ in their purely temporal characteristics. Leading incentives include various types of advances, credits, loans, etc. material incentives.

From administrative incentives — various kinds of career advancement, empowerment, granting of official privileges, from public incentives — approval and support received. All this anticipates the subsequent, individual labor performance. The value of leading incentives is recognized to be quite effective, although there are cases of the opposite order. The latter is most often associated with advances through salary.

Postponed incentives are most often represented in the material and social form of incentives. Especially in the pension systems. These incentives are widely spread due to the social orientation of the state, the involvement of companies in the implementation of social programs, and also as a result of an increase in social wealth and recognition of human resources as the main ones.

Methods

New approaches to incentives involve the abandonment of traditional time-based systems or payment by complexity coefficient, etc., as well as their replacement with remuneration consisting of two components: the base rate and additional incentive payments, depending on individual results and/or the performance of the unit/company.

Therefore, in this paper, we will look at these two most important components in more detail.

Results

Base wages is a monetary remuneration to an employee for his/her work in an organization or for performing duties at a given position (workplace) in accordance with the measure and quality of the labor invested. It consists of the official salary (usually monthly). At some enterprises, in addition to the official salary, the basic wages include a qualification allowance.

Official salary is a guaranteed monetary remuneration paid to an employee in accordance with an employment contract (or any internal regulatory document of the organization, which increases the remuneration specified in the employment contract) regardless of labor performance. It should be noted that in connection with this "regardless of labor performance," in practice, the official salary in itself has not the highest incentive effect for the employee.

The employee's official salary is determined depending on a number of factors (Kibanov et al., 2013)

– skill level;
– complexity of work performed;
– degree of independence of work performance;
– degrees of responsibility for managing the work of other employees;
– intensity, harmful exposure (including hazards) of labor;
– cost of living in the region (city, settlement);
– natural and climatic characteristics;
– industry specifics.

In modern management there are the following approaches to determining the level of the base salary (Shapiro et al., 2012)

1. Ranking method. It assumes the division of all types of work usually based on the complexity of the work performed. There are the following methods for determining the complexity of work:

a) Ranking is a non-analytical method, since the work is assessed as a whole, based on the impression it makes.

b) Classification by complexity is a semi-analytical method, in which an impartial, but not exhaustive analysis of qualification requirements is carried out.

c) Itemized ranking is an analytical method that requires a very detailed study of qualification requirements. The definition of the salary level is basically preceded by an assessment of labor (work complexity).

The advantage of this salary adjustment method is simplicity and accessibility for any organization. The disadvantage is that this method can be used only in relatively small organizations with a narrow list of employees' positions. Besides, with this method, the subjectivity of assessing the complexity of the work is great.

2. Factor comparison method. More formalized quantitative method of labor assessment. It includes the definition of several compensable factors (for example, responsibility, independence, mental burden), each of which may have several degrees, as well as the degree to which each factor is present in a particular type of work. For example, types of work may have 5 degrees of responsibility. In addition, each degree of each factor is assigned a certain number of scores. After that, we determine the extent to which each of the compensated factors (for example, responsibility) is present in the work, summarize the corresponding scores for all factors and obtain the overall scoring of the work.

3. Job classification (or grading) method. Types of labor are divided into groups. These groups are called categories (classes) if they include only similar types of labor, or ranks, if they include types of labor that are similar in complexity but differ in other characteristics. This method also includes the most popular salary adjustment method using the rate ranking system. Development of a multi-rank rate scale is the most common form of remuneration in most countries of the world.

4. Grading method is grouping of positions for certain reasons (definition of "weight", classification, etc.) in order to standardize remuneration in an organization. A way to determine the value (weight) of a particular position for the organization. Essentially, grading is a way of rating.

Grading objectives:

a) Comparison of positions by specified parameters and ranking of works by significance for the enterprise. In this case, the task of raising the prestige of a certain employee in an organization or horizontal promotion within a grade, that is, salary increase, can be solved. Besides, just the intersecting boundaries of the grades make it possible to make a so-called horizontal career: an employee can be moved to another grade (increased) without salary increase.

b) Rating (salary adjustment) based on the significance of work or a position for the enterprise. It allows you to pay not only the market value of the employee, but also the value of his/her work for the company. In addition, since grades combine positions of similar content and different hierarchical levels, this makes it possible to "tie" to different grades different levels of additional monetary and natural incentives: the difference in the volume and content of social packages, benefits for different categories of employees, etc.

c) Motivation is career motivation for employees, engagement motivation for candidates.

Basically, as sated above, grading is a type of work rating, but it also has fundamental differences, which are reflected in table 1 (Kibanova et.al., 2013).

Table 1. Difference between the grading system and the rating system

Rating system	Grading system
1	2
The system is based on the assessment of professional competencies (knowledge and skills), as well as work experience.	A wider number of indicators included in the assessment of the position: in addition to knowledge and skills, such characteristics as freedom of thinking and complexity of the issues being addressed, level of position's responsibility (freedom of action, field of activity, type of influence of the position on the performance) are assessed.
The basis of the structure is the minimum wage, which is multiplied by the corresponding rate factor	The basis of the structure is the weight of the position, estimated in scores

Continuation of Table 1

1	2
Position building hierarchy	Possible intersection of two nearby grades, i.e. an employee of a lower grade may receive a higher wage than an employee of a higher grade through professionalism
There is a clear position building hierarchy vertically from worker to director In the structure	The position structure is formed according to the emphasis principle of this position for the company
Note — drafted by the author based on the source: 5,7	

The grading method involves the following steps (see Figure 1).

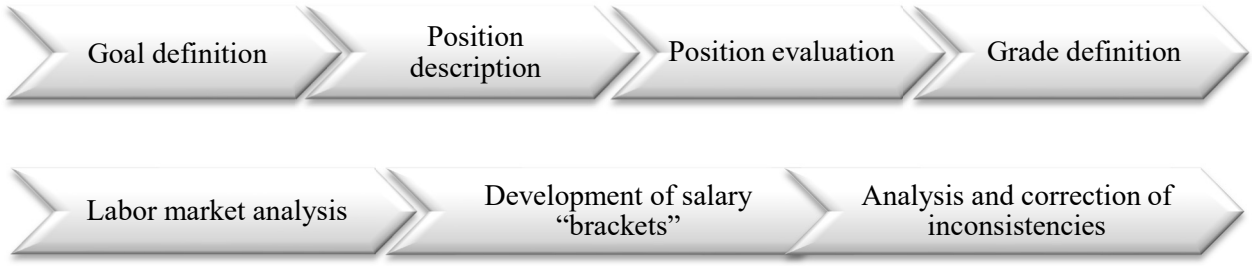

Figure 1. Grading stages

Note — drafted by the author based on the source:8,9,10

The specific sizes (levels) of official salaries are determined individually by each organization, and depend primarily on the market value of the job (position) and internal assessment of the work importance for the business, on the content, complexity and skill level required to perform a particular work.

Positions are evaluated by the evaluation committee using substitution profile tables, based on three groups of factors that are considered the most important.

The first group of factors include knowledge and skills required for work. There are three main elements: technical knowledge and skills, managerial and interpersonal qualities.

The second group of factors is issue resolution. It includes two main elements — the freedom of thinking and the complexity of the issues to be solved.

The third group is the level of responsibility. Includes: freedom of action, field of activity, the type of position's influence on the performance, as any system, the grade system has its advantages and disadvantages, by analyzing the sources (Malova, 2016)

The main types of premiums are:

1. Premium for individual employee performance. It reflects the possibility of direct individual influence of the employee on his/her performance. If this is not the case, then one of the incentive principles "Pay for real work, not for participation in the process" is violated. It is accrued by pre-determined bonus indicators, which are determined individually for each employee (position).

2. Premium for contribution to the work of the structural division. It is used to stimulate better interaction and mutual assistance between employees of the structural division to increase his/her performance as a whole. A bonus fund is calculated for each structural division of the organization. The bonus fund is distributed among employees of the structural division using the labor participation coefficient (LPC).

LPC determination procedure:

LPC is tied to the official position or qualifications of the employee;

b) scoring method (performance by predetermined indicators are taken into account (including their scoring) every day basically by the head of the structural division; the scores are summed up at the end of the month);

c) combination of the first two methods.

3. Premium for the overall performance of the organization. The main purpose is to motivate employees to increase the overall performance of the organization. It can be paid at different intervals (for example, quarterly, semi-annually, annually) and apply to various categories of personnel (for example, only to the owners of the organization and top managers; only to top- and middle-ranking managers; to top- and middle-ranking managers and employees of structural divisions, "bringing money" to the organization; for all permanent (full-time) employees of the organization).

4. Target bonuses. It is used to stimulate effective work and activity of employees when performing individual targets. For example, for innovation, initiative shown, raw material and material saving, improving the quality of products (works, services), work experience in the organization, etc.

The bonus system organization procedure for personnel is regulated by a special "Provision on bonuses". In addition, the provision on bonuses can be developed for a certain category (group) of personnel or extend to a specific structural division (group of divisions) of an organization.

The provisions on bonuses should include:

– indicators and specific conditions of bonuses;

– amount, scale and terms of bonuses;

– circle of awarded employees;

– source of bonuses.

Bonuses can be made by one or a group of agreed indicators. Experts identify four main groups of indicators of bonuses, stimulating employees for individual performance. They include:

1. Quantitative indicators: fulfillment and over-fulfillment of production targets for output and nomenclature, percentage of performance standards, ensuring uninterrupted and smooth operation of equipment, compliance with or shortening the planned repair time, performance of a smaller number compared to the standard, reduction in labor intensity of products, etc.

2. Quality indicators: improving the quality of products, the percentage of delivery of products from the first presentation, reducing the defect rate, increasing the grade of products.

3. Saving of resources used: economical consumption of raw materials and materials, fuel and electricity saving, reducing the cost of maintenance and repair of equipment.

4. Rational use of technology: compliance with the terms of development of new equipment and advanced technology, adherence to technological discipline, increasing equipment load factor.

For managers, professionals and employees, bonuses are primarily related to profit. There are proposals on the need to include in the bonus system for heads of organizations such indicators as the fulfillment of contractual obligations, the growth in production, and the provision of output of modern technological level and quality.

The condition for bonuses is usually the work during the accounting period and the fulfillment of the established indicators. One of the most important conditions for the bonuses is the compliance with labor discipline. Employees who have fulfilled bonus indicators, but have committed absenteeism or have appeared at work under the influence of intoxicants, have committed a different disciplinary offense (for example, violating the process rules for manufacturing products), do not accrue a right for the bonus in full. As a rule, they are either not rewarded (in the event of a serious misconduct), or they are paid a premium in a smaller amount than employees who have fulfilled both the indicators and the conditions for bonuses. An employee who has not fulfilled the bonus conditions does not acquire the right to a bonus or does not acquire the right to a bonus in the established (basic) amount.

Speaking about the bonus system, we should not forget about such an important point as bonus reduction. Bonus reduction is a procedure for reducing the amount of an already earned premium.

The purpose of bonus reduction is to increase the labor, production and process discipline of employees. Sanctions for violation of labor discipline can be contained either in the Regulation on bonuses, in the form of an independent section "Bonus Reduction Procedure", or regulated by an independent document (for example, the "Regulation on the defect-free labor system"). Depending on the severity of the violation, the amount of bonus reduction can be set from 15 % to 100 %.

Traditionally, within the economic sciences, which mainly develop this problem, incentives are divided into material and moral ones. Such a separation of incentives, in our opinion, does not look quite correct. More precisely, the whole set of applied incentives could be divided into economic associated with material incentives for labor and non-economic associated with organizational, status and moral incentives (Oganesyanet al., 2012). A non-economic labor incentive system is shown in Figure 2. Let us consider each element of the proposed scheme in more detail.

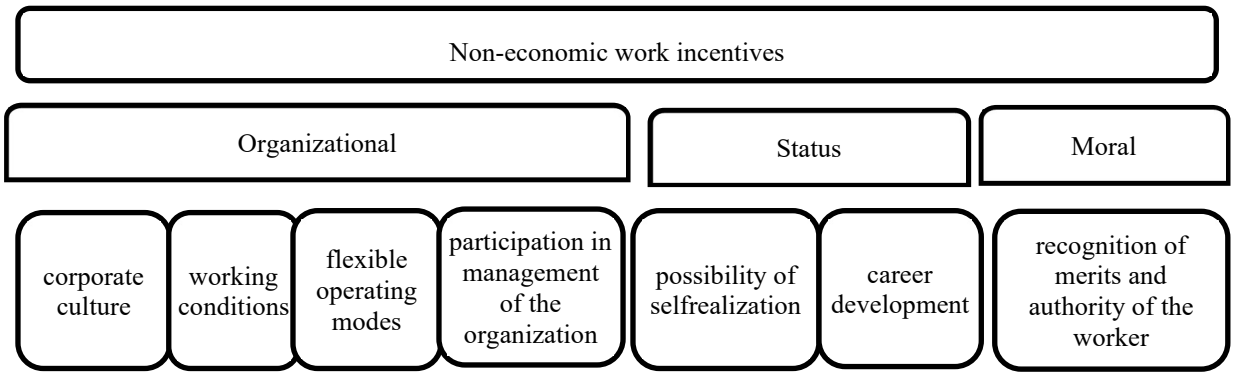

Figure 2. Non-economic labor incentives

Note — drafted by the author based on the source: 10, 11

Organizational incentives of labor activity is a tool of organizational management that includes a system of interrelated incentives that regulate employee behavior by increasing his/her job satisfaction in the organization and encouraging employees to creatively perform their functions aimed at implementation of the organization's strategic goals (Artyuhova et al., 2015). We allocate four elements to organizational incentives methods:

1. Corporate culture is a corporate-wide value system that allows an employee to feel involved in an important (reference) group of people, to receive recognition of his/her own professionalism from it. According to Maslow — these tools help to fulfill the needs for acceptance and respect.

The tools of corporate culture include the following:

– organizational management structure;
– leadership style;
– clarity of function allocation;
– decision making mechanism;
– work standards;
– performance evaluation;
– internal and external communications;
– corporate style;
– corporate traditions and holidays;
– scientifically based selection, training and periodic certification of executives;
– recruitment of primary divisions, taking into account the psychological compatibility factor;
– applying social and psychological methods that contribute team members to develop the skills of effective mutual understanding and interaction;
– ways to resolve conflicts, etc.

2. Labor conditions are a complex objective social phenomenon that is formed in the labor process under the influence of interrelated factors of a social and economic, technical, organizational and natural occurrence and affecting human health, performance, his attitude to work and the degree of job satisfaction, and labor productivity and other economic performance, on living standards and the all-round personal development as the main production forces of society (Buhalkov, 2016).

According to Maslow's theory of motivation (Agafonova et al., 2017), the tools of this group primarily satisfy physiological needs.

This group of tools includes everything that anyhow provides employees with comfortable work:

– work place;
– sanitary and hygienic conditions (temperature, light, the content of harmful substances in the air, wind speed, dust, humidity, etc;
– workplace equipment;
– provision of workwear and safety footwear;
– transportation services;
– provision of mobile communications;
– catering;
– medical service;

– sports, etc.

3. Flexible modes of operation. The necessary elements of the flexible working hours basically are (Lobanova, 2015) variable (flexible) hours at the beginning and end of the working day (shift), within which the employee has the right to start and finish work at his discretion; fixed hours — the hours required to stay at work for all employees in accordance with the flexible working hours. Thus, the working day in the application of flexible working hours is conditionally divided into 3 parts: two flexible time intervals — at the beginning and end of the working day and a fixed interval between them, divided, in turn, also into two parts by a lunch break.

The authors of the article identified two main options for a flexible working time system:

– with the obligatory observance by employees of the fixed working hours. With this option, employees who come to work later must work out the due time on the same day;

– with the obligatory observance of the weekly or monthly fund of working hours. In this case, employees can transfer the difference between the hours worked and the hours required from one day to another or from one week to another during the same month.

With help of the working schedule, some social problems can be solved, in particular:

– reduced labor market strains (for example, the spread of flexible working hours for working women by organizations will allow them to successfully combine motherhood and career, thereby stimulating birthrate);

– chronic fatigue, lack of sleep and stressful situations were eliminated (for example, when developing and implementing advanced labor management techniques ensuring adequate rest for workers and employees who perform work duties in shift working hours, as well as in irregular working hours), etc.

The disadvantages of using this working hours are:

– not suitable for all employees, because it requires a great concentration, responsibility and self-control for an employee;

– such work creates some isolation of people, since working relationships play an important role in the social relations of society;

– with the mixed working hours (some employees work according to a flexible schedule, and the rest — according to standard conditions), envy and ill will to each other may arise;

– additional costs from employers for the introduction of additional control and accounting of working time and labor remuneration to such employees;

– a negative impact on the career growth of employees performing their duties in the flexible working hours.

4. Participation in organization management. Knowing the labor motivation structure of employees, it is possible to more accurately predict which forms of incentives will be most effective for one or another category of staff of the organization. One of the most promising forms of employees' group behavior, leading to an increase in the performance of the collective work and the achievement of its goals, is participative management, which is also one of the employee incentives methods

The International Institute for Labor Studies describes participative management as a process in which employees and other categories of personnel have the right to make management decisions within an enterprise, with the elements of participative management being considered as a condition for a full implementation of employees' labor potential within the concept of quality of working life (Potudanskaya et al., 2016)

Participative management can also be viewed as remuneration programs seeking to increase internal motivation and interest of employees in the labor process by expanding their authority in the activities of the company. Unlike most remuneration systems based on the individual contribution of employees, the participative management is based on the recognition of the mutual interests of all members of the firm, which helps to integrate these interests and increase the interest of employees in performance.

Thus, the participative management structure provides for more active participation of employees in decision making, primarily within their area of responsibility, increases employee motivation, increasing responsibility for their performance, reduces the possibility of labor conflicts, eliminating many organizational and managerial reasons (Surkova, 2017).

Status labor incentives is focused on professional growth, increasing the authority in the team. These are promises to the employee of more interesting (profitable) work, increasing his/her social value in his/her own eyes or the eyes of those around him/her, which actually influence the change of status, and hence, the receipt of additional material benefits. The influence of these incentives is most noticeable not at the time of presentation of another job, position, but at the stage of waiting, when a person mobilizes his/her internal reserves in order to get what he/she wants, to move to these new positions (jobs, posts). This group includes everything

that gives company employees the opportunity for career growth, develop, achieve significant goals for themselves. According to Maslow — these tools contribute to the fulfillment of the need for self-fulfillment:

– professional development;
– career development;
– possibility to make decisions;
– internship and training;
– innovation incentives.

Moral stimulation of labor activity is aimed at regulating the employee's behavior on the basis of objects and phenomena reflecting public recognition, increasing the employee's prestige.

Incentives of this kind triggers motivation, based on the fulfillment of the need to express appreciation and be recognized. The essence of regulation is the transfer and dissemination of information about the labor performance, achievements in it and the merits of the employee to the team or organization as a whole.

Instruments of moral incentives for staff (Pritvorova et al., 2018).

– systematical informing the staff about the state of affairs in the organization (extended meetings, meetings of the work team, presentations of successful projects, organized internal PR, targeted ideological work, local corporate media, corporate identity, etc.;

– organization of corporate events (professional competitions, master classes, labor competitions, corporate events, newsworthy events, team building events, etc.);

– official recognition of merit (presentation to state, professional and public awards, awarding honored employees with certificates, diplomas, corporate awards, valuable gifts, vouchers, sums of money (status premiums), mentioning at meetings, public events, honor roll), etc.).

Discussions

Thus, it should be noted that the path to effective personnel management lies through an understanding of its motivation. Only by knowing what drives a person, what motivates him to act, what motives lie at the basis of his behavior, an effective system of forms and methods for work collective management can be developed. To do this, you need to know how certain motives arise, how and by what kind of incentives, these motives can be brought into action. In organizations where people closely interact with each other, the use of incentives should take into account the needs and their satisfaction, the entrepreneurial spirit and interests of the individual, and even the character and way of life. Then the incentives will be truly effective and personally meaningful. This article highlights the principles of labor motivation, as well as the conditions under which the labor motivation is formed or not formed. It was noted that changes in the socio-economic conditions of the economy have a multi-sided, often contradictory effect not only on the nature and performance of work, but also on its motivation. On the basis of the works of P. Drucker and A.N. Vashchenko, global modern trends of changing labor motives and their transformation in the conditions of our country are revealed.

Conclusions

– In this article, a classification of factors influencing the formation of the labor incentive system was proposed, which includes two groups: external (objectively existing and independent of the company's management) and internal (formed and dependent on the enterprise management); and the influence of these factors in the conditions of the Republic of Kazakhstan was considered.

– The main building principles of effective incentive system were also revealed in this studyits types were also considered — economic and non-economic. The conclusion is made about the need to apply more flexible approaches to determining the level of base wages, and the variable part of wages, the need to link wages with the ultimate performance of both an individual employee and the entire structural division, and the enterprise as a whole.

– Modern motivation theories were analyzed from the point of view of their impact on the efficiency of the use of labor resources, as well as from the point of view of their use as a basis for the analysis of foreign incentive systems for employees.

– It follows from the literature analysis that non-economic incentives play an increasing role in labor incentives for employees, as it allows to satisfy not only their basic needs, but also the needs of higher levels and create a favorable atmosphere in the workforce. This is achieved by expanding the participation of employees in enterprise management, using flexible working hours, creating a corporate-wide value system that allows an employee to feel involved in an important group of people, to receive from recognition of his/her own professionalism from it.

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А.А. Легостаева, Е.Д. Орынбасарова, Ж. Владимиров

Қазіргі жағдайда еңбекті ынталандыру жүйесі

Аннотация

Мақсаты: жүйені кешенді талдау және бағалау негізінде қазіргі жағдайда еңбекті ынталандыру жүйесін жетілдіру бойынша ғылыми негізделген ұсынымдарды әзірлеу.

Әдісі: мақала жазғанда мына әдістер қолданылған: ғылыми талдау, синтез және құрылымдық талдау әдістері.

Қорытынды: қазіргі кезеңде қазіргі заманғы экономиканың кадрлық әлеуеті әлемдегі елдің бәсекелестік артықшылықтарына әсер ететін маңызды стратегиялық фактор болып табылатыны анықталды. Зерттеу

барысында еңбекті ынталандыру жүйесін қалыптастыруға әсер ететін факторлар жіктелді. Қазіргі жағдайда мотивацияның тиімді жүйесін құрудың негізгі принциптері анықталды, оның түрлері қарастырылған, мотивацияның қазіргі заманғы теориялары талданған.

Тұжырымдама: зерттеу барысында авторлар базалық жалақы деңгейін және жалақының ауыспалы бөлігін анықтауға неғұрлым икемді тәсілдерді қолдану қажеттілігі, жалақыны жекелеген қызметкердің де, сондай-ақ барлық құрылымдық бөлімшенің де, сондай-ақ тұтастай алғанда кәсіпорынның қызметінің түпкілікті көрсеткіштерімен байланыстыру қажеттігі туралы қорытынды жасалған.

Еңбекті ынталандыру жүйесін қалыптастыруға әсер ететін факторларды жіктеу ұсынылды, ол екі топтан тұрады: сыртқы (объективті және кәсіпорын басшылығынан тәуелсіз) және ішкі (кәсіпорын басшылығынан қалыптасатын және тәуелді).

Кілт сөздер: басқару, ынталандыру, мотивация, экономика, менеджмент, қызмет, жүйе, кәсіпорын, қызметкер, процесс, еңбекақы төлеу.

А.А. Легостаева, Е.Д. Орынбасарова, Ж. Владимиров

Система стимулирования труда в современных условиях

Аннотация

Цель: разработка научно обоснованных рекомендаций по совершенствованию системы стимулирования труда в современных условиях на основе комплексного анализа и оценки системы.

Методы: при написании статьи применялись следующие методы: методы научного анализа, синтеза и структурного анализа.

Результаты: выявлено, что в современных условиях кадровый потенциал современной экономики является важнейшим стратегическим фактором, влияющим на конкурентные преимущества страны в мире. В процессе исследования были классифицированы факторы, оказывающие влияние на формирование системы стимулирования труда; выявлены основные принципы построения эффективной системы мотивации в современных условиях; рассмотрены ее виды; проанализированы современные теории мотивации.

Выводы: в процессе исследования авторами заключен вывод о необходимости применения более гибких подходов к определению уровня базовой заработной платы и переменной части заработной платы, необходимости увязки заработной платы с конечными показателями деятельности, как отдельного работника, так и всего структурного подразделения, а также предприятия в целом. Предложена классификация факторов, влияющих на формирование системы стимулирования труда, включающая две группы: внешние (объективно существующие и независимые от руководства предприятия) и внутренние (формируемые и зависимые от руководства предприятия).

Ключевые слова: управление, стимулирование, мотивация, экономика, менеджмент, деятельность, система, предприятие, персонал, процесс, оплата труда.

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Implementation of a compatibility assessment of the engagement system and the employee motivational profile in company human resources management

Abstract

Object: The object of this study is to develop and test a method for assessing the conformity of a system of an employee's engagement in a company and his motivation profile.

Methods: We have applied methods of sociological survey of company staff and subsequently, performed graphical and statistical analysis of the achieved results (an index method). We also used the matrix method for assessing the identified risks of employee dissatisfaction.

Findings: The results of the study confirm the effectiveness of the index method we propose. It allows conducting regular screening among company staff to identify risk factors for the formation of the employee's "dissatisfaction," which in the future may get him fired or burn out. This shall allow diagnosing the issue of discrepancies between motivation of the subject and measures for engagement used by the employer. In addition to the index, the authors have developed a risk assessment matrix based on a combination of significance of the factor (and its sub-factors) for the employee and probability (possibility) of the employee's influence on this sub-factor.

Conclusions: The application of the proposed two-stage assessment method shall allow the personnel department to timely diagnose the issue of inconsistencies in the motivational profile and the applied engagement measures for each employee and develop proposals for improving it.

Keywords: staff engagement system, assessment method, employee motivation profile, analysis of motivational factors, compliance index, risk matrix.

Introduction

Both in theory and in practice, the transition from the personnel management to the human resource management paradigm was associated with the transformation of the attitude towards this resource on the part of managers at all levels (Armstrong, 2006; López-Cotarelo 2018).

At present, specific features of the strategic management of human resources are as follows:

– Its functional dependence on the corporate strategy adopted for the medium or long-term period;

– Its coordination with general organizational strategies, such as cultural change, organization development, development of labor relations;

– Its multi-layer HRM structure that fulfills important functions of providing resources, managing labor performance, managing knowledge, and engaging workers (Delery, Roumpi, 2017).

The "Engagement of human resources" subsystem stands out as one of the most important ones since the activities implemented within its framework have a multi-vector impact on other functional strategies.

By engagement, we understand the process of influencing an employee's motivation to work with a set of tools and mechanisms stimulating the compliance of employee behavior and the results of his activities with corporate strategy (Pritvorova, Tasbulatova, 2018). The tools are as follows: ability diagnosis methods, training technologies, assessment and certification, career plan, horizontal and vertical rotation, etc. The mechanisms are as follows: a reward system, a mechanism for participation in management, an adaptation mechanism, etc. All of these are intended to create effective incentives for the employee to show his best results, i.e. provide a match with his intrinsic motivation to work.

A regular feedback is necessary for this complex system to work effectively, that is, information on how the employee evaluates measures taken against him.

Organization of feedback is possible by various methods, many of which are rather laborious and costly as they require involvement of highly paid professional experts or advice agencies, which is especially difficult for medium and small entities.

We have proposed a method for diagnosing issues in the main engagement areas. If used regularly, this method helps to reveal timely the dissonance between the employee's motivational profile and this system. The advantages of the method in question are ease of implementation, cost-effectiveness and methodological compliance with the principles of risk management (ISO-31000).

The method has been tested and recognized as effective in seven companies in Kazakhstan (including 3 national ones).

Literature Review

The founding classics of the theory of strategic human resource management are M. Armstrong (Armstrong, 2006), A. Thompson and A. Strickland (Thompson, Strickland, 2003). K. Gilbert (Gilbert, 2015), N. Kinnie and Swart D. (Kinnie and Swart, 2020) and others continue developing this concept. The key idea of this concept is a long-term cooperation between a productive employee and a company based on the constant engagement of his abilities, efforts, and competencies to achieve his goals.

Researchers Ogbonnaya and Messersmith (Ogbonnaya, Messersmith, 2019) believe that the staff engagement system includes three components: skill, motivation and opportunity enhancement.

Recent studies consider the problem of creating a complex of the best motivation for an employee through the prism of his continuous training (Ozkeser, 2019).

The authors recognize the relevance of the analysis of motivational profiles, the formation of clusters with similar profiles and the development of motivational programs (Zamecnik, 2014).

Our study is based on methodological individualism in HR policy, which is gaining increasing recognition and application as we speak; particularly, in the works of S. Chacko S. and N. Conway (Chacko, Conway, 2019).

The research of the last decade is characterized by the use of the term "burnout" of employees. One of the factors affecting it may be a model of human resource management in a company (Shamis, 2016).

The dominant idea of all research in human resources management is its purpose to link the interests of both employee and employer so that the employee's decent work is aimed at implementing the company's strategy and obtaining maximum results (Chulanova, 2020; Abilshaikov, Sartova, Titkov, 2015; Kurmankulova, Z. Karbetova, Sh.Karbetova, 2018; Bakirbekova, Kulimanova, 2018).

The main subsystem of the firm, which is directly responsible for the implementation of this idea, is a staff engagement system.

The purpose of the article. To develop a method for assessing the conformity of the engagement system and the motivational profile of an employee to implement it into the firm's human resources management.

Methods

We have applied sociological survey of company staff and subsequently performed a graphical and statistical analysis of the obtained results (an index method), and the matrix method of assessing the identified risks of employee dissatisfaction.

We propose the following sequence of evaluations:

Stage 1. Complete annual examination of all company staff.

Six aggregated factors of staff engagement (disclosed below) are evaluated by two characteristics:

1) The significance (importance) of the factor for the employee on a scale from 0 to 100 % (a motivation scale);

2) Employee's own estimate of the factor in reality on a scale from 0 to 100 %.

Stage 2. Calculation of the compliance index for each employee according to formula 1.

$$I_n = \sqrt{\sum \left(V_{nj} - R_{nj}\right)^2 / 6} \quad (1)$$

where

I is the compliance index of the engagement system and the motivational profile of employee n;

V is the significance (importance) of the j factor for employee n on a scale from 0 to 100 %;

R is the employee estimate of the j factor in reality on a scale from 0 to 100 %;

j is the number of aggregated factors from 1 to 6.

For each factor and index value, a deviation level is set that each company can preset independently.

If a deviation level of 20 % is considered normal, then negative deviations by a factor on a larger value shall be assessed as uncomfortable and forming dissatisfaction by this factor.

The discrepancy between the values is felt as uncomfortable and a discrepancy with the employee's motivational profile, which creates dissatisfaction in him, but can also contribute to the genesis of the risk of emotional burnout or dismissal.

Index values of 20 or more also indicate an employee's general dissatisfaction with the system.

The index can be calculated by unit and company as a whole, which again shall be the basis for further analysis by now specific factors.

Stage 3. If the employee's responses reveal factors he is not satisfied with, then we propose compilation of a risk matrix on a factor that creates dissatisfaction. When the risk is identified as "significant" or "unacceptable", measures are to be developed to reduce or neutralize it. We propose the following form of the matrix (see Table 1).

Table 1. The matrix for assessing the risk of employee dissatisfaction genesis by a specific sub-factor of the engagement system

Possibility of impact on the sub-factor (event probability) / Sub-factor value for the employee	High degree of impact	Medium degree of impact	Low degree of impact or impact possibility is non-existent
Significant	0 — No risk*	1 — Minor risk	3 — Unacceptable risk
Moderately significant	0 — No risk	0 — No risk	2 — Major risk
Insignificant	0 — No risk	0 — No risk	0 — No risk
*Risk is a combination of the value (importance for the employee) of the factor and the ability to influence it			
Note: Made up by authors			

Based on the results of the assessment, a list of measures should be determined for the employee in question on the possible prevention, neutralization or compensation of risks.

We have conducted the study in seven Kazakhstani companies, including three bearing the national status. For the national companies, we have conducted a survey in one of the units (cluster sampling) and a continuous survey in small companies.

Results

We believe the human resources engagement system to consist of three main blocks:

– motivation and reward systems;

– human resource development;

– relationship system in the firm.

Each block includes several factors. Factors are aggregated, i.e. there is a whole group of sub-factors inside each of them. In practice, each of these sub-factors can be considered separately.

Indeed, relationship system in the firm presumes taking into account five or more factors, each of which may include one or more sub-factors. For example, participation in management presumes allocation of at least three levels: at own workplace, at the unit level, and at the company level. Each of them is presented as a sub-factor.

Similar to the previous example, the factor "opportunities for developing skills and competencies" may include such sub-factors as availability of further qualification courses, availability of workshops for mastering new technologies at the workplace, possibility of abroad internship, availability of educational programs for self-study, etc.

We propose a method for assessing the conformity of the applied engagement model and employee's motivational profile in the form of an index calculated using a fairly simple formula 1.

This method can be applied both by the company itself and by independent appraisers during an audit (Litvinjuk, 2018).

The advantages of the method are as follows:

A small number of assessed factors that form employee's positive attitude towards high results of his work;

Obtaining individual conformity assessments that allow to see engagement problems associated with the psychological mismatch of the employee's activity stimulation system and his personal motivational profile;

Calculation of group assessments, which allow to identify and characterize the engagement system at the unit level and highlight the problems typical for all the unit staff.

Relative simplicity of the scales used for the employee and the simplicity of index calculation.

According to the modern methodology of human resource management and taking into account the results of our empirical research among the aggregated factors included in those engaging, we have identified the following ones:

1) fair assessment of labor contribution / adequate remuneration;

2) career opportunities;

3) opportunities for the development of skills and competencies, i.e. professional growth;

4) stable employment or safety motive as minimization of the risk of job loss;

5) participation in the management of the process and results at the workplace (degree of freedom in resolving issues of own workplace), in a unit, in a company;

6) relationship system in the firm.

In fact, the heads of human resources management departments can take even larger number of factors to assess compliance, but each of them must be clearly positioned so that the employee could distinguish them. Excessive detail at this stage is ineffective, because the task of this stage is to identify major issues, and if necessary, further clarify the picture by sub-factors.

Engaging factors are recognized by the employee as they affect his behavior at the workplace. A number of factors are of great importance to him, and he may not notice a number of factors at all. In any case, subjectively, the employee can determine the result of each of the six factors listed above both as psychologically comfortable or uncomfortable.

If we use a relative scale in points or other units to measure the importance (or significance) of each of the six aggregated factors for an employee, he is able to determine the real deviation from the "importance" of the factor in one direction or another easily enough.

This means that if the importance (significance) of the remuneration system for the employee is 100 %, and the real assessment of the current system is estimated as fair by 80 %, then the deviation is 20 % percentage points.

We propose using the principle applied in statistical calculations of standard deviation for the assessment of the conformity of the employee's engagement system and his motivation.

As is commonly known, the standard deviation is defined as the square root of the variance of a random variable. At the same time, the deviation of the true value of a random variable and its estimation using a certain estimation method is also referred to as the standard deviation 18 (Ivchenko, Medvedev, 2010). In a general sense, standard deviation allows to characterize the deviation of the indicators in the sample from the average value. In our case, it is the average deviation of the ideal and actual values for this particular individual. A similar conclusion can be made for the unit or the firm as a whole.

We shall use the deviation of the employee's actual estimates of the factors included in the engagement system from their optimal values determined subjectively by each employee. The ideal system of engaging workers gives a value of zero in calculations, but it is obvious that in practice this hardly ever happens.

The results of the study are presented on the materials of two cases: JSC "National Company KazakhstanTemirZholy" (hereinafter referred to as JSC "NC KTZ") and in SF "Zamandas 21".

The results for the first object of study (a subdivision of JSC "NC KTZ") are shown in tables 2 (stage 1: initial data collection) and 3 (stage 2: estimated data on the compliance index).

We have adopted a scale of percent so that the index values are convenient for use, i.e. obtained by integers in the range from 0 to 40.

We take the minimum value of the index equal to 0, but if there is a deviation in at least one of the factors by 10 %, then the index value shall be 4.

In the range from 0 to 20, index values shall be considered normal, and the engagement system effective.

A value of 20 is obtained when, for all factors, the deviation is 20 percentage points. In fact, the maximum value can be set expertly, and if the system is to improved further, the value can be set at a different level.

For the majority of the company unit staff, the engagement system is psychologically comfortable, i.e. they perceive deviations for individual factors as permissible.

An index value of more than 20 has been recorded for four subjects in the sample.

In subject No. 4, deviations significant for him can be seen in the factors "Fair remuneration" and "Safety from dismissal." Based on these factors, it is possible to carry out in-depth clarification of the sub-factor content of each of the factors. For example, the remuneration factor implies at least financial and non-financial remuneration, and each of these sub-factors is decomposed into several more positions.

Table 2. Initial results of the assessment (audit) of the compliance of the individual motivational profile and the staff engagement model used in the firm

Subjects	Significance (importance) of the factor for the subject						Subject's assessment of the factor in reality					
	Factors						Factors					
	1	2	3	4	5	6	1	2	3	4	5	6
1	100	90	60	80	70	100	90	80	80	70	60	90
2	100	80	70	90	80	90	80	70	60	80	50	80
3	80	70	50	70	90	80	70	60	60	80	70	70
4	100	80	90	90	60	70	60	60	80	60	60	70
5	100	90	70	100	80	60	70	50	90	90	70	60
6	90	60	80	100	30	80	80	100	70	90	30	70
7	100	70	90	80	90	90	90	60	80	80	60	80
8	100	80	100	60	60	80	70	90	100	50	50	80
9	100	90	90	70	70	100	80	80	80	60	60	90
10	100	60	100	90	80	90	90	50	90	80	90	80
11	90	90	60	100	90	80	70	80	50	90	80	80
12	100	80	70	90	60	70	80	60	60	80	50	70
13	100	70	50	100	80	80	80	60	60	90	80	60
14	100	80	90	60	90	60	90	70	80	60	90	50
15	100	90	70	80	80	40	90	80	60	70	80	40
16	90	60	80	60	90	60	70	50	80	60	80	50
17	100	70	90	70	100	80	90	60	70	50	50	70
18	100	80	100	60	100	90	90	70	90	80	60	80
19	100	90	90	80	80	70	80	80	90	70	50	60
20	100	60	100	90	70	90	70	70	100	50	50	90
Total	1950	1540	1600	1620	1550	1560	1590	1380	1530	1440	1270	1420
Average	97.5	77	80	81	77.5	78	79.5	69	76.5	72	63.5	71
Note: Made up by authors based on the results of the study conducted within a JSC "NC KTZ" unit												

Table 3. The index of compliance of the employee's engagement system and his motivation

Subjects	Deviation of a factor's real assessment from its level of significance for a subject						The index of compliance of the employee's engagement system and his motivation
	1	2	3	4	5	6	
1	-10	-10	20	-10	-10	-10	12
2	-20	-10	-10	-10	-30	-10	17
3	-10	-10	10	10	-20	-10	12
4	-40	-20	-10	-30	0	0	22
5	-30	-40	20	-10	-10	0	23
6	-10	40	-10	-10	0	-10	18
7	-10	-10	-10	0	-30	-10	15
8	-30	10	0	-10	-10	0	14
9	-20	-10	-10	-10	-10	-10	12
10	-10	-10	-10	-10	10	-10	10
11	-20	-10	-10	-10	-10	0	12
12	-20	-20	-10	-10	-10	0	14
13	-20	-10	10	-10	0	-20	14
14	-10	-10	-10	0	0	-10	8
15	-10	-10	-10	-10	0	0	8
16	-20	-10	0	0	-10	-10	11
17	-10	-10	-20	-20	-50	-10	24
18	-10	-10	-10	20	-40	-10	20
19	-20	-10	0	-10	-30	-10	16
20	-30	10	0	-40	-20	0	22
Total	-360	-160	-70	-180	-280	-140	-
Average deviation	-18	-8	-3.5	-9	-14	-7	11
Note: Made up by authors based on the calculation results							

For the subject No. 5, the zone of psychological tension is formed by the factors of "fair remuneration" and "career growth opportunities." Now, with the second factor discomfort is even more pronounced than with the first one. Since HR managers often use career opportunities as a non-financial component of fair remuneration, it is probably better to consider the issue more closely on the second factor and, if possible, ease the tension if the employee has the corresponding potential and value for the company. In addition, the low importance of professional growth and advanced training is noted for the subject.

This, most likely, suggests that at this stage he gained the necessary skill, because he appreciates the real opportunities to increase it in this firm; they exceed the significance of this factor for him at this stage. The psychological profile of the subject suggests that, based on the skill he has gained, he expects a career advancement, but does not see an opportunity for him in this firm. In addition, he is not satisfied with the reward system. Apparently, the subject's inconsistency between the employee's engagement system and his motivational profile is growing, which may lead to his dismissal. We have been identifying such cases in the course of a case analysis in JSC "NC KTZ," which currently is restricted on increasing financial remuneration of its staff. As a result, HR experts are ready to justify the appointment of an employee to the position of manager for the sake of increasing his salary as a key expert may leave the company. At the same time, the employee does not always associate career promotion with a managerial position, especially if he does not lean to this type of activity. In this case, the staff officer should look for non-standard solutions for career growth.

For the subject No. 17, the problem is the factor "participation in the management of processes and results at own workplace." This may have something to do with the fact that the employee has hard functionality and, due to the requirements of technology and the business process, objectively has an insignificant degree of freedom in matters relating to the selection of actions when making decisions at his workplace. This may be related to equipment, technology, work and rest schedules and other objective work parameters. But it may have something to do with excessive control over his activities, which can be weakened to increase employee's satisfaction with the results of his work.

There also may happen such a thing as "emotional burnout," that is when the employee takes this workplace for a long time and does not see ways to increase satisfaction from his work anymore. In this case, a personnel department officer may consider a number of options ranging from the rotation of the workplace (a possible switch to work in another city or district) to the transition of the employee to the role of a mentor for young or less experienced colleagues. Given that this subject evaluates the importance of participation in the management of the unit and the organization as a whole lower than what participation in management at his own workplace means for him, then, apparently, his involvement in management at other levels does not compensate for his lack of degree freedom at his workplace.

For subject No. 20, the problem is the state of anxiety and the fear of losing his job. This requires an interview on this particular factor and, possibly, as a result of simple management communication, this factor may be weakened. At the same time, it is possible that this feeling is justified and that the employee himself is required to take some measures to strengthen his position in the company. This employee also has an opinion that almost nothing depends on him in the business process that he carries out. The reward system, on which there is also a deviation at the comfortable/uncomfortable border, may convince the employee that he is threatened with an early dismissal.

A graphical representation of the conformity assessment is presented in Figure 1.

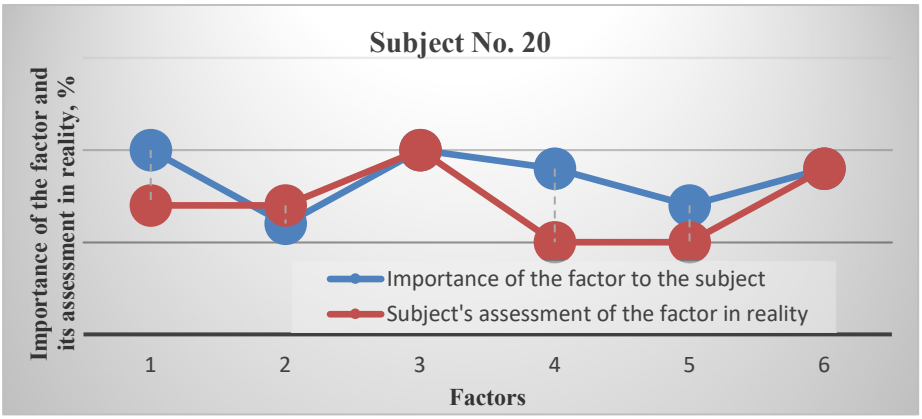

Figure 1. Graphical representation of conformity assessment (example)

Note: Made up by the authors

For subjects whose index values were close to the boundary value, i.e. 20, factors can also be studied for which a deviation of more than 20 is noted to introduce possible changes to their engagement system.

When developing such changes for each person, his individual psychogram data should be taken into account, since the problem of a particular person can often be solved by offering him a job in another unit, considering individual characteristics of internal motivation. Accordingly, for subject No. 18 with a borderline index value of 20 and tension over a degree of freedom in the workplace, it is probably better to reduce the degree of control by lengthening the time frame for KPI. That is, to control not by the results of the day or week, but by the results of the month, quarter or six months.

The value of this approach is that it provides an individual diagnosis quickly enough. It is a kind of screening of problems and identifying those workers for whom the engagement system is inadequate, meaning that it does not work as the human resources management service suggests.

Using this method, we can also obtain a general assessment of compliance by department and organization as a whole.

As for the generalized or "average" subject; for him the value of the compliance index calculated by formula 1 is 11, which is a completely correct value. Based on this calculation, we can conclude that the engagement system is generally adequate for this company unit (see Table 4).

At the same time, this gives reason to single out more and less stressful factors within the system. The least stressful factor is No. 3, "Opportunities for the development of skills and competencies, i.e. professional growth". The average deviation for this factor is -3.5. Apparently, in this firm advanced training is systematical, and most of the staff are completely satisfied with how their professional training is being improved, and they can find accessible forms in this system.

Table 4. The index of compliance of the employee's engagement system and his motivation

Subjects	Deviation of a factor's real assessment from its level of significance for a subject						The index of compliance of the employee's engagement system and his motivation
	1	2	3	4	5	6	
1	0	10	-20	0	0	10	10
2	20	0	-20	20	10	20	17
3	10	0	-10	0	-10	20	11
4	10	30	0	-40	10	-10	22
5	-10	30	-20	-10	0	-10	16
6	0	30	-10	-10	20	-10	16
7	10	10	-10	20	10	-20	14
8	20	20	0	-20	-10	-30	19
9	0	10	-10	-20	-10	-20	14
10	20	-10	-30	0	-30	-20	21
11	10	20	0	20	-20	0	15
12	0	40	20	0	10	10	19
13	0	30	0	20	-10	20	17
14	10	20	0	-30	0	20	17
15	10	10	0	10	0	30	14
16	10	10	0	-20	0	30	16
17	-10	20	20	-10	-20	20	20
Total	110	280	-80	-70	-50	60	
Average deviation	6	16	-5	-4	-3	4	8

Note: Made up by author based on the results of the study within SF "Zamandas 21"

The tensest one is factor No. 1, "Fair assessment of the labor contribution / adequate remuneration," the deviation for which is –18, although it is still within the normal range. But compared to other factors, tension on this one is the highest. This requires additional consultations on its improvement in contact with company staff.

The results of the study on PF "Zamandas 21" are presented in table 4.

According to the values in table 4, system does not correspond to the motivational profiles of employees No. 4 and No. 10. Assessment is also borderline for employee No. 17.

For employee No. 4, the problem is in his employment instability, which can be both subjective and objective, and requires ат HR expert to continue to participate in solving the issue.

For employee No. 10, the problem is in career growth and participation in management at his workplace. Addressing such a situation requires either expanding the responsibility area with increasing freedom, or moving to a higher position in the firm. In this case, it is necessary to seek out a career development option in which the expansion of the degree of freedom at the workplace will be combined with some changes in the career that the employee can assess as positive.

The borderline assessment of employee No. 17 requires the expansion of his participation in managing issues related to freedom at his workplace.

In this organization, the staff engagement system as a whole has a high index value of 8, and the motivational profile of only two employees does not comply with the management methods applied to them. At the whole organization level, the most vulnerable factor is professional development and development of professional skills, but the absolute deviation of this coefficient of by 5 percentage points is very far from the border of 20 %.

If problematic areas are detected in the engagement system that arise for a particular employee, the 3rd stage of the assessment begins which should identify the risk factors for the formation of employee's "dissatisfaction." It is these factors that can subsequently become the cause for his professional burnout or dismissal.

In addition to the method of index estimation already described, we propose a method for assessing problematic areas that arise for the employee using the example of aggregated factor No. 5, "Participation in the management of the process and results at own workplace (degree of freedom in solving issues related to the workplace), in divisions, and in the company."

As a result of the employee's inability to participate in the management of activities at his workplace, i.e. his lack of opportunities to influence any issues regarding the content, organization and schedule, and other labor issues, there is a risk of the formation of "dissatisfaction".

The assessment is proposed on the basis of two tools, one of which is auxiliary, and the other is in fact a questionnaire that the employee fills in.

The auxiliary tool is a scale for assessing a factor based on its two characteristics: "significance" and "influence possibility."

Table 5 shows a method for determining the risks of dissatisfaction formation by the factor "participation in management or the possibility of influencing own work, work of a unit, or whole company."

Table 5. Assessment of the factor "The degree of freedom at the workplace or the possibility of influencing the job description"

Characteristic	The value (importance) of the factor for the employee			Can you influence the performance? (degree of influence)			Risk
	Significant	Moderately significant	Insignificant	High	Medium	Low or does not exist	
A possibility to diversify work tasks, change the sequence of actions	Y				Y		1
A possibility to set a work break schedule		Y			Y		0
A possibility not to rush and work at preferred pace	Y					Y	3
A possibility to reduce the intensity of forced contacts			Y			Y	0
A possibility to think outside the box, use non-standard approach to work	Y				Y		1
A possibility to get full job description and operating situation		Y				Y	2
A possibility to determine preferred labor methods		Y			Y		0
A possibility to speak of the acquisition of new technical devices for own workplace		Y			Y		0
Other characteristics (respondent is allowed to indicate himself)							
Note: Made up by authors							

Several combinations of "significance" and "influence possibility" pose zero risk for the formation of dissatisfaction, because the job description itself is insignificant for the employee, or he is satisfied with how he can influence this characteristic.

For assessment, we propose the following characteristics of the labor content at the workplace to be assessed by the employee.

Similar tables should be made up for participation in management at the level of a unit, department, or company as a whole, taking into account the specifics of its activities.

According to the results (see Table 5), the greatest risk (a value of 3) for this employee is associated with the fact that he is not able to work at his own pace. The rush forms "dissatisfaction" with his labor own activity.

Another risk is associated with a lack of information (a value of 2).

Two risks (a value of 1) are associated with insufficient opportunities to diversify own work, to be creative.

Based on the results of the assessment, one should determine a list of measures to possibly neutralize or prevent risks. We propose doing so in the form presented in Table 6.

Table 6. Measures to prevent, neutralize or compensate for risks by the factor "The degree of freedom at the workplace or the possibility of influencing the job description"

	Characteristic	Risk	Measures	Designated responsible individual
1	A possibility not to rush and work at preferred pace	3		
2	A possibility to get full job description and operating situation	2		
3	A possibility to diversify work tasks, change the sequence of actions	1		
4	A possibility to think outside the box, use non-standard approach to work	1		
Note: Made up by author				

Measures can be developed as either directly eliminating or reducing the risk, or compensating for it by providing opportunities at a different level. For example, if an employee's workplace is strictly regulated and there are no opportunities for him/her to be creative, then providing him with such an opportunity at the level of a brigade, workshop, or unit would be ideal.

Discussion

The results of our research in the context of the strategic objectives of the company are in the mainstream of modern research in staff engagement. They are based on the recognition of the employee's motivational profile importance, as it is in the work of R. Zamecnik (Zamecnik, 2014). At the same time, this author proposes a cluster analysis which is methodologically correct, but for medium and small entities with a small number of staff it is somewhat excessive, and an individual approach to assessing and overcoming risks is ultimately more effective.

In a certain sense, they are debating the results achieved by B. Ozkeser (Ozkeser, 2019). Our approach to the motivation issue is multifactorial while confirming the fact that training is not always universal and effective motivation tool. In case of a specific person, this may not correspond to his current situation, and engaging this employee may require other tools.

Our results more likely confirm the conclusions of Ogbonnaya and Messersmith (Ogbonnaya, Messersmith, 2019) stating that the real consequences of the HR practice for different people may differ. We also believe that the approach to the selection of HR tools in the context of modern technologies for creating and managing databases should be personified.

We also agree with the results achieved by S. Chacko and N. Conway (Chacko, Conway, 2019), who have confirmed that the HR engagement system has daily consequences mediated by individual expectations.

Conclusion

Summarizing the above results of our study, we would like to note the following points we feel the most significant.

The staff engagement system is quite complex and multi-level. Most often, it is formed from a set of best practices tested in modern management and recognized as effective in most available sources. Therefore,

entities are focused primarily on these tools. And therefore, as a rule, the proportion of original solutions developed by managers in their firms is small.

At the same time, in many of the organizations we have examined, the role of human resources departments in implementing an individual approach to each employee is insignificant. The center of gravity and responsibility in decision-making for each employee has been transferred to line managers, e.g. functional experts. Line managers are required to know their immediate professional duties, but they may not be skilled in human resources management. They cannot be required high awareness and quality of decisions for each individual employee. They may find it difficult to assess the suitability of the staff engagement system and their motivational profile. Often, an independent evaluator view is required to identify system issues.

Therefore, we propose introduction of a regular assessment procedure (possibly in the form of an audit) for the engagement system and staff motivational profile for psychological comfort/discomfort. Any employee, even of the lowest qualification, can easily identify the importance of one or another element of the system for himself or the value of this element for himself on a percentage scale with a maximum of 100 percent. We propose 6 main factors. And for the same factors, he or she can determine in percentage the level of compliance of the actual situation in the organization with the desired one. Equality means full compliance with the significance and actual situation. A positive deviation means that in reality, there are more opportunities to satisfy than the real needs in this factor the employee has. For example, in the organization he or she can get any retraining or advanced training (100 %), but at this stage the employee needs less in this matter (80 %). A negative rating is of greater interest for diagnosis, because it means that the importance of this factor for the subject is higher than the actual assessment of the factor by the subject. For example, the importance of continuing education is 100 %, while the real opportunities are 60 %.

We have tested the assessment methodology based on 6 aggregated factors. Each of these can be considered in more detail when a problem is detected. The methodology operates on the principle of screening and identifies employees who are in a state of discomfort by one or more aggregated factors. We use the correspondence index of the engagement system and the employee's motivational profile, the mathematical basis of which is the principle of calculating the standard deviation. Workers whose index value is equal to or higher than a given barrier (in our case, a 20 % deviation for all factors, which gives an index value of 20), require a deeper analysis of their motivational profile. An analysis of the motivational profile shows by what factor there is a deviation in excess of the permissible value, therefore, it is necessary to develop and apply corrective measures for the situation involving the employee.

Further actions to concretize the risks of the forming the employee's "dissatisfaction" by individual subfactors within the aggregated one should reveal the subjective amount of risk by each individual factor or its sub-factors. The sub-factors are the characteristics of work activities. These are assessed by the risk level (a combination of the significance of the characteristics and the possibility for the employee to influence it). Subfactors shall be sorted by values: unacceptable risk, major risk, minor risk. For each of the risks, measures should be developed to reduce its value or fully compensate for it.

The proposed methods shall improve the efficiency of human resources management services. They make it possible to establish a systematic assessment of the compatibility of the engagement system and the motivational profile of each employee according to the screening principle. This makes it possible, without additional costs and loss of time, to respond in a timely manner to risk situations when employee dissatisfaction builds up.

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Компанияның адами ресурстарын басқаруға қызметкердің ынталандырушылық бейіні мен белсендіру жүйесінің үйлесімділігін бағалауды енгізу

Андатпа

Мақсаты: зерттеудің мақсаты компанияда қызметкердің белсенділігін арттыру жүйесі мен оның ынталандырушылық бейінінің сәйкестігін бағалау әдісін әзірлеу және апробациялау болып табылады.

Әдісі: компания қызметкерлеріне әлеуметтік сауалнама жүргізу әдістері, одан кейін алынған нәтижелерді статистикалық талдау, сондай-ақ қызметкерлерден анықталған қанағаттанбаушылық тәуекелдерін бағалаудың матрицалық әдістері қолданылған.

Қорытынды: зерттеу нәтижелері ұсынылған индекстік әдістің тиімділігін растайды, ол компания қызметкерлерінің арасында жүйелі скрининг жүргізуге, жұмыстан босатылуына немесе кәсіби біліктілігінің төмендеуіне себеп болуы мүмкін қызметкердің "қанағаттанбаушылығын" қалыптастыру тәуекелінің факторларын анықтауға мүмкіндік береді. Көрсеткішті есептеу жұмыскер және жалпы компания үшін де мүмкін, бұл субъектінің ынталандырылуы мен жұмыс беруші қолданатын іс шаралар арасындағы сәйкессіздік мәселесін анақтауға көмектеседі. Индекске қосымша ретінде авторлар фактордың қызметкер маңыздылығының үйлесімі және қызметкер тарапынан осы субфакторға әсер ету ықтималдығы (мүмкіндіктері) негізінде тәуекелдерді бағалау матрицасын әзірлеген. Матрица HR қызметінің қызметкеріне елеусіз, елеулі және жол берілмейтін тәуекелді анықтауға және тәуекелді азайту немесе толық жою бойынша іс-шараларды әзірлеуге көмектеседі.

Тұжырымдама: HR қызметтерінің ұсынылған екі кезеңді бағалау әдісін қолдануы ынталандырушылық бейіннің сәйкессіздігі мәселесі мен әрбір қызметкердің белсенділігін арттыру үшін қолданылатын шараларын уақтылы диагностикалауға және оны жақсарту бойынша ұсыныстар әзірлеуге мүмкіндік береді.

Кілт сөздер: адам ресурстарын басқару, компанияны белсендету жүйесі, қызметкерлерді ынталандыру бейіні, сәйкестілікті бағалау, тәуекелдер.

Т.П. Притворова, Б.К. Тасбулатова, О.К. Слинкова

Оценка совместимости системы активизации и мотивационного профиля работника в управлении человеческими ресурсами компании

Аннотация

Цель: разработка и апробация метода оценки, который определит соответствие системы активизации работника в компании и его мотивационного профиля.

Методы: нами применены методы социологического опроса работников компании с последующим статистическим анализом полученных результатов, а также матричный метод оценки выявленных рисков неудовлетворенности у работника.

Результаты: результаты исследования подтверждают эффективность предложенного метода, который позволяет проводить регулярный скрининг среди работников, выявить факторы риска “неудовлетворенности” работника, которые в дальнейшем могут стать причиной его увольнения или профессионального выгорания. Расчет индекса возможен как для работника, так и для компании в целом, что позволит диагностировать проблему расхождения между мотивацией субъекта и мерами активизации, применяемыми работодателем. В дополнение к индексу авторами разработана матрица оценки рисков на основе сочетания значимости фактора для работника и возможности влияния на него со стороны работника. Матрица позволит сотруднику службы HR выявить малозначимый, значительный и недопустимый риски и разработать мероприятия по уменьшению или полному устранению рисков.

Выводы: применение службами HR предложенного двухэтапного метода оценки позволит своевременно диагностировать проблему несоответствия мотивационного профиля и применяемых мер активизации у каждого работника и разработать предложения по её улучшению.

Ключевые слова: система активизации работников, метод оценки, мотивационный профиль работника, анализ мотивационных факторов, индекс соответствия, матрица рисков.

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Institutional aspects in regulating interaction between financial and innovation sectors

Abstract

Object: The scientific paper focuses on issues of inefficient intersectoral interaction through the prism of an institutional methodological approach. In particular, the authors aim to investigate and identify problems that limit the harmonious and mutually beneficial interaction of subjects of the financial and credit and innovation sectors in the modern conditions of the Kazakhstani economy.

Methods: Based on the use of comparative, statistical and expert analysis, the authors conclude that it is necessary to level the existing problem nodes by improving the existing institutional environment in terms of developing financial, real and regulatory innovations, further developing the institutional infrastructure, and an optimal combination of formal and informal institutions.

Findings: It is recommended to change the current paradigm of regulatory institutions implementation in the direction of preventive and stimulating regulation of subjects in both sectors at the same time in order to reduce the existing asymmetry.

Conclusions: The article considers the sources of financial and credit support for the innovation sector, identifies problems in financing investment and innovation projects in Kazakhstan based on a comprehensive analysis of the costs of research and development, bank lending, foreign investment, investment potential of the pension and insurance sectors, and development institutions.

Keywords: institutions, innovations, financial sector, banks, innovation sector, institutional environment, regulation.

Introduction

In modern conditions of global changes, market fluctuations, influence of integration processes on economic development, the relevance of sustainable development of the national economy on the basis of a deeper, diversified and active use of innovations in real sector of economy is increasing. For Kazakhstan, as a country with emerging markets, these issues are especially important in frames of consistently low economic growth rates and excessive dependence of the economy's state on the income of the extractive sector. Thus, in accordance with the priorities of the President's Messages "Kazakhstan–2050" and "the Third modernization of Kazakhstan: global competitiveness", the goals and objectives in the field of innovative development of Kazakhstan, aimed at overcoming existing structural imbalances, are outlined. However, the relevance of this issue is evidenced by the fact that, against the background of the long-term implementation of the state program of industrial and innovative development, Kazakhstan's rating position in the global innovation index has decreased from 74 to 79 place, and in the composite index of achieved results, Kazakhstan ranks only 92 out of possible 100.

We believe that state efforts alone are not enough to activate the subjects of the innovation sector, since best international practice indicates that the greatest success in the field of innovation performance is achieved by those countries that have managed to combine the efforts of the state and private entities primarily the financial and credit sector effectively, leaving the state authorities only the right of indirect preventive participation in regulation aimed at supporting and stimulating the latter in a market model of the economy (Rakhmetova et al., 2019, 115).

At the same time, the multidirectional vector of goals and interests that guide the subjects of the financial and credit and innovation sectors of the economy, entering into the process of interaction, despite the asymmetric nature, can be adjusted in one direction through the institutions that form the basis of the mechanism of effective intersectoral interaction.

In this regard, the purpose of this study is, based on an analysis of the theoretical and methodological foundations of the interaction of entities of the financial and innovation sectors of the economy, to identify existing restrictive barriers, and to offer appropriate recommendations for their elimination, primarily by improving the institutional infrastructure that ensures efficiency intersectoral interaction at the micro, meso and macro levels of the economy.

Institutions, according to the institutional-evolutionary concept, form the basis of any society, contributing to its sustainable and effective development. In particular, the founder of this scientific theory, D. North (North, 1997), noted in his works that "the way the economy functions is determined by a set of rules, informal laws and mechanisms that fix them, while if laws and rules can be changed overnight, then informal norms are formed and changed over a long time".

Appealing to the basics of institutional-evolutionary concepts in the context of this study is not accidental, because the complex of formal and informal institutions, in our opinion, is able not only to maintain the stability and resilience of complex systemic process of interaction of subjects of the financial and innovative sectors of the economy, but also allows to adjust the trajectory of its development in the right direction against the background of influence of many various factors.

The consequences of the so-called great recession (the financial crisis of 2007–2008) revealed the most pronounced dependence of intersectoral interaction between the financial and real (including innovative) sectors of the economy on the institutional infrastructure. So, the rapid development of the market of fictitious capital and derivatives market led to the fact that they began to use real assets that eventually led to the establishment of their reserves gradually began to define the fluctuations and manipulation of prices of these assets rather than the real needs of actors in real and innovation sector of the economy. In addition, due to increasing globalization, there was an increase in financial technologies, the development of international financial centers and offshore companies, whose activities generated super-profits outside the sphere of industrial production. The expansion of international financial institutions has led to the dependence of national economic systems on unified norms that do not always take into account the national true interests of national economies.

In our view, ongoing and periodically exacerbated contradictions in the relations of subjects of financial-credit and real (including innovative) sectors of the economy taking its roots in the conflict between the existing formal institutions, regulation and sustainable informal institutions, which are used to guide economic agents, which significantly reduces the efficiency of their interactions at both the micro and macro economy.

In particular, a preliminary analysis of the problems that limit the high efficiency of interaction between financial and credit organizations and enterprises of the innovative sector in domestic practice has shown that they can be grouped into so-called barriers or problem nodes, which are tied to many other smaller problems related to each other by cause and effect: 1) the first group of problems is associated with high risks (financial and industry), which do not allow financial and credit organizations to interact more actively with innovative enterprises; 2) the second group of problems is related to the adequacy of the conditions for providing the innovation process with financial resources; 3) the third group of problems comes from the imperfection of the regulatory practice, its single-vector nature and inflexibility.

Literature Review

Understanding that the role of the innovation sector in the development of a high-tech economy is currently increasing is a key to the stability and well-being of the state. Financial support for the effective functioning of the innovation sector is an object of active research in connection with the need to improve it. Various aspects of the problem were considered in the works of domestic and foreign scientists, which will be the scientific and methodological basis for developing the topic and achieving the research goal.

The impact of the degree of development of stock and credit markets on the high-tech sector in advanced economies is investigated in the work of Brown Jr., Martinsson, G., and Petersen B.C. (Brown et al., 2017). In turn, the work of Xiao S., Zhao S. (Xiao – Zhao, 2012) analyze how financial development affects the innovative activities of companies, including the functioning of the stock market and the banking sector in countries with different levels of state ownership of banks. Problems of availability of financial and credit resources for innovative firms in the conditions of insufficiently developed financial sector of countries with transition economies are investigated in scientific works of Botric V., Bozic L. (Botric – Bozic, 2017). The scientific paper of Hudson J., Orviska M. (Hudson – Orviska, 2014) examines the role of the EU financial sector in providing firms with financial and credit resources to promote potentially successful R&D on the world market. The study of the effectiveness of EU programs for financial support of innovative small and medium-sized businesses, availability of financial resources and satisfaction with cooperation with public institutions is presented in the work of Viskovic J., Udovicic M. (Viskovic – Udovicic, 2017). A detailed study of the possibilities of providing financial support to the innovative sector through the use of various government tools was conducted in the works of Kryskova L., Strzelczyk W. (Kryskova – Strzelczyk,2013), Nikolov M. (Nicolov, 2013). Problems of sustainability management in companies based on the introduction of business innovations are studied by Fogarassy C., Horvath B., Magda R. (Fogarassy et al., 2017).

According to L.I. Yuzvovich (Yuzvovich, 2012), the financial and credit mechanism can be considered from the position of attracting real investments as a "tool for influencing the process of financing real investments within the framework of a single investment system". This mechanism makes it possible for financial and investment institutions to have a targeted impact on investment relations and creates the necessary prerequisites for redistributing financial flows across various segments of the financial market.

In the economic literature, there is a need for a more in-depth study of the problems of evaluating the effectiveness of the system of financial and credit support for the innovative sector.

Methods

Theoretical and methodological base of research were represented by the works of Kazakhstani and foreign scientists-economists in the field of financial-credit support of innovative sector, normative-legal acts of the Republic of Kazakhstan in the sphere of development of innovation and financial system, the State program of industrial-innovative development of Kazakhstan for 2015–2019. In the process of research, general scientific methods were used: the method of comparative and dynamic analysis, system-structural and cause-and-effect analysis, SWOT analysis of the system of state financial and credit support for innovation, as well as analysis and forecasting based on a multi-factor correlation and regression model.

The study was made with the help of Committee on statistics of Ministry of national economics of the Republic of Kazakhstan, the National Bank of Kazakhstan for the years 2011–2019, analytical reports and studies, annual reports of development institutions and second-tier banks in the Republic of Kazakhstan.

A multi-factor correlation and regression model was developed to determine the degree of influence of various sources of financing for the innovation sector on the volume of production of Kazakhstan's manufacturing industry. Program Stata 13 was used as a modeling tool, and a graphical illustration of dependencies was performed in Excel. In the framework of modeling the selected indicators of dependence (the impact of financial assets on the growth of the innovation sector), an attempt was made to determine the degree of the greatest impact of various sources of innovation financing on the growth of the innovation sector. The sources of statistical data for this group of dependencies were statistical indicators from the database of the World Bank and the National Bank of the Republic of Kazakhstan for the period from 1995 to 2018.

Results

The risk node barrier in the context of interaction between financial and credit organizations and enterprises in the innovation sector is of paramount importance and includes a number of interrelated problems such as: asymmetry of goals of sector entities, asymmetry of information exchanged between them, regulatory requirements in terms of risk assessment, internal risk management systems, low quality of financial assets, high cost of financial services, state and potential of subjects and industries, specifics of their activities, etc. The risk nature of innovation undoubtedly affects not only the entire process of interaction between the financial and credit and innovation processes, but also the results of such interaction. Today, high financial and industry risks constrain all independence and initiative of financial and credit organizations in relation to the subjects of the innovative sector.

The next key barrier that restricts the active interaction of the financial and credit and innovation sectors of the economy is the resource sector. Total growing volatility in financial and commodity markets and the instability of the macroeconomic indicators today reduces the confidence of potential investors long-term resources temporarily available to financial institutions in the country, which leads to more hoarding and transfer of available funds primarily on the real estate market, currency, investments in other real assets and accounts of foreign banks, whose activities have proved reliable for centuries. Unfortunately, all these trends are due to the lack of clear, effective and time-tested mechanisms for saving and investing temporarily available resources. The problem is not even that these resources are not available, on the contrary, the country has serious savings from mining, and there are long-term savings in insurance and pension funds and in the hands of the population and business entities. All this suggest that this nodal barrier is closely related to the first "risk", because even if resources are available (including when the state sends trillions of funds to the banking sector in order to Finance the needs of the real sector under different programs), these funds are "stuck" in the financial and credit system due to high risks. The relationship between the first two problem nodes is shown by the incommensurability of the duration of the innovation process and the terms within which financial and credit institutions have the right and opportunity to place the attracted resources. As practice shows, the innovative developed countries that occupy the top 5 in the global innovation index have an average innovation cycle duration of 7–10 years (Sweden, Denmark, the Netherlands), while the term of placement on Bank deposits of domestic banks does not exceed 3–5 years. In addition to banks, the financial sector also has insurance and

pension organizations that have longer-term resources on their accounts, but these organizations, following the "letter" of the law and regulatory requirements, are also limited in risky investments. The significance of the resource node barrier is determined by the need to organize an optimal allocation mechanism that can provide sufficient and uninterrupted inter-subject, inter-territorial and inter-industry capital transfer within the country and obtain positive effects at all levels of the national economy.

The third key barrier that constrains the harmonious interaction between the subjects of the financial and credit and innovation sectors of the economy is the costs of the regulatory system. Of course, self-regulation cannot be a problem or a barrier, but the nature, direction and limits of the current regulatory system in relation to subjects of intersectoral interaction. In particular, it is a combination of such problems as: low competitiveness of domestic enterprises, under development of innovative sector entities, regional and sectoral imbalances in development, corruption at all levels, disparity of target indicators and vectors of development of the main directions of the implemented economic policy (monetary, industrial, innovative, antitrust, financial, banking, etc.)

It should be emphasized that this particular node barrier directly affects the previous two. At the same time, the cyclical nature of the development of economic systems dictates a periodic change in the regulatory vector depending on the current economic situation. Depending on the stage of the economic cycle, regulatory measures can either smooth out or exacerbate contradictions in the interaction of financial and credit organizations and enterprises in the innovation sector. So the significance of regulatory issues for the progress and results of intersectoral interaction between subjects of two strategically important sectors of Kazakhstan's economy necessitates adjustments to current regulatory practices from hard-sided restriction measures that target short-term effect towards a balanced and preventive regulation, which are of a stimulating nature and is designed, primarily, long-term multiplier effects.

We believe that such a difficult task in the current conditions of development of the Kazakhstani economy is unsolvable without a proper institutional infrastructure and environment that would support the trajectory of intersectoral interaction in the right direction, not only inter-subject relations, but also general economic development. In other words, the existing institutional infrastructure does not fully cope with its main function, which allows us to conclude that institutional reforms should not be aimed at maintaining individual sectors and their subjects, protecting their interests, but at maintaining mutually beneficial intersectoral interaction in order to achieve cumulative macroeconomic effects.

The essence of the institutional framework for interaction between the financial and credit and innovation sectors can be presented in the form of an institutional matrix, which is understood as a three-unit association consisting of a set of elements that are interconnected, representing the key areas of development (Figure 1). For the first time in their works, representatives of the institutional theory of North D. and Polanyi K. mentioned institutional matrices as a system of institutions represented as specific ways of development of a particular society.

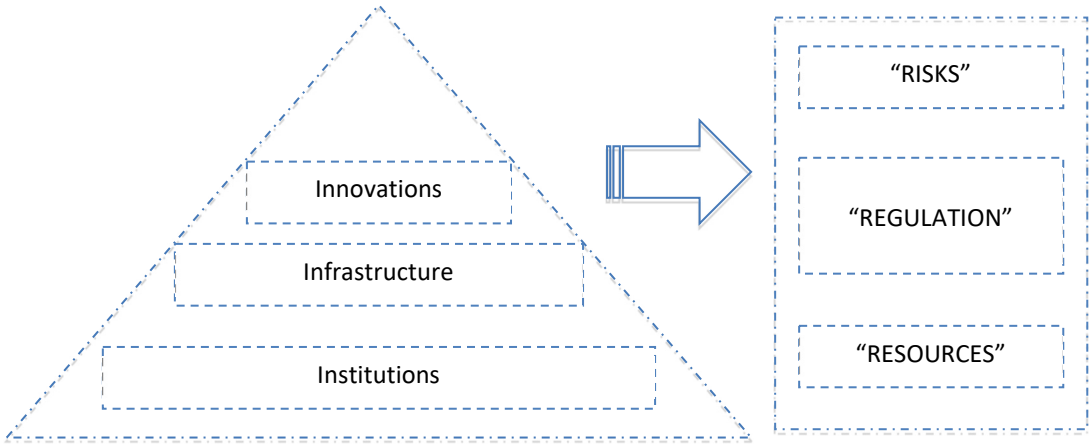

Figure1. Institutional matrix as the basis for interaction between the financial and credit, and innovation sectors of the economy

Note — compiled by the authors

The matrix is based on institutions that modern science associates with the possibilities of high-quality sustainable socio-economic growth of the economy. Today, the essence of the definition of "Institute" has not

only the established rules and regulations, but also the appropriate mechanisms that support their strict implementation. In other words, modern interpretations of the concept of "Institute" emphasize the relationship between the effectiveness of institutions and their stability both in the behavior of subjects and in the time period. In this regard, the effectiveness of the process of interaction between the subjects of the financial and credit and innovation sectors of the economy, in our opinion, can be ensured by cultivating stable informal (ethics of behavior of subjects) institutions on the basis of improving and thoughtful use of formal (reflexive — established by law norms and rules of behavior of subjects) regulatory institutions. The practice of such countries as England, the USA, Sweden, Denmark, the Netherlands, which tried to solve this problem at different periods of time, has shown that they succeeded only in combination, enhancing the role and quality of work of state and public institutions, focused on the diversity of opinions of economic agents and slow, progressive formation of a complex of informal institutes that has a huge potential to support the process of inter-sectoral cooperation, which is able to generate positive macroeconomic effects in an unstable economic environment (Gusmanova et al., 2019).

In the field of improving the use of existing formal institutions, it should be noted about the observed asymmetry in the current practice of regulating subjects, or rather about the disproportionality of the regulator's requirements. There are a large number of institutional frameworks for financial and credit sector entities: laws, regulations, limits, reserve requirements, licensing, availability of infrastructure organizations (rating agencies, credit bureaus, etc.), and there are no such regulatory requirements for entities in the real and innovative sectors of the economy. This only increases the asymmetric nature of the interaction between the parties and significantly expands the risk and uncertainty zone of the behavioral strategies of the interacting subjects. With one-sided use of only formal regulatory institutions, their role in the interaction of the financial and credit and innovation sectors is quite contradictory and sometimes fruitless. This fact is confirmed by the implementation of numerous state programs for financing priority sectors of the economy through the involvement of commercial banks and the use of a wide range of incentive tools (insurance, subsidies, tax breaks, etc.) and the simultaneous impact of regulatory requirements of the financial regulator aimed at minimizing risks — they do not allow the subjects of the financial and credit sector to adequately finance the needs of the subjects of the real (including innovative) sector, distorting the initial behavioral strategies (Rakhmetova et al., 2017).

In this regard, we believe that maintaining stable intersectoral interaction can be achieved by replacing strict measures with indirect and incentive measures that would give freedom of action to financial and credit sector entities, but with stricter responsibility for the results of decisions taken. At the same time, the parties involved in the implementation of an innovative project (financial organizations and innovative enterprises) must share not only the profit in case of a successful outcome, but also the losses in case of failure (adaptation and implementation of the principles of Islamic Finance). In this case, the rationality of using the principles of Islamic Finance, in our opinion, is justified, since formal institutions must necessarily be supported by properly nurtured informal ones, which contain and operate a more robust mechanism of self-support, including certain behavior based on high responsibility, morality, honor and conscience. Additional arguments for adapting certain principles of Islamic banking can be: 1) stability of interaction is ensured due to the fact that monetary resources are provided with real assets; 2) the principle of partnership prevails, eliminating the dominance of one of the parties (reducing asymmetry); 3) a mechanism for mandatory mutual fulfillment of obligations by the parties is built in.

It is important to note that within the framework of improving institutional reforms, models of state regulation that have long been developed in the world can be used. Judging by the emerging trends of expanding the state's presence in promoting intersectoral development, Kazakhstan uses the Anglo-Saxon model of regulation, which is based on the state's influence on the economy through the financial and credit sector, in particular the banking sector (this model is widely used in Canada and England). The essence of this model is that the primary assistance and support of the state is provided primarily to financial and credit organizations in order to direct financial resources to the development of the real economy, including innovation. However, the choice of this model, in our opinion, exacerbates the asymmetry in the development of sectors and limits their convergence, since the funds allocated by the state are deposited in the financial and credit sector due to high risks. The question arises "How to break this vicious circle? "The answer to this question is given by the second model of state regulation of intersectoral interaction — continental (used in European countries), in which the state directs its assistance and provides support directly to the real and innovative sectors, or the state pointwise participates in supporting enterprises of priority industrial sectors in times of crisis, which raises the level of development of the real (including innovative) sector to an investment attractive in the "eyes" of financial and credit organizations. We believe that the use of the continental model solves several unsolved

problems: 1) a decrease in dependency sentiment in the financial and credit sector; 2) increased competition in both sectors; 3) increased presence in priority industries, which is supported by the state, which reduces industry risks; 4) opens access to resources for industrial enterprises, which improves their condition, increasing their solvency and creditworthiness.

In addition, the high level of state intervention in the economy in a market economy indicates the asymmetry of institutional reforms. The weakness of the institutions of an independent assessment, the lack of specific limits of state participation in economic processes, lack of transparency institutional changes, reforms "for the sake of reforms" and not in the name of the specific results — all this, in our view, triggers the growth of bureaucracy and corruption, limiting the effectiveness of cross-sectoral collaboration, which should ensure stable and progressive development of the entire Kazakh economy.

Thus, the current system of institutions regulating the subjects of interaction between the financial and credit and innovation sectors of the economy, against the background of an imperfect institutional environment, still does not contribute to the activation of a qualitative process of interaction that ensures high and stable economic growth. The initial, high rate of change of existing and introduction of new formal institutions is in conflict with established informal institutions, dooming the implemented institutional reforms to failure, creating an institutional vacuum that exacerbates the asymmetric nature of interaction between the subjects of the financial and credit and innovation sectors of the Kazakh economy.

The next element of the institutional matrix is the institutional infrastructure, the elements of which together are designed to maintain the interaction process in an up-to-date state, in a correctly set trajectory and regardless of cyclical fluctuations, not allowing the subjects of the sectors to move away from each other.

The practice of economically developed countries of the world shows that the solvency of the infrastructure and all its main elements is ensured: by the state, partly by the state, partly by private business. Despite the fact that individual elements of the infrastructure have already been developed in Kazakhstan through analysis and adaptation of international best practices (operation rating, statistical and collection agencies, credit bureaus, the institutions of guarantees and insurance), however, the problems of interaction of subjects of financial-credit and innovative sectors a not reduced, because of the weakness of the institutions of an independent assessment of the risks of real assets; institutions insurance investment risks in the innovation sector; lack of private development institutions, underdevelopment of the segment of auxiliary information-analytical and consulting agencies with increased responsibility for the results of their activities, etc.

In terms of ensuring positive effects by means of interaction between the financial and credit sectors, it is necessary to diversify the levels of the banking sector as a leading segment of the financial and credit system as a part of the infrastructure. In particular, it is necessary to take into account the significant territorial dispersion of the economically and industrially developed zones of Kazakhstan and their distance from the center of the country through the expansion of financial and credit organizations of a specialized level, the main feature of which will be represented by regional and sectoral binding. For example, successful implementation of such example is available in Germany (land banks), Switzerland (office banks), Denmark (infrastructure "green" banks), the Netherlands (agricultural innovation banks), India (craft banks), and Bangladesh (rural banks). We believe that the best solution, taking into account the peculiarities of the development of the domestic economy, will be the revival of branch banks in key sectors of the economy with the function of crediting innovative projects for each specific industry that has its own specifics. The form of ownership of such banks can be either private or shared with the state. Deepening regional and industry diversification will ensure, in our view, that local regional characteristics and industry specifics are taken into account, that individual approach to risk assessment is taken, that appropriate methods are developed and gradually improved, and that staff competencies are increased. The use of the public-private partnership model in the formation of such financial structures is a priority for work in the innovation sector, as it will simplify access to an adequate amount of resources necessary for the implementation of all stages of the innovation process and will make it possible to use state institutions of insurance, guarantees and subsidies. A supportive set of measures can be the practice of applying a differentiated approach to the implementation of prudential and tax policies in relation to such elements of the institutional infrastructure in accordance with the results of their activity and effectiveness in the innovation sector.

One of the relevant issues of forming the appropriate information infrastructure in Kazakhstan is the establishment of the Institute of national rating assessments. However, views on the activities of international agencies (Fitch, Moody's, Standard&Poor's) has changed significantly after the global financial crisis, increasing the degree of distrust towards them, making possible the creation of a network of national rating agencies

of national and regional importance on the basis of licensing or regional rating agency on the basis of the National Bank of the Republic of Kazakhstan while pinning responsibility for the results of such activities.

Thus, the modernization and improving the existing infrastructure can significantly reduce the pressure of key barriers on the process of interaction between the subjects of the financial and credit and innovation sectors of the economy. The solvency, diversity and availability of fully developed infrastructure elements can give impetus to the convergence of financial and credit organizations and innovative enterprises. This element of the institutional matrix is designed to eliminate existing market failures and contribute to the formation of stable informal institutions that ensure the stability of not only the process of intersectoral interaction, but also the development of the economy as a whole.

Innovations as an element of the institutional matrix, representing various types of novelty and novation (Yagudina, 2004), reflect not only significant changes in the structure of the economy, contributing to progressive economic development, but also can form the basis for the development of new forms of interaction between financial and credit organizations and enterprises of the innovative sector. The presence of signs of dynamic development in the essence of innovation is noted in his works by J. Schumpeter (Schumpeter, 1982).

Asymmetric processes in the development of the innovation sector and existing regulatory institutions is confirmed by the fact that in the conditions of realization of the program of industrial — innovative development in the Republic of Kazakhstan, the level of innovative activity of enterprises the last few years does not exceed 7–8 %, while, in developed countries this ratio is much higher: Germany — 70 %, Canada — 65 %, Belgium — 60 %, in Denmark — 55 %, Europe 20 — 40 %.

Discussions

The results of the analysis of a group of factors showed that there is an inverse relationship between the export of high-tech goods in Kazakhstan and foreign direct investment (r_{Inn,I_3} = –0.48) (Figure 2).

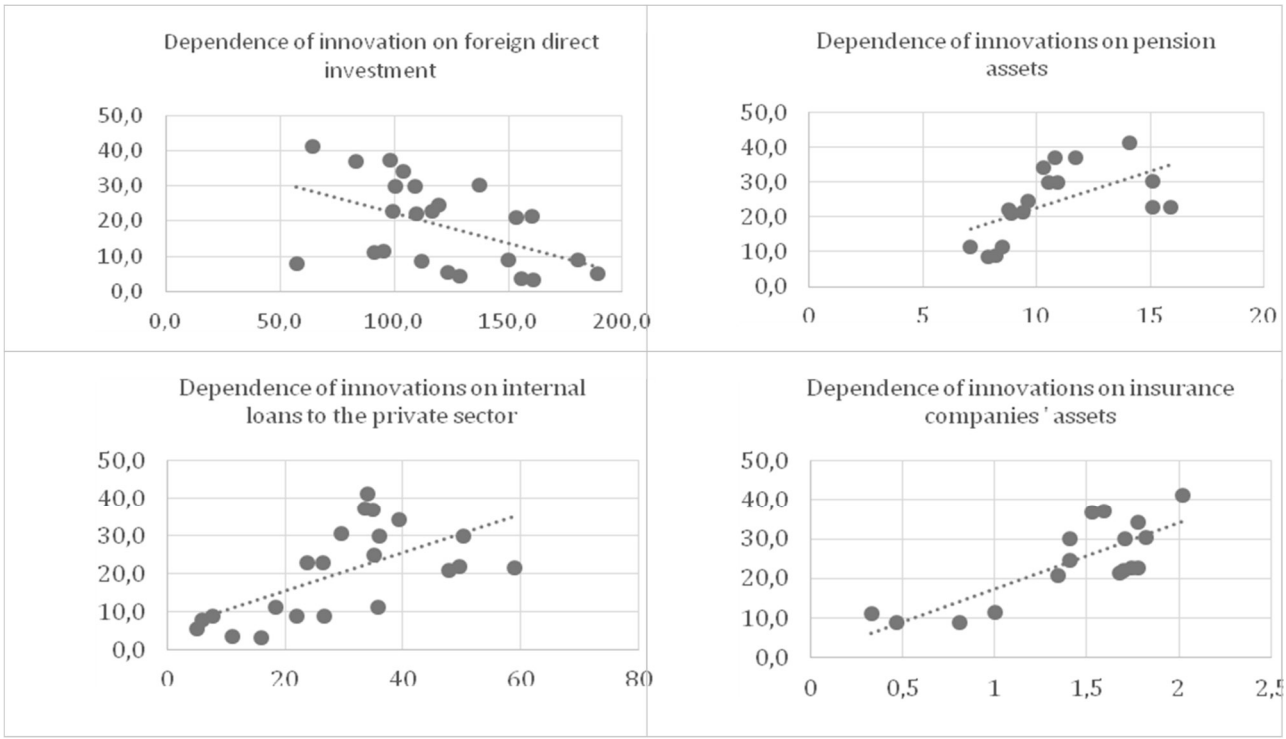

Figure 2. Dependence of innovation results on foreign direct investment, bank lending, pension and insurance assets in Kazakhstan

Note — compiled by the authors

The result confirms the thesis that the quantitative growth of foreign direct investment does not provide a guaranteed impact on improving the results of the innovation sector in the Republic of Kazakhstan. This result is not accidental. It confirms the choice of the so-called "catch-up development" model by Kazakh enterprises in the industrial sector, according to which the owners of enterprises (both domestic and foreign investors) do not invest resources in innovative developments, but buy ready-made high-tech equipment. The

assessment of the impact of bank loans showed the strongest correlation between the indicator of exports of high-tech products with indicator of domestic lending to the private sector, since the correlation coefficient has the value. All regression coefficients are statistically significant. At the same time, with an increase in the share of domestic loans to the private sector in GDP by 1 %, the share of high-tech exports in industrial exports will grow by 0.49 %. Similarly, an increase in the share of long-term bank loans to legal entities in GDP by 1 % will contribute to an increase in the share of exports by 1.8 % respectively.

As part of the assessment of the impact of pension and insurance sector assets on the indicator of innovation performance (exports of high-tech products in the total volume of industrial exports) in the Republic of Kazakhstan, it was found that the resulting indicator is influenced mostly by the assets of insurance companies (r_{InnA_3} = 0.79) and to a lesser extent by pension assets (r_{InnA_2} = 0.56).

If the share of banking assets in GDP increases by 1 %, we can expect an increase in the share of high-tech exports in industrial exports by 0.33 %. In turn, if the share of pension assets increases by 1 %, the share of exports of high-tech goods will increase by 1.89 %. The increase in the share of insurance companies' assets will contribute to the growth of exports of high-tech products by 29.4 % of industrial exports.

Thus, despite the still insufficient role of the banking, pension and insurance segments in financing innovative companies, due to the concentration of long-term resources, they have a great potential to interact with the subjects of the innovative sector of Kazakhstan.

Conclusions

Thus, the analysis of institutional inconsistencies that exacerbate the asymmetric nature of interaction between the financial and credit and innovation sectors of the economy allows us to conclude that the main reasons for the periodic cooling of relations between the subjects of two important sectors for the economy and their periodic distance from each other are: 1) the dominance and pressure of formal institutions without a focus on the cultivation of stable informal institutions; 2) the weakness of the institutional infrastructure; 3) the absence of an integrated approach to the implementation of economic policy, when each of its directions has a purely individual goal setting and an appropriate vector; 4) in the context of dynamic economic development there is a mismatch between time and the stage of initiation and implementation of innovation by actors, interactions and the regulatory bodies (in terms of the key stages of the economic cycle — in times of crisis innovation sector needs funding for innovation, in order to overcome the crisis and financial-credit institutions do not want to risk, and, conversely, in a period of economic growth — financial and credit organizations are willing to risk and finance innovations in order to diversify their investments, but the subjects of the innovation sector are not ready for this kind of borrowing.

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Қаржы және инновациялық секторлар субъектілерінің өзара әрекеттесуін реттеудегі институционалдық аспектілер

Андатпа

Мақсаты: мақалада институционалдық әдіснамалық тәсіл призмасы арқылы секторараралық тиімсіз өзара іс-қимыл мәселелері қарастырылған. Атап айтқанда, авторлар Қазақстандық экономиканың қазіргі заманғы жағдайларында қаржы несиелік және инновациялық секторлар субъектілерінің үйлесімді және тиімді өзара іс-қимылын шектейтін проблемаларды зерттеу және айқындау мақсатын қойып отыр.

Әдісі: салыстырмалы, статистикалық және сараптамалық талдауды пайдалану негізінде авторлар қаржылық, нақты және реттеуші инновацияларды дамыту, институционалдық инфрақұрылымды одан әрі дамыту, ресми және бейресми институттардың оңтайлы үйлесуі тұрғысынан қазіргі институционалды ортаны жақсарту арқылы қолда бар проблемалық тораптарды нивестициялау қажет деп тұжырымдайды.

Қорытынды: қолданыстағы ассиметрияны төмендету үшін бір мезгілде екі сектордың субъектілерін белсенді және ынталандырушы реттеу бағытында реттеуші институттарды қолданылу парадигмасын өзгерту ұсынылған.

Тұжырымдама: мақалада банктік несиелеудің көрсеткіштері, зейнетақы және сақтандыру секторларының инвестициялық әлеуетін, инвестицияларды, сондай-ақ даму институттарының инвестицияларын кешенді талдау негізінде Қазақстанның инновациялық секторын қаржыландырудың мәселелері анықталған.

***Кілт сөздер**:* институттар, инновациялар, қаржы секторы, банктер, инновациялық сектор, институционалдық орта, реттеу.

А.М. Рахметова, Г.М. Калкабаева

Институциональные аспекты в регулировании взаимодействия субъектов финансового и инновационного секторов

Аннотация

Цель: в статье рассматриваются вопросы неэффективного межсекторального взаимодействия сквозь призму институционального методологического подхода. В частности, авторами ставится цель — исследовать и выявить проблемы, ограничивающие гармоничное и взаимовыгодное взаимодействия субъектов финансово-кредитного и инновационного секторов в современных условиях казахстанской экономики.

Методы: на основе использования сравнительного, статистического и экспертного анализа авторы приходят к выводу о необходимости нивелирования имеющихся проблемных узлов посредством совершенствования действующей институциональной среды в части развития одновременно финансовых, реальных и регулятивных инноваций, дальнейшего развития институциональной инфраструктуры и оптимального сочетания институтов формального и неформального характера.

Результаты: рекомендовано изменить действующую парадигму применения институтов регулирования в сторону превентивного и стимулирующего регулирования субъектов одновременно обоих секторов с целью снижения имеющейся асимметрии.

Выводы: в статье выявлены проблемы финансирования инновационного сектора Казахстана на основе комплексного анализа показателей банковского кредитования, инвестиционного потенциала пенсионного и страхового секторов, инвестиций, а также вложений институтов развития.

Ключевые слова: институты, инновации, финансовый сектор, банки, инновационный сектор, институциональная среда, регулирование.

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Digitalization of the insurance industry of Kazakhstan: problems, digital technologies, development paths

Abstract

Object: The purpose of the study is to justify the objective need to transform the insurance industry of Kazakhstan using new technological digital solutions and to study the problems. According to the results of the study to consider reforming the insurance using digital technologies.

Methods: During the study, the author used methods: observation, generalization, comparison, analysis, systematic approach, systematization of the materials, processing.

Results: The article explores current trends in the insurance industry of Kazakhstan, using digital technologies. The concept of "digital insurance" is substantiated, the main factors of digitalization of the insurance industry are determined. Business processes of insurance activities of the company, which are subject to the use of digital technology, are specified. Digitalization implementation issues in the domestic insurance market are analyzed and priorities are identified.

Conclusion: The author argues that the digital economy is a future economic model based on new productive forces. In this aspect, the issues of integrated digitalization of the financial (insurance) sector of the economy are relevant. The trends in the modern development of financial digitalization will radically change the regulatory functions of the state in the financial sector, the relationship between consumers of financial services and suppliers, creating new competitive opportunities.

Keywords: digitalization, online insurance, internetization, large numbers (BigData), Internet resources, databases, blockchain technology, information and communication interaction.

Introduction

Digitalization of the economy is an inevitable objective process of development of the national economy in the conditions of a new technological structure, which is based on new productive forces that realize a higher level of productivity. In previous technological systems, such forces were the first steam engines, weaving machines, in the next ones — electricity, computers, and in the last technological mode, they are information technologies, which in turn cause new production relations related to digital technologies in the socio-economic life.

The idea of technological transformation has changed not only the approach to carrying out routine household tasks of a person, but also the economic course of development of entire countries. Digitalization of the economy is much wider than just the use of electronic services, the concept covers the entire system of economic relations, which is based on the use of information and communication technologies. The concept of the digital economy appeared in the last decade of the 20th century, it is connected with the name Nicholas Negroponte, who used the hypothesis of the transition from processing physical properties (atoms) to processing numbers (unit of information is bits) (Negroponte, 2013). One of the advantages of digital data over analog is that, signals can be transmitted without distortion, instant global movement (Horowitz and Hill, 1989).

Many experts believe that new information technologies using Internet resources can qualitatively develop the traditional economy, increase labor productivity, achieve competitive advantages, decentralization and simplify the control of analysis of the main processes.

In accordance with world trends, the objective need for digitalization of the national economy, including financial industry, is in demand in Kazakhstan. The development level of the digitalization of insurance market is inextricably linked directly to the state of technologicalization of the digital economy in the country. For a developing country like Kazakhstan, the digital transformation of the country's financial system using new digital technologies allows us to raise economic relations in the financial services sector to high standards of national economic growth, which confirms the relevance of the study of the development of digitalization of the insurance industry in Kazakhstan.

Literature Review

The process of digitalization throughout the world actively penetrates into the socio-economic life of almost all countries in the world that implement national programs of digital development. The digital economy acts as a new type of management based on information processing for management in all cycles of social production and consumption.

Radical changes are taking place in the financial (insurance) industry, and, in general, in the economy. New technological solutions based on digital innovations are being introduced, new terms and concepts, such as Internetization, the digital economy, digitalization, recyclability, Big Data and others are being introduced into the practical and scientific environment. As scientists and experts note, "digital transformation (or digitalization) is a ubiquitous concept in the modern insurance business ecosystem" (Persson et al., 2018).

Digitalization introduces innovations, improvements in the activities of business, insurance companies aimed at changes in the insurance ecosystem, industries, management and competitiveness in the markets. All factors of the insurance environment, both external and internal, are reviewed. As noted in the article named "Digital insurance — customer expectation in a rapidly changing world" by M. Sebulsky, Jörg Gunther and others say, that "internal and external factors are the driving force behind changes in the insurance market. The emphasis in the insurance industry has shifted from managing the insurance sector itself to managing a flexible cross environment" (Cebulsky et al., 2017).

Digital transformations are being successfully implemented in many developed countries, such as Singapore, the USA, Japan, Germany, Denmark and others, in which almost all government services and industries have been switched online, smart projects are being implemented, etc. Emerging markets are also starting to solve digitalization problems in order not to lag behind in national development. The relevance of the study of insurance markets becomes apparent, as noted in the materials of the Swiss Forum on Risks and Insurance, which summarizes the main trends in the development of modern insurance and discussion of digitalization and the insurance sector (Albrecher et al., 2019).

Leading experts, in particular, German Gref (the head of Sberbank), Christine Lagarde (IMF) and others, are already talking about this trend at all levels. In the context of digitalization, the infrastructure of the financial systems of countries will change, basic elements will appear on digital platforms, more advanced digital currencies will be used instead of the national money from a single emission center — they will be replaced by national cryptocurrencies, also regulated by the state, but used in a decentralized manner. Business processes in insurance are also undergoing dramatic changes.

According to Russian scientists (A.A. Tsyganov, D.V. Bryzgalov), it is assumed that "digital insurance" is a way to satisfy the traditional or specific (generated by digitalization) need for insurance protection through digital technologies.

In the scientific works of foreign and domestic scientists, experts in the field of insurance, such as A. Kappello, N. Albrecher, A. Bommier, M. Persson, S. Grundstrom, Jorg Gunther, M. Cebulsky, P. Heidkamp, M. Eling, K. Lehmann, O. Krasilnikov, A. Tsyganov (Tsyganov, Bryzgalov, 2018; Bejsembaj, 2019; Akhmetova et al., 2019; Zhartaj et al., 2019) and others, it is noted that the principal factors of digitalization of insurance are: the massive use of digital technologies, such as the Internet (Internetization); processing large arrays of numerical data; satisfaction of individual requests of the insured (individualization).

The so-called concept of "digital insurance" does not mean that a new type of insurance has appeared, but emphasizes the prevailing use of digital technologies in the insurance process. In practice, the term "electronic" insurance is often used. Often, some experts understand "digital insurance" as a narrower concept, such as the emergence of a set of new risks caused by information, digital, and electronic technologies, such as cyber risks, electronic commerce risks, cybercrime insurance, etc.

The main tools of digital insurance are: blockchain, processing of large arrays of numerical data (BigData), artificial intelligence, cloud technology, the Internet of things, with the help of which individual requests of the insured should be satisfied.

Current experience in the development of the Kazakhstani economy shows a complex backwardness in digital technologization, the filling of management and technological processes with digital content is extremely slow, and there is no systematic approach.

It can be assumed that the process of digital technologization was not given due attention by the state due to insoluble problems of an objective nature, although there are "points" of explosive growth in digital processes in some sectors of the economy that are predisposed to this. These serious problems are as follows:

1) unpreparedness of the national economy to introduce an integrated digitalization system due to objective factors of the technological backwardness of the economy;

2) underdevelopment of legislative support and infrastructure for the universal digitalization of technological processes;

3) problems of interactions between departmental databases (DB) and their intersectoral interoperability, lack of effective data storage security and cyber protection.

A new model of financial technologies, based on the transformation of the elements of a traditional economic model, is aimed at the formation of digital technological chains in all spheres of human activity and sectors of the economy. The corresponding specification is of a decentralized network nature, with a targeted focus on specification and individualization of the digital services provided.

In order to issue a digital policy as a final product, insurance as the most important link in the country's financial system cannot develop separately without interacting with information elements of the external digitalization environment. This requires an appropriate digital infrastructure. Digital (online) insurance is one of the links in digitalization. Digital (online) insurance is being implemented in Kazakhstan, as in many countries.

The main economic content of insurance remains unchanged, but the formation of new elements in insurance, the introduction of new innovative technological elements is in progress. Over its history, insurance has undergone several fundamental technological innovations, in particular, the introduction of actuarial calculations, which has become the basis of modern insurance business; the use of labor by insurance agents, which laid the foundation for mass insurance; the use of computers that have simplified the implementation of many business processes in insurance, etc.

Methods

To study the economic processes of the topic, the following forms and methods of scientific knowledge were used:

1) observation of the processes taking place in the context of the formation of new economic relations in insurance, in which there is a replacement of traditional elements with new digital business solutions based on technological tools;

2) generalization, comparison and systematization of the obtained materials, their processing through analysis methods and a systematic approach.

3) analysis in parts of the specific processes of the investigated object, to generalize and draw conclusions on the topic under study. Thus, the authors provided a systematic approach (integrated) to the complex multifactorial phenomena of the economic relations of digital insurance. Using a systematic approach, functional relationships, both direct and inverse, between variable factors were investigated.

4) elaboration of specific patterns of digital insurance new economic relations development, determination of trends and risks.

5) based on systematization of the data presented, proposals for development of digital insurance in the country are presented.

Results

At the heart of digitalization of the insurance market of Kazakhstan (early 2017–2018), as in many countries, business processes of an insurance company use Internet possibilities to the maximum. Digitalization of the insurance industry is a much broader concept than digital insurance or online insurance. In legislation practice in Kazakhstan, the term “online insurance” is adopted, which has a narrower meaning and involves the sale of insurance services via the Internet. Currently, the regulator and the market are discussing only the issues of creating and implementing an electronic policy of compulsory liability insurance of car owners (Compulsory insurance of ligal liability of vehicles owners — CILLVO), because of its mass character, social significance and obligatoriness.

One of the main infrastructural components of digitalization in Kazakhstan insurance is the interaction of information and communication links of the insurance industry with other information systems, such as databases of the Ministry of Internal Affairs, the Ministry of Finance, the State Revenue Committee, the judicial system, the Electronic Government Corporation public services, etc.

In the insurance market, the basis for information interaction is the Unified Database (UIDB — Unified Insurance Database) of insurance companies in Kazakhstan for collecting insurance information, created in the mid-2000s, using which bonus-malus discount systems are calculated using correction factors.

In the context of digitalization, the external and internal environment of digital insurance is changing, new conceptual changes in the management system and other issues are appearing, which is noted by many scientists (Cebulsky et al., 2017).

The external environment is a combination of factors and conditions affecting the competitiveness of the insurer in the market. External factors include the country's economic situation, market conditions, scientific and technological progress, government regulation (legislative support and the formation of the industry's digitalization infrastructure) and competitive insurance companies. To consider the possibilities of positive implementation of industrial digitalization, the level of state regulation, the state of technical equipment of an innovative nature, with favorable other environmental factors, are extremely important.

Internal factors affecting the effective operation of a company are administrative management, marketing, insurance product, profit, financial stability and solvency, pricing. Of the internal factors, decisive are qualified management personnel and the availability of innovative approaches to work.

Supplementing the contents of traditional insurance with new digital approaches makes it possible to significantly improve insurance conditions, reduce costs and tariffs, and flexibility in meeting customer requests.

In our opinion, digitalization of the insurance industry is a new level of economic relations regarding the purchase and sale of the insurance product (service) between the insurer and the insured using information and digital technological solutions, while maintaining the economic content of the concept of "insurance". The new concept of "digital insurance" emphasizes the predominant use of digital technology in insurance.

In practice, the Internetization of insurance activities is implemented in insurance companies in the country in the following areas:

– Internet sales of insurance services;

– settlement of insurance claims via the Internet;

– collection of information about policyholders via the Internet.

Using digital solutions in insurance, the increased use of the Internet by households, enterprises and the state leads to the emergence of new segments of the insurance market, such as cyber risks insurance, insurance of Internet of things, etc. Moreover, the implementation by insurance companies of only insurance activities using digital technologies is defined as the digitalization of the insurance market, which, in our opinion, isn't completely correct.

In the context of digitalization, the insurance market begins to actively use fundamentally new digital digitalization tools, such as blockchain technology, large numbers of data (BigData), artificial intelligence, cloud technology, the Internet of things, by which the satisfaction of individual requests of the insured is solved. In the world, the scope of digital technology is expanding in every way, e.g.:

1. In world practice, the most relevant 5 business projects using blockchain technology in the insurance industry are currently known: Etherisc. Medishares PAL Network. Teambrella VouchForMe (Novikova, 2019).

2. The use of Big Data technologies by insurers in the areas of insurance activities, such as risk assessment, prevention and combating insurance fraud, automation of routine operations in insurance, to individualize insurance needs, is based on an analysis of all parameters of human life (big data about client behavior) Machine Learning Models for insurance risk assessment (Novikova, 2019; Vichugova, 2019; Eling, Lehmann,2018). In addition, the experience of Latvian insurers in studying the impact of digitalization on the development strategy of Latvian insurance companies and the perception of customer values and preferences in the digital transformation era is also interesting (Voronova et al., 2018).

3. AIG conducted a study on the experience of large companies that implement the "Internet of things" technology (IoT). Thus, an annual 20 % growth of the Internet of Things market is forecasted, meaning that by 2020, the contribution of IoT-technologies to the world economy will amount to US $15 trillion. By this time, 50 billion devices will be connected to the Internet (Sean Dubrawak, 2016).

The study predicts that in the future, risk assessment through the introduction of the Internet of Things will become better. The introduction of the Internet of Things technology in insurance will contribute to the development of new innovative insurance products, services and working methods.

4. A leading insurance company American International Group, Inc (AIG), one of the world leaders in the field of personal and property insurance has the practical use of "cloud" technology. The company implemented virtualization technology using the Global Infrastructure Unity (GIU) project to transfer all applications and databases of branches, AIG offices, to a corporate "cloud" data center. In Europe alone, over the past six months, within the framework of the GIU project, more than 800 insurance programs and databases from the countries where the company operates have been transferred to the field of "cloud" technologies (Lagutenkov, 2018).

5. The insurance sector is heavily dependent on large amounts of data processing and diversity, and data processing underlies intelligent information technology. Many insurance companies channel funds to expand digital capabilities in the field of artificial intelligence. According to Novarica, approximately 20 % of the IT budgets of insurers for 2019 are intended to improve analytical tools and accounting systems (Shepelin, 2014).

Insurtech companies, which develop many innovative solutions and insurance services, begin to play an important role in world insurance practice. Insurtech, in its technological innovations, forms the basis for individualization and customer focus using data and digital platforms.

The main trends of 2019 in the developed insurance markets of the world, reflecting the general direction of digitalization of the insurance industry according to the Hannover Re report, are as follows (Allinsurance.kz, 2019):

1) insurtech startups are actively developing and offering their solutions, and the leading insurers in the world acquire and implement them, competing for customers.

2) InsurTech will build infrastructure for new insurance services in China. According to a joint report by ZhongAn Research Institute ZhongAn FinTech and professional service firm KPMG China, the significant growth in Internet technology and the development of InsurTech in China prepared the key infrastructure for creating a "new insurance" that is driven by emerging technologies such as big data, cloud computing, AI, the Internet things and blockchain (Allinsurance.kz, 2019).

3) the largest insurance company Manulife (Canada) is collaborating with Insurtech Blink on the development of parametric travel insurance against crash during travel to its customers.

4) a Japanese general insurance company has partnered with Singapore's Insurtech Plug and Play program to enable Tokyo Marine to gain access to the Plug and Play network and work with startups from the Asia-Pacific region to test and implement products in all of its offices in Southeast Asia..

5) Australia has expanded industry collaboration last year, with a 53 % increase in the number of InsurTechs operating between insurance companies and InsurTech companies.

6) Chinese insurer ZhongAn Online P & C Insurance is working with Digital Insurance Agenda (DIA) to promote the development of InsurTech worldwide, Shanghai Daily reports. Zhong An is the first digital insurer in China, DIA is a major InsurTech conference headquartered in Barcelona.

7) Insurtech insurance premiums will exceed US$400 billion by 2023, according to a new study from Juniper Research U.K, compared with about US$187 billion expected in 2018 (Allinsurance.kz, 2019).

Current trends in the implementation of digital technologies in insurance (InsurTech) are considered in the studies of many foreign scientists and experts. In particular, the analysis of digital technologies on the competitiveness of insurance markets pays special attention to the competitive opportunities of InsurTech implementation for existing insurers in the book by A. Cappello (Cappiello, 2018; Albrecher et al., 2019).

Discussion

According to the author, digitalization of the insurance market is a completely new level of industrial relations in the insurance process, because digitalization of business processes of insurance activity is taking place. The regulator represented by the National Bank has established a number of requirements for building and shaping IT systems of insurance organizations. This led to the fact that market participants began to make decisions on digitalization of business processes, introduced new systems. In modern Kazakhstani reality, the business processes of insurance activities of an insurance company through Internet technology are as follows:

1. Organization of information and communication interaction with potential clients — insurers (informing, polls, consultations, etc.).

2. Issuance of electronic policies, related procedures for identification and authentication;

3. Automation of a damage calculation, preliminary risk underwriting, implementation of insurance claims. Visualization and inspection of an insurance event, assessment and calculation of damage, insurance event, digitization of the relevant documents of an insurance event;

4. Maintaining a database of insurance statistics. Formation and interaction with the UIDB database;

5. Automation of the calculation of the insurance rate using large numbers of insurance statistics;

6. Organization of methods for protecting the company's Internet resource, information confidentiality;

7. Organization of information exchange with other information databases (Ministry of Internal Affairs, Ministry of Finance, etc.). Maintaining confidentiality of data exchange rules;

8. Maintaining and updating information on an insurance company website.

To purchase an insurance policy on the website of an insurance company, a policyholder can carry out the following procedures:

1. Choose a specific insurance product, familiarize yourself with the terms of the insurance rules;
2. Fill out an application for insurance, fill out a questionnaire and other necessary documents for applying for an insurance policy (scanned copy of the vehicle data sheet, identity card of the insured and others);
3. Get a calculation of the insurance services cost and pay the insurance premium (or part thereof);
4. Get an insurance policy (insurance contract), through electronic digital printing (EDS) or in a traditional way;
5. In the course of the contract, make changes through the Internet;
6. Submit claims about the insurance event;
7. Receive the amount of insurance payment.

According to Kazakhstani legislation, the insurance contract is subject to conclusion using the electronic digital signature (EDS) of the insured, taking into account the requirements established by the Law of the Republic of Kazakhstan dated January 7, 2003 "On electronic document and electronic digital signature" (Zakon Respubliki Kazahstan "Ob jelektronnom dokumente i jelektronnoj cifrovoj podpisi", 2003). Also, the relevant notification of the UIDB on the conclusion of the insurance contract to the insured in the form of an SMS message, an electronic message to the specified email address (if any) upon receipt of information on the conclusion of the insurance contract in electronic form.

In current conditions of transition to active digitalization of most insurance operations, the positive factors are:

1) an increase in the number of Internet users in insurance;
2) the formation of legislative acts introduced into the current insurance legislation governing the interaction of the insurer and the policyholder through the Internet;
3) lower costs for insurance transactions, higher profitability of online sales of insurance services;
4) opportunities to settle insurance claims via Internet;
5) individualization of the needs of the insured to meet them, due to more innovative technologies of large numbers of data (Big Data);
6) new opportunities for remote settlement of damages and, consequently, losses.

Negative factors hindering the development of digital insurance are:

1) weakness of the current legislative regulation of Internet trade in insurance services in Kazakhstan;
2) lack of infrastructure component for online commerce;
3) a low existing level of insurance culture and a small share of the prevalence of the conclusion of insurance via the Internet;
4) insurance fraud issues in the country;
5) insufficiency of efforts of insurance companies and the regulator to intensify the Internet sales of mass types of compulsory insurance, like public liability of vehicle owners;
6) solving problems of high loss ratio on liability insurance, due to elimination of commission fees of intermediary services in this type of insurance;
7) low level of public confidence in the insurance mechanism.

The issues of introducing a digital insurance policy today encounter a number of serious difficulties that are being worked on by both the national regulator, insurance companies, and other participants in the national insurance market:

1. Problems of data security, identification and authentication of the policyholder, confidentiality and data protection;
2. Ensuring the reliability of the UIDB data, with which all intermediary agents could previously work, not observing the requirements of reliability;
3. The existing UIDB database must undergo drastic changes in order to meet the requirements of the digitalization of the insurance industry, as an infrastructure component in the information integration of government agencies, within the framework of Digital Kazakhstan;
4. An important aspect is the creation of a unified database of accounting for insured events to suppress the facts of insurance fraud;
5. To effectively digitalize the industry, one should start using blockchain technology to record insurance contracts and insured events;
6. Using BigData to analyze insurance statistics and digitized customer stories will allow insurance organizations to create personalized offers, thereby increasing loyalty to their insurance brands.

Such measures as creation of the aforementioned databases with distributed records of blockchain technology, the use of large numbers of data (BigData) allow to raise the level of national insurance to a qualitative level, increase competitiveness and confidence in the industry, reduce the number of fraud cases.

Conclusion

As a result of the study, the following conclusions were drawn and proposed for implementation of the priority tasks of digitalization in the field of insurance and insurance activities of the national insurance market:

1. Automation of routine business processes of insurance companies insurance activities. Insurance companies are actively starting to use the latest innovative developments using information and digital technologies. First of all, the most routine insurance processes are automated in the insurance market. The opportunities of digital technologies are used to implement productive communication with potential customers. We propose customer communication projects (non-contact cold sales, reminders, polls), including the implementation of insurance products in popular mobile applications, insurers' websites.

2. Automation of the processes of preliminary underwriting of risks when concluding an insurance contract, conditions of insurance compensation, organization of insurance document management, assessment and examination of damages and the process of compensation for losses. Optimization of processes will lead to a reduction in the cost of insurance services, and, this is a reduction in insurance rates.

In general, focused work is being formed to meet the needs of the client, improving the quality of the service, i.e. satisfaction of individual customer requests (individualization).

3. In addition to organizing insurance compensation processes, automation of customer service issues (new types of services of the insurer) is required, including finding convenient car services and car repairs after an accident, auto-expert services and creating a car service history. The process of damages for motor insurance, as the most developed and mass, will allow insurers to show the level of competitiveness and optimize costs.

4. Marketing research of the insurance process in the new conditions of digitalization of the market is undergoing dramatic changes. New marketing actions arise when the insurance company will need to quickly, than other competitors, find a client through an online resource.

In particular, as noted in the article “regarding marketing automation for visitors who have not left personal data on the site; service for psychological segmentation of the client base in order to reduce the loss of the insurance portfolio and increase the response to the advertising proposal; neuromarketing research; application for measuring and increasing customer loyalty using artificial intelligence; a system for analyzing the psychographic portrait of users of social networks for personalized communication, assessing credit and insurance risks” (Allinsurance.kz, 2019).

The world experience of different countries shows that in the insurance market various directions of insurance projects of Insurtech company aimed at improving the efficiency of insurance are beginning to actively develop. The Kazakhstan insurance market should form a digital infrastructure, attract digital startups, new technological solutions using digital tools.

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Қазақстанның сақтандыру саласын цифрландыру: мәселелері, цифрлық технологиялар, даму жолдары

Аңдатпа

Мақсаты: зерттеудің мақсаты жаңа технологиялық цифрлық шешімдерді қолдану және мәселелерді зерттей отырып, Қазақстанның сақтандыру саласын түрлендірудің объективті қажеттілігін негіздеуден тұрады. Зерттеудің нәтижелері бойынша цифрлық технологиялардың көмегімен сақтандыруды реформалауды қарастыру.

Әдісі: зерттеу барысында келесідей әдістер қолданылды: бақылау, жалпылау, салыстыру, талдау, жүйелік тәсілдеме, ақпараттарды жүйелеу, өңдеу.

Қорытынды: мақалада цифрлық технологияларды колданумен Қазақстанның сақтандыру саласының заманауи үрдістері зерттелген. Сақтандыру саласын цифрландырудың негізгі факторлары анықталып, “цифрлық сақтандыру” ұғымы негізделген. Сақтандыру компаниясындағы цифрлық технологияларды қолдануға жататын сақтандыру қызметінің бизнес-процестері нақтыланған. Отандық сақтандыру нарығында цифрландыруды енгізу мәселелері талданып, бірінші кезекті міндеттер анықталған.

Тұжырымдама: автормен цифрлық экономика — бұл жаңа өндіргіш күштерге сүйенетін болашақ экономикалық модель екені туралы дәлелдер келтірген. Осы аспектіде экономиканың қаржы (сақтандыру) секторын кешенді цифрландыру сұрақтары өзекті болып табылады. Қаржылық цифрландырудың заманауи даму үрдістері жаңа бәсекелестік мүмкіндіктерді қалыптастыра отырып, мемлекеттің қаржы саласындағы реттеуші қызметтерін, қаржылық қызметтерді тұтынушылар мен жеткізушілер арасындағы қатынастарын түбегейлі өзгертетін болады.

Кілт сөздер*:* цифрландыру, онлайн-сақтандыру, интернетизация, үлкен сандар (Big Data), интернет-ресурстар, дерекқор, блокчейн технологиясы, ақпараттық-коммуникациялық өзара әрекеттестік.

А.К. Сембеков

Цифровизация страховой отрасли Казахстана: проблемы, цифровые технологии, пути развития

Аннотация

Цель: цель исследования состоит в обосновании объективной необходимости трансформации страховой отрасли Казахстана с применением новых технологических цифровых решений и исследования проблем. По результатам исследования рассмотреть реформирование страхования с помощью цифровых технологий.

Методы: в ходе исследования использованы методы: наблюдение, обобщение, сравнение, анализ, системный подход, систематизация материалов, обработка.

Результаты: в статье исследуются современные тенденции страховой отрасли Казахстана, с применением цифровых технологий. Обосновано понятие "цифровое страхование", определены основные факторы цифровизации страховой отрасли. Конкретизированы бизнес-процессы страховой деятельности компании подлежащих к использованию цифровых технологий. Проанализированы проблемы внедрения цифровизации отечественного рынка страхования и определены первоочередные задачи.

Выводы: автором приведены аргументы о том, что цифровая экономика — это будущая экономическая модель, опирающаяся на новые производительные силы. В этом аспекте актуальными являются вопросы комплексной цифровизации финансового (страхового) сектора экономики. Тенденции современного развития финансовой цифровизации кардинально будут менять регулятивные функции государства в финансовом секторе, отношения между потребителями финансовых услуг и поставщиками, формируя новые конкурентные возможности.

Ключевые слова: цифровизация, онлайн-страхование, интернетизация, большие числа (BigData), интернет-ресурсы, базы данных, технология блокчейн, информационно-коммуникационное взаимодействие.

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Modern aspects of competitiveness in Kazakhstan

Abstract

Object: The purpose of this study is to determine the degree of influence of various economic indicators on the competitiveness of Kazakhstan's economy. To identify the challenges of competitiveness' establishment. At the moment, there is a need to find ways to increase the competitiveness of domestic economy in the light of Kazakhstan's integration into the world. The purpose of the study is to identify the features of the competition development in the modern economy of Kazakhstan. The object of the study are the aspects of competition in the economy of Kazakhstan. The subject of the study are the peculiarities of competition in Kazakhstan as an integral feature of a market system that can positively affect the country's economic growth.

Methods: statistical and comparative analysis.

Findings: This article explores aspects that affect competitiveness. Performed was the analysis of indicators on the global competitiveness rating, foreign direct investment (FDI) for the period of 2009–2019 for such countries as Kazakhstan, Russia, Azerbaijan, and Kyrgyzstan. FDI is an indicator of the "confidence" of investment by large companies. Studied were the indicators of the innovation index and the costs of research and development for the period of 2011–2019.

Conclusions: Globalization and the post-industrial era require Kazakhstan to increase competitiveness. At this stage of development, innovative methods of increasing the economy are becoming more and more sought after. The results of the study allow us to conclude which of the listed aspects affect the competitiveness of the domestic economy. These results are very important for decision making within the economy.

Keywords: Foreign direct investment, global competitiveness rating, industrial revolution, ICT, innovation index, diversification.

Introduction

The basis for developing competitive relations in Kazakhstan and increasing the competitiveness of its economy should not be formed according to foreign standards, but rather on our own experience of evolutionary development using incentive mechanisms of the state in expanding competition among domestic producers and modernizing the national economy.

Literature review

In the process of research, we have analyzed the scientific works of Russian and foreign scientists on the issues of economic competitiveness: M. Porter, R. Huggins, K. Giovanni, G. Edimon and Kiyoshi Taniguchi, K.S. Momaya, etc.

At the same time, the study of competitiveness and the development of proposals to regulate this phenomenon in Kazakhstan are characterized by the peculiarities common to most countries at their nascent stage. Domestic authors studying the country's competitiveness and conducting research are as follows: G.K. Kishibekova, G.A. Abdulina, S.M. Zhanbyrbayeva, G. Aubakirova, I.P. Stetsenko, E. Orynbasarova, etc., and statistical data published in domestic and foreign periodicals.

Results

In Kazakhstan, the competitive environment has not formed in an evolutionary way as it has in most developed countries, but by creating institutional conditions for the competitive behavior of economic entities.

During its development, domestic economy was accompanied by crises of economic and political instability, thereby negatively affecting the conditions and forms of competitive relations.

The modern economic reality, characterized by the transformation of economic relations, the globalization of business, the integration of Kazakhstan into the world places an even greater responsibility on the

development of competitive relations for improving economic, innovative indicators, the quality of life and the well-being of society.

The concern of modern analysts is caused, above all, by the fact that the majority of domestic entities with their uncompetitive goods cannot withstand competition with import (Huggins, R. 2015).

Therefore, addressing the issues related to the selection of ways of economic development based on innovation is becoming particularly relevant. The creation of optimal motivational conditions for both business and employees for the effective development of competitive relations can contribute to this (Jha, S. K., 2018).

A number of works and studies of various economic schools and directions in foreign economic literature are devoted to competition issues.

The first most comprehensive theoretical provisions on competition issues were formulated in the XVIII century by the classics of political economy (A. Smith, D. Ricardo, J.S. Mill). They have developed a model of perfect competition and characterized the features of a competitive market. Deviation from perfect competition, as a reference model of the market, was regarded negatively. Neoclassicists A. Marshall, A. Cournot argued that monopoly, as the antipode of free competition, reduces the efficiency of the economy. (Porter M., 2016).

The development of competition concepts leads to the realization that competition and monopoly are so interwoven that it makes it necessary to talk monopolistic competition, such a market structure which combines features of both competition and monopoly at the same time. (Pragya Bhawsar, 2015).

Later, J. Schumpeter has expressed the essence of competition in the struggle between the new and the old. Thanks to competition, the economy "cleanses" itself of inefficient firms. The economist called this process a "creative destruction" and paid great attention to the relationship between innovation and competition.

Competition is not static. It develops under the influence of various factors; the forms and methods of competitive relations are being transformed, the criteria for competitive advantages, competitiveness, etc. are changing. This circumstance determines the importance of further studying the specifics of competitive relations in the modern economy of Kazakhstan and addressing the issues related to the motivation of competitive behavior of its economic agents.

The term "competition" comes from the Latin word "concurrentia," which means, collision. At the same time, it is legitimate to note that this concept is cognate to the Latin term "concurus," competition. The fundamental similarity of concepts implies a single competitive character of competition. (Aiginger, K. 2015)

With the development of society's economic system, forms and methods of competitive relations evolve as well, reflects in theoretical provisions on the competition content. (Aiginger, K. 2015)

Figure 1 shows the mutual relations between the components: The Global Competitiveness Index (GCI). Also indicated are the sub-indices included in the final index. We emphasize once again that the ratio of estimates of 12 terms is constant, but the proportion of sub-indices in the final indicator varies depending on the stage of country's development.

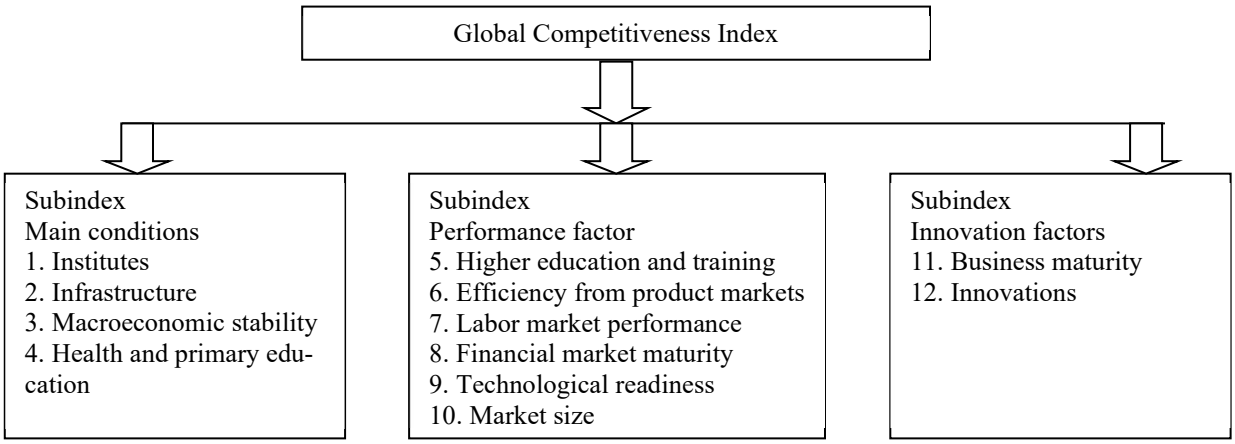

Figure 1. Global Competitiveness Index structure

Note: Made up on basis of (Countryeconomy.com, 2019)

In the Global Competitiveness Rating as of 2019, Kazakhstan ranks 55th with an index of 62.9 (out of 141 countries). This indicator has decreased by 1.13 index points compared to the maximum for 2016, which

amounted to 64.07. Observing the competitiveness index in the period of 2013–2019, one can note the stagnation of index fluctuations (Trading economics. 2019).

One of the reasons for the low competitiveness is that domestic companies cannot compete with companies from Western and Southeast Asian countries on equal termsю therefore, if foreign trade is liberalized, all domestic production will be supplanted by import (Stetsenko, I. 2017).

In Table 1, we reflect the Global Competitiveness Index in a comparative analysis for the period of 2009–2019, for such countries as Kazakhstan, Kyrgyzstan, Russia, and Azerbaijan.

Table 1. Kazakhstan — Global Competitiveness Index

Date	Kazakhstan (Competitiveness)		Kyrgyzstan		Russia		Azerbaijan	
	Ranking	Index	Ranking	Index	Ranking	Index	Ranking	Index
2019	55	62.94	96	54.00	43	66.74	58	62.72
2018	59	61.80	97	53.02	43	65.62	69	60.04
2017	57	62.14	102	55.71	38	66.29	35	67.00
2016	42	64.07	102	54.78	45	63.42	40	64.35
2015	50	63.09	108	53.22	53	62.43	38	64.72
2014	50	62.95	121	51.01	64	60.66	39	64.48
2013	51	62.52	127	49.09	67	59.96	46	63.01
2012	72	59.78	126	49.25	66	60.21	55	61.63
2011	72	58.85	121	49.79	63	60.54	57	61.26
2010	67	58.22	123	48.00	63	59.33	51	61.43
2009	65	58.66	122	48.60	51	61.63	69	58.60

Note: Countryeconomy.com, 2019: https://countryeconomy.com/government/global-competitiveness-index/kazakhstan

Table 1 clearly shows that Kazakhstan has scored 62.94 points out of 100 in the 2019 Global Competitiveness Report. Competitiveness rating: Russia (43rd), then Kazakhstan (55th), Azerbaijan (58th), and Kyrgyzstan (96th). (Countryeconomy.com).

The latest issue of the 2019 Global Competitiveness Report estimates 141 countries. GCI (Global Competitiveness Index) ranges from 1 to 100, a higher average score means a higher degree of competitiveness.

Report consists of 98 variables based on a combination of data from international organizations and on a survey of the World Economic Forum leaders. These variables are organized into twelve columns with the most important ones, including the following: institutions, infrastructure, ICT implementation, macroeconomic stability, health, skills, product market, labor market, financial system, market size, business dynamism, and innovative potential.

In its 2018 edition, the World Economic Forum has introduced a new methodology with a goal to integrate the concept of the 4th industrial revolution into the definition of competitiveness. It emphasizes the role of human capital, innovation, sustainability and flexibility as not only the driving forces, but also the defining characteristics of economic success in the 4th industrial revolution. (Trading economics, 2019).

Next, we consider the indicator of the Innovation Index, which varies from 0–100. For this indicator, Cornell University, INSEAD, and the WIPO provide data on Kazakhstan for the period of 2011—2019. The average for Kazakhstan during this period was 31.59 points with a minimum of 30.3 points in 2011 and a maximum of 32.8 points in 2014. (The WorldBank, 2019).

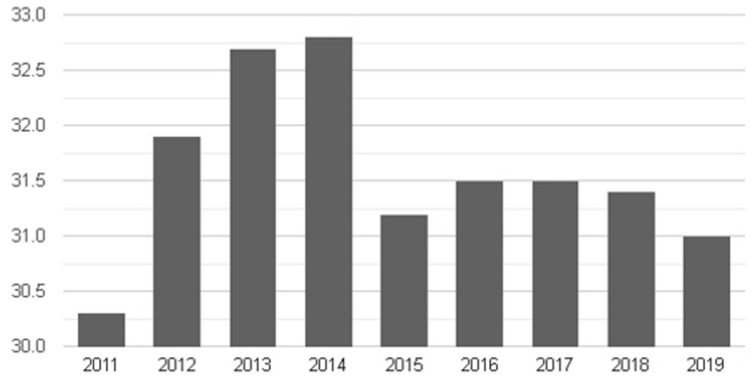

Figure 2. Kazakhstan's Innovation Index

Note: Made up on basis of (Globaleconomy.com, 2019)

The next important indicator that affects competitiveness is research and development costs, percentage of GDP: For this indicator, The United Nations provides data on Kazakhstan for the period of 1997–2017. The average for Kazakhstan during this period was 0.2 % with a minimum of 0.13 % in 2017 and a maximum of 0.29 % in 1997 (The World Bank, 2019).

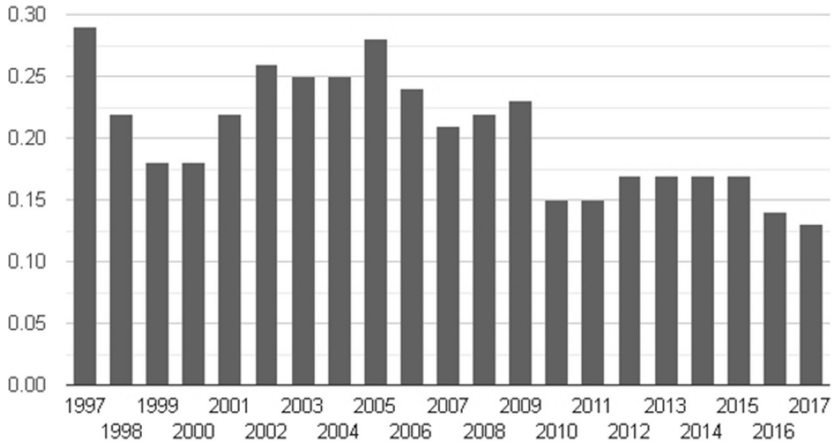

Figure 3. Research and development costs

Note: Made up on basis of (Globaleconomy.com, 2019)

The final result demonstrates Kazakhstan's low competitiveness, underdeveloped institutions and low performance of product and financial markets, low competitiveness of companies with a relatively higher development of education, scientific and technological infrastructure. This result was obtained thanks to the aggregation of 114 primary indicators, among which on 24 indicators our positions are higher than our final 53rd place, and on 87 they are lower. Among 114 indicators, about 80 were obtained as a result of a survey of business representatives, 17 are data from statistics of international organizations and 16 are data from other indices, in particular, "Doing Business" (Caurkubule et al., 2019)

To protect and increase competitiveness, countries need to develop leading industries through tariffs or quotas until they become competitive in the global economy, and only then can they open the market.

This argument has the right to exist where it meets two conditions:

– first, in case of protection, the industry should develop at a faster pace than that of foreign competitors';

– second, the initial drag in competitiveness should be small. Protection of each industry leads to welfare losses; therefore, protectionism should be extremely selective and limited in time. If you protect all industries, the real exchange rate of the national currency increases, the benefit of each industry is small, and the welfare losses are huge.

The same thing happened in most developing countries where industrial policy is based on the restriction of imports. Each industry would declare itself almost competitive. Naturally, defenses would be sought by politically strong industries, and not those actually growing.

At the same time, due to the lack of competition, entities would not have incentives to increase efficiency; therefore, the "almost competitive" industries could not manage to get rid of this "almost" and they would demand an extension of the protection period. (Esengeldinova et al., 2017)

The next important aspect of competitiveness is foreign direct investment (FDI). It is a form of participation of foreign capital in the implementation of investment projects in the host state, which is a long-term investment of a foreign investor in manufacturing, trading and other commercial entities for profit.

The methodology of the International Monetary Fund (IMF), which annually calculates the volume of foreign direct investment at the international level, states that foreign investment can be considered direct if it implies the acquisition by a foreign investor of at least 10 % of the commercial organization's share capital in the territory of the host state, and allow the investor (or his representative) to exert a strategic influence on the invested entities, including partial or complete control over them. In practice, however, in some countries, a 10 % stake in the share capital of an invested entity is considered insufficient to establish effective control over the management or to demonstrate long-term investor interest. (Tlesova et al., 2019)

Thus, foreign direct investment as a whole should be large enough and long-term to allow a foreign investor to establish effective control over the management of the invested entity and ensure its long-term interest in the successful operating and development of said entity. At the same time, the long-term investment as part

of FDI limits the investors' possibilities to quickly exit the market and thereby increases the interest of FDI importing countries in them. In many countries, the implementation of investment projects involving foreign capital is regulated by law, and the structure of the executive branch, as a rule, includes a state body responsible for the development and implementation of state investment policy.

The main stimulus for the intensive development of the international investment process is the need for large businesses to increase their competitiveness at the international level by means of expanding their activities in new markets, production rationalization, reducing costs, diversifying risks and gaining access to resources and strategic assets in the economies of different countries. Currently, the main subject of FDI are international companies and financial groups.

The basis of FDI data in the economies of different countries is the periodicals of the statistical reports of the International Monetary Fund's (IMF) Balance of Payments Statistics series, the World Bank's World Development Indicators, and the United Nations Conference on Trade and Development's (UNCTAD) World Investment Report, as well as annual economic reports of national statistical institutes, the data from which are accumulated by the indicated international organizations (Koksharov et al., 2019).

Presented is the table of FDI over the past 10 years for four countries: Kyrgyzstan, Azerbaijan, Russia, and Kazakhstan.

Table 2. FDI for the period of 2009–2019 (million USD)

FDI amount	Kazakhstan	Azerbaijan	Russia	Kyrgyzstan
2019	208,064,585	1,402,998,000	8,784,850,000	46,599,800
Rating	134	75	31	161
2018	471,263,147	2867487000	28557440000	-107212800
2017	172,209,625	4499666000	32538900000	619220700
2016	657,782,404	4047630000	6852970000	1144054000
2015	730,811,264,	4430466000	22031340000	343010700
2014	1,001,129,328	2619437000	69218890000	612016900
2013	1,364,813,437	5293250000	50587560000	260927500
2012	13760291528,5034	4485120000	55083630000	685760800
2011	7456117901,08145	3352997000	43167780000	472768300
2010	14275888207,0145	2900030000	36583100000	189377400
2009	16818890680	3986807000	74782910000	376992152,1
Note: (The World Bank, 2019): https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD? most_recent_year_desc=false				

In 2018, Kyrgyzstan observed negative FDI, which was due primarily to the fact that foreign investors would withdraw more of their funds than they would invest.

However, an increase in capital investment in the first half of this year would seem like a positive signal. In the whole country, this grew up to 5.25 trillion tenge (13.82 billion USD) or almost 12 % compared to the corresponding period of 2018.

A significant increase was enjoyed by investments in such areas as agriculture (by 62.7 % to 191 billion tenge), construction (by 54.7 % to 52.86 billion tenge), mining (by 31.7 % to 2.67 trillion tenge). However, we also noted a significant drop in investment indicators in the manufacturing industry for the reporting period due to the completion of a number of large investment projects, and a number of other reasons: by 37.9 % to 344 billion tenge. This is despite the sharp increase in the indicator for Nur-Sultan, Karaganda and East Kazakhstan regions.

We should note that the fixed rate of growth in capital investment is still lagging behind the annual increase by average of 20 % indicated by the government in order to bring their share to 30 % of GDP by the middle of the next decade. Last year, this indicator was 17.2 % on an annualized basis (11.13 trillion tenge). Given the improvement of the general conditions for doing business and the state's promotion of additional measures to support foreign investors, Kazakhstan enjoyed an increase in the volume of attracting foreign direct investment. (Reforms in Kazakhstan: successes, challenges and prospects. OECD. 2018).

In particular, according to the National Bank, the gross inflow of foreign direct investment last year amounted to 24.28 billion USD. This is the highest ever since 2012. According to the results of the first quarter of last year, 5.54 billion USD were attracted. At the same time, the net inflow of foreign direct investment (inflow of FDI to Kazakhstan minus FDI abroad) in the first quarter of 2019 amounted to 2.43 billion USD. For reference, in the period of January-March of last year, indicator in question amounted to 2.94 billion USD.

In the first quarter of 2019, more than half of the gross inflow or about 3.3 billion USD accounted for investments in oil and natural gas production, 15.5 % or 0.9 billion USD in the metallurgical industry, 9.8 % or 0.6 billion USD in wholesale and retail trade. As a result, additional measures are required for the diversification of foreign investment by industry. This includes expanding the investment attractiveness of the manufacturing sectors. In general, the accumulated direct investments in Kazakhstan have reached 151.3 billion USD, while the accumulated direct investments from the republic abroad cap at 18.2 billion USD.

The government focuses on increasing annual foreign direct investment to 34 billion USD, among other ways through further improvement of the business climate and the development of public-private partnerships in the country. In this context, noteworthy is the fact that in the World Bank's Doing Business 2019 ranking, Kazakhstan took 28th place among 190 countries, ahead of such large economies as Spain, France, Switzerland and Japan. Over the past 11 years, Kazakhstan has moved up the ranking under review by 36 points, including 6 points compared to Doing Business 2018 (Orynbasarova et al., 2017).

Table 3. FDI in the first quarter of 2019 (million USD)

	Gross FDI inflow	Net FDI inflow
Total	5 964	2 428
including		
The Netherlands	1 798.9	154.5
USA	1 450.7	1200.3
Switzerland	647.2	493.0
China	362	158.4
France	255.7	23.0
Russia	229.7	31.0
Belgium	218.2	78.1
Note: Data from NBK		

The dependence of Kazakhstan on oil resources holds an important value. Given that the price of oil shall only increase by 1.6 % per year from the current relatively low level (as per the latest World Bank price forecast) and labor productivity shall increase at the same rate as in the past, a strategy based on the oil and gas sector will not bring as much economic growth for Kazakhstan as in the recent past, and will not bring the country closer to achieving its growth potential.

In this case, GDP growth is expected to average only 2.3 % annually from the current moment until the year 2030. In contrast, reforms in key sectors to improve the business climate, increase competitiveness, and increase private sector participation, along with other reforms, as outlined in the new medium-term Strategic Plan (Government of Kazakhstan, 2017), shall improve the country's growth rate by about 1.2 percentage points per year (Comprehensive country review of Kazakhstan. 2017).

There is a decrease in price dynamics in the oil market. The cost of the Brent mix fell by more than 10 % compared to local maximums in the middle of last April amounting to more than 74 USD per barrel. At the same time, in April-May, the average monthly wholesale price would exceed 71 USD per barrel, while in June-July it was about 64 USD. The International Energy Agency expects this spread to be reduced to 4 USD in the last quarter of 2019.

Table 4. Dynamics of the wholesale price of Brent oil in Kazakhstan

Month	Year	USD
July	2019	63.91
June	2019	64.22
May	2019	71.32
April	2019	71.23
March	2019	66.14
February	2019	63.96
January	2019	59.41
December	2018	57.36
November	2018	64.75
October	2018	81.03
September	2018	78.89
August	2018	72.53
Note: Data from the Statistics Committee of the Ministry of National Economy. 2019		

The reason for the trend decline is that the long-term forecast for the global economy remains not entirely favorable, including from the point of view of the formation of global demand for crude oil and petroleum products.

Many financial experts predict a high probability of a global recession in the foreseeable future, around 2020–2021. Real demand for raw materials is now weaker than financial markets believe. Market players are closely monitoring the situation around the trade conflict between China and the USA, to which their growing political contradictions are added.

In its 2018 review of the global economy, the OECD has lowered its growth forecast compared to the previous estimate to 3.2 %. Global trade growth has slowed to the lowest levels since the financial crisis.

The consequences for oil demand are obvious: in 2019, its growth won't exceed 1.2 million barrels per day. According to International Energy Agency's estimates, in the first quarter of 2019, growth was only 300 thousand barrels per day compared to the same period last year. This was the lowest value since the last quarter of 2011. The main reason is the weakness in the OECD economies, where demand fell by a significant value of 600 thousand barrels per day due to various factors (a warm winter in Japan, a slowdown in the petrochemical industry in European countries, etc.). For comparison, countries outside the OECD have enjoyed an increase in demand of 900 thousand barrels per day, despite the decline in China. (Data from the Statistics Committee of the Ministry of National Economy, 2019).

Considering the expected oil production volumes and the projected world price of Brent oil of 55.0 USD per barrel, direct taxes from the oil sector entities into the National Fund are projected to be 1947.9 billion tenge in 2019, 1952.3 billion tenge in 2020, and 1971.9 billion tenge in 2021.

According to the pessimistic case scenario of a summary forecast for the socio-economic development of the Republic of Kazakhstan for 2019–2023 (approved at a meeting of RBC on May 15, 2018, minutes No. 9), the oil price shall drop to the level of 45 USD per barrel in 2019—2023. The average annual GDP growth amount to 3.9 %. Deteriorating external conditions and declining business activity shall restrain growth in all sectors of the economy. The average growth shall slow down to 3.7 % in tradable sectors, and to 4.1 % in non-tradable ones.

In the pessimistic case scenario of the forecasts, revenues will amount to 6,614.1 billion tenge in 2019, 7395.8 billion tenge in 2020 and 7,729.5 billion tenge in 2021. For 2019–2021, the deficit is projected at 1.1 % of GDP. The non-oil deficit (excluding ETP) is projected at 6.1 % of GDP in 2019, 5.3 % of GDP in 2020, and 5.0 % of GDP in 2021. (State program of industrial and innovative development of the Republic of Kazakhstan for 2015–2019).

The main objectives for the budget policy for 2019–2021 shall be reducing the dependence of the budget on oil revenues;

To reduce the budget's dependence on oil revenues, fiscal policy will be formed on the basis of a gradual decrease in the non-oil deficit in relation to GDP and an increase in non-oil revenues.

In the medium term, the main focus shall be on reducing the level of non-oil deficit to 7.0 % of GDP in 2020.

At the same time, it is planned to maintain the budget deficit at 1.0 % of GDP from 2019, which shall allow keeping the Government debt at no more than 25.0 % of GDP. The reduction of the non-oil deficit shall be ensured by reducing the use of funds of the National Fund, stimulating the growth of revenues from the non-oil sector, and rationalizing budget expenditures.

To increase the efficiency of budget expenditures, funds shall be redistributed from ineffective programs to budget programs that ensure the implementation of the priorities of socio-economic development. (State program of industrial and innovative development of the Republic of Kazakhstan for 2015–2019).

Most crises are associated with insufficient diversification of the economy, budget dependence on revenues of the energy sector. In the presence of oil resources, countries with economies in transition have specific features of the "Dutch disease": revenues would grow faster than productivity, and domestic goods, which were already inferior in competitiveness, became even less demanded on the domestic market. (Momaya, K.S., 2019).

At the moment, exports should be increased in other sectors of the economy, primarily manufacturing and agriculture. Given the wider range of diversified sources of growth, the country's current vulnerability to external shocks shall be reduced (Issabekov O. 2018).

The average growth of 3.5 % projected until 2030 under this scenario is lower than the potential growth of Kazakhstan at 4 % recently projected by the IMF. This is due to the fact that in the modeling of policies in chapter 6, more conservative shock effects are used compared to government ones and include only a few

government initiatives to reform economic policies. With less conservative assumptions about the scope and number of reforms, a potential growth rate of 4 % proposed by the IMF may be quite achievable, which may help move towards a more diversified economy over time. (Reforms in Kazakhstan: successes, challenges and prospects. OECD. 2018).

Discussions

The revealed features of domestic competition and the proposed ways to improve the competitive environment and increase the competitiveness of the domestic economy can be taken into account in the formation of state programs for the development of competition.

Conclusions

1. Kazakhstan's oil revenues create symptoms of the "Dutch disease" for the economy. The oil industry attracts foreign investment, financial and human resources, while other sectors producing goods and services, such as agriculture and production, experience a decrease in competitiveness. Kazakhstan helps accelerate the development of the Astana financial center, which shall become the region's financial center. However, both oil and financial sectors only create limited employment, mainly with high salaries, creating pressure around inclusive growth. To counter this, the economy needs to be diversified. To create a diversified economy, the agri-food sector needs to be developed as a key to further economic development. According to projections, the decline in prices for agricultural products in international markets in the foreseeable future, along with the growth of demand in a number of developing countries slowing down and the effect of stimulating biofuel programs smoothing out, shall be less conspicuous than the drop in oil and gas prices. Initially, our country owns a large agricultural potential of Kazakhstan. The gradual introduction of digital technology shall increase productivity and reduce costs.

2. The reduction in research and development costs shall negatively affect the projected case scenario for the development of competitiveness. For effective competition, efforts should be made to interact innovation and research with business. From a broader macroeconomic point of view, government policy should stimulate the launch and growth of innovative entities. Since competition plays a key role in innovation, government needs to encourage market competition and minimize interference that distorts product and factor markets. Investments in research and development, both from the government and the private sector, are urgently needed to stimulate innovation while gradually reducing the participation of state-owned entities to expand and develop a more dynamic and innovative private sector.

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Қазақстанның бәсекеге қабілеттілігінің қазіргі аспектілері

Андатпа

Мақсаты: Зерттеудің мақсаты — Қазақстан экономикасының бәсекеге қабілеттілігіне түрлі экономикалық көрсеткіштердің әсер ету дәрежесін анықтау. Бәсекеге қабілеттіліктің қалыптасу мәселелерін белгілеу. Қазіргі уақытта Қазақстанның әлемдік кеңістікке кірігуі тұрғысынан отандық экономиканың бәсекеге қабілеттілігін арттыру үшін жол іздеу қажеттілігі туындайды. Зерттеудің мақсаты Қазақстанның қазіргі экономикасындағы бәсекелестікті дамыту ерекшеліктерін анықтаудан тұрады. Зерттеу нысанына Қазақстан экономикасындағы бәсекелестік аспектілер алынған. Зерттеу пәні Қазақстанның экономикалық өсіміне оң әсер ете алатын нарықтық жүйенің ажырамас белгісі ретіндегі бәсекелестіктің ерекшеліктері болып табылады.

Әдісі: статистикалық және салыстырмалы талдау.

Қорытынды: мақалада бәсекеге қабілеттілікке әсер ететін аспектілер зерттелген. Қазақстан, Ресей, Әзірбайжан, Қырғызстан сияқты елдер бойынша 2009–2019 жылдар кезеңінде бәсекеге қабілеттіліктің жаһандық рейтингі, тікелей шетелдік инвестициялар (ТШИ) бойынша көрсеткіштерге талдау жүргізілген. ТШИ ірі компаниялардың инвестицияларын салу “сенім” көрсеткіші болып табылады. 2011–2019 жж. кезеңінде инновациялар индексі және зерттеу мен дамытуға арналған шығындар көрсеткіштері қаралған.

Тұжырымдама: жаһандану мен постиндустриялық дәуір Қазақстаннан бәсекеге қабілеттілікті арттыру жолдарын талап етеді. Дамудың осы кезеңінде экономиканы арттырудың инновациялық әдістері неғұрлым сұранысқа ие болып отыр. Жүргізілген зерттеу нәтижелері аталған аспектілердің қайсысы отандық экономиканың бәсекеге қабілеттілік позициясына әсер ететініне қорытынды жасауға мүмкіндік береді. Бұл нәтижелер экономикада шешімдер қабылдау кезінде өте маңызды.

***Кілт сөздер*:** тікелей шетелдік инвестициялар, бәсекеге қабілеттіліктің жаһандық рейтингі, өнеркәсіптік төңкеріс, АКТ, инновация индексі, әртараптандыру.

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Современные аспекты конкурентоспособности Казахстана

Аннотация

Цель: цель данного исследования — определение степени влияния различных экономических показателей на конкурентоспособность экономики Казахстана; обозначение проблемы становления конкурентоспособности. В данный момент назрела необходимость поиска путей для повышения конкурентоспособности отечественной экономики в свете интеграции Казахстана в мировое пространство. Цель исследования состоит в выявлении особенностей развития конкуренции в современной экономике Казахстана. Объектом исследования являются аспекты конкуренции в экономике Казахстана. Предметом исследования выступают особенности конкуренции в Казахстане как неотъемлемый признак рыночной системы, способный позитивно влиять на экономический рост страны.

Методы: статистический и сравнительный анализ.

Результаты: в статье изучены аспекты, влияющие на конкурентоспособность. Осуществлен анализ показателей по глобальному рейтингу конкурентоспособности, прямые иностранные инвестиции (ПИИ) за период 2009–2019 гг. по таким странам, как Казахстан, Россия, Азербайджан, Кыргызстан. ПИИ являются показателем “доверия” вложения инвестиций крупными компаниями. Рассмотрены показатели индекса инноваций и расходы на исследование и развитие за период 2011–2019 гг.

Выводы: глобализация и постиндустриальная эпоха требуют от Казахстана путей повышения конкурентоспособности. На данном этапе развития все более востребованными становятся инновационные методы повышения экономики. Результаты проведённого исследования позволяют сделать вывод, какие из перечисленных аспектов влияют на позиции конкурентоспособности отечественной экономики. Данные результаты очень важны при принятии решений в экономике.

***Ключевые слова*:** прямые иностранные инвестиции, глобальный рейтинг конкурентоспособности, промышленная революция, ИКТ, индекс инноваций, диверсификация.

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Study into the tourist attractiveness of Lubuskie Province municipalities using the aggregate measure

Abstract

Object: A special feature of contemporary economy is that processes occurring within it are characterised by growing dynamics and spatial diversification. One of the important phenomena in the development of each region or municipality is the tourist traffic taking place in their territory. Benefits associated with it include: improvement of living standards, increase in demand and income, reduced unemployment rate, development of infrastructure, sustenance of local crafts. Tourism is thus becoming an important way to revive the regional and local economy.

Methods: In this paper, the Lubuskie Province was subjected to statistical research in this respect.

Findings: A general characteristic of tourism development in the region was prepared and an attempt was made to assess the tourist attractiveness of municipalities using an aggregate measure with the median value.

Conclusions: The ranking of municipalities obtained on the basis of this measure was compared with the rankings obtained for other commonly used aggregate measures. The study accounts for data obtained from various sources for the year 2018.

Keywords: tourist attractiveness, aggregate measure with median, Lubuskie Province, local development.

Introduction

From the point of view of a regional economy, region means a set of areas bordering on each other, distinguished in terms of similar criteria in relation to adjacent areas (Korenik, 2011). Region understood this way is an important subject of research; in tourism sciences, too. Considering the place that tourism takes in the region's economy, it should be considered a specialization, i.e. one of the socio-economic roles fulfilled there. In line with the definition, it is understood as an activity directed at providing services to tourists that the region fulfils in the economic system, as well as the effects and consequences of this activity exerted upon the spatial structure and economic life of the region (Kruczek, Zmyślony, 2010). Therefore, tourism can be treated as a socio-economic function of the region. The theory of economic base holds that it is an exogenous supra-regional function that co-determines the strength of the region and conditions of its development. It also points out that for many regions tourism has become an important factor that has contributed to their development and better economic functioning (Panasiuk, 2007). Benefits resulting from the fall in unemployment, infrastructure development and income increase mean that more and more regions can see opportunities related to tourism in their development.

The terms directly related to the development of tourism are tourist traffic and tourist attractiveness. Tourist traffic is defined as a social phenomenon involving the spatial movement of people into areas and to tourist destinations (Kornak, 1997). The main factors that caused mass tourism to take shape are the growing level of income of the population and the increasing amount of leisure time devoted to tourism. The increase in demand for various types of tourist service is caused by both the growing number of its participants and structural changes in tourist traffic (forms of tourist consumption, traffic structure and demand, travel range, spatial range).

On the other hand, tourist attractiveness is understood as the property of an area or town resulting from a set of natural or non-natural features that arouse interest and attract tourists (Kurek, 2007). In traditional terms, all objects of interest to tourists are considered to be "tourist attractions". Currently, due to the popularization of tourism and the increase in the role of culture in its development, this concept has been expanded to include cultural and sporting events, entertainment and other. It also takes into account the level of accommodation prices, food standards, tourist facilities and technical infrastructure (Halemba, Mrozowicz, 2013). Factors such as: products of local artists, regional cuisine, attitude of local people towards tourists, tourist information and promotion, favourable communication location also play a role.

The literature points out to the following values that define the tourist attractiveness of a region: natural, recreational, cultural and specialist (Ibidem). Natural ones come from: national parks, landscape parks, zoos,

botanical gardens, historic parks, viewpoints, gorges, caves and lakes. Leisure ones that allow for regeneration and rest are: low urbanization, clean air, leisure and recreation centres, healing properties of waters, availability of recreation areas and conditions for active leisure. Cultural values include monuments of architecture and construction created in the process of historical development, artefacts of folk material culture and non-material culture works such as folklore, rituals and traditions. Specialist values are, in turn, components and qualities of the natural environment that enable specialized tourism, in particular: sailing, canoeing, riding and hunting.

The Lubuskie Province Development Strategy 2020 states that in light of the natural and cultural values existing in the province, tourism can and should become an important pillar of socio-economic development (Zarząd Województwa, 2012). Referring to the above statement, the aim of the study was to prepare general characteristics of its development in the region and to make an attempt to assess the tourist attractiveness of municipalities using an aggregate measure with the median. The research conducted accounted for statistical data from resources kept by various institutions. The data refer to the 2018 conditions.

Method

According to the theory of tourism, in order to examine the tourist attractiveness of a given municipality or district, the value of resources that shape it should be assessed (Halemba, Mrozowicz, 2013). Statistically speaking, a number of methods can be discerned that allow to assess the tourist potential of the studied area. These include the following methods: Hellwig's development pattern (Hellwig, 1968), Cieślak (Cieślak, 1974), rank method (Siedlecka, 1999), zero unitarization (Kukuła, 2000), Walesiak's (Walesiak, 2006).

An interesting proposition that can also be used to assess the tourist attractiveness of municipalities is the Strahl method (Strahl, 2001, 2006). The essence of this method is to determine the aggregate measure, which in its construction uses the median and standard deviation. Aggregate measures built on the principle of averaging variables have a disadvantage, which is the sensitivity of the average to extreme values, and especially to high values of the variable. The use of median in the construction of aggregate measures means that extreme values do not affect the average level of the variable. The standard deviation takes into account the effect of variation in the variable values of a given object on the level of the measure obtained.

The construction of an aggregate measure with a median is as follows:

1. In the set of variables $\{x_1, x_2, \ldots, x_m\}$ that characterize the examined municipalities $\{P_1, P_2, \ldots, P_K\}$, the following are distinguished: stimulants, destimulants and nominants. Numerical values are arranged in the matrix:

$$\mathbf{X} = \left[x_{kj} \right] = \begin{bmatrix} x_{11} & x_{12} & \ldots & x_{1m} \\ \vdots & \vdots & \ddots & \vdots \\ x_{K1} & x_{K2} & \ldots & x_{Km} \end{bmatrix}, \tag{1}$$

where: x_{kj} — the value of the j-variable for the k-th municipality.

2. The data are then normalised. The stimulants are normalised by the formula:

$$z_{kj} = \frac{x_{kj}}{\max_k \{x_{kj}\}}. \tag{2}$$

The destimulants are transferred as:

$$z_{kj} = \frac{\min_k \{x_{kj}\}}{x_{kj}}. \tag{3}$$

In the case of the nominants the relations are as follows:

$$z_{kj} = \begin{cases} 1 & \text{for } x_{kj} = N_j \\ \dfrac{x_{kj}}{N_j} - 1 & \text{for } x_{kj} < N_j \\ \dfrac{N_j}{x_{kj}} - 1 & \text{for } x_{kj} > N_j \end{cases}, \tag{4}$$

where: N_j — a nominal value of the j-th nominant.

The values of the variables after being normalised for the matrix $\mathbf{Z} = \left[z_{kj} \right]$.

3. For each municipality a median and standard deviation are calculated. With that in view in each row of the matrix **Z** the values of the variables are ordered in a decreasing manner $z_1, z_2, \ldots, z_m$. The median is determined as follows:

$$\mathrm{me}_k = \begin{cases} z_{k\left(\frac{m+1}{2}\right)} & \text{for an uneven } m \\ \dfrac{z_{k\left(\frac{m}{2}\right)} + z_{k\left(\frac{m}{2}+1\right)}}{2} & \text{for an even } m \end{cases}, \tag{5}$$

where: $\frac{m+1}{2}$, $\frac{m}{2}$, $\frac{m}{2}+1$ is the value of the consecutively numbered variable, while *m* is the number of variables.

Standard deviation and arithmetical mean are calculated in this manner:

$$\mathrm{s}_k = \sqrt{\frac{1}{m}\sum_{j=1}^{m}\left(z_{kj} - \overline{z}_k\right)^2} \text{ and } \overline{\mathrm{z}}_k = \frac{\sum_{j=1}^{m} z_{kj}}{m}. \tag{6}$$

4. For each municipality $P_k \left(k = 1, \ldots, K\right)$ the aggregate measure is calculated by the formula:

$$\omega_k = \mathrm{me}_k \left(1 - \mathrm{s}_k\right), \tag{7}$$

where: ω_k is the level of measure for the *k*-th municipality, me_k — median from the value of *j*-variables for the *k*-th municipality, s_k — standard deviation from the value of *j*-variables for the *k*-th municipality.

The aggregate measure values obtained are normalized and meet the relation $\omega_k < 1$. Measurement values closer to one testify to a higher level of development in the P_k municipality. The measure prefers municipalities that have higher median values of the features describing them and their smaller diversity, expressed by a standard deviation.

To compare rankings obtained using different methods, Kendall tau or Spearman's rank correlation coefficients can be used. These measures determine the compatibility of rankings on the ordinal scale (Walesiak, 1993, 2006).

Tourism in Lubuskie Province against the background of other provinces

Situated on the Polish-German border, Lubuskie Province is one of the smaller regions in the country. The province has the area of 13,988 km^2, which constitutes 4.47 % of Poland (US Zielona Góra, 2019). The region has a population of 1,014,548 and a population density of 72.5 people per km^2. The number of employed in the province for 2018 is 357,724 people. The sections directly related to tourism, such as accommodation and catering, with culture, entertainment and leisure accompanying the former, indicate that 2.72 % of the inhabitants is actively employed. GDP per capita of the province is at the level of PLN 45,317. In this respect, it ranks 9th among all regions in the country.

The province has its tourist values because it is a valuable natural area. A characteristic feature of the region is the largest afforestation in Poland. The share of forests is 49.3 % of the total area of the province. Protected areas in the region include: 2 national parks, 8 landscape parks and 64 nature reserves (Urząd Marszałkowski, 2019). It chiefly is woodland and lakesides and riversides that show a variety in the plant, fowl and animal composition. The major watercourses are the Odra, Warta, Noteć, Nysa Łużycka, Obra and Bóbr rivers. It has to be stressed out that the region is often called the Five-Hundred-Lakeland. The total area of the lakes is 13.4 hectare while Lake Sławskie has the area of 828 hectare.

These, however aside, as it is the bed and breakfast facilities and the number of visitors that show that the region is developing. In the Province of Lubuskie some 300 B&B facilities are available. To be more specific, these are: 66 hotels, 14 motels, 13 boarding houses, 43 other hotel facilities, 9 hostels, 31 holiday centres and youth camps, 22 training and leisure centres, 45 offering agritourism lodgings and guest rooms, 21 complexes of tourist houses, 13 campsites and field camping sites, 23 otherwise not classified. The database has 18,512 beds, of which 11 083 are all-year beds. In total, 687,751 tourists used them in 2018. They were provided with 1,429,521 nights, including 327,190 nights for foreign tourists.

Indicators of tourism development in relative terms compared to other provinces are presented in table 1.

Table 1. Indicators of tourism development in Lubuskie Province as compared to other provinces for 2018

	Lubuskie Province	Min	Max	Rank
Number of tourist facilities per 100 km^2	2.14	1.39	9.95	9
Number of beds per 100 inhabitants	1.82	0.95	8.10	6
Tourists using accommodation per 100 inhabitants	67.7	42.4	178.6	7
Number of nights spent per 100 inhabitants	140.8	90.0	889.8	10
Average number of nights per one user	2.08	1.76	4.98	12
Occupancy rate of beds in %	29.8	29.2	51.6	15
Number of nights spent for foreign tourists per 100 inhabitants	32.2	8.48	225.1	6
Source — own work based on (GUS, 2019)				

In Lubuskie there are 2.14 accommodation facilities per 100 km^2, which gives it 9th place among other regions in the country. However, the province has some opportunities for tourism development. This is indicated, for example, by the Baretje tourist function indicator. He informs that due to the number of beds, which is 1.82 per 100 inhabitants, the region occupies even 6th place in the country. The position of the province is also relatively high, taking into account the intensity of Schneider tourism. The number of users of accommodation reaches 67.7 per 100 inhabitants and in this respect it occupies the 7th position. The province performs worse in light of the Charvat saturation index. The number of overnight stays is at the level of 140.8 per 100 inhabitants, which means that it is only in the 10th position. The average number of nights per tourist is also low. It is 2.08 in the region, while in other provinces it reaches up to 4.98 nights. This results in the fact that the region has a low level of utilization of bed places. It amounts to 29.8 % and it is last but one level among all provinces.

On the other hand, the border location and natural values are a chance for the development of tourism in Lubuskie, next to the accommodation base it possesses. This can be demonstrated by the number of overnight stays provided to foreign tourists. It amounts to 32.2 per 100 inhabitants in the region, being the 6th value of the indicator in the country. Tourists from Germany (30.6 %) and Ukraine (24.8 %) dominate among them. While, the virtues of forests and numerous lakes can promote the development of various forms of recreational and leisure tourism, as well as active tourism: water, cycling, hiking, Nordic walking, riding, hunting, fishing. Among the most important tourist attractions of the region are: Kayaking Trips of Lubrza, Lubniewickie Zander Festival, Festival Pol'and Rock in Kostrzyn nad Odrą, Joanite Fair in Łagów, the underground of Międzyrzecki Fortified Region, Ark of Mużaków Geopark (LOTUR, 2019).

Tourist Attractiveness of Province Municipalities

The tourist attractiveness of a given area and municipality results from its natural and anthropogenic values (Gołębski, 1999). Important in this respect are: the existing hotel base, catering facilities, entertainment offer and existing monuments in a given municipality. The condition of the natural environment and activities related to its protection play an important role. The image of the tourist product of the municipality and the role of marketing in its promotion are also significant.

In order to take into account the above-mentioned aspects, when assessing the tourist attractiveness of municipalities of the Lubuskie Province, an attempt was made to consider the widest possible set of diagnostic variables. To complete the task data from the Local Data Bank kept by the Chief Statistical Office (GUS, 2019), Chief Land Survey and Cartography Office (GUGiK, 2019) and Lubuskie Province Historic Preservation Officer (*Rejestr zabytków,* 2019) were derived. Initially, 29 variables were selected for which data for the year 2018 were available. Out of this set, with substantive criteria applied, 11 variables were selected for the construction of the aggregate measure. This set ultimately consists (cf. Balińska*,* 2016):

x_1 — woodland share in % of the total area of the municipality,

x_2 — area with special natural values in % of the municipality area,

x_3 — number of lakes, ponds, and man-made lakes per each 100 km^2 of the municipality area,

x_4 — number of tourist accommodation establishments per 10,000 inhabitants,

x_5 — number of beds per 100 inhabitants,

x_6 — number of foreign tourists per 100 inhabitants,

x_7 — number of overnight stays provided to foreign tourists per 100 inhabitants,

x_8 — number of businesses active in the catering services (Section 56) per 100 inhabitants,

x_9 — number of historic places per 100 km^2 of the area of the municipality,

x_{10} — length of bicycle paths per 100 km^2 of the area of the municipality,

x_{11} — expenditure on tourism, culture and protection of the national heritage in % of total expenditure out of the municipality purse.

Detailed analysis indicates a high diversity of municipalities due to the considered diagnostic variables. Coefficients of variation determined for them range from 35.1 % to 399.7 %. They visibly exceed the minimal level of variability which usually is 10.0 %.

An aggregate measure with the median Strahl was used to assess the synthetic tourist attractiveness of the region's municipalities. According to the test procedure, the variables were normalized. Since all of the variables are stimulants, a quotient transformation with a base equal to the maximum value was used for this purpose. The ranking of tourist attractiveness of municipalities is presented in table 2.

Table 2. Ranking of tourist attractiveness of Lubuskie Province municipalities for the year 2018 obtained using an aggregate measure with a median

No.	Municipality	ω_k	No.	Municipality	ω_k	No.	Municipality	ω_k
1.	Łagów	0.453	29.	Dąbie	0.083	57.	Santok	0.026
2.	Lubniewice	0.304	30.	Dobiegniew	0.078	58.	Deszczno	0.025
3.	Pszczew	0.290	31.	Rzepin	0.077	59.	Czerwieńsk	0.024
4.	Ośno Lubuskie	0.231		Zabór	0.077		Krosno Odrzańskie	0.024
5.	Sława	0.221	33.	Sulęcin	0.073	61.	Nowogród Bobrzański	0.023
6.	Łęknica	0.195	34.	Międzyrzecz	0.071	62.	Żary rural	0.018
7.	Torzym	0.194	35.	Tuplice	0.067	63.	Przewóz	0.017
8.	Skąpe	0.179	36.	Gubin	0.064	64.	Małomice	0.015
9.	Słubice	0.177		Iłowa	0.064	65.	Świdnica	0.011
10.	Bobrowice	0.157	38.	Witnica	0.056		Stare Kurowo	0.011
11.	Drezdenko	0.143	39.	Otyń	0.055	67.	Żagań rural	0.010
12.	Przytoczna	0.133	40.	Zielona Góra	0.054		Bojadła	0.010
13.	Trzciel	0.124	41.	Kostrzyn nad Odrą	0.053		Szlichtyngowa	0.010
14.	Bledzew	0.120		Żary	0.053	70.	Bogdaniec	0.009
15.	Kolsko	0.119	43.	Nowe Miasteczko	0.052	71.	Zwierzyn	0.006
16.	Nowa Sól	0.114		Krzeszyce	0.052	72.	Jasień	0.004
17.	Słońsk	0.110	45.	Gorzów Wlkp.	0.047	73.	Maszewo	0.003
18.	Kargowa	0.109	46.	Żagań	0.046		Trzebiechów	0.003
19.	Bytnica	0.108	47.	Skwierzyna	0.045		Siedlisko	0.003
20.	Strzelce Krajeńskie	0.099	48.	Nowa Sól rural	0.043	76.	Niegosławice	0.002
21.	Bytom Odrzański	0.095	49.	Sulechów	0.039		Kożuchów	0.002
22.	Świebodzin	0.092		Lubsko	0.039	78.	Szczaniec	0.000
23.	Brody	0.091		Zbąszynek	0.039		Gozdnica	0.000
	Wschowa	0.091	52.	Cybinka	0.035		Brzeźnica	0.000
25.	Górzyca	0.090	53.	Trzebiel	0.034		Wymiarki	0.000
26.	Lubrza	0.089	54.	Szprotawa	0.032		Lipinki Łużyckie	0.000
27.	Kłodawa	0.087	55.	Lubiszyn	0.030	X	X	X
28.	Babimost	0.084		Gubin rural	0.030	X	X	X

Source — own calculations

The ranking prepared on the basis of an aggregate measure with the median was then compared with the rankings obtained on the basis of other commonly used aggregate measures. Of these, measures built on the basis of methods: rank (w_1), zero unitarisation (w_2), Cieślak with normalization against standard deviation (w_3), Hellwig's development pattern with normalization through standardization (w_4) were taken into account. To compare the rankings, the Spearman's rank correlation coefficient was used, the values of which are summarized in table 3.

Table 3. Spearman's rank correlation coefficient for the ranking obtained using the aggregate measure with median and rankings obtained by other methods

	w_1	w_2	w_3	w_4
Aggregate measure with the median	0.851	0.765	0.793	0.837

Source — own calculations

By splitting the range of the values of aggregate measure with the median into equal-span ranges, four groups of municipalities with a similar level of tourist attractiveness were identified. The first singled out group within the measure bracket from 0.345 to 0.460 is made of the municipality of Łagów. The value obtained in its case is 0.453. Tourst-wise it is the most attractive municipality in the region. The second group includes

3 municipalities that have values from 0.230 to 0.345. These are the municipalities of Ośno Lubuskie, Pszczew and Lubniewice. As for regional conditions, they are characterized by significant tourist attraction. Eleven municipalities belong to the third group with measurement values from 0.115 to 0.230. This group is made up of the following municipalities: Kolsko, Bledzew, Trzciel, Przytoczna, Drezdenko, Bobrowice, Słubice, Skąpe, Torzym, Łęknica and Sława. For tourists these are medium-attractive municipalities. The remaining group of 67 municipalities belongs to the fourth group. The values of measure are in their case from 0.000 to 0.115. These municipalities are not very attractive for tourists. The arithmetic mean of the aggregate measure determined is 0.074, standard deviation 0.078 and the coefficient of variation 105.8 %.

The relatively high values of Spearman's rank correlation coefficients indicate that the aggregate measure with median gives a comparable order of municipalities vis-à-vis those that could be obtained by other methods considered. The resulting tourist attractiveness ranking is most similar to the ranking obtained by the rank method (w_1), with the value of the coefficient reaching 0.851. It differs most from the ranking obtained by the method of zeroed unitarisation (w_2). In this case, the Spearman's coefficient is 0.765. At the same time, generally, a significant correspondence holds for municipalities occupying more top-wise positions in the rankings, and any discrepancies will mainly be placed in lower positions, especially those between which there are small differences in the level of aggregate measure used.

Figure 1 shows the spatial distribution of the aggregate measure with the median.

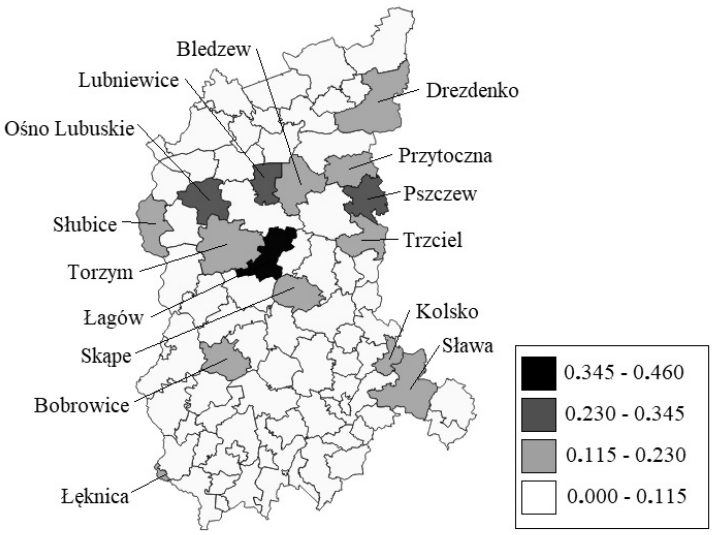

Figure 1. Municipalities as per level of tourist attractiveness determined using an aggregate measure with the median for 2018

Source — own study.

Generally, municipalities of an average or higher level of tourist attractiveness are located in the centre and at the eastern border of the region. The first cluster is especially interesting. It comprises the municipalities of Lubniewice, Bledzew, Ośno Lubuskie, Torzym, Łagów, Skąpe and Bobrowice. It seems that in the situation of a short stay of tourists in the region, the creation of a joint complementary offer of these municipalities could contribute to the tourists' interest in extending their stay there. This could be facilitated by the construction of a cycle path network connecting these municipalities. Owing to the proximity of border crossings at Słubice, Kostrzyn on the Oder and Łęknica the path could be a factor that would additionally stimulate tourism from Germany. Alternatively, state eastern border adjacent municipalities could also be connected by bicycle paths: Sława, Kolsko, Trzciel, Pszczew, Przytoczna and Drezdenko.

Conclusions

In the programme documents of Lubuskie Province, tourism is branded one of the potential pillars of the socio-economic development of the region. However, the outcome of the study shows that despite the region's assets (large afforestation, numerous lakes, nature reserves, accommodation facilities) its potential is not fully utilized. For example, the number of nights spent in the region is quite low compared to other provinces. And although the sheer number of tourists visiting it is relatively high, this does not translate into the degree of use of the existing accommodation base.

The province itself is also diversified to a large extent as regards tourist attractiveness of the municipalities. This is indicated by the value of the coefficient of variation of the aggregate measure determined by the median. In line with this measure, a relatively high level of tourist attractiveness is shown by the municipalities located in the centre of the region: Łagów, Lubniewice, Ośno Lubuskie, Bledzew, Torzym, Skąpe and Bobrowice. Other municipalities include: Pszczew, Sława, Kolsko, Trzciel, Przytoczna, Drezdenko, Słubice and Łęknica. In the light of the value of the Spearman's rank correlation coefficient, the aggregate measure with median orders municipalities with respect to their level of their tourist attractiveness to a large extent comparable to values that could be obtained by other methods considered in the study.

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П. Щучински

Любуш облысының муниципалдық құрылымдарының туристік тартымдылығын агрегацияланған көрсеткішті пайдалана отырып зерттеу

Аңдатпа

Мақсаты: қазіргі экономиканың ерекшелігі, онда болып жатқан үрдістер өсіп келе жатқан динамика мен кеңістіктікті әртараптандырумен сипатталады. Әр өңірдің немесе муниципалдық құрылымның дамуындағы маңызды құбылыстардың бірі — олардың аумағында болып жатқан туристік ағым. Осыған байланысты ұтымды тұстар мыналарды қамтиды: өмір сүру деңгейін жақсарту, сұраныс пен табыстарды арттыру, жұмыссыздық деңгейін төмендету, инфрақұрылымды дамыту, жергілікті қолөнерді қолдау. Осылайша, туризм өңірдегі және жергілікті экономиканы жандандырудың маңызды тәсілі болып табылады.

Әдісі: бұл зерттеуде Любуш өңіріне статистикалық зерттеулер жүргізілген.

Қорытынды: өңірдегі туризмді дамытудың жалпы сипаттамасы әзірленген және муниципалдық құрылымдардың туристік тартымдылығын медианалық мәні бар агрегацияланған көрсеткішті пайдалана отырып бағалауға әрекет жасалған.

Тұжырымдама: осы көрсеткіштің негізінде алынған муниципалдық құрылымдарды саралаудың басқа кең қолданылатын агрегацияланған көрсеткіштер үшін алынған саралаулармен салыстырылған. Зерттеу барысында әртүрлі дереккөздерден 2018 жылға арналған мәліметтер ескерілген.

Кілт сөздер: туристік тартымдылық, медианамен жиынтық көрсеткіш, Любуш облысы, жергілікті даму.

П. Щучински

Исследование туристической привлекательности муниципальных образований Любушской области с использованием агрегированного показателя

Аннотация

Цель: особенностью современной экономики является то, что происходящие в ней процессы характеризуются растущей динамикой и пространственной диверсификацией. Одним из важных явлений в развитии каждого региона или муниципального образования является туристический поток на их территории. Выгоды, связанные с этим, включают в себя: повышение уровня жизни, увеличение спроса и доходов, снижение уровня безработицы, развитие инфраструктуры, поддержание местных ремесел. Таким образом, туризм становится важным способом оживления региональной и местной экономики.

Методы: в данном исследовании были проведены статистические исследования в Любушской области.

Результаты: подготовлена общая характеристика развития туризма в регионе и предпринята попытка оценить туристическую привлекательность муниципальных образований с использованием агрегированного показателя с медианным значением.

Выводы: ранжирование муниципальных образований на основе этого показателя было сопоставлено с ранжированием, полученным для других широко используемых агрегированных показателей. В исследовании учитываются данные из различных источников за 2018 год.

Ключевые слова: туристическая привлекательность, совокупный показатель с медианой, Любушская область, местное развитие.

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State administration of higher education in the Republic of Kazakhstan: problem and perspectives

Abstract

Object: identify current problems of higher education in the Republic of Kazakhstan, aimed at improving the competitiveness of education, the development of human capital by ensuring the availability of quality education for sustainable economic growth. The article also discusses the current state and development trends of the higher education system in the Republic of Kazakhstan. Structure of higher and postgraduate education in the Republic of Kazakhstan. Data on the priority directions of development of the higher education system at the present stage, as well as the implementation of program goals and objectives defined in international and national strategic and program documents, are analyzed.

Methods: the article uses theoretical and empirical research methods: the works of foreign and Kazakhstani authors on this topic, legislative and program documents are studied. In order to identify problems, an analysis of official statistics was conducted.

Findings: the analysis and forecast of the faculty of the higher education system. Analysis of the dynamics of changes in the number of students in the higher education system of the Republic of Kazakhstan. The analysis of the ratio of students in the form of ownership of universities, the ratio of students in the form of payment for education, as well as the dynamics of the contingent of students in the regional context.

Conclusions: as a result of the study, conclusions were drawn and development prospects and methods for improving the monitoring of higher education in the Republic of Kazakhstan were determinedю

Keywords: public administration, higher education system, implementation of programs, statistical analysis, public policy.

Introduction

The economic and political achievements of the last decades have made it possible to shift the state priorities to the main value — the quality of human life and life. In the Address to the People of Kazakhstan on October 5, 2018, the President said that “the growth of the welfare of Kazakhstanis should be a priority”, and the main priority is the well-being of the people of Kazakhstan, which is directly dependent on increasing the income and quality of life (Nazarbayev N, 2018). Education plays a key role in human resources development.

According to the Human Development Index, which takes into account the UN's Interstate Indicator of Quality of Life (Atherton et. al., 2016), in 2018, out of 189 countries with the highest human development indicators, Kazakhstan ranked 58th in 59 countries. Human Capital Development by the World Bank According to the Index, Kazakhstan ranks 31st out of 157 countries (UNDP, 2018).

According to the index, the child labor productivity of a child born in Kazakhstan today is 75 % of his or her potential, which is achieved through full education and improved health (TWB, 2018).

Both countries have shown positive dynamics in Kazakhstan's rankings, but the state needs to make some efforts to improve the welfare of its citizens. By the way, mechanisms are being created, which now create favorable conditions for professional growth and self-realization, providing quality education for all citizens of the country. In solving these important tasks, Kazakhstan has high hopes for young people. For the sustainable development, the Incheon Declaration adopted has identified 17 youth as a key factor in development. However, economic growth is possible only if young people have the skills and abilities necessary to unlock their potential. In 2019 the World Economic Forum focused on the main theme: The role of young people in shaping global architecture and building a better world in the era of the fourth industrial revolution (WEF, 2019). The head of state has designated 2019 as the Year of Youth, in which the growing generation can expand his horizons of knowledge and skills focused on the modern labor market in a fast-growing world. Human capital is one of the key factors in sustainable growth and reducing poverty.

This article discusses the priorities for the development of higher education at the current stage of data analysis on implementation of program goals and objectives identified in international and national strategic and program documents.

Hypothesis: Improving public administration monitoring of the higher education system by means of:

– implementation of the principles of the Bologna Declaration in order to provide students with modern knowledge and mastery of foreign languages. The activities of the Ministry of education and science of the Republic of Kazakhstan are aimed at promoting international best practices in the field of managing the process of providing high-quality educational services;

– due to the fact that higher education institutions have a certain degree of autonomy in operational management and financial matters, there is a tendency to reduce the scope of application of state standards and expand the variable component. Based on this, implement a system of University management based on the principles of autonomy, strategic planning and quality management.

Literature Review

After all, more and more, this will result in a change in the quality of more than one image. Tuck, G. Shrikanthan et al (UNESCO, Stat., 2013). Undermines the uncontrollability of developing a single-grain model with a higher image quality. E. Van Kemenade (Srikanthan et. al., 2002) portrays divisive aspects, varying in the quality of image formation. The basis of this technology is the technology of the formation of a variable, the monitoring of the instrument of the enhancement of the coherence (Van Kemenade et al., 2008; Kingsbury et al., 1989; Lord, 1980). J. Lyotard & Dr. (Wess et al., 1984) Defined to be institutionalized (formal) process, based on the basic object of the transfer, the degree of change, and the value of the single item, group, family. It can be said that you are interested in the area of objective institutions, as well as in the criteria criteria, as well as in the monitoring of the monitoring of the training and analysis of the results of the results. The value of the value of the information is reflected by the accuracy of objective information, valid information about the status and results of the visualization process. By the way, the emphasis on the ability to work, the process of the formation of the process with the help of the self-organization, with the result of the results of the correction of the need for the correctness of the work in the day of the day. One-to-one effectiveness is based on the constant focusing on the current, as long as the method and instrument are used (Lyotard et al., 1984; Athiyaman, 1997; Ham et. al., 2003; Suhre et al., 2017).

Methods

In its use theoretically-empirical method of study: the study of the written and the Kazakh authors on the basis of the subject, the program and the document. In the case of problem solving, this is done by analyzing official statistics and analyzing statistical methods.

Results

The structure of higher and postgraduate education of the Republic of Kazakhstan is regulated by the Law “On Education” (July 27, 2007). According to the latest changes and additions in the legislation the following regulations are established:

– Bachelor's degree programs are designed for higher education with the award of a “Bachelor” degree in the relevant specialty;

– Postgraduate education Master's degree, residency and doctoral degree programs of higher and (or) postgraduate education, scientific organizations in the basic profile of activities and training, as well as scholarship holders of “Bolashak” international scholarship in the manner prescribed by the legislation of the Republic of Kazakhstan leading foreign higher and (or) postgraduate education on full-time education according to the list of approved specialties annually. Send read ımdarına;

– Training in a magistracy is carried out on the basis of educational programs of higher education in two directions: the scientific and pedagogical term of training not less than two years and the period of training not less than one year;

– Training of doctoral candidates is carried out on the basis of magistracy educational programs in two directions: educational term not less than three years scientific and pedagogical and profile period not less than three years.

The increasing share of the middle class and young people encourages the concentration of higher education in the world. A few decades ago, higher education was elite. Today, countries recognize the value of higher education for the well-being of adults and society as a whole. In that sense, it will be accessible to most middle class individuals. At the same time, the share of young people around the world is growing. At the

beginning of 2012, the world population was more than (TWB, 2017) billion, and young people under 30 made up more than half (50.5 %) of this number. These and other reasons have doubled the number of students in the world over the last two decades: 1998 — 89 million people, 2017 — 200 million people (Salmy, 2018).

Created on November 28, 2018 as World Higher Education Achievement Day — World Access to Higher Education Day (WAHED). The event was attended by experts from 100 professional associations from 30 countries. This day has been celebrated in 15 countries through 40 different activities on inequality in access to tertiary education at local, national and global levels. The initiative was presented by a national network of educational opportunities in England (TNEON).

WAHED prepared and published the International Report "All around the world — Higher education equity policies across the globe". The report, written by expert Jamil Salmi, analyzed the politics of state equality in about 70 countries, including the fragmentary statements about Central Asia. The analytical framework is based on the identification of two types of incentives for access to higher education: non-financial and financial (Table 1). A more effective policy of inequality in tertiary education is recognized by experts as a combination of financial and non-financial support measures (VSHE, 2011). The state plays a key role in the distribution of any mechanism at the national level.

Table 1. Mechanisms to Encourage Access to Higher Education in J. Salmi, 2018

Financial	Non-financial	Combined
Subsidized education (in whole or in part)	Preparatory programs	Holistic access strategies up to the establishment of a special government agency aimed at:
Poverty scholarships and grants / targeted grants	Establishment of uniform requirements / Reduction of entry requirements	– timely implementation of certain mechanisms;
Educational loans	Establishment of branches in remote areas	– ensuring consistency between the various goals of state policy, including equitable access for different population groups, allocation of adequate resources and compliance with quality assurance criteria
Redistribution of state finances of higher education to providing	Distance education	
Fair access	Specialized units for underrepresented groups	
Other financial regulatory measures	Career support (career guidance)	
	Possibilities of changing the trajectory / re-reading of the previous training	
	Retention Programs	
Note: Salmi J. (2018), All around the world — Higher education equity policies across the globe, https://www.universityworldnews.com/post.php? story=20181203055421486		

Non-financial mechanisms to encourage higher education include measures that do not require direct cash investments. The study by Jamila Salmi, covering 71 countries worldwide, showed that the most common non-financial measures involved reforming admission criteria, preparation programs (in 28 countries), retention programs (in 24 countries) and other mechanisms of motivation for universities (38 countries) (Fig. 1.). According to the study, formerly socialist countries in Eastern Europe and Central Asia misuse non-financial support for tertiary education, as we are convinced that the key to equality is a meritocratic entrance exam. In most of these countries, such examinations were introduced as part of the transition from socialism to market economy.

In the Kazakh context, the UNT is defined as the main intangible measure to ensure equal access to higher education. In 2018, school leavers passed the UNT 15 times. Over the years of UNT testing more than 1.6 million school graduates. From 2017, they have passed the final attestation in the form of (1) Secondary Education Certificate and Altyn belgi and (2) School Graduation Exams with UNT and state scholarships to study at universities. Applicants have the opportunity to take the UNT again on a paid basis. 5 334 school leavers took the opportunity to take the UNT. In 2018, the average UNT score was lower than the average score based on the results of the main tests — 77.96 (–5.12). Only 21 % of the graduates who passed the UNT in August failed to score the maximum score (1,132 people). Thus, according to the results of additional testing, 4,202

school leavers got a second chance to enter the university. Entry to the university is possible only on a paid basis after passing the test, state grants are allocated after passing the main UNT.

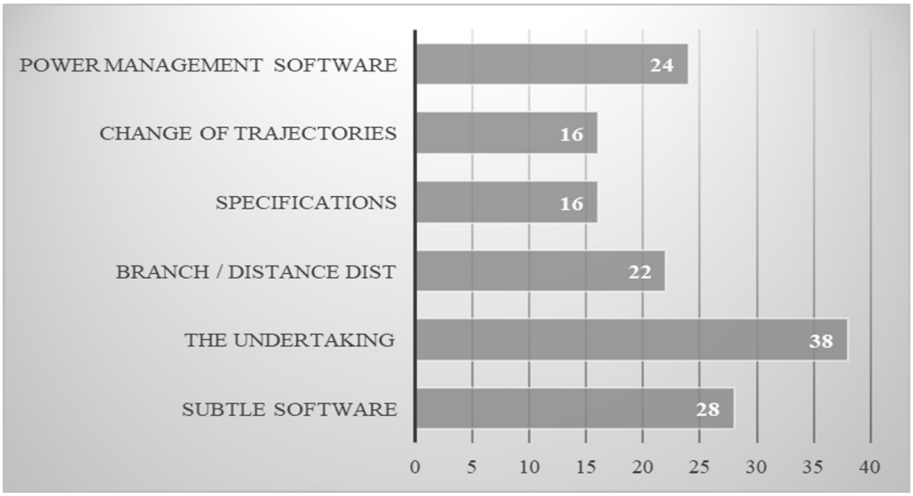

Figure 1. Spread of non-financial support measures in higher education, 2018, Unit

Note: Salmi J. (2018), All around the world — Higher education equity policies across the globe

In 2018, the UNT indicators remained the same. 102 447 graduates applied for participation in the UNT. This is 71.6 % of the total number of school graduates. 98 698 or 96,3 % of applicants for UNT participated in testing. The highest proportion of UNT participants from the total number of graduates who applied for the test: Zhambyl region — 99.4 %, Almaty region — 99.3 % and SKO — 98.9 %. The lowest proportion of UNT participants was observed in Kostanai region — 87.6 %, NKR — 88.3 % and Almaty — 87.5 %. In 2018, the number of graduates who passed the threshold score, as well as their average score increased. The average score across Kazakhstan was 83.1 (+2.6) out of 140 possible points. In creative specialties, on the contrary, the average score dropped from 0.79 points to 40.3 points out of 40 possible. 84 065 people passed the threshold, or 85.2 % of the total number of participants (2017 — 81 %).

In 2018, the graduates were given the opportunity to take the test in English for the first time. 28 graduates from 7 cities of the country took advantage of it (1 — Pavlodar, Ust-Kamenogorsk, 3 — Kostanay, 5 — Almaty, Nur — Sultan, 6 — Shymkent, 7 — Atyrau). The average score was extremely high and reached 84.89 points. These graduates were allowed to use test tasks in the Kazakh and Russian languages in order to save the contents of the question and compare it with the original language.

In 2018, the differences between urban and rural school graduates reached the lowest. The average score of city school leavers made up 86.04 points, and rural — 79.75 points. The gap between city and rural schoolchildren reduced to 6.29 points (Figure 2).

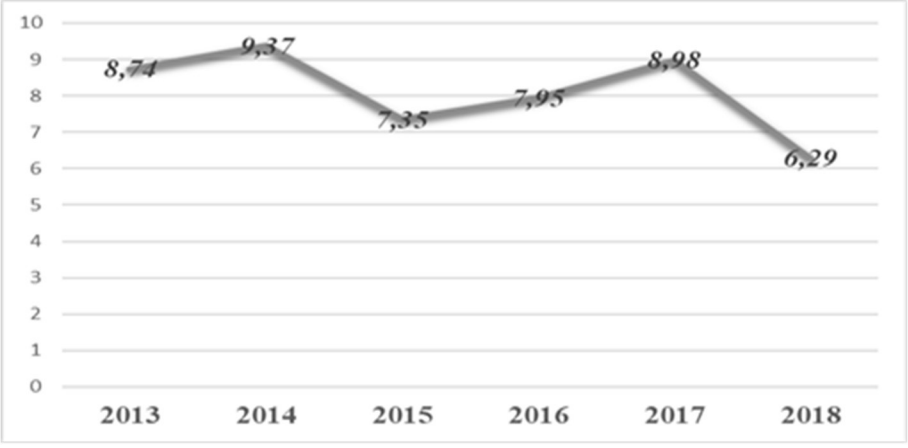

Figure 2. 2013–2018 UNT results in city-village division, points

Note: authored by NCT

Basic courses or basic programs are designed to prepare the candidate for admission to the university. Today, the quality of graduate education varies from school to school. The core programs are designed to bridge the gap in pre-university education and ensure equal access to university. In the world there is a sharp increase in demand for training programs. Thus, in 2015 alone the stock market's software market volume reached $825 million and, according to experts, it will continue to grow (Aljamova, 2017).

Experience of preparatory courses in Kazakhstan is at the stage of formation. In accordance with the Rules for Organizing the Activities of the Preparatory Units of Higher Education Institutions of the Republic of Kazakhstan, the courses offered at the HEIs are organized to increase the level of general education and language training for entering citizens of the Republic of Kazakhstan, foreigners, oralmans and stateless persons residing in Kazakhstan (Order MON RK 554, 2011). In 2018, the state educational grant for training students of the preparatory departments of universities was 2 650 places, for students of Nazarbayev University — 700 seats, for oralmans — 1,200 places, for improving the level of language training — 450 places, for foreign citizens — 100 places.

Another non-financial measure to support domestic higher education is the co-operation of universities with schools and colleges. However, this is traditionally done as part of career guidance work during the recruitment period before the start of the school year. Today, vocational guidance activities include: Job Fair, Open Day, preparatory courses at higher education institutions, field lectures with representatives of higher education institutions with school and college graduates and their parents, presentations and work on future majors in the form of an interview with suppliers. Finding out the effectiveness of higher education institutions and colleges in collaboration requires further research.

There will be part-time and distance learning systems equivalent to part-time education. 2018 year was the last year of traditional part-time education. From January 1, 2019, the ban on extramural education came into force. Within the framework of expansion of academic autonomy of higher education institutions the flexible and low focus on terms of studying of educational programs is formed. Further education is focused on the subjects and their credit volume. Due to this, the need for part-time education is gone. After giving up part-time education, higher education institutions will switch to full-time distance learning technologies and use the part-time system, with part of the courses being held in the evenings and weekends. In addition, part-time students can earn up to a degree. In 2018, part-time enrollment was 39,017, or 24 % of the applicants. In general, 19 % of the total contingent of higher education institutions is part-time education.

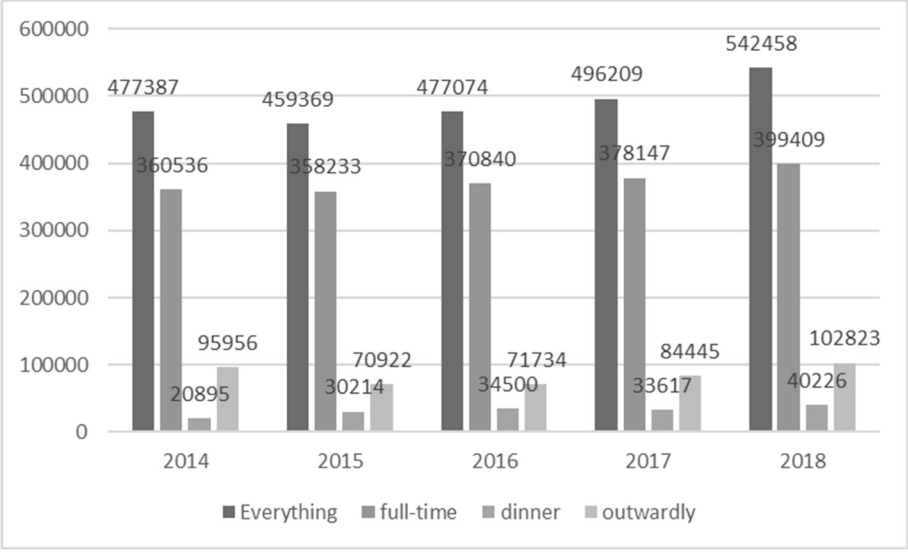

Figure 3. The number of students in the Republic of Kazakhstan
in the form of education for the 2014–2018 academic year, people

Note: Created by the author according to Statistics Committee of the Ministry of National Economy

In the 2018–2019 academic year, 53 594 educational grants were allocated for the preparation of bachelors (Table 2). The largest number is provided for the group of specialties of "technical sciences and technologies" — 19 111 (excluding quotas).

Table 2. Higher and postgraduate education state order for preparation

Level of education	Year of study					2018–2019 to % 2014–2015
	2014–2015	2015–2016	2016–2017	2017–2018	2018–2019	
Total	41 508	39 435	39 728	49 221	68 338	164,6
Bachelor	34 115	32 168	31 700	37 932	53 594	157
Master	6 737	6 682	7 400	10 004	12 504	185,6
Doctoral studies	656	585	628	1 285	2 240	341,4
Note: Created by the author according to Statistics Committee of the Ministry of National Economy						

The comparative indicators of the contingent of higher and postgraduate education show that in the 2018–2019 academic year the number of students on a paid basis prevails. At the same time, the number of students on a paid basis decreased compared to the previous academic year by 17 113 people (Table 3).

Table 3. The ratio of contingent of higher educational institutions on the form of payment for the 2014–2018 academic year, people

The form of study	Year of study					2018–2019 to % 2014–2015
	2014–2015	2015–2016	2016–2017	2017–2018	2018–2019	
Government order	157 301	154 447	156 863	163 159	179 645	114,2
Paid	354 676	337 092	355 814	371 262	354 149	99,8
Note: Created by the author according to Statistics Committee of the Ministry of National Economy						

Opening of the University's branches will help to increase their prestige abroad. Promotion of Kazakhstani universities, including the opening of student admission committees, is one of the strategic directions in the development of education and science in the Republic of Kazakhstan for 2016–2019. Higher education institutions of Kazakhstan work on opening representative offices on the basis of higher educational institutions of the CIS. For example, in accordance with the Agreement, an office of EKSTU was opened in the Republic of Mongolia. S. Amanzholov. In Uzbekistan M. Auezov SKSU has opened educational and consulting center. This was one of the reasons for the increase in the number of applicants from Uzbekistan to 60.6 % of the total enrollment in Kazakhstani universities.

The level of education of the population of Kazakhstan is relatively high and approaches the middle level of the OECD member states. About 40 % of the adult population aged 25 and over have secondary education, 30 % graduate college and 25 % higher education (ND IAC, 2017).

According to the Ministry of National Economy, in the 2018–2019 academic year the number of universities in Kazakhstan was 521,571 students, including undergraduate programs — 479,914, graduate programs — 36,720 (scientific and pedagogical direction — 19,431 people, profile direction — 15,178 people), PhD — 4937 people (Table 4.).

Table 4. Contingent of universities of the Republic of Kazakhstan 2014–2018, people

Level of education	Year of study				
	2014–2015	2015–2016	2016–2017	2017–2018* In 122 higher education institutions	2018–2019* The number of ESUV in 115 grammatical schools
Bachelor	477 387	459 369	477 074	496 207	479 914
Master	32 527	29 882	32 839	34 609	36 720
Doctoral studies	2 063	2 288	2 710	3 603	4 937
Total	511 977	491 539	512 677	534 421	521 571
Note: Created by the author according to Statistics Committee of the Ministry of National Economy					

As a result of regional comparisons of the contingent of higher education institutions of the Republic of Kazakhstan for the 2014–2018 academic year, it was found that the largest number of students is concentrated in Almaty, Shymkent and Astana region, Mangistau and North Kazakhstan oblasts (Table 5). This is due to the large number of students and the large number of universities in these regions. Against this background, since 2014, Kazakhstan has been implementing the State Program “Serpin–2050” “Mangilik El zhastary —

Industry". The purpose of the program is to train and employ young people in the southern regions of the country with a high staff deficit in the northern, western and eastern regions of Kazakhstan. The program was implemented in the first year in the field of pedagogical specialties, which subsequently expanded to include technical and agricultural specialties.

Table 5. Dynamics of the number of students by region in 2014–2018 academic year, people

Region	The number of universities at the beginning of the 2018–2019 academic year *	Year of study				
		2014–2015	2015–2016	2016–2017	2017–2018	2018–2019
Republic of Kazakhstan	124	477 387	459 369	477 074	496 209	542 458
Akmola region	4	10 289	9 267	8 455	9 441	10 166
Aktobe region	6	20 825	20 336	21 004	21 829	24 459
Almaty region	3	9 724	9 051	9 422	9 342	10 410
Atyrau region	3	10 552	10 014	11 012	12 046	13 186
West Kazakhstan region	4	28 369	26 856	29 919	31 392	30 663
Zhambyl region	3	19 580	18 950	19 662	20 874	22 665
Karaganda region	9	41 123	36 976	41 738	42 629	44 549
Kostanay region	7	19 840	19 014	20 057	20 534	21 169
Kyzylorda region	3	11 308	10 055	10 070	9 973	10 660
Mangistau region	2	3 815	3 976	5 081	5 167	6 215
Pavlodar region	4	13 750	12 703	13 566	14 537	15 892
North-Kazakhstan region	2	4 851	4 560	5 265	6 027	7 530
Turkestan region	2	9 089	8 263	8 192	8 603	9 673
East Kazakhstan region	7	26 559	26 842	27 969	29 334	32 129
Astana city	14	52 945	51 235	51 800	52 369	54 419
Almaty city	41	133 736	128 707	130 761	131 292	143 860
Shymkent	10	61 032	62 564	63 131	70 820	84 813
Note: Created by the author according to Statistics Committee of the Ministry of National Economy						

The dynamics of five years has seen an increase in the teaching staff of the university. In the 2018–2019 academic year, 50,735 people will be teaching in the system of higher education, including 40,594 staff. In structure of quality the number of candidates of science prevails, that makes 31 % from total number of staff of 115 civilian universities. Teaching activity is carried out by 27 % of masters. The academic performance rate of the university teaching staff in 2018–2019 academic year was 47.6 %. Table 6 shows the relative proportion of faculty members over the last 5 years.

Table 6. Rankings of teaching staff of higher educational institutions 2014–2018, person /%

	2014–2015		2015–2016		2016–2017		2017–2018		2018–2019	
	people	share, %	people	share, %	people	share, %	people	share, %	people	share,%
All teaching staff	38658	100	38 087	100	38 21	100	38 212	100	38 768	100
Including:										
Doctors of sciences	3 863	9,9	3 568	9,4	3 499	9,2	3 251	8,5	3 197	8,3
Candidate	14 49	38,7	14 239	37,4	14 023	36,7	13 276	34,7	12 896	33,3
Doctor of Philosophy (PhD)	888	2,3	1 133	3	1 562	4	1 854	5	2 175	5,6
Doctors by profile	102	0,4	139	0,4	175	0,5	208	0,5	222	0,5
Masters	9 592	24,8	10 082	26,5	11 135	29,1	12 098	31,7	12 337	31,8
Overall rating (1–4 points)	19 802	51,2	19 079	50,1	19 259	50,4	18589	48,7	18 490	47,6
Other	9264	23,9	8 926	23,4	7 847	20,5	7 847	19,6	7 941	20,5
Note: Created by the author according to Statistics Committee of the Ministry of National Economy										

According to the MNE SC, dynamics of four years shows decrease in the indicators of university professors (-201 people) and associate professors (–731 people) (Fig. 4).

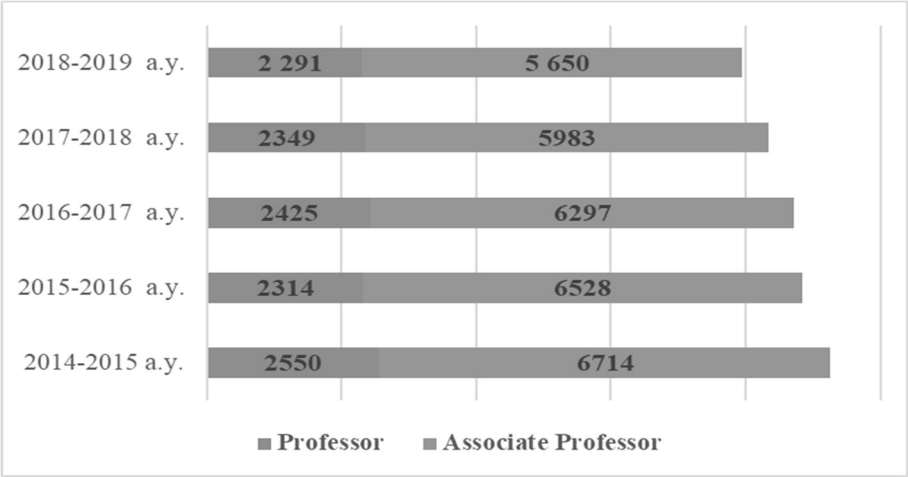

Figure 4. University teaching staff, academic titles, person

Note: Created by the author according to Statistics Committee of the Ministry of National Economy

Discussion

As a result of the study, the author identified opportunities and threats to the higher education system in the Republic of Kazakhstan (Table 7). Based on the analysis of the development trend of the higher education system in the Republic of Kazakhstan, the following conclusions can be drawn:

1. Over the years of independence, Kazakhstan has carried out a reform of the higher education system, bringing it in line with the principles of a market economy. The public administration of the higher education system, based on international experience, is aimed at meeting the needs of the economy and social sphere in qualified specialists, developing human capital, expanding the access of citizens to higher education based on personal merit.

Table 7. Opportunities and threats of the public administration system of higher education in the Republic of Kazakhstan

Opportunities	Threats
Public awareness of the importance of investing in higher education	Inertia of the university management system, imperfection of the strategic planning system, lack of an adequate system of measuring the results of higher education institutions
International organizations support the process of reforming the higher education system	Lack of an effective planning system for training personnel with higher education in accordance with the needs of the national economy
Interaction of domestic higher education organizations with educational institutions of developed countries	A decrease in the general living standard of the population increases the social vulnerability of students from low-income families, as a result of which there is a decrease in the number of applicants and university students
Exchange of students in the framework of the state policy of cooperation with leading universities of foreign countries	Lack of business interest in higher education
The development of digitalization of public administration in higher education.	The curricula of the retraining and advanced training system for employees in higher education do not meet temporary requirements, and also do not take into account the needs of society
Note — compiled by the author on the basis of the study	

2. The republic is carrying out a targeted process of integrating the education system into the world educational space, implementing the principles of the Bologna Declaration in order to obtain students modern knowledge, mastery of foreign languages. The activity of the Ministry of Education and Science of the Republic of Kazakhstan is aimed at promoting advanced international experience in the field of managing the process of providing and providing high quality educational services.

3. At present, the republic's higher education system is diversified, higher education institutions offer various formats of education. The legislative framework of the higher education system is focused on promoting the introduction of a three-cycle structure, which contributes to the expansion of academic mobility and the international recognition of Kazakhstani educational documents.

4. Higher education institutions have a degree of autonomy in operational management and financial matters. There is a tendency to reduce the scope of state standards, to expand the variable component. A university management system based on the principles of autonomy, strategic planning and quality management is being introduced.

Among the problems facing the domestic higher education system are the following:

– centralized control over the content of education (courses and curricula) and the process of its organization (organization of training and standards of degrees) limit the freedom of higher education institutions and their ability to respond to the needs of the economy and social sphere, students and employers;

– The system for assessing the quality of higher education is quite complicated: a large number of checks are carried out and too little attention is paid to self-assessment and improvement of universities.

6. To solve these problems it is necessary:

– make the transition from existing quality management mechanisms to a culture of quality assurance based on the interests of stakeholders;

– improve relations between higher education institutions and employers, in particular, by strengthening social partnership as mechanisms:

a) encouraging employers to participate more actively in organizing field trips and employing graduates;

b) the organization of sponsorship in the process of training specialists on the basis of tripartite agreements between universities, enterprises and students;

c) the involvement of employers in the processes of evaluating and ensuring the quality of educational services.

Conclusions

Public administration of the education sector in Kazakhstan is a complex and multifaceted process that is currently experiencing the challenges of the need to reform the system. On the one hand, the education sector has always been under strict state control, being a national priority and an important factor in the country's economic development and its competitiveness. The state regulates the education system through legislative, fiscal, administrative and other mechanisms. On the other hand, the direction of the transition to a market-oriented economy, the creation of a market for educational services, and the development of market-based mechanisms for managing education, led to changes in public administration in this area and a tendency to reduce public intervention (Sidorova, 2012).

The processes of globalization and technological modernization contribute to the emergence of new areas of education and the obsolescence or depletion of existing knowledge. This could result in the loss of a part of the business in the next decade. In this context, universities need to offer new formats of education that are focused on a qualitatively new level of training of Kazakhstani specialists, which is globally competitive in the field of education.

The mission and functions of higher education institutions are changing as important subjects of socioeconomic development. They will be the driving force behind the development of not only the education system, but also society as a whole.

Modernization of the modern Kazakhstan education system began with the accession of the country to the Bologna process, which emphasized the establishment of a European Higher Education Area as a key stage in developing the mobility of citizens, their need and the global development of the continent.

Today, the competition between universities has shifted both domestically and between states, filled with new content. Academic globalization encourages universities to become more entrepreneurial and to take an active part in the struggle for more successful students, faculty, and competition for research grants, for which they must have administrative and academic autonomy in their activities.

Kazakhstan's development as an educational hub in Central Asia encourages foreigners to access higher education. Kazakhstan's access to higher education abroad is a task of the Strategic Development Plan of the Republic of Kazakhstan until 2025 and will enhance the competitiveness and need of the national system of higher education.

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Қазақстан Республикасындағы жоғары білімді мемлекеттік басқару: мәселелері мен келешегі

Аңдатпа

Мақсаты: тұрақты экономикалық өсу үшін сапалы білімнің қол жетімділігін қамтамасыз ету арқылы адами капиталды дамыту, білімнің бәсекеге қабілеттілігін арттыруға бағытталған Қазақстан Республикасындағы жоғары білімнің өзекті мәселелерін анықтау. Мақалада Қазақстан Республикасындағы жоғары білім беру жүйесінің қазіргі жағдайы мен даму тенденциялары, Қазақстан Республикасының жоғары және жоғары оқу орнынан кейінгі білім берудің құрылымы қарастырылған. Қазіргі кезеңдегі жоғары білім беру жүйесін дамытудың басым бағыттары туралы мәліметтер, сондай-ақ халықаралық және ұлттық стратегиялық және бағдарламалық құжаттарда анықталған бағдарламалық мақсаттар мен міндеттердің орындалуы талданған.

Әдісі: мақалада зерттеудің теориялық және эмпирикалық әдістері қолданылған: шетелдік және қазақстандық авторлардың осы тақырыптағы жұмыстары, заңнамалық және бағдарламалық құжаттар зерттелген. Мәселелерді анықтау үшін ресми статистикаға талдау жасалған.

Қорытынды: жоғары білім беру жүйесінің профессорлық-оқытушылар құрамына талдау және болжау жасалған. Қазақстан Республикасының жоғары білім беру жүйесіндегі студенттер санының өзгеру динамикасы талданған. ЖОО-ның меншік формасындағы білім алушылардың арақатынасы, ақылы түрдегі білім алушылардың арақатынасы, сондай-ақ, әр аймақтағы білім алушылар контингентінің динамикасына талдау жасалған.

Тұжырымдама: зерттеу нәтижесі бойынша қорытынды жасалып, Қазақстан Республикасындағы жоғары білім мониторингін жетілдірудің келешегі мен әдістері анықталған.

Кілт сөздер: мемлекеттік басқару, жоғары білім беру жүйесі, бағдарламаларды жүзеге асыру, статистикалық талдау, мемлекеттік саясат.

Г.С. Тапенова, Р.О. Бугубаева, Г. Купалова

Государственное управление высшего образования в Республике Казахстан: проблемы и перспективы

Аннотация

Цель: выявить актуальные проблемы высшего образования в Республике Казахстан, направленные на повышение конкурентоспособности образования, развитие человеческого капитала путем обеспечения доступности качественного образования для устойчивого роста экономики. Также в статье рассматриваются современное состояние и тенденции развития системы высшего образования в Республике Казахстан, структура высшего и послевузовского образования Республики Казахстан. Проанализированы данные о приоритетных направлениях развития системы высшего образования на современном этапе, а также реализация программных целей и задач, определенных в международных и национальных стратегических и программных документах.

Методы: в статье использованы теоретико-эмпирические методы исследования: изучены труды зарубежных и казахстанских авторов по данной теме, законодательные и программные документы. В целях выявления проблем был проведен анализ данных официальной статистики.

Результаты: проведён анализ и прогноз профессорско-преподавательского состава системы высшего образования, анализ динамики изменения численности студентов в системе высшего образования Республики Казахстан, анализ соотношения обучающихся по форме собственности вузов, по форме оплаты обучения, а также динамики контингента обучающихся в региональном разрезе.

Выводы: в результате исследования сделаны выводы и определены перспективы развития и методы совершенствования мониторинга высшего образования в Республике Казахстан.

Ключевые слова: государственное управление, система высшего образования, реализация программ, статистический анализ, государственная политика.

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Improving the scientific support for strategic planning in the Republic of Kazakhstan

Abstract

Object: The article discusses the features of scientific support for strategic planning in the Republic of Kazakhstan, which are necessary conditions for solving problems in the field of building the digital economy of Kazakhstan. Strategic planning in all hierarchical structures of government, both at the national and territorial, sectoral levels, in the activities of absolute common companies and business organizations. In accordance with strategic planning, all the coordinates of the entire state planning system.

Methods: Authors and analytical materials based on educational, scientific, technical and innovative processes that lead to Kazakhstan. Based on the construction of regression models, it was found that the number of organizations engaged in research and development, and the volume of government spending on higher and postgraduate education affect the volume of internal research and development costs.

Findings: It is recommended to improve scientific support for the realization of educational government program.

Conclusions: In the process of the study, conclusions were drawn and recommendations were given, a way to provide assistance in providing a more advanced system of scientific support for strategic planning, necessary for solving urgent economic and social problems of the Republic of Kazakhstan.

Keywords: science, scientific support, education, strategic planning, management, globalization, scientific and technical process, R&D — research and development organizations.

Introduction

Over the past decade, significant changes have taken place in the post-Soviet space in the organization of management and planning of scientific support: a legal framework has been formed, a departmental approach to managing educational institutions is being overcome, the interaction of state and public forms of education management is emerging, and the role of associations of educational institutions is growing. A new approach to understanding modern education has been formed in society, based on its quality and the introduction of the latest innovative pedagogical technologies. Education has become one of the main state priorities of many countries that are striving to create a flexible mobile higher education system that meets new requirements in the face of global competition.

In accordance with the Message of the President of Kazakhstan N.A. Nazarbayev to the people of Kazakhstan “Strategy 2050”, technological discoveries are fundamentally changing the structure and needs of world markets. Digital and nanotechnology in various industries and fields of activity, robotics, regenerative medicine and many other achievements of science will become commonplace, transforming not only the environment, but also the person himself (Strategy 2050, 2012). For Kazakhstan, this becomes especially relevant when the influence of integration processes and involvement in the global economic system are strengthened. Public administration in the field of scientific support is faced with certain difficulties and changes caused by the processes of digitalization and globalization of educational services. The current stage of development of scientific support is characterized by a particular intensity of transformations, equally affecting the organizational and managerial structures of education, its purpose and content, teaching methods and technologies, funding sources and mechanisms, as well as the conditions and forms of educational, scientific and industrial cooperation. This indicates that the development of human capital is a decisive factor in the implementation

of tasks on the path to building a digital economy. Despite the significant achievements that the Republic of Kazakhstan has been able to achieve in the field of science in recent years, global competition poses for the state in the field of education absolutely specific, and often new tasks, which must be solved so that Kazakhstan remains a full-fledged, independent and respected member of the world community.

The strategic interests of Kazakhstan require increasing the competitiveness of the domestic economy and comprehending the fact that at the present stage, the quality of the country's human resources is, along with innovation and investment activities, the key factors in transforming the domestic economy into the post-industrial stage (Pupysheva, 2014).

The author of this article has identified a hypothesis about the influence of the volume of internal R&D expenditures on the number of organizations carrying out R&D and the amount of government spending on higher and postgraduate education. In this regard, the development of the intellectual potential of youth through improving the quality of education is one of the main priorities of the state policy of the Republic of Kazakhstan, since globalization, radical changes taking place in the world have a great impact not only on the development of material, technical and scientific-theoretical foundations of social progress, but also on the socio-political and ideological processes, the formation of a progressive and free social consciousness.

The need to assess the effectiveness of the implementation of strategic and program documents is associated not only with control, but also helps to focus the attention of performers on achieving specific results, analyze existing trends, ensure timely adjustment, and gain public confidence by publishing the results of activities (State program, 2016).

Literature Review

The system of state strategic planning and forecasting is a tool for forming long-term priorities of the state's activity, implementing global and large-scale tasks, ensuring the coherence of the plans of the central and regional authorities, local authorities, linking decisions made in the process of state strategic management with budgetary restrictions for the medium and long term. In the short time after independence, Kazakhstan achieved effective results in its economic and social development, thanks to the use of strategic planning in the public administration system (Yuvitsa, 2015, 247).

In the article of Mironov A.V. "Education as a sphere of public policy", it was noted that state educational policy is the directing and regulating activity of the state in the field of education, carried out by it to achieve the corresponding strategic goals and objectives of national and global importance (Mironov, 2012, 29).

The field of science is an essential part of the national heritage, a fundamental resource for the country's economic and social transformations. The scientific potential largely determines the country's place in the world community, the prospects for competition in the foreign market, and the possibilities in solving its internal problems (National Science Report, 2018, 3).

In his publications, Petrenko E.S., Koroleva A.A. give an assessment of education as a factor in the development of a creative economy from the point of view of a marketing approach, where the education sector should be more focused on creating a creative class that can make money on new ideas. The lack of a creative class is the main cause of the economic crisis (Petrenko et al., 2019, 325).

In the scientific publications of such researchers as Borbasova Z.N., Sedlarsky T., Bezler O.D. an analysis of the modern interaction of the labor market and vocational education in Kazakhstan is presented, where it is noted that in providing the country's economy with a key resource, highly qualified personnel, a large role is given to the effective interaction of the labor market and higher education institutions, the integration of their main goals and objectives. Errors in the market coordination of these most important subsystems of the market lead to irreversible economic losses and negative social consequences, since under the market conditions the development of the economy and the country's competitiveness is largely determined by high-quality human capital (Borbasova et al., 2019, 105).

Analyzing the general trends in the financing of research and development in foreign countries, we note that due to the increase in their importance in the socio-economic development of countries, the total aggregate expenditures on research and development also tend to increase. At the same time, an increase in total spending on science was observed in some countries even during the crisis period (Maass, 2013).

A distinctive feature of financing research and development in leading foreign countries is that it is implemented to a large extent at the expense of the private sector. In terms of the share of private spending on research and development, the undisputed leaders are Japan (76.5 %), South Korea (74 %), and China (74 %). The top ten also includes Taiwan (72.5 %), Switzerland (68 %), Finland (67 %), Germany (66 %), Australia (62 %), Belgium and Denmark (60 % each), USA (58 %) (Gulbrandsen et al., 2015, 343).

One of the highest and at the same time steadily growing from year to year are total spending on science in Switzerland (despite the relatively low level of government spending on research and development) (Locke et al., 2012, 705).

Scientific and technical policy, being the most important part of state economic policy, is independent and represents a dynamic tool of state management and entrepreneurship (Belyakov et al., 2019, 657).

You can consider the various strategic planning tools necessary for scientific support. If we consider this from the point of view of providing quality higher education, we can consider the process of implementing an interactive tool for compiling a digital curriculum, which was developed at the University of Utrecht. The tool was designed to assist academic developers and supervisors in practical discussions of the aforementioned issues and to facilitate the processes of improving the coordination of curricula and the visibility of learning paths for teachers and students. An online mapping tool offers a smart but comprehensive overview of the learning path in the curriculum (Wijngaards-de Meij et al., 2018, 219–231).

The lack of empirical research in the field of scientific support, as well as the theoretical contribution that helps us better understand the role and importance of this study by conducting research and sharing not only success stories, but also failure reports (Bolander et al., 2020, 1–4).

Thus, it can be concluded that the role of higher education and its "contribution" to the country's economy is the primary lever of economic growth. This is confirmed by the studies of many both domestic and foreign researchers, as well as programs and development strategies at the legislative level. So, for example, A.A. Bulasheva, T.A. Kusainova, assess the impact of investment in education on the development of human capital and its impact on economic growth (Bulasheva et al., 2019, 41–48).

The implementation of the "Kazakhstan-2050 Strategy" and the task of joining the "thirty" of the advanced countries of the world require the mobilization of the scientific and research potential of the country, the implementation of international research and their wide practical implementation (Strategy, 2012).

In recent years, Kazakhstan has been taking active steps at the state level to solve the tasks to create a knowledge-based economy of the country. Further implementation of the Law "On Science" is carried out, which defines a new model of science management, which is maximally adapted to international best practice (Borbasova et al., 2019).

The Law "On Commercialization of the Results of Scientific and (or) Scientific and Technical Activities" (October 31, 2015 No. 381V) and the State Program for the Development of Education and Science for 2016–2019 (March 1, 2016 No. 205), adopted in 2015–2016 They are aimed at developing new mechanisms for the interaction of science and business, increasing the effectiveness of scientific research, their focus on practical implementation, ensuring the introduction of high-tech technologies in production and stimulating the entrepreneurial sector to participate in scientific projects (Maass, 2013; Gulbrandsen et al., 2015).

In the world community, the role and importance of education in recent times are considered as the main factor in socio-economic progress. As noted by specialists from the Organization for Economic Co-operation and Development (OECD), "the rate of basic long-term economic growth in OECD countries depends on maintaining and expanding the knowledge base. The comparative advantages of countries are less and less determined by the wealth of natural resources or cheap labor and more and more by technical innovations and the competitive application of knowledge. Economic growth today is as much a process of accumulating knowledge as a process of accumulating capital" (Locke et al., 2012).

In the Republic of Kazakhstan, 386 organizations were engaged in research and development in 2017 (in 2016 — 383 organizations) (Figure 1) (Belyakov et al., 2019).

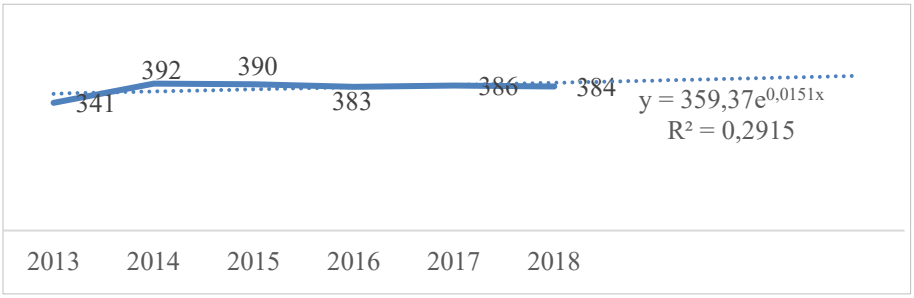

Figure 1. The number of organizations p erforming research and development in the Republic of Kazakhstan for the period from 2013–2018, units

Note — Compiled on the basis of the source: Electronic resource: Data of the Committee on Statistics of the Republic of Kazakhstan for 2013–2018. //www.stat.gov.kz

If we consider the number of organizations performing research and development in a regional aspect, then the situation is as follows (Table 1) (Belyakov et al., 2019).

Table 1. The number of organizations performing research and development in the regional aspect for the period from 2013–2018, units

Region	2013	2014	2015	2016	2017	2018
Akmola	12	11	11	9	11	11
Aktobe	13	1	14	14	16	16
Almaty	10	13	11	10	11	9
Atyrau	8	9	10	11	10	10
East Kazakhstan	29	30	30	35	34	35
Zhambyl	9	11	11	11	11	9
West Kazakhstan	9	9	7	8	8	10
Karaganda	23	31	32	33	29	28
Kostanay	13	13	14	13	14	12
Kyzylorda	6	6	8	10	8	7
Mangistau	7	7	5	7	6	6
Pavlodar	10	11	9	10	11	14
North Kazakhstan	3	3	4	5	5	5
Turkestan	3	5	4	5	6	6
Astana city	52	59	53	55	62	60
Almaty city	122	148	152	133	131	135
Shymkent city	12	12	15	14	13	11
Note — Compiled on the basis of the source: Electronic resource: Data of the Committee on Statistics of the Republic of Kazakhstan for 2013–2018. //www.stat.gov.kz stat.gov.kz						

According to table 1, an increase in organizations occurred in the East Kazakhstan, West Kazakhstan and Pavlodar regions and the city of Almaty. A decrease in the number of scientific organizations occurred in seven regions of the country, such as Almaty, Zhambyl, Karaganda, Kostanai, Kyzylorda and the cities of Nur-Sultan and Shymkent (National Science Report, 2018, 6).

Almaty continues to be the main scientific center of the Republic of Kazakhstan. In 2018, 135 organizations, or about a third of all scientific organizations in the country, were engaged in scientific research and development in Almaty.

The public sector, including institutions funded by the state budget, was represented by 103 organizations in 2018. Over the past four years, this sector has been constantly growing.

The number of organizations in the business sector, including organizations whose main activity is related to the production of products or services for sale, increased by 3 units compared to 2017, but remained unchanged compared to 2016 (Table 2) (Belyakov et al., 2019).

Table 2. The number of organizations performing research and development by sector of activity for the period from 2013–2018, units

Region	2013	2014	2015	2016	2017	2018
In total, including:	341	392	390	383	386	384
– government sector	78	101	94	100	101	103
– sector of higher professional education	112	105	103	103	99	95
– business sector	110	149	154	149	146	149
– non-profitsector	41	37	39	31	40	37
Note — Compiled on the basis of the source: Electronic resource: Data of the Committee on Statistics of the Republic of Kazakhstan for 2013–2018. //www.stat.gov.kz stat.gov.kz						

The higher education sector (95 organizations) includes universities, institutes, academies and other institutions of post-secondary education, regardless of the source of their funding and legal status; research institutes, experimental laboratories and clinics, which are managed by higher education institutions. The smallest number of organizations is represented in the non-profit sector of science, which includes legal entities funded by private non-profit organizations — 37.

Regarding the types of organizations, a generally stable nature of development can be noted. Only in comparison with 2016, the number of universities decreased by 4 units, the number of research institutes also tends to decrease (Figure 2) (Belyakov et al., 2019).

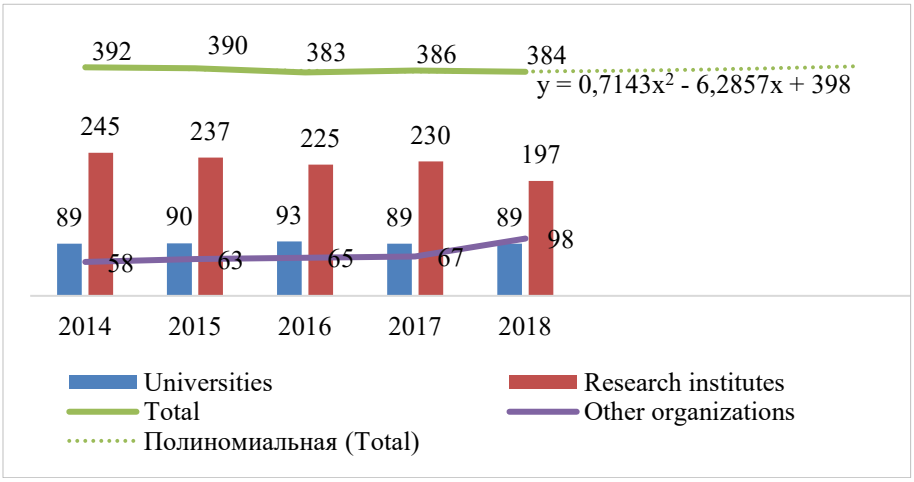

Figure 2. The number of organizations engaged in research and development by type in the Republic of Kazakhstan for the period from 2013–2018, units

Note — Compiled on the basis of the source: Electronic resource: Data of the Committee on Statistics of the Republic of Kazakhstan for 2013–2018. //www.stat.gov.kz

For 2017–2019, the decision of VNTK approved new priorities for the development of science in Kazakhstan:

– Scientific foundations of "Mangilik el" (education of the XXI century, fundamental and applied research in the field of humanities);

– Energy and engineering;

– Rational use of natural resources, including water resources, geology, processing, new materials and technologies, safe products and structures;

– Information, telecommunication and space technologies, scientific research in the field of natural sciences;

– Sustainable development of the agricultural sector and the safety of agricultural products;

– National Security and Defense;

– The science of life and health.

The main criteria for selecting priority areas:

– compliance with the priorities of the country's socio-economic development, the Strategic Plan for the Development of the Republic of Kazakhstan until 2050, the State Program for Industrial and Innovative Development of the Republic of Kazakhstan for 2015–2019, the State Program for the Development of Education and Science for 2016–2019;

– compliance with world trends in the development of science; — the availability of personnel and material and technical potential;

– compliance with the interests of national security;

– the possibility of commercializing research results for subsequent use in innovative development.

In accordance with these new priorities, in 2018 a new competition of scientific projects for grant financing for 2018–2020 was held in the republic (Figure 3) (National Science Report, 2018, 27).

Two priorities dominate in the number of applications submitted for the contest of the Ministry of Education and Science of the Republic of Kazakhstan: "Rational use of natural resources, including water resources, geology, processing, new materials and technologies, safe products and designs" — 134 applications (33 %) and "Scientific basis" Mangilik el" (education of the 21st century, fundamental and applied research in the field of humanities) — 94 (23.2 %). The following are: "Life and health sciences" — 72 (17.7 %); "Information, telecommunication and space technologies, scientific research in the field of natural sciences" – 55 (13.5 %); "Energy and engineering" — 38 (9.4 %); "National Security and Defense" (without secrecy stamp) — 13 applications (3.2 %) (National Science Report, 2018, 27).

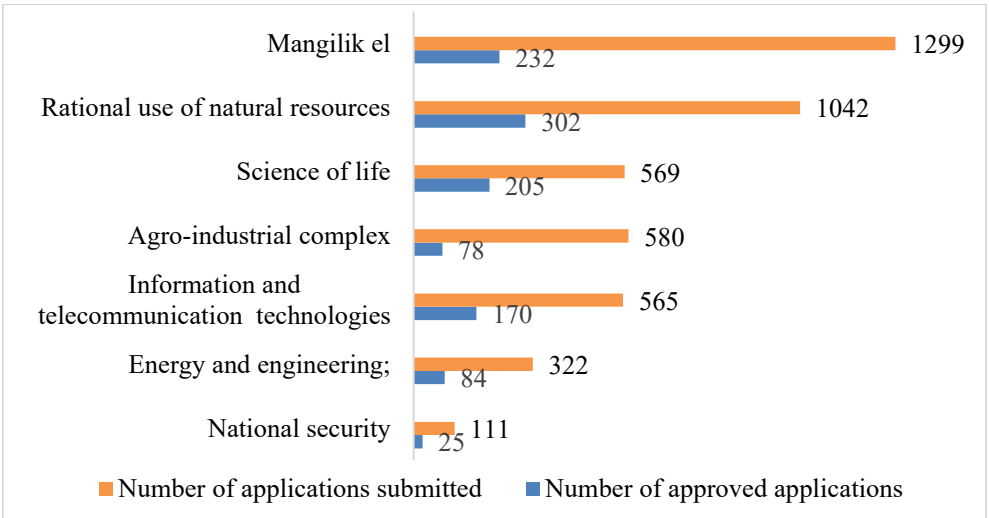

Figure 3. Distribution of grant funding applications for 2018–2020 in the context of priority areas for the development of science

Note — Compiled on the basis of the source: National report on science — Astana, Almaty, 2018. — 27 p.

According to operational data, in 2017, the share of domestic R&D expenditures in GDP amounted to 0.13 %, which is lower than in 2016 (0.14 %). The ratio of production of goods and production of services to GDP in 2017 amounted to 36.0 % and 57.9 %, respectively (Wijngaards-de Meij et al., 2018, 53).

Thus, the goals of Kazakhstan regarding the education system are clearly reflected in a number of political statements that link scientific support, that is, education, with the broader goal of becoming one of the leading nations of the world. Three of these statements have a direct impact on the provision of quality higher education by Kazakhstan:

– Strategy — 2050, which highlights the critical role of higher education in the process of preparing a skilled workforce;

– The State Program for the Development of Education (GPRO) for 2011–2020 (2010) and the State Program for the Development of Education and Science for 2016–2019. (2016) the Ministry of Education and Science of the Republic of Kazakhstan, which emphasize (among many other statements) the need to prepare students and undergraduates to meet the needs of industrial and innovative development, the importance of an independent assessment of the qualifications of graduates and the importance of integration into the European higher education space;

– Plan of the nation: 100 specific steps. The main points of this document are the creation of a group of ten leading higher education institutions that will receive additional resources and autonomy with the aim of possible transfer of their experience to other higher education institutions, the gradual elimination of centralized education management and the introduction of English as a widely used language of instruction.

The goals set out in these documents are ambitious, but often, in the first place, contribute to improving quality. They include the desire to be included in the “top 30 countries” in the Global Competitiveness Index (GIC) and the appearance of two of their higher education institutions in the top row of international university rankings.

According to the UNESCO Institute for Statistics (UIS) database, over the years of independence of Kazakhstan, a consistent development of the country's education system has been observed. Revenues from oil and gas exports gave a powerful impetus to economic development and made it possible to invest in improving the education system. But the issue of financing higher education remains critically important (Figure 4) (Bolander et al., 2020).

In addition to state financing and own funds, scientific organizations use such sources as loans and loans of banks, foreign investments, loans of non-banking legal entities (except for development institutions).

Today, in Kazakhstan, the share of expenditures on science is on average 0.2 % of the country's GDP, while the UNESCO International Academic Committee recommends that the share of expenditures for developing countries be at least 1–1.5 % of GDP. For example, in Japan this figure is 3.3 % of national GDP, in the USA — 2.8 %, in Germany — 2.5 %, in China — 1.4 %, in Russia — 1.3 %. In almost all regions of the Republic of Kazakhstan, we can observe an increase in domestic R&D expenditures, with the exception of Zhambyl, Kostanai, Kyzylorda, and Pavlodar regions (Table 3).

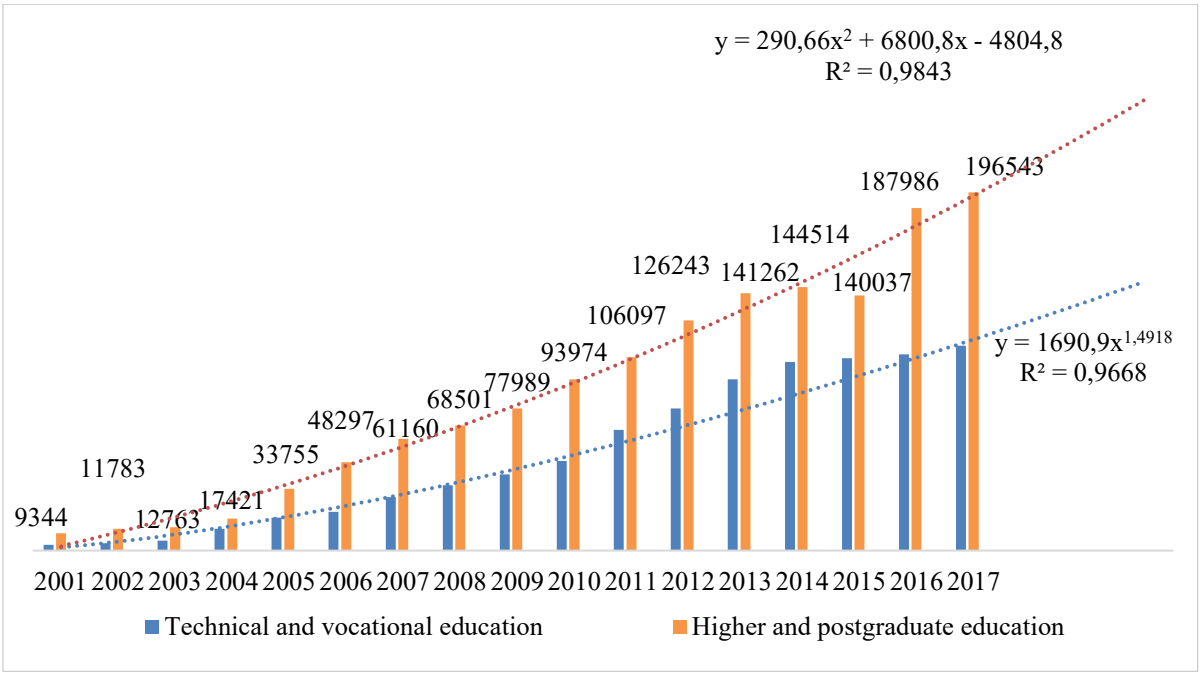

Figure 4. Dynamics of indicators of public spending on education in the Republic of Kazakhstan, million tenge

Note — Compiled from the source: UNESCO Institute for Statistics (UIS) database data, http://data.uis.unesco.org2017

Table 3. Internal R&D expenditures by regions for the period from 2013–2018, units

Indicator	2013	2014	2015	2016	2017	2018
The Republic of Kazakhstan	61 672.7	66 347.6	69 302.9	66 600.1	68 884.2	72 224.6
Akmola	742.5	826.7	1 113.1	797.3	898.2	1 694.3
Aktobe	559.2	735.3	701.6	763.0	839.1	974.6
Almaty	1 117.4	804.2	1 053.6	941.7	871.1	1 121.1
Atyrau	1 880.0	1 885.7	2 415.9	2 753.3	3 637.7	4 494.5
East Kazakhstan	916.0	672.2	753.2	1 789.2	298.5	878.2
Zhambyl	1 077.0	1 322.3	689.7	456.3	1 024.3	731.6
West Kazakhstan	3 407.7	4 048.9	3 597.8	4 279.1	3 488.1	3 508.3
Karaganda	445.3	574.0	599.2	562.1	1 176.5	827.4
Kostanay	213.3	266.0	235.6	613.6	506.3	301.9
Kyzylorda	5 095.4	6 160.7	7 694.5	7 800.4	8 043.5	9 848.7
Mangistau	335.3	322.9	320.8	390.4	335.7	290.2
Pavlodar	209.6	236.3	224.4	180.2	185.2	226.3
North Kazakhstan	247.3	284.1	313.0	173.1	204.9	273.6
Turkestan	3 773.3	3 040.6	3 300.0	3 475.4	5 000.5	5 319.1
Astana city	9 741.2	10 187.7	13 451.9	13 990.6	16 297.5	14 094.2
Almaty city	30 991.0	34 030.3	31 791.2	26 596.1	25 357.8	26 586.5
Shymkent city	921.2	949.7	1047.4	1038.3	719.3	1 054.0

Note — Compiled on the basis of the source: Electronic resource: Data of the Committee on Statistics of the Republic of Kazakhstan for 2013–2018. //www.stat.gov.kz stat.gov.kz

Of the total expenditures for scientific research in 2018, more than 47 % (34 billion tenge) falls on the own funds of organizations, state funding makes up about 45 % of the total costs, of which 73 % is for basic research. The share of investments from other sources, including foreign, exceeds 8 % (Table 4) (Belyakov et al., 2019).

Table 4. Sources of financing of internal costs for research and development for the period from 2013–2018

	2013	2014	2015	2016	2017	2018
Domestic costs by main sources of financing, million tenge						
The Republic of Kazakhstan	61672.7	66347.6	69302.9	66600.1	68884.2	72224.6
Total budget funds, million tenge	39273.3	43343.5	40719.1	35440.5	35979.9	32145.7
Own funds, million tenge	17836.2	19858.3	25356.6	26388.8	28187.6	34251.0
Other means of financing, million tenge	4563.2	3145.8	3227.2	4770.8	4717.0	5827.9
The share of financing in total costs, %						
The Republic of Kazakhstan	100	100	100	100	100	100
Total budget funds, million tenge	63.7	65.3	58.8	53.2	52.2	44.5
Own funds, million tenge	28.9	29.9	36.6	39.6	40.9	47.4
Other means of financing, million tenge	7.4	4.7	4.7	7.2	6.8	8.1

Note — Compiled on the basis of the source: Electronic resource: Data of the Committee on Statistics of the Republic of Kazakhstan for 2013–2017. //www.stat.gov.kz

According to data, in 2018, internal R&D expenses amounted to 72.2 billion tenge. At the same time, the share of domestic R&D expenditures from GDP fell to 0.12 %, continuously decreasing over the past 5 years. The current level of costs in this area is an order of magnitude lagging behind developed and even many developing countries. At the same time, the number of organizations and enterprises engaged in R&D in 2018 decreased to 384 throughout the republic, while 10 years ago there were 438. Over the past five years, the number of employees performing R&D has decreased by more than 3 thousand people, i.e. by 14 %.

Therefore, in the absence of adequate R&D funding and specialists in this field, one cannot expect the construction of an innovative economy even with the creation of technology parks, incubators and other expensive infrastructure.

Among the sources of financing, there are almost no representatives of entrepreneurs representing the real sector of the economy. At the same time, according to the OECD, at present, for European and American companies, the share of this sector in total R&D expenditures of 60–65 % is optimal. The importance of the source of funding was recognized by the Lisbon Strategy, whose goal was to make the EU "the most competitive and dynamic knowledge-based economy". One of the goals of the Lisbon agenda is to bring the share of the private sector in total R&D expenditures to 2/3 of all funding. That is why the financing of research and development in all developed countries today at 60–75 % is carried out precisely by the business sector. And, as a result, the highest science-intensive GDP is also noted in these countries (National Science Report, 2018, 57).

Methods

Let us analyze the impact on the volume of internal expenditures on R&D of such factors as the number of organizations engaged in R&D and the volume of government spending on higher and postgraduate education.

We construct a regression model by adopting the following notation:

y — the volume of domestic R&D expenditures (million tenge);

x_1 — thenumber of organizations engaged in research and development (units);

x_2 — the volume of government spending on higher and postgraduate education (million tenge).

To evaluate the parameters of the two-factor regression equation, we used the statistical data of these indicators for the period from 2008 to 2017 (source: Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan). As a result, the following multiple linear regression equation was obtained:

$$y = 39166.482 - 64.995x_1 + 0.299x_2,\ R^2 = 0.789$$
$$(0.805)\ (-2.590)\ (4.025)$$

The multiple correlation coefficient is equal $R = 0.889$, which indicates a close relationship of the resulting trait with two factor traits at the same time. The coefficient of determination is equal R^2=0.789, i.e. 78.9 % of the variation of the dependent variable is explained by the regression obtained.

From the data of the regression analysis execution protocol, we have that the observed value of the Fisher criterion is equal $F_{observable}$= 13.155. The critical value of the Fisher criterion at the level of significance $\alpha = 0.05$ and the number of degrees of freedom $k_1 = m = 2$, $k_2 = n - m - 1 = 7$ is equal $F_{critical}(0.05; 2; 7) = 4.737$. Since $F_{observable} > F_{critical}$ (13.155 > 4.737) then, the obtained regression equation is statistically significant and reliable.

We will check the significance of individual parameters of the obtained regression equation using Student's *t*-test. In the regression model, *t*-statistics for the corresponding coefficients are indicated in parentheses. Comparing the absolute values of the observed values of *t*-statistics with a critical value $t_{critical} = 2.365$ (at the significance level $\alpha = 0.05$ and the number of degrees of freedom $k = n - m - 1 = 7$), we can conclude that the regression coefficients will be statistically significant, but the free term will not.

Results

The analysis of the obtained regression coefficients shows that:

– with an increase in the number of organizations carrying out R&D by 1 unit, the volume of internal R&D expenses decreases by 64.995 million tenge;

– an increase in government spending on higher and postgraduate education by 1 million tenge, entails an increase in domestic spending on R&D by 0.299 million tenge.

As S.V. Anoshin, currently such a task has become the modernization of the higher education system in order to meet the requirements of the global trend of transition to a knowledge economy, where the conditions for the necessary modernization are the creation of a real competitive environment in this sector of the national economy (Bulasheva et al., 2019, 38).

The Government of Kazakhstan plays a very important role in the development of scientific support and the country's education and training system:

– The executive branch in the person of the government determines the basic educational strategies and develops key initiatives, such as the network of Nazarbayev Intellectual Schools, which educate gifted students. The government also monitors progress towards the goals of the education strategy;

– The Ministry of Education and Science of the Republic of Kazakhstan (MES RK) manages, implements and supervises work in the field of education, science, protection of children's rights and youth policy;

– The Ministry of Education and Science of the Republic of Kazakhstan has several subordinate organizations that work in specific areas (for example, ensuring quality guarantees, statistics or managing international projects). For example, the Information and Analytical Center provides analytical support to the Ministry of Education and Science of the Republic of Kazakhstan and is responsible for various projects, such as international projects of the Ministry (including educational system reviews such as this). The National Center for Continuing Education (Orleu) provides a second example. He is responsible for developing and providing professional development opportunities for teachers and school leaders.

– The Ministry of Education and Science of the Republic of Kazakhstan reports to the Administration of the President of the Republic of Kazakhstan, assesses the performance of the Ministry of National Economy of the Republic of Kazakhstan (MNE of the Republic of Kazakhstan) and monitors budget execution by the Ministry of Finance.

Discussions

When reviewing the statistical analysis of legislation in the field of education and science, it should be noted that there is a tendency to increase the intensity of adoption of legal acts that amend and supplement the Law “On Education”, which is a characteristic feature of the development of the modern educational system at this stage, as well as scientific support in Kazakhstan.

Scientific publications are a measure of the quality and effectiveness of individual scientists and research teams, as well as a criterion for comparing the position of countries in global science. This was made possible largely due to the access of researchers and administrators of science from different countries to the resources of information market leaders. At present, about 300 Kazakhstani universities and research institutes have the opportunity to use relevant scientific information concentrated in the foreign resources of the largest companies Clarivate Analytics, Elsevier, Springer.

The education system is called upon to carry out its transformative functions, where all the links in the education system are in interaction and interconnected with each other. This objectively contributes to the integrity of the system, its unity. Therefore, it is necessary to improve the training of highly qualified specialists, offering to go beyond formal education, improve management and strengthen the formation of professional skills, taking into account the development of small and medium-sized businesses.

Conclusions

The tasks of developing scientific support, as in many other industries, are inextricably linked with the digitalization process. Of course, in order to achieve results, it is necessary to create specialized centers of

competence. This requires systematic measures to organize training taking into account the new employment structure and, accordingly, improving the quality of education.

The author of the article revealed how the number of organizations engaged in research and development and the volume of government spending on higher and postgraduate education affect the volume of internal research and development costs. Also, in the process of research and analysis, conclusions were drawn and recommendations were made that could contribute to the improvement of an effective, more advanced system of scientific support for strategic planning, necessary for solving urgent economic and social problems of the Republic of Kazakhstan.

The foreign experience of improving the quality of training was studied. So, in higher education, for example, in the USA, organizational development grew out of the "movement for quality rooted in work to improve the quality of work, productivity and improve educational processes (Sutherland, 2018, 264).

Thus, improving the quality of training qualified personnel adapted to the digital economy is the basis for the future well-being of the population and society as a whole, as qualified employees are the intellectual competence qualifier for the modern economy of the Republic of Kazakhstan.

The results of the analysis indicate that in order to transition to "sustainable innovative development" in the future, Kazakhstan needs to combine the development of breakthrough technologies with a concentration of efforts on "industrial and innovative development". It is breakthrough technologies that will be the main factor in Kazakhstan joining the group of technological leaders. In this regard, by 2030, Kazakhstan should expand its niche in the global market for scientific support and bring to the logical conclusion a number of initiated projects. For this, it is necessary to combine the efforts of participants in educational, scientific, technical and innovative processes that ensure the further progressive development of domestic science and the introduction of its results in the real sector of the national economy.

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Қазақстан Республикасындағы стратегиялық жоспарлауды ғылыми қамтамасыз етуді жетілдіру

Андатпа

Мақсаты: мақалада адам капиталын дамытудағы басқарудың қажетті құралы және Қазақстанның цифрлық экономикасын құру жолындағы міндеттерді іске асырудың шешуші факторы болып табылатын Қазақстан Республикасындағы стратегиялық жоспарлауды ғылыми қолдау ерекшеліктері қарастырылған. Жаһандану және елдің әлемдік экономикаға интеграциялану жағдайында стратегиялық жоспарлау ұлттық басқарудың иерархиясында ұлттық және аумақтық, салалық деңгейлерде, ұлттық компаниялар мен бизнес ұйымдарының басым көпшілігінің қызметінде қолданылады. Мақалада стратегиялық жоспарлау іс жүзінде бүкіл мемлекеттік жоспарлау жүйесінің басты үйлестірушісі бола бастағаны туралы айтылған.

Әдісі: Қазақстанда отандық ғылымның дамуын және оның нәтижелерін ұлттық экономиканың нақты секторына енгізуді қамтамасыз ететін білім беру, ғылыми-техникалық және инновациялық үрдістерге негізделген стратегиялық жоспарлауды ғылыми тұрғыдан қамтамасыз ету талданған. Регрессиялық модельдің құрылысына сүйене отырып, авторлар ғылыми-зерттеу жұмыстарымен айналысатын ұйымдардың саны мен жоғары және жоғары оқу орнынан кейінгі білім беруге жұмсалатын мемлекеттік шығындардың көлемі зерттеулер мен әзірлемелердің ішкі шығындарының көлеміне қалай әсер ететіні ашып көрсеткен.

Қорытынды: мақалада мемлекеттік білім беру бағдарламасын іске асырылуды ғылыми қамтамасыз етуді жақсарту бойынша ұсыныстар жасалған.

Тұжырымдама: зерттеу барысында Қазақстан Республикасының өзекті экономикалық және әлеуметтік мәселелерін шешуге қажетті стратегиялық жоспарлаудың ғылыми тиімді жетілдірілген жүйесін жақсартуға ықпал ете алатын тұжырымдар жасалған және ұсыныстар берілген.

Кілт сөздер: ғылым, ғылыми қамтамасыз ету, білім беру, стратегиялық жоспарлау, басқару, жаһандану, ғылыми-техникалық үрдіс, ҒЗТКТ — ғылыми зерттеу және тәжірибелік конструкторлық талдамалар.

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Совершенствование научного обеспечения стратегического планирования в Республике Казахстан

Аннотация

Цель: в статье рассмотрены особенности научного обеспечения стратегического планирования в Республике Казахстан, которые являются необходимым инструментом управления в развитии человеческого капитала и решающим фактором в реализации поставленных задач на пути построения цифровой экономики Казахстана. В условиях глобализации и интеграции страны в мировую экономику стратегическое планирование применяется во всей иерархии государственного менеджмента, как на национальном, так и на территориальном, отраслевом уровнях, в деятельности абсолютного большинства национальных компаний и бизнес-организаций. В статье отмечено, что стратегическое планирование реально становится главным координатором всей системы государственного планирования.

Методы: авторами дан анализ научного обеспечения стратегического планирования на основе образовательного, научно-технического и инновационного процессов, которые обеспечивают в Казахстане развитие отечественной науки и внедрение ее результатов в отрасли реального сектора национальной экономики. На основе построения регрессионной модели авторами было выявлено, как количество организаций, осуществляющих научно-исследовательские организации конструкторских разработок (НИОКР) и объем государственных расходов на высшее и послевузовское образование, влияют на объем внутренних затрат НИОКР.

Результаты: авторами даны рекомендации по улучшению научного обеспечения реализации образовательной государственной программы.

Выводы: в процессе исследования были сделаны выводы и даны рекомендации, способные содействовать совершенствованию эффективной, более совершенной системы научного обеспечения стратегического планирования, необходимые для решения актуальных экономических и социальных задач Республики Казахстан.

***Ключевые слова**:* наука, научное обеспечение, образование, стратегическое планирование, управление, глобализация, научно-технический процесс, научно-исследовательские организации конструкторских разработок.

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