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The main features of innovation management in companies of the Republic of Kazakhstan¹

Abstract. *The study discusses the innovations used in domestic enterprises and their impact on the effectiveness of the organization. As well known, innovation is a key component that ensures the competitiveness of enterprises in both domestic and international markets. The study aims to assess the role of innovative processes in the effective management of enterprises in Kazakhstan. The authors conducted a quantitative study using data from a survey of senior employees of innovative enterprises in Almaty. The results of the study revealed the positive impact of innovation processes on the financial and non-financial performance indicators of innovative enterprises.*

The data obtained as a result of the questionnaire allowed us to conclude that domestic enterprises produce the most product innovations (67%), and the number of produced process innovations is less (25%). In addition, the authors identified external and internal obstacles to the active implementation of innovative processes at domestic enterprises, and also suggested ways to prevent them.

Keywords: *innovation, innovative processes, innovative enterprises, enterprise efficiency.*

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Introduction. Today, innovations are key drivers for enterprises, as they are an important factor allowing organizations to use their knowledge, skills and experience to develop new technologies, processes and products, as well as services for their business activities [1]. Innovation plays a very important role for all small and large enterprises, as they participate in creating economic and market potential, as well as in enhancing competitive advantages.

The Address of the Head of State Kassym-Zhomart Tokayev to the people of Kazakhstan dated September 2, 2019, emphasizes the role of domestic enterprises in the country's economy and the need for measures to support national

business in international markets [2]. And this, in turn, is possible with the active introduction of innovations in entrepreneurial activity.

However, innovation can only occur when the organization or entrepreneur attaches particular importance to innovative development [3]. Innovation is defined as the ability of an organization or company to carry out the development of innovations, including process innovations, product innovations or innovative ideas [4]. Innovation can also be described as organizational behavior aimed at the active development of innovation. In turn, innovation processes are also very important for maintaining a competitive advantage and efficient operation

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of enterprises. Therefore, research in the field of innovative processes that increase the efficiency of enterprises is very relevant today. Moreover, the innovative activity of enterprises makes a significant contribution to improving the competitiveness rating of the national economy.

The main aim of the study is to assess the role of innovation processes in the effective management of enterprises in Kazakhstan. In this regard, the literature review was aimed at studying the relationship between innovation and effective enterprise development.

Literature review. Schumpeter, one of the main founders of the modern theory of innovation, defines innovation as the introduction of new products and production methods, the opening of a new market, the conquest of a new source of supply of raw materials and the creation of a new organization in any industry [5]. This definition is extremely important because it defines innovation not only as an object (the result in the form of a new product, new technology, new market, etc.), but also as a process using the term "introduction". In addition, it allows us to distinguish between a narrow and broad approach to innovation. With a narrow approach, innovation can be defined as new products and new services. A wide understanding of innovations allows for a broader interpretation of them in terms of phenomena that bring a new quality to various processes and activities in society.

According to Amabil [6], all innovations begin with creative ideas. Innovation, in his opinion, represents the successful implementation of creative ideas within the enterprise. From this point of view, the creativity of individuals and teams is the starting point for innovation.

Cooper [7] considers four drivers for innovation: technological advances; increasing customer needs; shorter product life cycles and increased global competition. Obviously, these drivers will remain important in the future.

Numerous studies show that the ability of an enterprise to absorb and use innovative knowledge is the main driving force of innovation [8-11]. Svetina and Prodan [12] believe that the degree of use of knowledge

obtained from internal or external sources has a positive effect on the innovative performance of the enterprise. In addition, Hall and Andriani [13] note that the volume of received and applied innovations determines the level of technological development of the enterprise.

Another group of authors, in particular, Landwell [14], Porter [15], Freeman and Soet [16] and Stoneman [17] found that innovation is the main factor in the growth of economic well-being of not only the enterprise, but also the economy as a whole.

This statement was confirmed in research conducted by Kirk J. [18], who analyzed 11 large innovative enterprises and came to the conclusion that innovation has a positive impact on the organizational activities of the enterprise. In turn, Cherkasova D.P. [19] considers the issue of the importance of innovation management for the effective operation of an organization. She made conclusions about the role of innovation in improving the competitiveness of an enterprise.

As for domestic entrepreneurship, it is worth noting that innovation in the country is not yet a source of increasing the country's competitiveness in the world market, and, despite the positive experience of a number of initiatives, a significant breakthrough in the field of innovative development of the country's economy has not occurred.

An analysis of the existing literature on the subject under study shows that the relationship between innovative processes and performance indicators of domestic enterprises is not well understood. A quantitative assessment of these indicators did not receive sufficient detailed explanation in the domestic literature. In this regard, the next section will be devoted to the description of the research methodology.

Methodology. To study the relationship between innovative processes and performance indicators of innovative enterprises, a quantitative study was conducted with a survey among the leaders and managers of innovative enterprises in Almaty in the period from 2018 to 2019. Information about respondents participating in the survey is given below (Table 1).

Table 1

Characteristics of respondents

№	Respondents	Quantity	Percentage
1	Head of enterprise	34	22,7%
2	Top manager	52	34,7%
3	Employee	64	42,7%
4	Total	150	100%

Note - developed by the authors based on the survey results

As can be seen from table 1, 150 representatives of Almaty enterprises participated in the survey. Many enterprises (44%) that carry out innovative activities employ up to 15 people, i.e. enterprises are not numerous in terms of the composition of

working specialists. At the same time, a significant proportion of enterprises (39.3%) employ from 16 to 50 people, in 11.3% of enterprises - from 51 to 100 people and in 5.3% of enterprises - from 101 to 250 people (Figure 1).

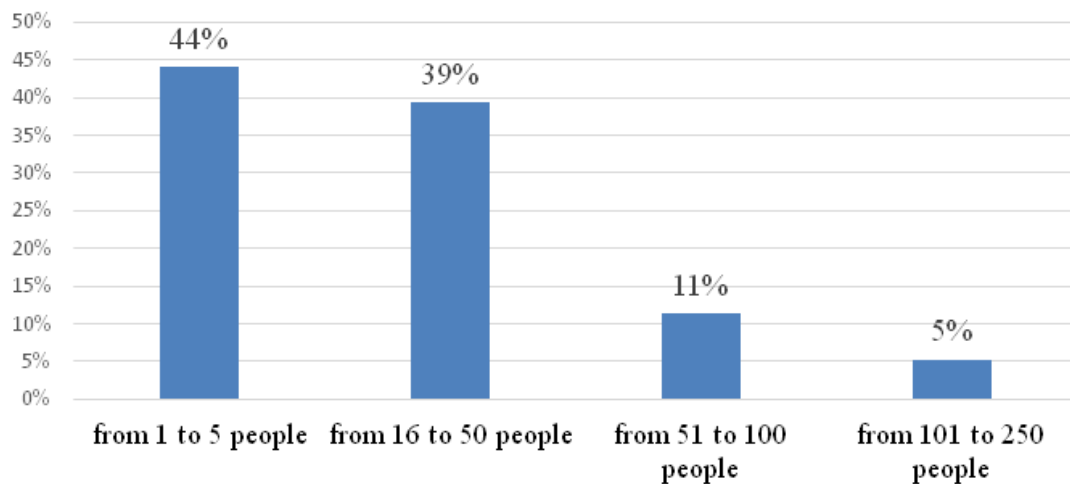


Figure 1. The average number of employees at the enterprises of the respondents

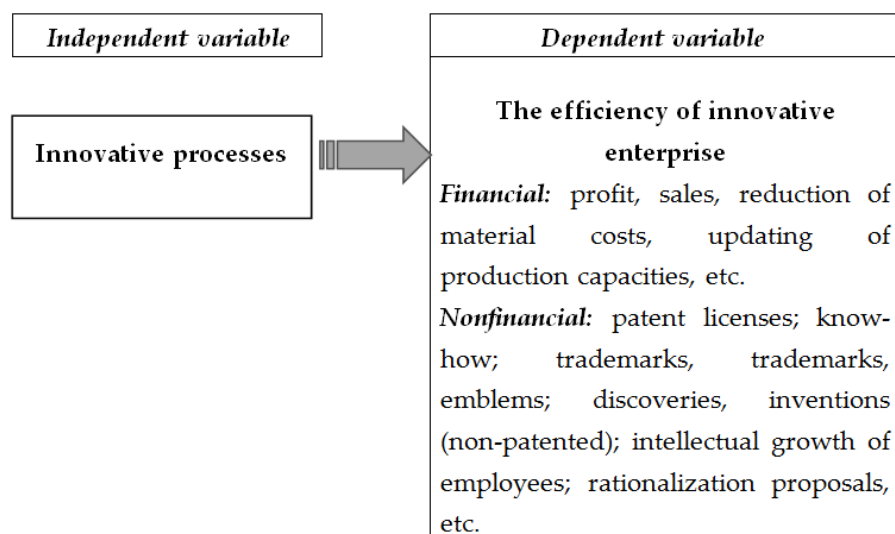


Figure 2. The study design

Note - developed by the authors based on the survey results

According to the data in figure 1, the bulk of the respondents are small business employees.

The research design, according to which the relationship between innovation and the effectiveness of innovative enterprises is analyzed, is shown in figure 2.

According to figure 2, this study assesses the impact of an independent variable, in the form of innovative processes, on two main indicators of the effectiveness of an innovative enterprise: financial and non-financial. A rather high level of these indicators indicates high efficiency, which will be analyzed in the next section.

Results and discussion. First of all, we will discuss the innovations used in the studied enterprises. According to the data, the most common are product developments (67%), the

result of which is a new material product, product or service. The second most common are process, technological innovations (25%), the result of which is considered a new technological process. At the same time, organizational innovations are being developed (18%), the result of which are innovations in the management of production and personnel. The distribution of answers of representatives of innovative enterprises to the question of what innovations are developed at their enterprises is presented in figure 3.

According to figure 3, marketing innovations (7%), the result of which are marketing methods, design, etc., are less common, but nevertheless successfully implemented. Some survey participants (3%) noted that they are partly developing innovations in the provision of legal services. Thus, it becomes clear that process innovations take the second place in frequency of application in innovative enterprises.

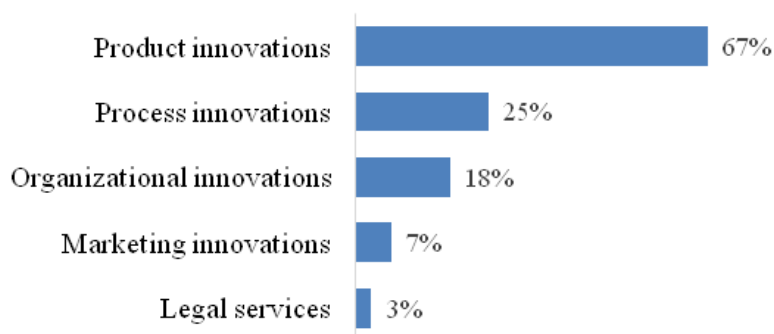


Figure 3. Description of innovations being developed at the surveyed enterprises.

Note - developed by the authors based on the survey results

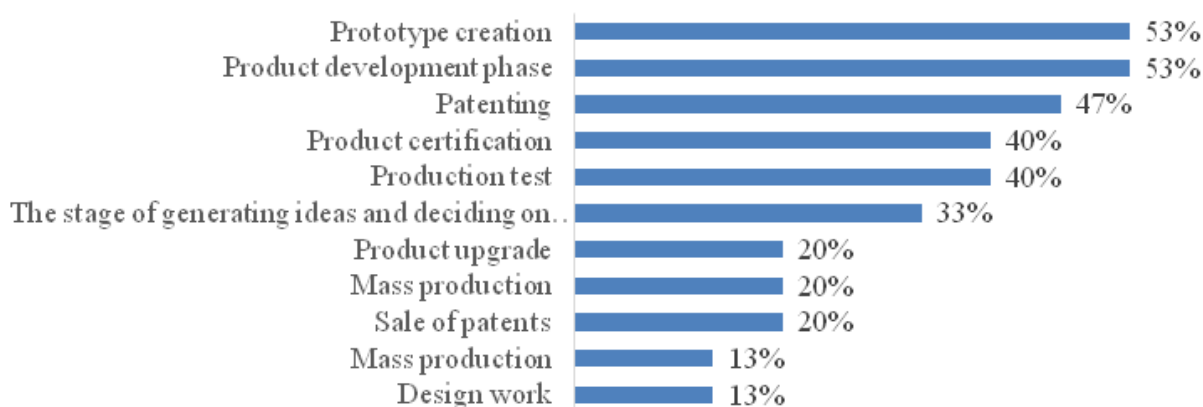


Figure 4. Stages of innovation in the development of new products and services in the surveyed enterprises

Note - developed by the authors based on the survey results

The study confirmed that several stages of development are carried out in the course of innovation. Since the development of various products and goods is the most common, the main stages of innovation are the stage of product development, prototype development, production testing, product certification and patenting, as shown in figure 4.

Thus, representatives of innovative enterprises outlined various forms of results of their activities, in which patent licenses are the most common. Further, table 2 presents the results of the introduced innovations.

As can be seen from table 2, the results can be considered rationalization proposals, documents describing new management, technological processes, know-how, discoveries, patentless inventions, trademarks, brands, emblems. According to the study, the results are quite substantial: innovative developments increased the profit of enterprises (73%), allowed to improve the quality of goods and services (60%), expanded markets (47%). The above results are illustrated in figure 5.

According to figure 5, the impact of innovation processes had a positive impact on the financial

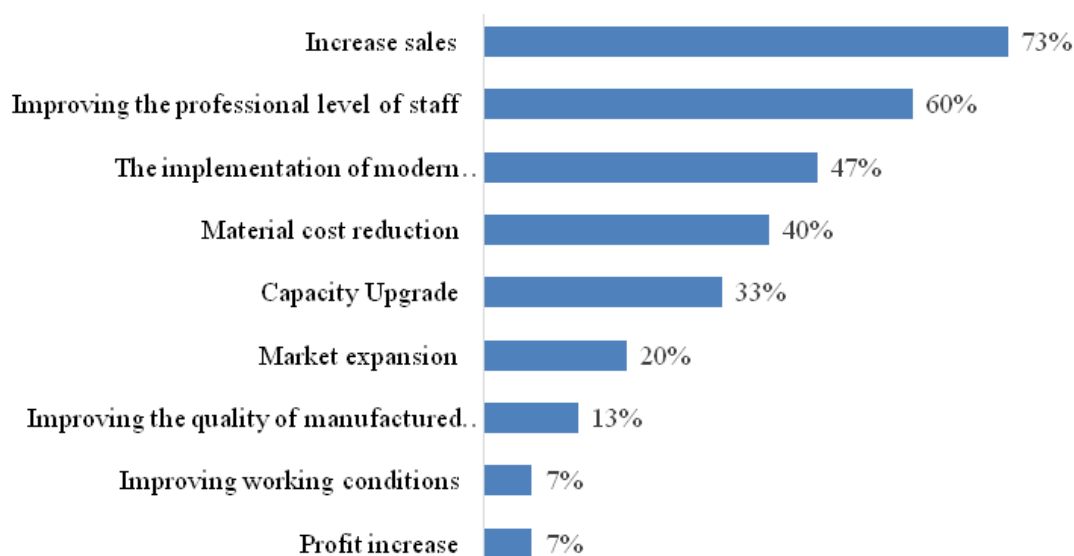


Figure 5. Performance indicators of innovative activities of enterprises

Note - developed by the authors based on the survey results

Table 2
Forms of the results of innovative activities of enterprises

№	Results of innovations	n	%
1	Patent Licenses	80	53%
2	Documents describing new management, technological processes	21	14%
3	Rationalization proposals	20	13%
4	Know how	20	13%
5	Trademarks, trademarks, emblems	15	10%
6	Discoveries, inventions (non-patented)	10	7%
7	Intelligent employee growth	4	3%
Note - developed by the authors based on the survey results			

Table 3
Expected Results from Planned Innovations

Index	n	%
Improving the quality of manufactured goods and services	40	27%
Capacity Upgrade	40	27%
Profit increase	30	20%
Material cost reduction	30	20%
Improving working conditions	20	13%
Ability to use new sales channels	20	13%
Market expansion	10	7%
Increase sales	10	7%
Note - developed by the authors based on the survey results		

and non-financial performance of enterprises. The most common are improving the quality of manufactured goods and services and updating production capacities (Table 3).

As can be seen from Table 3, increased profits and reduced material costs only in third and fourth places among the expected results from planned innovations.

Conclusion. To sum up, it becomes clear that the most enterprises face certain problems in innovation and commercialization of innovations. These problems are both internal and external. As it was revealed, the most common internal obstacles are lack of information about potential buyers of innovations; ignorance of the forms and methods of cooperation; poor system of stimulating innovation. Among the external

obstacles to innovation, the most common are: weak business demand for innovation; a high degree of risk, more precisely, the risk of not recouping innovative investments; insufficient financial support from the state (subsidies, guarantee of loans for innovative purposes, state order for innovation, co-financing of innovative projects); weak tax, depreciation, customs, rental (including leasing) benefits. Therefore, it is necessary to create a communication platform that combines enterprises with innovative infrastructure containing the state, scientific organizations, venture funds, technology parks and other interested parties. The established interconnection of the above stakeholders will help to solve a number of problems and increase the efficiency of innovative enterprises.

References

1. McAdam R., McConvery T., Armstrong G. Barriers to innovation within small firms in a peripheral location // *International Journal of Entrepreneurial Behaviour & Research*. - 2004. - Vol. 10 (3). - P. 206-221.
2. Послание Главы государства Касым-Жомарта Токаева народу Казахстана от 2 сентября 2019 года.
3. Drucker P.F. The discipline of innovation // *Harvard Business Review*. - 2002. №80. - P. 95-104.
4. Aurjirapongpan S., Wattanasit P., Janchai A., Kupparat P. The ability to manage knowledge with the innovative capability of enterprises that are innovative in Thailand // *Journal of Development Administration*. - 2011. – Vol. 51 (1). - P. 159-199.
5. Schumpeter J.A. *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*, Cambridge, Mass.: Harvard University Press, 1934. –320 p.
6. Amabile T.M. A model of creativity and innovation in organizations. In B.M. Stew & L.L. Cummings (Eds.) // *Research in organizational behaviour*. - 1988. №10. - P. 123-167.
7. Cooper R.G. Perspective: The Stage-Gate® Idea-to-Launch Process -Update, What's New, and NexGen Systems // *The Journal of Product Innovation Management*. - 2008. - Vol. 25, №3. - P. 213-232.
8. Nonaka I., Takeuchi H. *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation* / - New York, Oxford University Press, 1995. –P. 284.
9. Popadiuk S., Choo Ch.W. Journal: *International Journal of Information Management* // *The Journal for Information Professionals archive*. -2006. - Vol. 26, Issue 4. - P. 302-312.
10. Ramirez A.M., Kumpikaite V. Creation, Transfer and Application of Knowledge and its Importance for Business Innovation and Organizational Performance // *International Proceedings of Economics Development & Research*. - 2012. - 46 (6). - P. 27-31.
11. Sankowska A. Relationships between organizational trust, knowledge transfer, knowledge creation, and firm's innovativeness // *The Learning Organization*. - 2013. - Vol. 20, Issue 1. - P. 85-100.
12. Svetina A., Prodan I. How internal and external sources of knowledge contribute to firms' innovation performance // *Managing Global Transitions*. - 2008. -Vol. 6 (3). - P. 277-299.
13. Hall R., Andriani P. Managing knowledge associated with innovation // *Journal of Business Research*. - 2013. - Vol. 56. - P. 145-152.
14. Lundvall B.A. *National Systems of Innovation. Toward a Theory of Innovation and Interactive Learning*. – London: Pinter Publishers, 1992. – P. 342.
15. Porter M.E. *The Competitive Advantage of Nations*. - New York: Macmillan, 1990. – P. 875.

16. Freeman C., Soete L. The Economics of Industrial Innovation, third ed. – London: Pinter, 1997.- P. 10.
17. Stoneman P. Handbook of the Economics of Innovation and Technological Change. – Oxford: Blackwell, 1995. – P. 583.
18. Kirca A.H., Jayachandran S., Bearden W.O. Market orientation: A meta-analytic review and assessment of its antecedents and impact on performance // Journal of Marketing. 2005. - Vol. 69 (2). -P. 24-41.
19. Cherkasova D.P. Rol innovatsionnogo menedjmenta v povyshenii effektivnosti deiyatel'nosti predpriyatiya [The role of innovation management in improving the efficiency of the enterprise] // Sociyalniye nauki [Social sciences.] - 2017. -4 (19). -P. 148-154. [in Russian]

References

1. McAdam R., McConvery T., Armstrong G. Barriers to innovation within small firms in a peripheral location, International Journal of Entrepreneurial Behaviour & Research, 10 (3), 206-221(2004).
2. Poslanie Glavy gosudarstva Kasym-Zhomarta Tokayeva narodu Kazahstana [Message of the Head of state Kassym-Jomart Tokayev to the people of Kazakhstan] from September 2, 2019. [in Russian]
3. Drucker P.F. The discipline of innovation, Harvard Business Review, №80, 95-104(2002).
4. Aurjirapongpan S., Wattanasit P., Janchai A., Kupparat P. The ability to manage knowledge with the innovative capability of enterprises that are innovative in Thailand, Journal of Development Administration, 51 (1), 159-199(2011).
5. Schumpeter J.A. The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle (Cambridge, Mass.: Harvard University Press, 1934. 320 p.).
6. Amabile T.M. A model of creativity and innovation in organizations. In B. M. Stew & L.L. Cummings (Eds.), Research in organizational behaviour, №10, 123-167(1988).
7. Cooper R.G. Perspective: The Stage-Gate® Idea-to-Launch Process -Update, What's New, and NexGen Systems, The Journal of Product Innovation Management, 25(3), 213-232(2008).
8. Nonaka I., Takeuchi H. The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation (New York, Oxford University Press, 1995, 284 p.).
9. Popadiuk S., Choo Ch.W. Journal: International Journal of Information Management, The Journal for Information Professionals archive, 26(4), 302-312(2006).
10. Ramirez A.M., Kumpikaite V. Creation, Transfer and Application of Knowledge and its Importance for Business Innovation and Organizational Performance, International Proceedings of Economics Development & Research, 46 (6), 27-31(2012).
11. Sankowska A. Relationships between organizational trust, knowledge transfer, knowledge creation, and firm's innovativeness, The Learning Organization, 20(1), 85-100(2013).
12. Svetina A., Prodan I. How internal and external sources of knowledge contribute to firms' innovation performance, Managing Global Transitions, 6(3), 277-299(2008).
13. Hall R., Andriani P. Managing knowledge associated with innovation, Journal of Business Research, 56, 145-152(2013).
14. Lundvall B.A. National Systems of Innovation. Toward a Theory of Innovation and Interactive Learning (Pinter Publishers, London, 1992, 342 p.).
15. Porter M.E. The Competitive Advantage of Nations (Macmillan, New York, 1990, 875 p.).
16. Freeman C., Soete L. The Economics of Industrial Innovation, third ed. (Pinter, London, 1997, 10 p.).
17. Stoneman P. Handbook of the Economics of Innovation and Technological Change. (Oxford, Blackwell, 1995, 583 p.).
18. Kirca A.H., Jayachandran S., Bearden W.O. Market orientation: A meta-analytic review and assessment of its antecedents and impact on performance, Journal of Marketing, 69 (2), 24-41(2005).
19. Cherkasova D.P. Rol innovatsionnogo menedjmenta v povyshenii effektivnosti deiyatel'nosti predpriyatiya [The role of innovation management in improving the efficiency of the enterprise], Sociyalniye nauki [Social sciences], 4(19), 148-154(2017) [in Russian]

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Қазақстан Республикасы кәсіпорындарының инновациялық қызметін басқару ерекшеліктері

Аңдатпа. Мақалада отандық кәсіпорындарда қолданылатын инновациялар және олардың ұйым қызметінің тиімділігіне әсері қарастырылған. Инновациялар отандық және халықаралық нарықтарда кәсіпорынның бәсекеге қабілеттілігін қамтамасыз ететін негізгі компонент болып табылатыны белгілі. Зерттеудің мақсаты ҚР-дағы кәсіпорындарды тиімді басқарудағы инновациялық үдерістердің рөлін бағалау болып табылады.

Авторлар Алматы қаласындағы инновациялық кәсіпорындардың жетекшілері мен бас мамандарының қатысуымен ұйымдастырылған сауалнама мәліметтерін қолдана отырып, сандық зерттеу жүргізді. Зерттеу нәтижелері инновациялық үдерістердің инновациялық кәсіпорындардың қаржылық және қаржылық емес тиімділік көрсеткіштеріне оң әсерін анықтауға мүмкіндік берді. Сауалнаманың нәтижесінде алынған деректер отандық кәсіпорындар өнімдік инновацияларды көбірек шығаратынын (67%), ал үдерістік инновациялардың үлесінің төмендігін (25%) көрсетті. Оған қоса, авторлар отандық кәсіпорындарда инновациялық үдерістерді белсенді енгізудегі сыртқы және ішкі кедергілерді анықтады, сондай-ақ, олардың алдын алу жолдарын ұсынды.

Түйін сөздер: инновациялар, инновациялық үдерістер, инновациялық мекемелер, мекеме қызметінің тиімділігі.

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Особенности управления инновационной деятельностью предприятий Республики Казахстан

Аннотация. В статье рассмотрены инновации, применяемые в отечественных предприятиях, и их влияние на эффективность деятельности организации. Как известно, инновации являются ключевым компонентом, обеспечивающим конкурентоспособность предприятия как на отечественном, так и на международном рынках. Целью исследования является оценка роли инновационных процессов в эффективном управлении предприятиями в РК.

Авторами было проведено количественное исследование с применением данных опроса руководящих сотрудников инновационных предприятий в городе Алматы. Результаты исследования позволили выявить положительное воздействие инновационных процессов на финансовые и нефинансовые показатели эффективности инновационных предприятий. Данные, полученные в результате анкетирования, позволили сделать вывод о том, что отечественные предприятия больше всего производят продуктовые инновации (67%), а выпускаемых процессных инноваций в разы меньше (25%). К тому же авторами выявлены внешние и внутренние препятствия для активного внедрения инновационных процессов на отечественных предприятиях, а также предложены пути их предотвращения.

Ключевые слова: инновации, инновационные процессы, инновационные предприятия, эффективность предприятия.

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