ISSN 1648-2603 (print)
ISSN 2029-2872 (online)

VIEŠOJI POLITIKA IR ADMINISTRAVIMAS
PUBLIC POLICY AND ADMINISTRATION
2022, T. 21, Nr. 5 / 2022, Vol. 21, No. 5, p. 653–664.

ASSESSMENT OF THE EFFECTIVENESS OF PUBLIC-PRIVATE PARTNERSHIP PROJECTS ON THE EXAMPLE OF THE TRANSPORT INFRASTRUCTURE OF THE REPUBLIC OF KAZAKHSTAN

Anar M. Aitkaliyeva

Kazakh University of Economics, Finance and International Trade
010000, 7 Zhubanov Str., Astana, Republic of Kazakhstan

Zhanar K. Zhanabayeva

L. N. Gumilyov Eurasian National University
010008, 2 Satpayev Str., Astana, Republic of Kazakhstan

Larissa I. Kussainova

Academy of Public Administration under the President of the Republic of Kazakhstan
050000, 33a Abay Ave., Astana, Republic of Kazakhstan

Aziya Kulubekova

LLP "International Educational Center Eurasia"
010000, 23 A. Baitursynov Str., Astana, Republic of Kazakhstan

Assel K. Kadyrbergenova

Atyrau Oil and Gas University named after S. Utebayev
060027, 45A Baimukhanov Str., Atyrau, Republic of Kazakhstan

DOI: 10.13165/VPA-22-21-5-11

Abstract. *Public-private partnership is a promising and well-proven tool in many developed countries to attract investment in infrastructure projects. The introduction of such a tool is especially relevant in modern conditions of socio-economic instability and is associated with the financing of large infrastructure projects (in the transport industry). The purpose of the study is to analyse existing approaches to assessing the effectiveness of public-private partnership projects in the field of transport infrastructure of the Republic of Kazakhstan. Methods for the study of the subject matter: analysis of Kazakh and foreign theoretical approaches, analysis and synthesis, statistical and systematic analysis, system, concretisation, graphical representation of information, analysis of state programmes and legislative documents. As a result of the study, the author's hypothesis was confirmed – by*

improving, developing, and systematising the system of criteria for assessing the effectiveness of infrastructure projects, followed by the definition of methodological approaches and the development of assessment tools, it is possible to intensify the development of transport infrastructure projects based on public-private partnership models. This would help to attract additional extra-budgetary funds and stimulate the introduction of new technologies in the design, construction, and maintenance of transport infrastructure facilities of the Republic of Kazakhstan

Keywords: *Transport industry, public-private partnership as a development tool, efficiency of infrastructure projects, infrastructure projects in the transport industry*

Introduction

Nowadays, there is an increasing need for such a tool as a public-private partnership. And this need arises mainly in those areas where public authorities are responsible for public facilities. These are transport, social and communal infrastructure, architectural and historical monuments, cultural objects, housing and utilities, education and healthcare, etc. That is, public-private partnership as a tool performs a very important function for public authorities: ensuring more effective interaction on infrastructure development through the distribution of risks and responsibilities, compared with conventional public procurement. The interaction of the state and business in most public-private partnership projects has a medium- and long-term character. The main features of public-private partnership in the implementation of transport infrastructure projects. Firstly, the mandatory presence of two sides: the state and private business. Secondly, the interaction of the parties takes place on the official platform and is necessarily institutionalised. Thirdly, the interaction of the parties is characterised by equality. Fourthly, in the process of project implementation, the resources and contributions of the parties are consolidated. Fifthly, risks, costs, and results are distributed between the parties in proportions determined in advance.

Currently, the problems that are associated with providing citizens with infrastructure facilities, including transport, deserve special attention. There is also an objective need in difficult modern economic conditions for state support for the development of the economy in general and the transport infrastructure in particular. But with the existing shortage of budget funds for financing infrastructure projects, there is a need to search for and substantiate financing schemes. An alternative option to increase the intensity of transport infrastructure development is the use of a public-private partnership mechanism (Beljatynskij et al. 2009; Lavrov et al. 2020). The current realities associated with the crisis due to the worldwide pandemic of the novel COVID-19 infection have called into question many existing socio-economic instruments. And whether the public-private partnership will remain attractive for business, and in what areas – this question has become quite relevant in 2021. Back in 2019, the President of the Republic of Kazakhstan Kassym-Jomart Tokayev noted that the concept of public-private partnership in Kazakhstan has been discredited. “Significant potential remains in the

field of public-private partnership. At the same time, more than 90% of the cost of public-private partnership projects are state obligations," the President of the Republic of Kazakhstan noted (Message from the Head of State... 2020). In this regard, the relevance of the problem under study, the investigation of the possibilities for the development of public-private partnership, especially in the transport sector, is beyond question.

Instability in the system of public-private partnership, the study of the possibilities of assessing the effectiveness of projects created the need for a theoretical understanding of this problem and the development of mechanisms for its improvement. Questions about the role of the state in the national economy, the boundaries of intervention in the economy, the mutual influence of the state and market actors were dealt with by internationally acclaimed researchers: Brailey and Mayers (2012), Keynes (2007), Smith (1776), Hayek (2005). The works of authoritative authors: Ablyazov and Marusin (2019), Luzan, Sokolov, and Mleshkov (2018), Ofin (2016) were devoted to the problems of the development of public-private partnership in the theoretical and applied context. The development of public-private partnerships in the Republic of Kazakhstan, including in the transport industry, was reviewed by Kazakh researchers – Kudaibergenova (2010), Aizhanov and Mustafina (2010), Kazbaeva (2008), Bekmagambetov (2008), Baktymbet Ai. et al. (2020). A literature review has identified the main current research areas in this field.

The purpose of the study is to identify and analyse the main approaches to assessing the effectiveness of public-private partnership projects in the field of transport infrastructure of the Republic of Kazakhstan. The originality of the study lies in the application of an integrated, systematic approach and analysis of the problems of assessing the effectiveness of public-private partnership projects in the transport sector in the difficult modern conditions of socio-economic instability in the world and the Republic of Kazakhstan.

Materials and Methods

A number of modern approaches were used in the study of the subject matter. Theoretical methods and approaches, analysis and synthesis were used: analysis of Kazakh and foreign theoretical provisions on public-private partnership; the concept of project effectiveness; state support of the transport industry; further synthesis of the identified patterns. The study pays attention to the identification of gaps in the theory, in connection with the acute crisis conditions that have arisen in the world today. Using the method of concretisation and generalisation, problems and gaps in research and theory were identified.

The shortcomings and obstacles to the development of public-private partnerships in the transport industry were investigated. Using the method of graphical representation of the results, drawings-diagrams reflecting the current situation were compiled (scheme of the algorithm for determining the effectiveness of public-private partnership projects in the field of transport infrastructure; scheme of risk classification of public-private partnership projects in transport infrastructure; scheme of advantages and disadvantages of the concession form of public-private partnership implementation (Aydosov et al. 2016; Tanirbergenova et al. 2021; Kamalova et al. 2008). The degree of validity and reliability of scientific statements and conclusions is provided by the analysis of a large array of official data from authoritative Kazakh and foreign sources.

During the study and analysis of national programmes and the regulatory framework, the programme method was used. The following were considered: the Message of the Head of State Kassym-Zhomart Tokayev to the People of Kazakhstan (2020); the Resolution of the Government dated 31.12.2019 No.1050 "On approval of the State programme of industrial-innovative development of the Republic of Kazakhstan for 2020-2025" (2019); World Bank data (Private Participation in... 2021; World Bank Group Doing Business 2020); the Law of the Republic of Kazakhstan "On concessions" dated July 7, 2006.

Results and Discussion

The mechanism of public-private partnership existing in the Republic of Kazakhstan requires improvement in accordance with progressive world practices. Public-private partnership is a form of attracting private investment (in the medium and long term) for the development of projects in various sectors of the economy. These are energy, transport, communications, healthcare, and education. The study examines the sphere of transport infrastructure. Transport infrastructure includes all structures necessary for transportation (communication routes, auxiliary facilities of transport systems that provide power supply, communications, etc.) (Baktymbet As. et al. 2020; Danchuk et al. 2021; Kamalova et al. 2019). It is absolutely evident that the importance of such facilities for the national economy is enormous. This is the basis for many areas. Without improvement, and the support of which, it is impossible to imagine the progressive development of the country as a whole. The development of approaches to assessing the effectiveness of projects in the field of transport infrastructure is particularly relevant.

Almost every state has its own experience in implementing public-private partnerships by concluding a concession agreement. Notably, the implementation of such global projects as the Suez Canal and the Trans-Siberian Railway were financed by private companies. However, there are also known unsuccessful examples of the implementation of public-private partnerships. For example, the famous tunnel project under the English Channel, when the state shifted the entire burden of financing to the private sector (Aizhanov and Mustafina 2010).

Foreign experience of using public-private partnerships has shown that in countries with developed economies and high per capita incomes, the leading sectors of public-private partnership projects are: healthcare, education, construction, and highway maintenance. According to the United Nations (UN), in the "Big Seven" countries (USA, Great Britain, Germany, Italy, Canada, France, Japan), healthcare and education occupy the leading places in the implementation of public-private partnership projects. In other groups of countries, highways are in the first place in terms of the number of public-private partnership projects. This once again underlines the high importance of transport infrastructure for the vast majority of countries, as it is the basis for the development and operation of other industries and socio-economic spheres.

The Republic of Kazakhstan, being an active participant in global economic processes, has a need for more effective implementation of the mechanism of public-private partnership to increase the competitiveness of the national economy. In world practice, there are several

forms of cooperation within the framework of public-private partnership: management and maintenance contracts, operation and maintenance contracts, contracts for project activities, financing, construction and operation (including concessions). In the Republic of Kazakhstan, only one form of public-private partnership is legally consolidated – concession, which assumes the maximum amount of investment and, accordingly, the maximum risk from the private sector (Aidosov et al. 2015). The first concession project was the construction of a new railway line "Shar – Ust-Kamenogorsk", where the mechanisms of the public-private partnership were worked out for the first time (Kazbaeva 2008). The experience of implementing this project shows that neither the state nor the business were ready to work properly on the principles of partnership. The main problem at that time was the lack of a legislative framework, since the Law of the Republic of Kazakhstan "On concessions" was adopted later.

In 2006, the Law of the Republic of Kazakhstan "On concessions" was adopted (Law of the Republic of Kazakhstan... 2006), which defined the legal framework for the implementation of the concession mechanism. The law establishes the legal basis for attracting private capital to the economy based on concession agreements. Investors, in accordance with the law, are granted the right to temporary possession and use of state-owned facilities, and to the construction of new objects, which, in fact, should only be owned by the state (Concession projects of the transport industry… 2021).

Time and practice have shown that the application of concession agreements is difficult. This is conditioned by the weak elaboration of the regulatory framework and it does not provide the necessary socio-economic effects for the national economy. Now there are still a number of unresolved problems, and one of them is the distribution of risks when investing in capital-intensive infrastructure facilities. Projects implemented on the principle of public-private partnership still remain vulnerable to financial and economic crises, the crisis associated with the COVID-19 pandemic. This situation is explained by the divergence of interests of the parties, high risks, legal imperfections. Assessment of the effectiveness of public-private partnership projects in the field of transport infrastructure should be carried out according to a clear algorithm. A variant of this algorithm is shown in Figure 1.

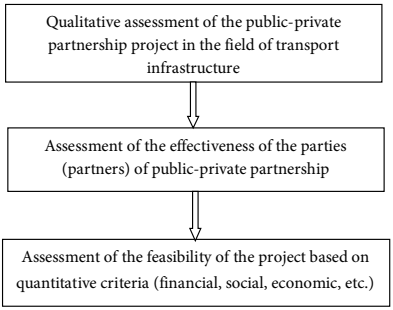

Figure 1. **Algorithm for determining the effectiveness of public-private partnership projects in the field of transport infrastructure**

The first thing that begins the assessment of an infrastructure project is the assessment of its qualitative components. Next, the effectiveness of the parties, that is, the partners concluding the agreement, is assessed. And the key point here is the experience of a private organisation or enterprise. Economic expediency is substantiated by such effects as stimulating entrepreneurial activity in the project implementation region (for example, a paved road improves transport links and affects the development of trade activities), the population no longer seeks to move due to the opportunities that have appeared, prerequisites for production activities arise, etc. (Cheremnikh et al. 2018; Kim et al. 2020; Ablyazov and Asaul 2018).

Budget efficiency – during the assessment, depending on the scheme of project implementation, budget receipts are considered, such as: receipt of budget revenues from the operation of the facility; tax receipts for the project; mandatory payments to state extra-budgetary funds; payment for the use of resources (for example, land and other natural resources). The budget efficiency of the project is assessed by comparing the amount of state support and tax revenues to the state budget. When assessing budget efficiency, it is advisable to calculate indicators for budget flows both for assessing financial and socio-economic efficiency. This is the budget net present value, the budget internal rate of return, the discounted payback period for budget cash flows.

An important area is the study of methodological approaches to the risk analysis of public-private partnerships for projects in the field of transport infrastructure of the Republic of Kazakhstan. First of all, it is necessary to classify the risks of public-private partnership projects in the transport infrastructure, which are presented in Figure 2. From the diagram shown in Figure 2, it can be seen that there are quite a lot of risks to which public-private partnership projects are exposed, and they certainly require prevention and minimisation.

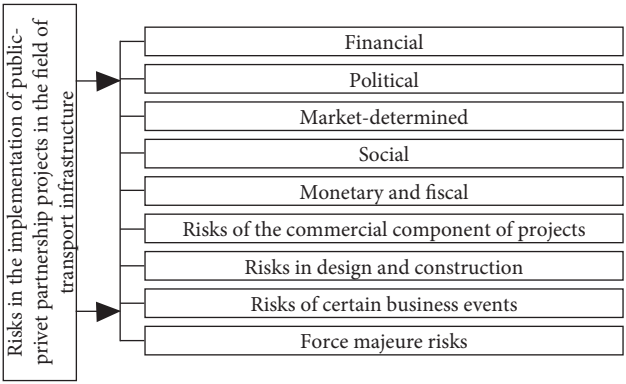

Figure 2. **Classification of risks of public-private partnership projects in transport infrastructure**

Economic risks are manifested in the exit of finances from the project or a sudden drop in income. Economic risks are divided according to the following factors:

1) the discrepancy between the project's profitability and the costs of its maintenance and operation, which may result in the private party needing monetary compensation from the government/public party for the revenue shortfall;
2) investment risks are related to the lack of time to obtain a loan, insufficient financing, difficulties in conducting a tender, etc.;
3) financial risks arise from certain economic factors, such as inflation, price increases, changes in exchange rates, taxes and insurance costs;
4) the risk of excessive costs is when finances within the set budget are exhausted and additional income is needed to complete the project (Rybnicek et al. 2020).

Political risks involve political problems with current legislation and government actions. Political risk is of great importance at the initial stage of project development. Political risk is defined as a negative government intervention in the realization of the project or as a result of a political decision that may lead to reduced revenues or large losses. Within this aspect of existing risks, the following subcategories are distinguished:

1) political decisions – the influence of government officials who make political decisions on the success of the project;
2) direct political risks may arise from the manipulation of project assets, changes in legislation, and refusal to grant or cancellation of approved permits and licenses;
3) regulatory risks are associated with obtaining permits, as well as compliance with established regulations and environmental regulations;
4) it should be noted about the policy of protectionism, as one of the factors of political risks, which is manifested in the restraint of trade between countries. The policy of protectionism is implemented through the introduction of tariffs on imported goods, restrictive quotas, obstacles to imports and the entry of foreign companies into local markets (Wang et al. 2018)

Social risks include conflicts between parties to the contract, as well as impacts on the public or users of the facility. It is worth noting the following factors:

1) community interests and public opinion – indignation or approval of the project by the public, insufficient transparency of the project, which may cause distrust among the public;
2) environmental risks arise as a result of the potential negative impact of project implementation on the environment;
3) moral risk is associated with the failure of one of the parties to fulfil its obligations and the provision of unreliable guarantees regarding creditworthiness or assets;
4) partnership risks arise as a result of the ineffectiveness of the activities of individual parties participating in the implementation of the project (Le 2022).

Technical risk includes concerns about production, engineering, design, and logistical support for project implementation. The following factors are distinguished:

1) irrational project management manifested in overspending, schedule inconsistencies, lack of communication between parties, contractual conflicts, and tender delays;

2) construction risks – non-compliance with the work plan, in particular, violation of schedules, budget and standards laid down in the project, which causes a decrease in the final quality of the object;
3) design problems are characterized by errors in construction planning, inaccuracy of plans and geotechnical studies;
4) force majeure or unforeseen circumstances include various natural disasters, epidemics, fires, acts of terrorism, etc.;
5) physical risks include damage to construction equipment, infrastructure elements, or maiming of workers (Le 2022)

At the meso-level, the infrastructure serves a certain territory: a republic, a region, a district, a city, a village. These are transport communication systems, provision of electricity, water, heat, communications, professional and public education, healthcare, etc. In general, infrastructure today is becoming an indicator of the level of social development, being the foundation of the national economy, on which the degree of economic activity depends (Ablyazov and Rapgof 2019; Pykhov and Kashina 2016).

The priority task of public authorities in a public-private partnership is to identify the most problematic and significant areas to further develop a project implementation programme. Under the first option, for example, infrastructure facilities are being built, where the business entity acts as a concessionaire. Upon completion of construction, the business entity receives the right to operate the facility during its payback period, and after it is transferred to the authorities. In the second option, the constructed object remains in the ownership of the business entity upon completion of the agreement. The advantages and disadvantages of the concession form of public-private partnership in the field of transport infrastructure are shown in Figure 3.

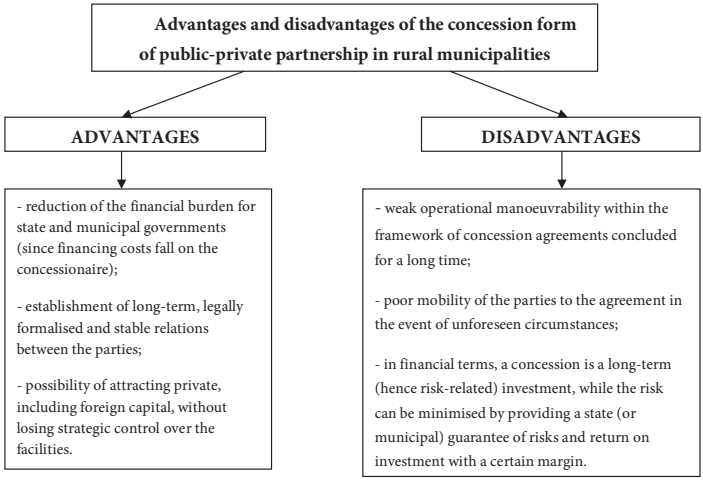

Figure 3. **Advantages and disadvantages of the concession form of public-private partnership in the field of transport infrastructure**

Conclusions

1. The existing trends in the development of public-private partnership in the field of transport infrastructure in the Republic of Kazakhstan have, in general, positive dynamics. But to ensure the effective implementation of public-private partnership projects in the Republic of Kazakhstan, it is necessary to pay attention to the fulfilment of a number of mandatory conditions.
2. The period of acute socio-economic crisis in 2020 (associated with the pandemic) revealed many problematic and weak points. In this regard, there is a need for the operational modernisation of public-private partnership mechanisms. The analysis of Kazakh and foreign studies, the systematic and statistical analysis confirms the hypothesis of the study that the improvement, development, and systematisation of the system of criteria for assessing the effectiveness of infrastructure projects, followed by the definition of methodological approaches and the development of assessment tools, it is possible to intensify the development of projects in the field of transport infrastructure based on public-private partnership models.
3. The focus on advanced development, consistency, improvement of the regulatory framework, the partnership between entrepreneurs and the state, increasing state financial support for innovations and attracting private investors would allow the Republic of Kazakhstan to occupy worthy socio-economic positions and be resistant to crisis situations in conditions of instability. The basis of civilised promotion is the public-private partnership mechanism.

References

1. "On approval of the State Program for Industrial and Innovative Development of the Republic of Kazakhstan for 2020-2025". www.adilet.zan.kz/rus/docs/P1900001050/history [2019-31-12].
2. Ablyazov, T., and Asaul, V. On competitive potential of organization under conditions of new industrial base formation. *SHS Web of Conferences*, 2018, Vol. 44, 00003.
3. Ablyazov, T., and Rapgof, V. Digital platforms as the basis of new ecological system of socioeconomic development. *IOP Conference Series: Materials Scince and Engineering*, 2019, Vol. 497, 012002.
4. Ablyazov, T.Kh., and Marusin, A. Public-private partnership as a mechanism for the development of transport infrastructure in the context of the formation of the digital economy. *Journal of International Economic Affairs*, 2019, Vol. 9, p. 1271-1280.
5. Aidosov, A. A., Aidosov, G. A., Zaurbekov, N. S., Baibolova, L. K., Admaeva, A. M., and Zaurbekova, N. D. The estimation of height of the mouth of the river of sources and influence of building of industrial facilities at the modelling of pollution of the atmosphere by the emissions. *Research Journal of Applied Sciences*, 2015, Vol. 10, No 2, pp 54-58.

6. Aizhanov, K.K., and Mustafina, L.E. Problems of development of public-private partnership in Kazakhstan. *Transit Economics*, 2010, Vol. 3, p.30-33.
7. Aydosov, A., Urmashev, B., and Zaurbekova, G. Modeling the spread of harmful substances in the atmosphere at a variable velocity profile. *Open Engineering*, 2016, Vol. 6, No 1, p 264-269.
8. Baktymbet, A. S., Baktymbet, S. S., Yelshibayev, R. K., Ukubassova, G. S., and Baktymbet, A. S. The fourth energy transition and development of energy sector in Kazakhstan. *Journal of Advanced Research in Law and Economics*, 2020, Vol. 11, No 3, p 735-746.
9. Baktymbet, A. S., Ukubassova, G. S., Baktymbet, S. S., Baktymbet, A. S., and Bakirbekova, A. M. Economic and environmental aspects of the development of renewable energy in Kazakhstan. *Journal of Environmental Management and Tourism*, 2020, Vol. 11, No 5, p 1025-1039.
10. Baktymbet, S. S., Kozhabaev, S. A., and Baktymbet, A. S. Issues of transformation of the national model for the development of small innovative enterprises in the Republic of Kazakhstan. *Economic Series of the Bulletin of L. N. Gumilyov Eurasian National University*, 2019, Vol. 4, p 367-375.
11. Bekmagambetov, M.M. Formation of the Kazakh PPP model. *Magistral*, 2008, Vol. 11, p. 28-29.
12. Beljatynskij, A., Kuzhel, N., Prentkovskis, O., Bakulich, O., and Klimenko, I. The criteria describing the need for highway reconstruction based on the theory of traffic flows and repay time. *Transport*, 2009, Vol. 24, No 4, p 308-317.
13. Brailey, R., and Mayers, S. *Principles of corporate finance*. Moscow: Olymp-Business, 2012.
14. Cheremnikh, E., Ivasyk, H., Alieksieiev, V., Kuchma, M., and Brodyak, O. Construction of spectral decomposition for nonself- adjoint friedrichs model operator. *Eastern-European Journal of Enterprise Technologies*, 2018, Vol. 4, No 4-94, p. 6-18.
15. Concession projects of the transport industry of the Republic of Kazakhstan. https://www.gov.kz/memleket/entities/transport?lang=ru [2021].
16. Danchuk, V., Bakulich, O., Taraban, S., and Bieliatynskyi, A. Simulation of traffic flows optimization in road networks using electrical analogue model. *Advances in Intelligent Systems and Computing*, 2021, Vol. 1258 AISC, p 238-254.
17. Hayek, F. A. *The road to slavery*. Moscow: New Publishing House, 2005.
18. Kamalova, G. A., Messerle, V. E., Naimanova, A. Zh., and Ustimenko, A. B. Modelling of turbulent reacting flows in furnace devices. *Thermophysics and Aeromechanics*, 2008, Vol. 15, No 1, p. 139-151.
19. Kamalova, G. A., Tulegenov, K. K., Rakhmetova, K. B., and Ramazanova, K. M. Three-dimensional modelling of gas-air mixture combustion process. *Journal of King Saud University – Science*, 2019, Vol. 31, No 4, p. 1326-1338.
20. Kazbaeva, N. Shar-Ust-Kamenogorsk - the first concession project. *Magistral*, 2008, Vol. 8, p. 18-20.

21. Keynes, J. M. *General theory of employment, interest and money*. Moscow: Eksmo, 2007.
22. Kim, I. S., Baizhanova, S.B., Kenzhibayeva, G.S., Makhmudova, M.A., and Kayumova, U.R. Principles of designing modern clothing based on traditional Kazakh costume. *Izvestiya Vysshikh Uchebnykh Zavedenii, Seriya Teknologiya Tekstil'noi Promyshlennosti*, 2020, Vol. 387, No. 3, p. 89-92.
23. Kudaibergenova, Z. U. The method of concessional development of the transport industry of the Republic of Kazakhstan is the basis of public-private partnership. *KazATK Bulletin*, 2010, № 4, c.158-163
24. Lavrov, E., Pasko, N., Siryk, O., Burov, O., and Natalia, M. Mathematical Models for Reducing Functional Networks to Ensure the Reliability and Cybersecurity of Ergatic Control Systems. *Proceedings - 15th International Conference on Advanced Trends in Radioelectronics, Telecommunications and Computer Engineering*, 2020, Vol TCSET 2020, p. 179-184.
25. Law of the Republic of Kazakhstan No. 167-III "On Concessions". 2006, July. https://online.zakon.kz/Document/?doc_id=30062571 [2006-07-07]
26. Le, P. T. Taxonomy of risks in PPP transportation projects: a systematic literature review. *International Journal of Construction Management*, 2022, Vol 22, No 2, pp 166-181.
27. Luzan, S., Sokolov, V., and Meleshkov, V. *Success factors and key risks in PPP transport projects*. www.transport.ru/doc/presentations/master-klass_v_transportnoi_infrastrukture_19092018.pdf [2018].
28. Message from the Head of State Kassym-Zhomart Tokayev to the people of Kazakhstan. https://www.akorda.kz/ru/addresses/addresses_of_president/poslanie-glavy-gosudarstva-kasym-zhomarta-tokaeva-narodu-kazahstana-1-sentyabrya-2020-g [2020-09-1].
29. Ofin, V.P. Features of the implementation of public-private partnership projects in the transport infrastructure. *Bulletin of the St. Petersburg State University of Economics*, 2016, Vol. 5, No 101, p. 50-54.
30. Private Participation in Infrastructure (PPI) Project Database. www.ppi.wordbank.org [2021].
31. Pykhov, P. A., and Kashina, T. O. Infrastructure as an object of economic research. *Journal of Economic Theory*, 2016, Vol. 14, p. 236-243.
32. Rybnicek, R., Plakolm, J., and Baumgartner, L. Risks in Public–Private Partnerships: A Systematic Literature Review of Risk Factors, Their Impact and Risk Mitigation Strategies. *Public Performance and Management Review*, 2020, Vol. 43, No 5, p. 1174-1208.
33. Smith, A. *An Inquiry into the Nature and Causes of the Wealth of Nations*. https://standardebooks.org/ebooks/adam-smith/the-wealth-of-nations [1776].
34. Tanirbergenova, A., Orazbayev, B., Ospanov, Y., Omarova, S., and Kurmashev, I. Hydrotreating unit models based on statistical and fuzzy information. *Periodicals of Engineering and Natural Sciences*, 2021, Vol. 9, No 4, p. 242-258.

35. Wang, H., Xiong, W., Wu, G., and Zhu, D. Public–private partnership in Public Administration discipline: a literature review. *Public Management Review*, 2018, Vol. 20, No 2, p. 293-316.
36. World Bank Group Doing Business. www.doingbusiness.org/en/doingbusiness [2020].

Anar M. Aitkaliyeva – Doctoral Student, Department of Economics, Kazakh University of Economics, Finance and International Trade, Astana, Republic of Kazakhstan.
E-mail: Aitkaliyeva.anar@yahoo.com

Zhanar K. Zhanabayeva – PhD in Economics, Associate Professor, Department of Economics and Entrepreneurship, L. N. Gumilyov Eurasian National University, Astana, Republic of Kazakhstan.
E-mail: Z.K.Zhanabayeva@outlook.com

Larissa I. Kussainova – PhD in Economics, Professor, Institute of Management, Academy of Public Administration under the President of the Republic of Kazakhstan, Astana, Republic of Kazakhstan.
E-mail: lar.kussainova@gmail.com

Aziya Kulubekova – PhD, Deputy Director, LLP "International Educational Center Eurasia", Astana, Republic of Kazakhstan.
E-mail: dr.kulubekova.aziya@gmail.com

Assel K. Kadyrbergenova – PhD, Associate Professor, Business School, Atyrau Oil and Gas University named after S. Utebayev, Atyrau, Republic of Kazakhstan.
E-mail: a.kadyrbergenova@outlook.com