

## Development of Public-Private Partnership in the Republic of Kazakhstan

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### ABSTRACT

This study discusses the development of public-private partnership (PPP) in the Republic of Kazakhstan. The authors analyze specific features and stages of public-private partnership development, study the international experience of assessing the effectiveness of public-private partnership, develop basic models of public-private partnership and provide their classification. In addition, the study provides an analysis of the current implementation of PPP projects in the Republic of Kazakhstan. The objective of this research is to analyze the specifics and stages of PPP development in the Republic of Kazakhstan. The basic models and the advantages of such partnership are described in the concession project Construction and Use of Outpatient Hospitals for 500 Visits per Shift in the City of Kostanay. The methodology of this study is based on various approaches and methods widely used in modern science, including induction and deduction, generalizing indicators, statistical equalization and analytic hierarchy. The results of this research evaluate effectiveness of PPP projects not only based on economic factors but also social, human, political and entrepreneurial factors. The results of the study will create conditions for more efficient selection of PPP projects.

### KEYWORDS

Public-private partnership; project effectiveness; assessment methodology; assessment factors; investment project

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## Introduction

Modern challenges require new development models and mechanisms of interaction between the government and other economic actors, including the provision of public services under limited resources (Ingram, Johnson & Moser 2016).

In the times of economic crisis, the role of the state increases both at the macro and at the branch level. At the same time, financial capacity of the state with regards to the implementation of long-term projects is reduced. Therefore, it is necessary that new forms of cooperation between the state and the private

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sector be introduced, namely - the public-private partnership (hereinafter - PPP).

PPP in its various forms is actively gaining popularity in many countries as a tool used to create new infrastructure and provide public services. Regardless of the fact that this phenomenon has been recently presented as a novelty, PPP has long traditions in many countries (World Bank Global Round 2013).

In recent years, Kazakhstan has been facing a period of struggle for sustainable economic development and improved competitiveness. This resulted in the growing interest of the government in the private sector in terms of using its potential for funding, development and implementation of projects aimed at infrastructure development. Presently, Kazakhstan gained considerable experience in the implementation of PPP projects in various sectors, especially in the field of industrial infrastructure, innovation, transport, and social and public services (Gabdullina, 2012).

The use of PPP mechanisms provides a number of advantages, both for the state and for businesses. The private sector gets new investment opportunities, and therefore, new sources of revenue and opportunities to participate in major projects. On the other hand, PPP implies the use of intellectual and resource potential of the private sector in the areas of traditional state responsibility (Solana, 2015).

Some of the constraints involved in the implementation of public-private partnerships include:

- Difficulty assessing state benefits from PPP contracts; lack of a clear policy related to consideration of the interests of entrepreneurs and transparency of public-private interaction tools;

- Difficulty assessing reliability of the claimed effectiveness and efficiency of projects;

- Increased costs due to complexity of competition and harmonization of PPP contracts in comparison to the established procedures of public procurement;

- Difficulties predicting risks associated with the PPP projects;

- Need for a thorough examination of the projects, as not all projects are suitable for PPP;

- Insufficiently developed mechanisms of PPP implementation and evaluation of its effectiveness.

Today, the Kazakh business community suffers from a lack of knowledge and experience that could be potentially used in the subsequent PPP projects. Given this background, this study aims to reduce this deficit, and thereby develop recommendations for assessing the effectiveness of PPP projects in Kazakhstan. The practical significance of this study lies in the fact that its results extend and deepen the theoretical and methodological basis of the PPP development in Kazakhstan (Mataev, 2011).

Public-private partnership - is a form of interaction between the public and private sectors, providing transfer of responsibility to the private sector for the provision of services that traditionally belong to the public sector. In this regard, one has to deal primarily with specific projects, where the government transfers

certain rights (and at the same time, responsibilities and risks) to the private sector (Alpatov, Pushkin & Japaridze, 2010).

Public-private partnership (PPP) is used to provide funding, planning, implementation and operation of facilities, production and delivery of public sector services. Key features of PPP include (Delmon, 2011; Connolly & Wall, 2013):

- Long-term character of services provision (sometimes up to 30 years);
- Transfer of risks to the private sector;
- Various forms of long-term contracts concluded by legal entities with the public and local agencies.

There are several key forms of public-private partnerships: contracts, lease, concession, production sharing agreement and joint ventures (Akitoby, Hemming & Schwartz, 2007).

Public-private partnership, investment fiscal theory, financial analysis and planning is studied by many contemporary foreign economists: E.R. Yescombe (2011), L. Beeferman (2008). Among the modern Russian economists are A.M. Margolin & P. Dutkiewicz (2013), O.M. Osobekov & M.V. Schegortsov (2011) and others.

In Kazakhstan, significant contribution to the theory and practice of PPP development and management of investment projects was made by S.A. Abdymanapov & J.A. Abiesov (2013), T.J. Ernazarov (2007).

Despite the impressive list of scholars and practitioners in this area of investment policy and their invaluable contribution to the theoretical and methodological basis of interaction between private capital and the state, modern practices set new requirements to the economic science in terms of rethinking approaches to the practical realization of network projects related to socially significant services (Bishimbayev, 2008).

The purpose of this research is to investigate the development of PPP in Kazakhstan.

## Methods

The methodology of this study is based on different approaches and methods widely used in modern science. Analysis and synthesis were most actively used in the process of studying relevant issues, as the paper is based on the study of international experience of cooperation between the state and businesses, as well as the development of new PPP mechanisms in the priority sectors of the accelerated industrial and innovative development of Kazakhstan.

Methods of induction and deduction along with integrated indicators and statistical alignment further promote assessment of the effectiveness of PPP projects due to a more accurate calculation of financial and economic indicators of the project based on automation of the PPP project evaluation, with due regard to the impact of economic, social, political, and other factors that have not been considered thus far.

Use of these methods will provide solutions for modern approaches to the development of PPP mechanisms in the priority sectors of the accelerated industrial and innovative development of Kazakhstan. In addition, these methods will promote the assessment of PPP projects at all stages of their

implementation, as well as predict main financial and economic indicators of the project.

## **Data, Analysis, and Results**

### ***International experience***

Today, the world economy has considerable experience in the implementation of PPP projects in various sectors. Many PPP projects are carried out in the fields of industrial infrastructure, innovation, and military affairs.

The United States, the U.K., Germany and France are leader states in the field of public-private partnerships (Connolly & Wall, 2013).

International experience in the field of PPP could be divided into two groups: countries, where the PPP development has a long history and is based on the implementation of specific projects and countries, where PPP is implemented through creation of appropriate legislative framework.

The first group includes a number of the most developed countries of Western Europe, such as the U.K., France and Spain, as the process of restructuring of infrastructure sectors was the most intensive in these countries, and legislation has been substantially amended with regards to these targets.

The experience of South Korea should be considered as the most characteristic in terms of implementing the PPP projects through legislative changes (conditional second group).

South Korea introduced PPP programs with the adoption of the law on private capital promotion to social capital investment in 1994. PPP projects were focused on transport infrastructure, but after the revision of the PPP law in 2005, the potential PPP projects were focused on social infrastructure that is closely related to daily life of people.

PPP remains one of the most attractive tools for developing economies. The most significant increase in infrastructure investment using the PPP instruments could be seen in Southeast Asia; China accounts for 90% of such transactions. PPPs are also widely used in Brazil, India and Turkey.

With regards to the main trends in the world development of PPP, the Practical Guide to Promoting Good Governance in Public-Private Partnerships issued by the United Nations Economic Commission for Europe noted a tendency of a stage-by-stage process in certain states before a PPP program is fully used. Most countries are in the first stage, where the number of actual projects is insufficient. Only in the third stage, which includes only a few countries, programs are becoming significant (Bishimbayev, 2008). The stages of PPP development are shown in Table 1.

**Table 1.** Three stages of PPP development

Stage 1	Stage 2	Stage 3
1. Political decision-making	1. Review of legislation	1. Creating the complete and integrated system
2. Verification of compliance with the current legislation	2. Publication of strategic and practical guidelines	2. Removing legal barriers
3. Building project portfolio	3. Creation of specialized structures involved in PPP issues	3. Clarification and implementation of PPP models
4. Development of basic concepts	4. Refinement of the PPP models	4. Comprehensive risk allocation
5. Use of lessons learned in other sectors	5. Promotion of market development for PPP	5. Formation of the guaranteed project portfolio
6. Market development	6. Expansion of project portfolio and coverage of other sectors	6. Providing the long-term political consensus
	7. Attracting new sources of funding	7. Using all available sources of funding
		8. Creation of the investment market for infrastructure, covering pension and private equity funds
		9. Use of PPP experience by the highly experienced employees of the public and municipal institutions

### **Legal framework**

Table 1 shows that the study of international experience in the PPP development implies the analysis of PPP legislation as many international analysts recognize that the existence of legislation in the field of PPP is the first step in the development of PPPs. In fact, bringing the PPP legislation in line with the broader legal framework requires the introduction of specific PPP regulations, and therefore, by-laws and other regulations should be amended in due course.

Adoption of the Law of the Republic of Kazakhstan "On Concessions" became an important step in the establishment of a legal framework for the implementation of concession mechanism, as one of the PPP types. To date, legal mechanisms for the implementation of concession have been developed; the concession is applicable to the most complex and capital-intensive projects in the field of social infrastructure and life necessities.

The implementation practice showed that traditional concessions in Kazakhstan are either not repaid or require setting a very high cost for the population, which is unacceptable. In addition, the global economic crisis adjusted plans for the PPP development in the country, as the deficit of long-term and project debt funding makes such projects difficult to implement.

In 2013-2014, a number of amendments were adopted, which laid the foundation for the accelerated development of PPP in Kazakhstan, including the embedded financial and legal mechanisms with a view to increase the attractiveness of PPP projects.

Within the framework of financial and legal mechanisms developed with a view to increase the attractiveness of PPP projects, the following activities were carried out:

- Substitution of the concessionaire;
- Settlement of the legal status of the concession and other assets involved into the concession project.

### **Implementation of PPP projects in Kazakhstan**

Implementation of PPP projects at all stages requires a very important tool – a well-designed and adequate financial and economic model, which is a major success factor.

Currently, one of the most important activities in the field of investment planning is the analysis of PPP efficiency.

Algorithm for evaluating the PPP efficiency consists of three stages:

- The first stage involves qualitative assessment of the proposed PPP project, including its information support. With regards to this data, the project FS is developed, which should prove its higher efficiency compared to the traditional public sector projects.

- The second stage implies making conclusions on the need for partnership relations, based on different types of project efficiency.

- The third stage (quantitative analysis) – implies assessment of the PPP project feasibility in terms of its various components (finance, economy) and should include the financial structure, with regards to all sources of funding as defined in the PPP reference model.

The main criteria of financial feasibility of a PPP project include the following:

- positive net present value;
- non-negative annual cash flows;
- debt service rate in accordance with the set standards;
- availability of financial base to service the first stage debt even provided the development of the worst-case scenario.

Modern assessment methods of PPP investment projects include the economic benefit analysis as a mandatory part along with the cost-benefit analysis (analysis of public performance, the cost-benefit analysis (CBA)), with due regard to the general social interests.

The analysis of international experience in the field of PPP demonstrates real identification of possible ways to avoid mistakes and to overcome difficulties in the implementation of PPPs.

First, the state should create a transparent legal and institutional framework for PPP and pay close attention to all the phases of the project lifecycle - from planning to concession management.

Second, the state should take a closer look at the new PPP models, which will provide proper allocation of risks even under uncertain prospects of the project.

Third, there is a need to invest underutilized assets with low value (land and buildings) in the PPP infrastructure, which will then generate revenue and attract more business interest in the project by reducing return risks.

Within the approved state program of industrial-innovative development of Kazakhstan for 2015-2019, public-private partnership is defined as a mechanism

of rapid industrialization in terms of creation and development of infrastructure projects (The State Program on Accelerated Industrial and Innovative Development, 2010).

Today, Kazakhstan has 42 active PPP projects, 5 projects of national significance and 37 local projects (Table 2).

**Table 2.** Branch distribution of PPP projects

	<i>Industry</i>	<i>National</i>	<i>Local</i>
Education			8
Health care		2	13
Transport		2	13
Housing and utility sector			2
Sport			1
Penal enforcement discipline		1	
<b>TOTAL</b>		<b>5</b>	<b>37</b>

These projects are at various stages (planning, tender, repeated tender procedures etc.) pursuant to the project schedule. In this regard, one should note projects oriented at non-primary goods. The priority areas of these projects include transport infrastructure and the development of social and urban infrastructure.

### **Selected Sector Analysis: Infrastructure and Health Care**

Contribution of the infrastructure sector in the GDP of the Republic of Kazakhstan is 17%, or more than USD 35 billion. It is the third largest sector of the economy after trade and services, as well as the mining sector. However, the infrastructure sector is important not only due to its significant direct contribution to GDP. Infrastructure is a prerequisite for the realization of investment projects in other sectors - industry, construction, and mining and processing of mineral resources; it is also the determining factor in human development - through the provision of clean water, high-quality medical and educational services, and maintenance of favorable environmental conditions.

According to the analysis of the European Investment Bank, the mid-year infrastructure investment in Kazakhstan during 2003-2014 was 2.7-3.2% of GDP, while the recommended level of annual infrastructure investment in developing economies is 5-6% of GDP.

This long-time lack of investment in infrastructure led to the fact that depreciation of fixed assets in the most important economic sectors reached critical values.

According to expert assessment of the Asian Development Bank, during 2016-2025, investment needs in such areas as transport, energy and urban infrastructure (water supply and sanitation, solid waste, city transport) will be about USD 72 billion or nearly one third of Kazakhstan's GDP.

The growing need for quantity and quality of social infrastructure and life necessities cannot be satisfied solely through budgetary resources because of their limits. In this respect, PPP is the foundation for improving future efficiency of public investment, attracting private domestic and foreign capital into areas traditionally funded only by the budget.



Astana and the East Kazakhstan region are the most active subjects in the PPP development. At the same time, zero activity is detected in a number of areas: Akmola, Aktobe, Atyrau, Kostanay and Pavlodar region (Figure 1).

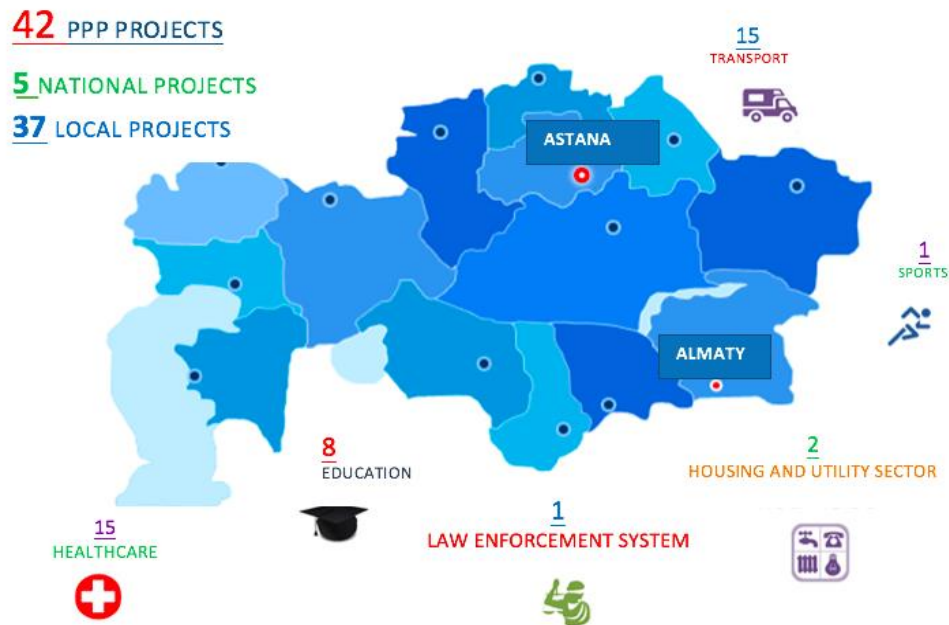


Figure 1. PPP projects map

Indeed, PPPs in the health care sector have been successful for more than two decades. Originating and having successfully gained a foothold in the U.K., healthcare PPPs were quickly “taken into service” in other countries, although with mixed results. The U.K. suffered massive lack of investment in the construction of NHS (National Health Service) hospitals. Since 1990s, through the PFI (Private Finance Initiative) mechanism, 100 new NHS hospitals were built in the U.K. during the subsequent twelve-year period. Private sector provided funding, construction and maintenance of infrastructure through the PFI mechanism and the public sector was responsible for providing clinical services. To date, the U.K. have successfully implemented around 280 PPP projects in the health care sector, which comes to 19% of total PFI volume (Cruz & Marques, 2011).

The implementation of the concession project "Construction and operation of outpatient hospitals for 500 visits per shift in Kostanay" will contribute to the development of the State program aimed at expanding access to health care and the achievement of the main goal - improving health of the city population (The State Program for Health Care Development of the Republic of Kazakhstan "Healthy Kazakhstan", 2011).

Construction of an outpatient hospital for 500 visits per shift will promote employment in the health care industry. The construction will be carried out by building companies, companies responsible for the supply of building materials, products, equipment and services. Implementation of this concession project will also increase the interest of young people in the field of medicine, and therefore, will increase prestige of the medical profession.



Assessment of investment projects is one of the urgent tasks of financial management: businesses adopt new technologies and products, lending institutions and investors are looking for effective investment directions (companies, projects). Methodological approaches to the calculation of the efficiency of projects are widely known, however, practice shows that the development and assessment of investment projects cannot be limited by calculations.

The assessment of investment projects is carried out in stages:

1. Calculation of net and retained income;
2. Analysis of the lowest costs;
3. Analysis of maximum profit.

Investment costs (see Table 3) are calculated according to the Model project of the Republic of Kazakhstan MP 500 PPP (IB, IIA) 2.2-2012 «Outpatient hospital for 500 visits per shift" for the IB, IIA climatic subregions with normal geological conditions, adjusted for price changes.

**Table 3.** Investment expenditures

#	Types of expenditures	Expenditure value, thousand USD
1	Outpatient hospital construction	3,392
2	Outpatient hospital equipment	2,077
3	Cost of insurance	21.87
4	Loan disbursement fee	8.12
5	Credit interest	273.43
	Total expenditures, thousand USD	5,772

Since the state is ready to charter land to the concessionaire on a long-term basis free of charge, land redemption value makes zero.

It is assumed that the distribution of funding requirements through the stages of the concessionaire project will be as follows:

– The concessionaire attracts a loan from the regulated bank at 10.0% per annum; during the construction period, they will spend both these and own funds;

– The concessionaire will invest 50-50 percent between own and loan funds.

It is also assumed that the beginning of interest payments and principal payments will coincide with the beginning of public compensation of investment costs (2015) (see Table 4).

**Table 4.** Distribution of the investment amount

Required investment	Investment amount, thousand USD
Long-term loan	2,734
Equity capital	2,734

The interest rates on the loan taken by the concessionaire are calculated by the latest data on average interest rates of different banks on loans provided to non-banking entities in February 2014 in the amount of 10% (according to the National Bank of Kazakhstan). It is expected that the loan term will be 20 years and the payment will start from the first year of operation period.

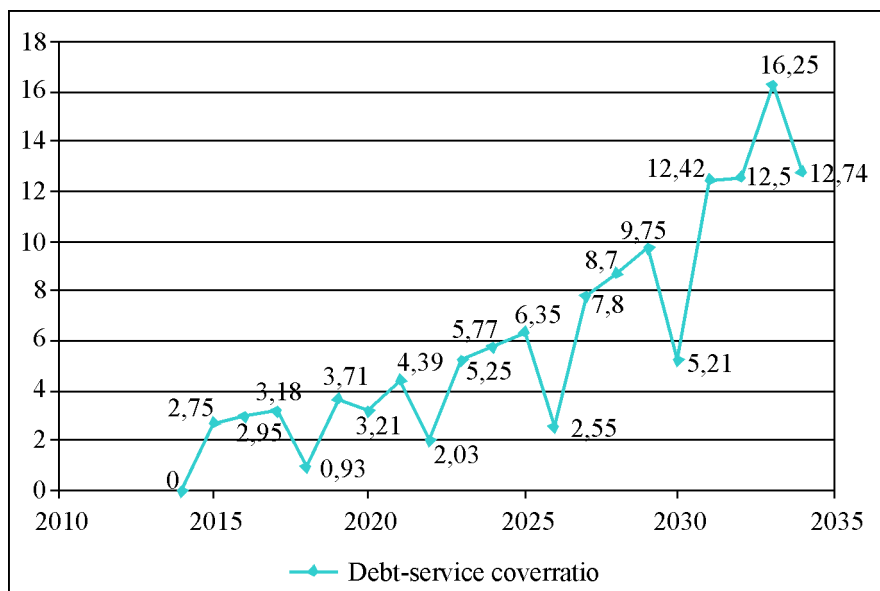
Project analysis utilizes discounting methods, including the calculation of net present value (NPV), internal rate of return (IRR), the interrelation between the discounted benefits and costs and the discounted payback period. According to the calculations of the financial model, the basic parameters of the project are as follows (Table 5).

**Table 5.** Project Performance Indices

<i>Index</i>	<i>Value</i>
NPV, thousand USD	722.13
IRR, %	13.0%
Simple payback period, years	10
Discounted payback period, years	18

The data presented in Table 5 shows that the NPV of the project is positive and the IRR index is above the discount rate, which indicates the project attractiveness. The ratio of the discounted costs and benefits in each respective year, is equal to the ratio of the discounted sum of all income in a given year to the discounted cost value in the relevant year. It should be noted that this figure is greater than one almost every year, which indicates the project profitability.

The annual debt-service cover ratios for the respective that are equal to the ratio of cash flow before debt service in respective year and the amount of debt service in respective year are shown in Figure 2. The debt-service cover ratio is greater than one almost every year, which indicates the project profitability.



**Figure 2.** Debt-service cover indices

Sensitivity analysis of the net present value (NPV) and internal rate of return (IRR) shows high sensitivity to a change in the number of involved

citizens. The increase in involved citizens by 1 000 persons leads to an increase in NPV and IRR by 87% and 10% respectively (Table 6).

**Table 6.** Sensitivity analysis

<i>Changes in the number of involved population</i>	<i>Change</i>				
	-2 000	-1 000	50 000	1 000	2 000
NPV, thousand USD	-527.78	97.17	722.12	1,347	1,972
IRR, %	10.3%	11.7%	13%	14.3%	15.5%
NPV rate of change, %	-173%	-87%	-	87%	173%
IRR rate of change, %	-21%	-10%	-	10%	19%

Table 6 demonstrates that implementation of the project demands investment of the concessionaire's private means (50% of investment costs) and borrowed funds, which shall be refunded in accordance with the loan terms, including loan interest during the period of operation.

Due to high cost of construction and the required high rate of return of the concessionaire, investment costs reimbursement (ICR) is envisaged in equal installments over the maintenance period along with the operating costs reimbursement (OCR) in the amount of 5%, and the public use of the guaranteed free medical care under the integrated per capita rate and the amount of involved population.

Payback Period (PP) is the widely used index for assessing the investment effectiveness. This index is helpful to find out the period of investment return (to investors). The PP logic shows the number of reference periods during which the initial investment amount will be fully reimbursed by the cash flow generated by the project.

The project design period is 21 years. Selection of the design period is based on the assessment of project attractiveness to the investor, and the project NPV during this period is 722.12 thousand USD. This result is financially efficient and, therefore, financially attractive for potential investors. The simple payback period is 10 years, while the discounted payback period is 18 years. Based on these calculations, the 21-year concession term, is effective. Therefore, results of the project study could be summarized in the table given below.

**Table 7.** Project efficiency results

<i>Index</i>	<i>Unit</i>	<i>Value</i>
NPV of the project	thousand USD	722.12
IRR of the project	%	13.0%
NPV of the investor	thousand USD	3,174
IRR of the investor	%	22.1%
NPV of budgetary cash flow	thousand USD	-23,597
IRR of budgetary cash flow	%	57.7%
Simple payback period	years	10
Discounted payback period	years	18

The data presented in Table 7 shows the main advantages of the project, namely: improvement of the quality of services; creation of new jobs during construction and operation; lack of peak load on the state budget; high-quality

construction of the outpatient hospitals, due to the fact that the concessionaire will be responsible for its operation during the subsequent 20 years.

The indirect benefit of the project is its positive social effect. The main setback of the project is the higher complexity of the institutional scheme of the project caused by the fact that the project will be implemented on a concession basis.

### Discussion

T.M. Matayev (2012) argues that innovative long-term projects can be implemented only by the government, since they are beyond the power of other subjects. However, considering the experience of other countries, one can see that this is not the case, especially in countries of the European Union, where PPP projects play a key role (Connoly & Wall, 2013).

This study summarizes the experience of PPP development in the Republic of Kazakhstan, which is in the third stage of its development (Table 2). This study also provides an example of the effectiveness of a PPP project in the field of construction and operation of an outpatient hospital for 500 visitors per day in Kostanay city, which will contribute to the development of a State program aimed at increasing access to medical care, and achieve the main goal of improving the health of the population of the city.

Construction of clinic with 500 visitors per day will boost employment in the health care industry and also contribute to the growth in the interest of the youth population in medical profession.

In comparison to other countries, the experience of Kazakhstan is still not sufficient enough. At the same time, high demand for implementing infrastructure projects motivates necessary legislative, investment conditions for PPP development in our country.

### Conclusion

The legislation in the field of PPP is the first step towards its development in accordance with foreign experience. Analysis of international experience showed that PPP tools have long and successfully been used in countries such as the United Kingdom, United States, Australia, Italy, France, Germany, Hungary, Poland, Turkey and others.

Today, mainly the economic efficiency has been used to evaluate the PPP projects, but these projects do not consider the social significance; therefore, we propose to introduce the additional criteria for evaluating the effectiveness of projects using a modern analytic hierarchy process (AHP), that will help evaluate social, human, political and entrepreneurial factors. Traditional indicators of economic efficiency of investments, typically include the net present value (NPV), payback period of the investment (PBP) and internal rate of return (IRR).

Despite the fact that the PPP in Kazakhstan is actively growing, there is still a lack of knowledge, experience and possible appliance of PPP. Therefore, this paper focuses on the synthesis of the experience of PPP development in Kazakhstan and elaboration of recommendations for the development of

mechanisms for evaluating the effectiveness of PPP projects in the Republic of Kazakhstan.

### Disclosure statement

No potential conflict of interest was reported by the authors.

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