



Impact of Projects with Future Potential on the Global Competitiveness Index of Countries

Akbota Akzambekkyzy ¹, Laszlo Vasa ², Jeffrey Yi-Lin Forrest ³,
Shynara Sarkambayeva ^{4*}, Satyanand Singh ⁵

¹ Kazakh National University, Almaty 050040, Kazakhstan.

² Faculty of Economics, Széchenyi István University, Győr, Hungary.

³ Department of Accounting Economics Finance, Slippery Rock University, Slippery Rock, PA 16057, United States.

⁴ Department of Management and Mathematical Economics, Satbayev University, Almaty 050013, Kazakhstan.

⁵ School of Electrical & Electronics Engineering, Fiji National University, Fiji Island.

Abstract

The concept of project success has evolved from the perspective of conforming to the project triangle to that of benefiting the environment, and then from the perspective of the following generation. Scientists increasingly assert that successful projects require a set of criteria that include such item(s) as future potential. The meaning of project success varies depending on where it is executed. The purpose of this study is to identify whether projects with future potential have a certain effect on indicators of the Global Competitiveness Index (GCI) of the Republic of Kazakhstan (RK) and what other success criteria are inherent in such projects. By using the method of descriptive analysis of data collected from 107 experts and analyzing 19 influential projects, the study revealed that projects oriented towards the future have a significant impact on the indicators of the GCI in the RK. This finding confirms the necessity of considering the long-term sustainability and social significance of projects when assessing their successes. Additionally, a specific combination of success criteria that contributes most to this impact was identified. This research provides a brand-new understanding of project success criteria in the context of their impact on the GCI and emphasizes the importance of considering future potential in project planning and evaluation.

Keywords:

Project Success;
Global Competitiveness Index;
Future Potential; Success Criteria;
Levels of Success;
Project Management Success.

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1- Introduction

The success of a project in each country is defined differently; even each person may have their own understanding of the success of projects [1]. However, the concept of success acquires a unified essence, although the involved details change from one year to another and from one country to another. The understanding of success has been evolving, and from the impact of the pandemic, this concept has acquired some broader and clearer features while showing the existence of a knowledge gap in determining the success of projects. And in the post-pandemic world, projects are required to have different outputs and results than before. Projects have become more than a temporary organization of resources; the impact of projects has transformed the industries and cultures of different countries for the long term. That underlines the growing importance of the impacts of projects on the future and the aspiration for excellence in delivering such projects that may positively affect the environment and bring forward tomorrow's new challenges and opportunities.

* **CONTACT:** sh.sarkambayeva@satbayev.university

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The Republic of Kazakhstan, like many nations, has embarked on a series of national projects with the overarching goal of fostering nationwide socio-economic development and growth. These projects represent the nation's strategic investments in various economic and societal sectors, spanning infrastructure, technology, education, and healthcare, among others. Given the scope and significance, it is imperative for us to explore the potential repercussions of these national projects on critical metrics that gauge a nation's progress.

National projects are often conceived as initiatives aimed at bolstering a nation's development. Therefore, it is reasonable to postulate that these projects may have discernible impacts on key indices that reflect a nation's overall progress. This paper, after an extensive review of existing literature, highlights a conspicuous gap in research efforts concerning the correlation between projects with future potential and the GCI. Although some scholarly works have delved into the study of projects with the potential to shape a nation's future, a similar endeavor examining their implications for the GCI remains conspicuously absent. The following discussion seeks to address this knowledge gap and provide insights into the prospective relationship between national projects and the GCI within the context of the Republic of Kazakhstan.

Due to the pandemic, all countries need an individually specific course of action towards growth and achieving such lofty goals as sustainable development and nationalization of various more or less localized objectives through the global competitiveness index. Although the overall effort of striving for project successes can help accelerate the achievement of these goals, it is necessary to understand which projects are needed to achieve the goals and how to predict the success of such projects in advance. To this end, this paper attempts to more accurately describe the concept of project success than before, although the concept has been formed in the world of learning and employed in business practice, and it determines whether these projects can materialistically affect the growth of the global competitiveness index based on project-specific data and indicators of the global competitiveness index of the Republic of Kazakhstan.

2- Literature Review

Most authors consider time, cost, and quality as fundamental elements that determine a project's success. For example, Frödell et al. [2] empirically develop the metrics of success, including such factors as completing the project on time, within budget, performing scheduled maintenance, and achieving the project's profitability goal. In the meantime, Elattar [3] offers an assessment of success from the viewpoint of the client (for example, time, cost, functionality, end result, quality, aesthetic value, profitability, competitiveness, less waste), that of the sponsor (for example, a satisfied client, quality, cost and profit, staff satisfaction, social acceptability), and that of the contractor (e.g., time, cost, quality, clearly defined expectations from all parties, customer satisfaction), while emphasizing that these viewpoints play an important role in increasing the likelihood of project success.

Also, people have been looking for other criteria to define project success beyond the known project triangle [4]. The concept of project success has been explored over time with increasing depth and expanding meanings since the time when the project triangle emerged by focusing on the values and benefits a project creates [5].

The study of project successes in various industries also yields the result that the most important criterion is customer satisfaction [6]. For example, Bryde & Robinson showed that customers ranked stakeholder satisfaction as most important, while for contractors, meeting the constraints of cost and time was most important [7]. However, human assets must be included in the set of success criteria, in addition to all imaginable technical parameters. Because they are not easy to quantify, few studies have considered such criteria that involve human assets [8]. Although that is the case, researchers have gradually begun to introduce such criteria that are related to characteristics of people, like flexibility, adaptability, enthusiasm, spontaneity, aggressiveness, confidence, preferences about initiatives and leadership, etc. On such human qualities, Young and his colleagues examined how the international nature of a project and the involved leadership style influence the project's success, in addition to factors recommended in the technical literature, such as teamwork, project type, industry sector, team size, etc. [9]. Davis' research finds supporting evidence for the belief that each project requires the participation of all stakeholders to determine the ultimate parameters of success, which is needed for the evaluation of the project's successful conclusion [10].

The definition of project success can be extended to the concept of positive effects from a project. And the success of a project can be measured in four different aspects: project efficiency, impact on clients, direct and business success, and organizational preparedness for the future [3].

Sebestyen divided the knowledge about the success of a project into the following aspects: stakeholders and their perceptions, be they financial, human, extended, traditional, and advanced, where advanced aspects include the concept of positive effects from the project on the future [11]. Müller and Turner showed that to determine the criteria for the success of a project, it is necessary to take into account the type of project (complexity, importance, and type of contract), the industry sector (private or public sector or voluntary), personal experience, and parameters of the project manager (age, gender, qualifications, nationality, etc.) [12]. As for particular ideas for managers and organizations to use, the following three dimensions were suggested by Meredith and Zwikael: firstly, successful project management—the

effectiveness of the project manager in terms of achieving the predetermined objective; secondly, effective project ownership—the effectiveness of the project owner in implementing the business case; and, thirdly, the investment success of the project—the investment efficiency of the project for its sponsor [13]. However, the success of project management is only an internal, short-term perspective on the project. It ignores strategic and long-term considerations. Project managers can make bad decisions by seeking local success without considering any global consequences. Project evaluation models have gradually included, over time, criteria for evaluating long-term success. These criteria have been expanded to include coverage of the skills and capabilities acquired after project implementation, practical use of the project results by its stakeholders, achievement of customer satisfaction, that of stakeholder satisfaction, attainment of commercial success, and manifestation of project effectiveness [14].

There have been studies in which time has played an important role in determining the success of a project. That is, time can change the determination of how successful a project is because some stakeholders, such as the project manager, have a short-term interest, while others, such as a project sponsor, CEO, or organization, have long-term interests [15] without considering the interests of society and of future generations. All in all, it is most likely the consumers of a project or its results that weigh heavily on the definition of the success of a project. In this vein, it would be advisable to apply the concept of sustainability to project management, as has been done recently [16]. The logic behind this linkage between project success and sustainability is that resilience needs change while projects potentially implement changes [17].

Overall, the most positive correlations are found between sustainability and success criteria, stakeholder satisfaction, preparedness for the future, and controlled project delivery. As of this writing, the expected relationship between maintaining sustainability and completing a project on time and within budget is uncertain [18]. A sustainable company must consider both the short-term and long-term consequences of its actions, instead of just focusing on short-term benefits. Measuring both short-term and long-term orientations focuses efforts and attention on the full duration of the project, including its consequent impacts [19]. An illustration of the broader context of “sustainable project management,” as compared to that of traditional or prevalent project management, is given in van den Brink et al. [20]. In the former case, the project context is considered in relation to the organization's strategy as well as to the greater society.

Resilience has also grown out of the transition from an approach characterized by predictability and manageability to that characterized by flexibility, complexity, and opportunity. In addition, embracing sustainability implies a change of mind for the project manager, from delivering requested results to taking responsibility for sustainable development in organizations and society [17]. The modernization of consciousness and its update with the project manager can help find a connection in the organization outside the project. In the development of knowledge about project successes, there were further works [21], where the authors described the main criteria for the success of a project as follows: project efficiency, organizational benefits, the project's impact(s), potential for the future, and the satisfaction of stakeholders.

The concepts of efficiency and potential for the future have been mentioned more often in recent times than before. There are also works in which such criteria as efficiency, influence on the client, influence on the team, business success, and preparation for the future appear [22]. Such knowledge has been expanded with additional criteria, such as relevance, effectiveness, efficiency, and sustainability [23]. A study, conducted in 21 universities with the participation of 28 experts in 8 countries, identified the following main criteria for a project to be successful: efficiency, impact on the client, impact on the team, business success, preparing for the future, and sustainability [24].

It is important to emphasize that projects generally have their respectively specific contexts, different stakeholders have different perceptions of success, and project managers' perceptions of importance have been found to be different from how organizations measure success [25]. There are references in the literature that suggest the need to rethink about how to view project success. For example, Dalcher describes a project's success as something about how the project leads to new business opportunities and has an impact on future generations or the environment of the project [26].

Through sharing a project's success, achieved in project management, project completion, improved business operation, and better expected future potential, Dalcher [27] pays attention to the assessment of the project's success through the lens of the project's impact. That, in turn, can be long-term and sustainable. The concept of potential for the future can be revealed and explained by the following characteristics of impact: project success, project management success, business success, and future potential.

According to Dalcher [27], the potential for the future is revealed as follows:

- New business opportunities;
- Emergent benefits;
- Additional business;
- New markets;
- Derived products;

- Competitive advantage;
- New or expanded core competency;
- New system capability;
- New people-related capability;
- Recognition in new market or segment;
- New strategy;
- Improved processes;
- Image;
- Enhanced reputation.

According to this and other related studies, the success of a project can be measured through the concept of "levels of success," denoting values of significance gained from the project's conclusion. Each level of success has its own measurement criteria, which are characteristic not only for IT projects [27].

The evolution of project management paradigms has ushered in a redefined conceptualization of project success. This transformation is underscored by an emergent emphasis on projects' capacity to catalyze future development. While extant literature has made significant strides in redefining the parameters of project success, a discernible research gap persists regarding the quantification and operationalization of a project's potential for future development. This shift in perspective not only entails a reconceptualization of success criteria but also necessitates a contemporaneous recalibration of the strategies adopted for practical project execution. Yet, the dimension of a project's prospective potential remains an underexplored terrain within the existing scholarly discourses. This study aims to address this lacuna by examining the interrelation between the Global Competitiveness Index (GCI) and projects that harbor potential for future development.

The purpose of this study is to contribute to the understanding of the literature on project success and to the determination of whether projects with potential for the future bring positive changes to the GCI indicators.

3- Methods

The article first provides a detailed literature review on the interpretation of the success of projects based on 24 scientific studies selected from a pool of more than 100 articles, which are most illustrative of the evolution of the concept. Based on our comparative analysis, it is revealed that the understanding of project success has grown from the concept of the project triangle to that of projects with potential for the future. Research in the IT field has shown that the concept of project success can be categorized into levels [28]. However, in this study, the considered projects can be from any industry, so we revise and regroup the criteria for the success of each level.

As a result, it became possible for us to eventually identify 17 criteria of success, distributed over 4 levels. For details, see Table 1.

Table 1. Criteria for different levels of project success

Success Level	Designation	Criteria
1. Project Management Success	X1	Application of project management methodology to a project / organization
	X2	Project Management Specialist in Project
	X3	The presence of trained project management specialists in the project / organization team
2. Project Success	X4	Achievement of the set goal of the project
	X5	Satisfaction of the customer, sponsors, and project executors
	X6	Customer satisfaction with the project result
3. Business Success	X7	Positive indicators of the investment attractiveness of the project
	X8	Positive forecast of economic efficiency of capital investments
	X9	Achievement of environmental, social, and other categories of sustainable development goals
	X10	Achievement of planned income indicators
4. Future Potential	X11	Opens new markets
	X12	Makes new derivative products
	X13	Creates new business opportunities
	X14	Improves processes in the organization and in the market
	X15	Increases the reputation of the performer / locality / country
	X16	Opens new opportunities related to people
	X17	Changes thinking and worldview of society.

Projects with success at the 4th level, combined with or without others, are believed to help improve the GCI score. Through analyzing data available from various statistics and reports on the Republic of Kazakhstan, it was possible to identify 19 projects that influenced the growth of the global competitiveness index of the nation, indicators of which from 2011 to 2019 were considered. Through analyzing these indicators, "growth spikes" and stable growth in some indicators were found, with the latter helping the country enter the top 50 nations from around the world for a certain component of the index. Subsequently, 9 components of the index were looked at more closely while their specific ways of calculation were determined. At the end, 14 projects were found to have contributed to the calculation of the components of the index. And these projects were confirmed to have contributed to the growth of the index.

Additionally, 5 projects, which were the only ones included in the WEF survey in Kazakhstan, were closely investigated for their link to the competitiveness index. In particular, a survey was conducted among 160 industry experts corresponding to the industries these 5 projects represented. Each of these surveyed experts assessed how a project impacted the index of competitiveness on a 10-point scale, where 10 stands for a direct dependence of the index on the project. The results of the survey showed a high-level correlation of these projects with the components of the index. Figure 1 depicts the entire research process.

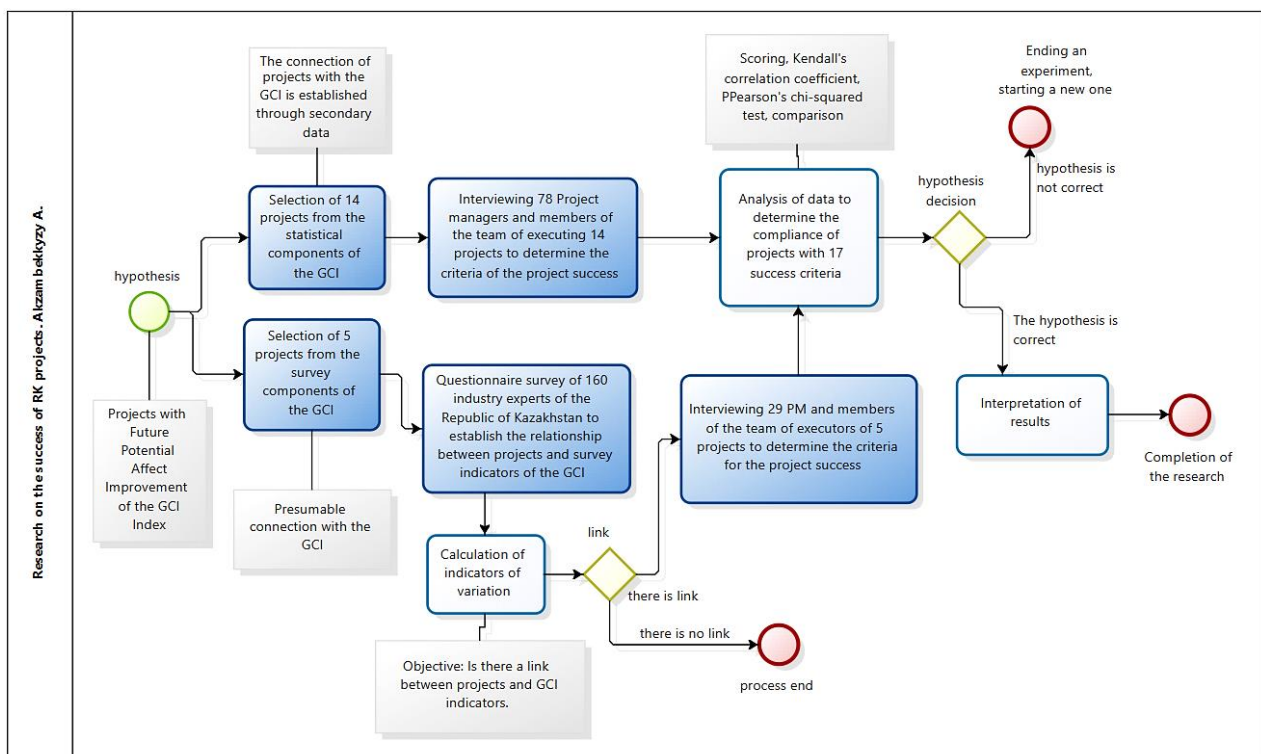


Figure 1. Research process

Projects that affect the growth of GCI indicators do not have to be state-owned. For this research, projects with different characteristics were selected, while a number of programs were used for studying 6 components of the index. In Kazakhstan, state programs are being implemented in all sectors of the economy in accordance with the predetermined main goals of the country. Thus, these programs directly influenced the growth of certain components of the index over time. The purpose of the study is to determine not the magnitude of the impact of a project on the dynamics of the GCI, but the binary classification of yes / no. The main question of this study is to find out whether projects with potential for the future cause changes in the indicators of the GCI. The analysis of the literature and the aforementioned data led to the following hypothesis - it is possible to increase the indicators of the GCI if the projects of concern meet the criteria of success for the 4th level (future potential).

The focus of the study is on the identification of the criteria of success that are characteristic of all types of projects. For this purpose, 107 interviews were conducted with the leaders and team members of 19 projects, involving 17 factors (criteria for the success of projects according to levels of success). Then, based on statistically analyzing the collected data, a set of criteria for project success was determined.

The purpose of the interviews was to understand what level of success these selected projects can be classified to, and what set of criteria is most typical for all projects. We then followed the following steps.

- 1) Sorting factors from high to low by the total amount of points scored to determine the mode for each criterion.

Limitations: Factors x1, x2, x3, x7, x8 are not considered in sorting the results, since the questions for them are not evaluative, but about the fact of availability.

- 2) Determining the coefficient of concordance for each project to determine the level of agreement of experts and the Pearson agreement criterion.
- 3) Excluding projects with a low value of expert agreements.
- 4) Drawing up a table for the locations of factors by importance of projects
- 5) Determining the consolidated location of factors in terms of importance for all projects
- 6) Comparing the results of sorting based on points and the significance of factors by using the coefficient of concordance
- 7) Determining the combination of success levels of the selected projects.

4- Results

This work starts with the identification of projects that have an impact on the dynamics of the GCI RK. The definition of the components of the index, where Kazakhstan has been among the top 50 countries over the past 10 years, made it possible to narrow the field of data mining. Table 2 shows the GCI indicators that are clearly visible before and after implementation for one selected project.

Table 2. Projects with an impact on the GCI and the e-participation index in Kazakhstan 2008–2019

No.	Index component	Project information	Years of launching the project for operation		2008	2012	2014	2016	2018	2019	
1.12	Electronic participation 0-1 (best)		1 stage – 2012	Information for all projects in the group	Value	n/d	n/d	n/d	n/d	0.84	
		EGov Project Portal of the Open Government of the Republic of Kazakhstan	2 stage – 2014		Score	n/d	n/d	n/d	83.7	83.7	
			3 stage – 2017		Rank	n/d	n/d	n/d		41	
			4 stage – 2018								
		«iKomek» - City Center for Monitoring and Rapid Response of the Akimat of Nur-Sultan	2018		E-Participation Index	0.0909	0.9474	0.7647	0.5932	0.8371	0.8812
		«Open Almaty»	2017		Rank EPI	n/d	2	22	67	42	26
		Public procurement portal of the Republic of Kazakhstan (www.goszakup.gov.kz)	2010		Rank EPI (a place)	98/170	2 /32	22/192	67/191	42/193	26/193

A comprehensive analysis of the electronic participation index enables a more profound understanding of the specific initiatives and projects that have contributed to their improvement in Kazakhstan and provides insights for future developments in the field of e-government. According to the official data of the Electronic Government of the Republic of Kazakhstan, there are several tools in Kazakhstan to influence the e-participation index. It is the process of involving citizens in policy- and decision-making and the design and delivery of services using information and communication technologies. E-participation is rated as an important indicator of the development of e-government (Figure 2).

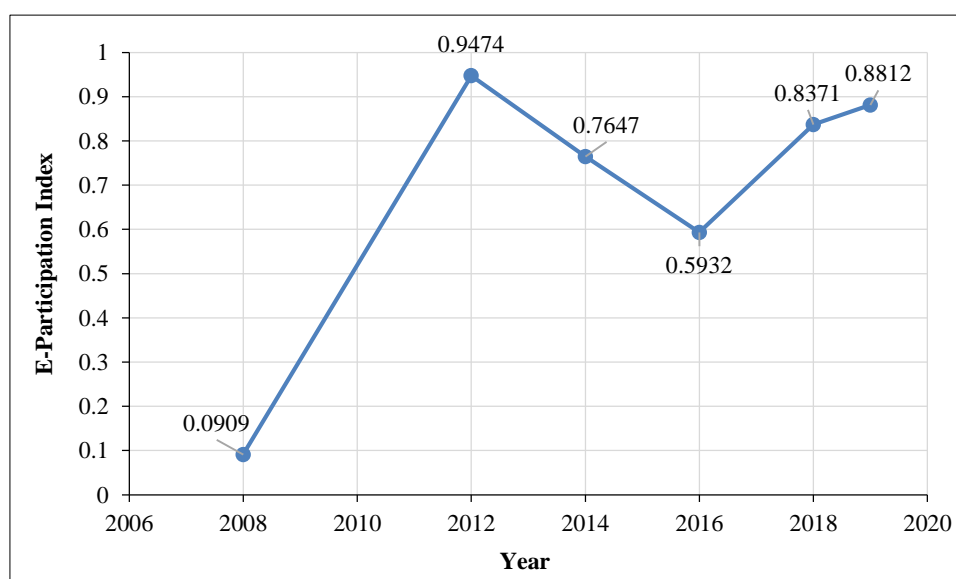


Figure 2. The value of the e-participation index in Kazakhstan for 2008–2019 [29]

This indicator is based on three components: the availability of information on the Internet, online public consultation, and direct citizen involvement in online decision-making processes. The main projects that contributed to this indicator in Kazakhstan are shown in Table 3, from which one can observe how Kazakhstan has risen from 98th place to 26th place in 12 years while competing with other developed countries [30]. The achievement of this notable advancement in the electronic participation index can be attributed to the cumulative influence exerted by a series of projects, all of which systematically contributed to enhancing the performance across the three integral components of the index. These initiatives collectively augmented the availability of information on the Internet, fostered extensive online public consultation, and facilitated the direct involvement of citizens in online decision-making processes. Such concerted efforts have led to a substantial boost in the overall e-participation index for Kazakhstan. To identify and select the remaining 13 projects that have a direct impact on the GCI, a meticulous data analysis was undertaken. This rigorous data-driven approach ensures that the selection process is grounded in empirical evidence while providing a sound basis for understanding the specific contributions of these projects to Kazakhstan's competitiveness in the global arena. Through this analytical framework, a comprehensive picture of the multifaceted interactions between various projects and their cumulative impact on key indicators emerged, thus offering valuable insights for future policy and decision-making endeavors.

Table 3. Projects with an impact on the components of the GCI index

No	Projects	Associated Index Component	Source of information
A	Open Budgets Project Portal budget.egov.kz	1.06 Budget transparency	Electronic government of the Republic of Kazakhstan, 2021 [31], International Budget Partnership, 2019 [32]
B	EGov Project Portal of the Open Government of the Republic of Kazakhstan	1.12 Electronic participation	Electronic government of the Republic of Kazakhstan, 2021 [30], UN E-Government Database, 2021 [29]
C	Portal "E-licensing»	11.02 Time to start a business	The World Bank Group, 2019 [33], Electronic government of the Republic of Kazakhstan, 2021 [30]
D	«iKomek» - City Center for Monitoring and Rapid Response of the Akimat of Nur-Sultan	1.12 Electronic participation	Electronic government of the Republic of Kazakhstan, 2021 [30], UN E-Government Database, 2021 [29]
E	Open Almaty – Public reception of the Akimat of Almaty	1.12 Electronic participation	Electronic government of the Republic of Kazakhstan, 2021 [30], UN E-Government Database, 2021 [29]
F	Public procurement portal of the Republic of Kazakhstan (www.goszakup.gov.kz)	1.12 Electronic participation	Electronic government of the Republic of Kazakhstan, 2021 [30], UN E-Government Database, 2021 [29]
G	Electronic customs declaration system	11.02 Time to start a business	Committee on Taxes and Levies at the Ministry of Finance of the Republic of Kazakhstan, 2019 [34], The World Bank Group, 2019 [33]
H	Project "Modernization of the National Power Grid of Kazakhstan, Stage II"	2.10 Electricity supply quality	International Energy Agency, 2019 [35], Kazakhstan Electricity Grid Operating Company, 2019 [36]
I	Construction of fiber-optic communication lines of Kazakhtelecom JSC	3.05 Internet users% of the adult population	International Telecommunication Union, 2019 [37], Kazakhtelecom, 2019 [38]
J	Women in Business EBRD project	8.11 Ratio of wage and salaried female workers to male workers%	International Labour Organization, 2020 [39], The European Bank for Reconstruction and Development, 2020 [40]
K	Project "Development of infrastructure in the field of education" according to the state program for the development of education of the Republic of Kazakhstan for 2011 - 2020	8.11 Ratio of wage and salaried female workers to male workers%	Ministry of Education and Science of the Republic of Kazakhstan, 2018 [41], International Labour Organization, 2020 [39]
L	Healthcare development program for 2011-2015 "Salamatty Kazakhstan"	8.11 Ratio of wage and salaried female workers to male workers%	Ministry of Health of the Republic of Kazakhstan, 2015 [42], International Labour Organization, 2020 [39]
M	Healthcare Development Program of the Republic of Kazakhstan "Densaulyk" for 2016-2020	8.11 Ratio of wage and salaried female workers to male workers%	Ministry of Health of the Republic of Kazakhstan, 2019 [43], International Labour Organization, 2020 [39]
N	Project "Bastau Business"	11.02 Time to start a business	National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken", 2019 [44], The World Bank Group, 2019 [33]

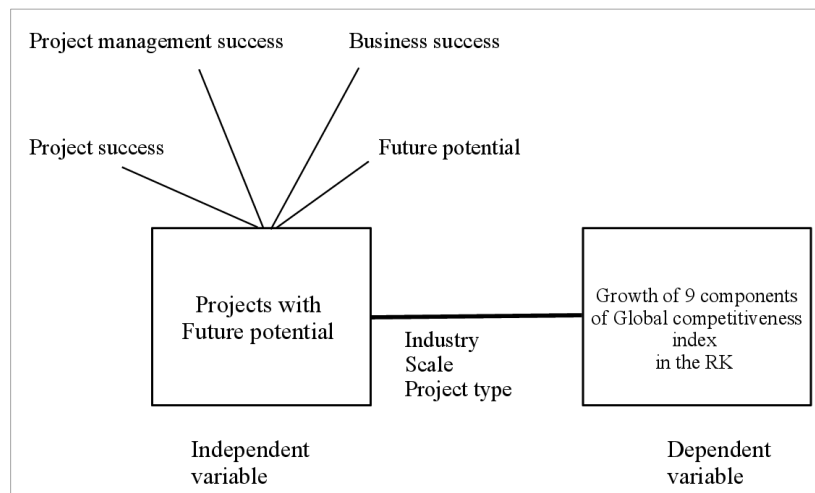
Some of the GCI indicators are calculated based on a survey of target populations according to each component. However, the 3 components of the index, for which Kazakhstan has been in the top 50 countries for more than 3 years, were calculated based on the opinions of industry experts. Hence, we selected projects from the industries the surveyed experts were from, believing that these projects would have the most influence on one or another component of the index. After selecting projects that could potentially have an impact on the components of the GCI, we conducted a survey of 160 industry experts to determine the relationship between projects and the components of the index. Table 4 lists the selected projects.

Table 4. Projects with potential impact on the components of the GCI index

No.	Projects	Associated Index Component	The magnitude of the relationship (from 10)
O	Project of Kazakhstan Temir Zholy: Construction of main lines 2014 -2015	2.04 Efficiency of train services	7.467741935
P	Project Kazakhstan Temir Zholy: Tulpar-Talgo	2.04 Efficiency of train services	7.816666667
Q	Infrastructure development program "Nurly Zhol" for 2015-2019	2.04 Efficiency of train services	7.721311475
R	The project "Teaching basic digital skills" Program "Digital Kazakhstan"	6.05 Digital skills among active population	7.442622951
S	The program for the development of productive employment and mass entrepreneurship for 2017-2021 "Enbek"	8.05 Active labor market policies	9.442622951

By analyzing what was collected, 14 projects were identified with statistically calculated indicators of the GCI, and 5 projects with indicators calculated based on the WEF survey. All these projects influenced the growth of GCI indicators over the past 5 years for 9 components of the index.

The subsequent phase of the research endeavored to ascertain the multifaceted levels of success, as exhibited by the projects under scrutiny, with a particular emphasis on delineating four distinctive tiers of achievement: Project Management Success, Project Success, Business Success, and Future Potential. This intricate examination seeks not only to gauge the immediate accomplishments and efficiency of the projects but also to discern the prevalence of future-oriented potential within them. By meticulously evaluating the projects against comprehensive criteria, we aim to shed light on their capacity to deliver immediate results as well as to serve as sustainable drivers of innovation and advancement in the foreseeable future. This holistic assessment framework provides a nuanced understanding of the dynamic interplay between various facets of success and the overarching potential for long-term impact and transformative change (Figure 3).

**Figure 3. Research model**

The conducted in-depth interviews provided an opportunity to collect data on project appraisals. Table 5 provides the results sorted by scores.

Table 5. Sorting project success criteria as assessed by project managers

Sort descending	Criteria	Value	Qualitative significance of the criteria
1	X16	183	Opens new opportunities related to people
2	X13	157	Creates new business opportunities
3	X5	156	Stakeholder Satisfaction
4	X14	154	Improves processes in the organization and in the market
5	X15	150	Increases the reputation of the performer / locality / country
6	X4	149	Achievement of the project goal
7	X6	144	Customer satisfaction with the project result
8	X11	143	Opens new markets
9	X17	142	Changes thinking and worldview of society.
10	X12	140	Makes new derivative products
11	X9	137	Achievement of environmental, social and other categories of sustainable development goals
12	X10	110	Achievement of planned income indicators

From Table 5, we can observe that criterion X16 was rated higher than all other criteria, and it characterizes a larger number of projects that have impacted certain indicators of the GCI. These particular projects are also mostly characterized by criteria X13, X5, X14, X15, and X4. The criteria "Opens up new opportunities related to people" and "Creates new opportunities for business" are the most highly rated and characterize 19 projects. This observation implies that these two criteria are important in describing the success of projects for the RK.

Since all selected projects have a medium to high Kendall coefficient of concordance, experts were not excluded from any of the projects (Table 6). Pearson's agreement criterion also showed that for all the selected projects, the calculated χ^2 is greater than 26.29623. Hence, the W value of the concordance coefficient is not random so that the results obtained here make sense and can be used in follow-up studies, and the hypothesis on the agreement of experts' opinions is not rejected for each of the projects.

Table 6. Consensus levels of experts

N	Specified significance level	Number of degrees of freedom	Kendall's Concordance (W) Coefficient	Qualitative characteristics of the relationship of experts	Pearson's agreement criterion	The value of the chi-square»	Specified significance level
A	$\alpha = 0.05$	16	0.61	average	48.46	26.29623	the quantity is not random
B	$\alpha = 0.05$	16	0.61	average	48.51	26.29623	the quantity is not random
C	$\alpha = 0.05$	16	0.57	average	45.24	26.29623	the quantity is not random
D	$\alpha = 0.05$	16	0.76	high	60.48	26.29623	the quantity is not random
E	$\alpha = 0.05$	16	0.46	moderate	43.90	26.29623	the quantity is not random
F	$\alpha = 0.05$	16	0.58	average	55.78	26.29623	the quantity is not random
G	$\alpha = 0.05$	16	0.61	average	58.43	26.29623	the quantity is not random
H	$\alpha = 0.05$	16	0.60	average	57.81	26.29623	the quantity is not random
I	$\alpha = 0.05$	16	0.64	average	61.28	26.29623	the quantity is not random
J	$\alpha = 0.05$	16	0.78	high	49.70	26.29623	the quantity is not random
K	$\alpha = 0.05$	16	0.67	average	63.94	26.29623	the quantity is not random
L	$\alpha = 0.05$	16	0.50	average	47.99	26.29623	the quantity is not random
M	$\alpha = 0.05$	16	0.60	average	57.66	26.29623	the quantity is not random
N	$\alpha = 0.05$	16	0.74	high	70.56	26.29623	the quantity is not random
O	$\alpha = 0.05$	16	0.44	moderate	42.24	26.29623	the quantity is not random
P	$\alpha = 0.05$	16	0.60	average	57.19	26.29623	the quantity is not random
Q	$\alpha = 0.05$	16	0.66	average	52.49	26.29623	the quantity is not random
R	$\alpha = 0.05$	16	0.74	high	71.06	26.29623	the quantity is not random
S	$\alpha = 0.05$	16	0.62	average	59.80	26.29623	the quantity is not random

The experts surveyed in this study evaluated the degree of significance in terms of the success criteria for organizations of the Republic of Kazakhstan by assigning them Likert scales, which were then converted into scores for the purpose of ranking. The factor to which the expert gives the highest score is assigned a rank 1. If an expert perceives several factors as equivalent, then they are assigned the same Likert number. Based on the data from the survey questionnaire, a summary matrix of ranks for each project was compiled based on the calculation of 4, 5, 6 experts for each project, where all factors were ranked according to their importance. The significance of the factors for the 19 projects is summarized in Table 7.

It makes no sense to calculate a single concordance factor for all projects and experts since each project has its own unique and distinctive characteristics (type, branch of the project, scale), and the consistency in experts's opinions for the 19 projects will be low. In this case, the fashion shown in Table 7 exhibits a single trend in determining the importance of factors for all the projects. Specifically, factors x1, x2, x3, x7, and x8 are of the greatest importance in determining the success of projects. The second group of factors that have the greatest importance were distributed as follows: x3, x5, x11, x6, x10, x13, x14, x15, and x17. The sorting, according to the significance of the criteria, reveals that these 5 criteria as x1, x2, x3, x7, and x8 are the most significant. This can be explained by the factual nature of the criteria (yes, no), confirming that the experts were most consistent in these answers, so that these consistent answers can be taken as the actual answer. Thus, it is possible to select several groups of factors that are most important in assessing the success of projects (Table 8):

- 1) The most significant and characteristic factors for the largest number of projects have been added to the first group, which includes x1, x2, x3, x7, x8 (orange).
- 2) The factors that are most important in terms of scores and significance have been added to the second group, which includes x5, x13, x14, x15, and x16 (blue).
- 3) The third group included factors that are of secondary importance, including x6, x10, x11, and x17 (violet).

Table 7. Summary table of the significance of the criteria for the success of projects

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	Mode
x7	x7	x7	x3	x2	x1	x1	x1	x1	x1	x10	x2	x10	x10	x17	x1	x1	x1	x1	x1
x2	x10	x9	x7	x1	x2	x2	x2	x2	x2	x7	x10	x7	x1	x1	x2	x2	x2	x2	x2
x4	x1	x2	x1	x3	x3	x3	x3	x3	x3	x2	x7	x1	x2	x2	x3	x3	x7	x3	x3
x6	x2	x17	x2	x7	x7	x7	x7	x7	x7	x1	x1	x2	x7	x3	x7	x4	x10	x7	x7
x9	x3	x1	x8	x8	x8	x8	x8	x8	x8	x11	x3	x3	x3	x7	x8	x5	x11	x8	x8
x1	x8	x3	x9	x10	x9	x9	x17	x12	x6	x12	x4	x8	x8	x8	x17	x6	x12	x10	x8
x3	x9	x5	x10	x11	x17	x6	x12	x11	x10	x3	x5	x12	x5	x4	x14	x7	x3	x11	x3, x5, x11
x8	x16	x6	x11	x12	x10	x10	x11	x10	x13	x4	x6	x13	x6	x5	x15	x8	x13	x12	x6, x10, x13
x10	x4	x8	x6	x14	x4	x11	x14	x13	x14	x5	x8	x14	x9	x6	x4	x10	x14	x13	x14
x15	x6	x12	x4	x6	x5	x15	x4	x14	x15	x6	x11	x15	x4	x9	x5	x15	x15	x14	x15
x13	x17	x14	x5	x4	x6	x4	x5	x17	x4	x8	x12	x17	x11	x10	x6	x9	x17	x15	x17
x12	x13	x16	x12	x13	x11	x5	x6	x4	x5	x9	x15	x11	x12	x11	x9	x11	x4	x9	x11
x16	x15	x4	x13	x15	x12	x12	x9	x5	x9	x13	x17	x4	x13	x14	x10	x12	x9	x5	x13, x12, x9
x5	x5	x15	x15	x5	x13	x13	x10	x6	x11	x14	x9	x5	x14	x15	x11	x17	x5	x6	x5
x11	x11	x10	x16	x9	x14	x14	x13	x9	x12	x15	x13	x6	x15	x12	x12	x13	x8	x4	x13, x12
x17	x12	x11	x17	x16	x15	x16	x15	x15	x16	x17	x14	x9	x16	x13	x13	x14	x16	x16	x16
x14	x14	x13	x14	x17	x16	x17	x16	x16	x17	x16	x16	x16	x17	x16	x16	x16	x6	x17	x16

Table 8. The most important criteria for the success of the selected projects

Success Level	Designation	Criteria
1. Project Management Success	X1	Application of project management methodology to a project/organization
	X2	Project Management Specialist in Project
	X3	The presence of trained project management specialists in the project/organization team
2. Project Success	X4	Achievement of the set goal of the project
	X5	Satisfaction of the customer, sponsors and project executors
	X6	Customer satisfaction with the project result
3. Business Success	X7	Positive indicators of the investment attractiveness of the project
	X8	Positive forecast of economic efficiency of capital investments
	X9	Achievement of environmental, social, and other categories of sustainable development goals
	X10	Achievement of planned income indicators
4. Future Potential	X11	Opens new markets
	X12	Makes new derivative products
	X13	Creates new business opportunities
	X14	Improves processes in the organization and in the market
	X15	Increases the reputation of the performer/locality/country
	X16	Opens new opportunities related to people
	X17	Changes thinking and worldview of society.

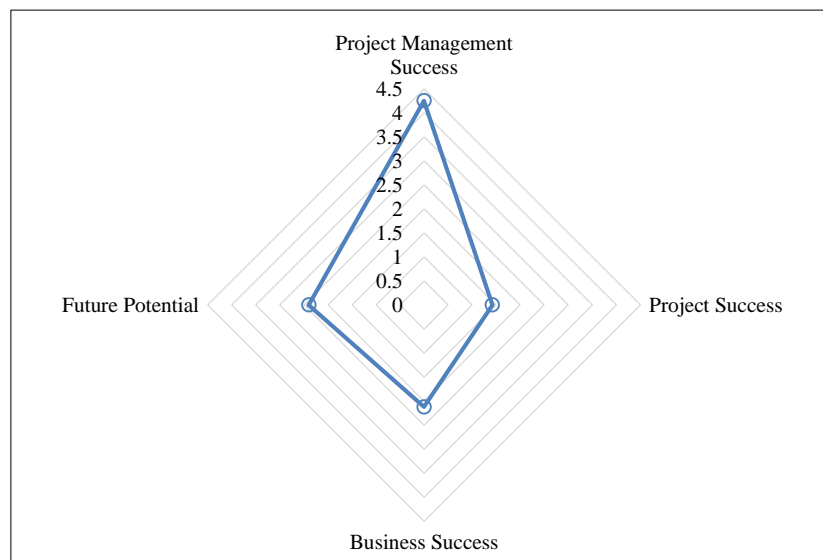
As an outcome of the study, it can be seen that each project that impacts 9 components of the competitiveness index meets the criteria of success potential for the future. Thus, we can state that projects, which meet the success criteria with a potential for the future, affect the indicators of the GCI in the Republic of Kazakhstan.

The intricate nature of measuring success in projects necessitates a comprehensive understanding of the distinct levels at each of which success can manifest. By categorizing projects based on these success levels, it becomes possible for project managers to create more holistic and nuanced representations of their achievements, allowing them to make appropriate rankings and assessments across multiple dimensions. It's important to note that success levels are not mutually exclusive, as a project can excel in one or more of these dimensions concurrently, highlighting the multifaceted nature of success. This underscores the idea that no single level of success is inherently superior to another; rather, they each make contributions to the ultimate goals in distinct ways. Therefore, by assigning equal significance to each of these identified levels, one can establish the relative importance of each criterion and construct a comprehensive radar diagram that provides a holistic view of a project's success across multiple dimensions (Table 9).

Table 9. Weights of levels and criteria for measuring project successes

Success Level	Criteria	Weight of each level	Weight of each criterion	Most significant criteria	Current level weight
1. Project Management Success	X1	4.25	1.42	1.42	4.25
	X2		1.42	1.42	
	X3		1.42	1.42	
2. Project Success	X4	4.25	1.42	-	1.42
	X5		1.42	1.42	
	X6		1.42	-	
3. Business Success	X7	4.25	1.06	1.06	2.12
	X8		1.06	1.06	
	X9		1.06	-	
	X10		1.06	-	
4. Future Potential	X11	4.25	0.6	-	2.4
	X12		0.6	-	
	X13		0.6	0.6	
	X14		0.6	0.6	
	X15		0.6	0.6	
	X16		0.6	0.6	
	X17		0.6	-	

Perceptions, values, priorities, and objectives are dynamic constructs of projects that evolve with the passage of time. Correspondingly, the assessment of a project's success and failure is subject to the influence of these shifting factors. What may be regarded as a project's success at a specific juncture can undergo a transformation as time elapses and extends into a more extensive timeframe. Indeed, the radar of a project's success can vary from one country to another depending on the unique, underlying contextual factors and objectives specific to each nation. Figure 4 illustrates the radar of the successes of projects that impact the indicators of the GCI RK. This radar provides a visual representation of which aspects of a project's success are significant for Kazakhstan within the context of its innovativeness and competitiveness endeavors. Other countries may have their own success radars tailored to their individually-specific priorities and development strategies.

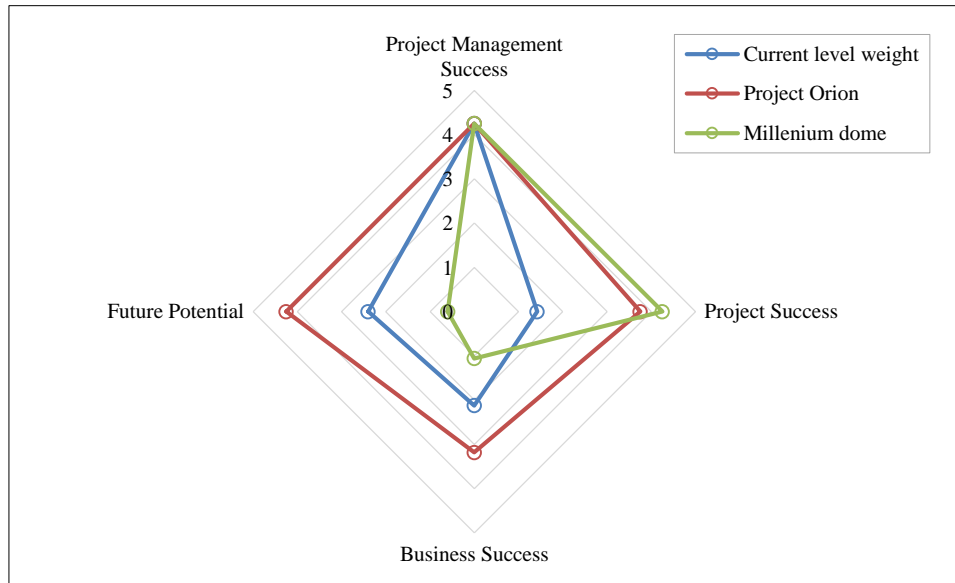
**Figure 4. Radar of the success projects affecting the indicators of the GCI RK**

A comparison of the findings of the current study with those of Dalcher [27], which examined Project Orion (Kodak, which was replaced by a new innovation) and the Millennium Dome Project, reveals notable distinctions in the radar of project successes. Dalcher's radar delineates the weightings of success levels within these projects in contrast to the projects in Kazakhstan that influence the indicators of the Global Competitiveness Index. Consequently, one can observe that projects exhibiting a more conventional distribution of success levels tend to achieve higher levels of success. For details, see Table 10.

Table 10. Weights of project success levels in the radar of the success projects

Success Level	Current level weight	Project Orion	Millenium dome
Project Management Success	4.25	4.25	4.25
Project Success	1.42	3.75	4.25
Business Success	2.12	3.18	1.06
Future Potential	2.4	4.25	0.6

This analysis serves the purpose of elucidating the disparities that possibly exist in the patterns of how international projects and those affecting Kazakhstan's competitiveness index are seen as successful. It underscores the nuanced dynamics of success criteria across different project contexts. Notably, the projects considered in prior research, such as the Orion and Millennium House projects, might have displayed distinct success profiles when compared to those examined in the current study (Figure 5)

**Figure 5. Kazakhstan projects success radar**

The inference drawn is that a more balanced and standardized distribution of success levels within projects appears to correlate with higher levels of overall project success. This insight has implications for both project management practices and policy formulation, while emphasizing the importance of considering the diverse levels of success and their potential impact on the future when assessing the outcomes of projects aimed at enhancing a nation's competitiveness. Ultimately, the comparative analysis highlights the need for a comprehensive understanding of success factors that transcend specific project boundaries and underscores the value of standardizing success criteria to optimize project performance and outcomes.

This implies that in order to exert an influence on the components comprising the competitiveness index, projects should exhibit a combination of several levels of success. In subsequent research endeavors, it becomes plausible to explore the extent of the future impact potentials on the advancement of global competitiveness index indicators. Such an inquiry holds the promise of providing a deeper understanding of how prospects for future success in projects can translate into tangible improvements in a nation's overall competitiveness. By delving into the quantifiable aspects of this relationship, researchers can shed light on the intricate dynamics between long-term project potential and its implications for a country's position in the global economic landscape. This analytical approach can yield valuable insights for policymakers and stakeholders seeking to optimize their strategies for enhancing competitiveness. Ultimately, it underscores the significance of considering not only immediate outcomes but also future prospects when evaluating the success and impact of projects on a nation's competitiveness.

5- Discussion

The present study made it clear that projects with future potential affect the performance of the GCI of the Republic of Kazakhstan and identified a combination of success criteria that contributed to this impact.

It selected projects that influenced the growth of some GCI indicators. These projects were associated with an increase in nine GCI indicators in Kazakhstan. Considering that in Kazakhstan there is an exact number of targeted projects for each area of these GCI indicators, these projects' influence can be considered strong. The purpose of the study was to identify and confirm what characteristics these projects have that can be used as criteria of success. In addition, a qualitative study of project criteria was carried out to determine their application usefulness.

During the study, we were able to provide a different interpretation for the concept of project success, making previously unsuccessful projects become successful with this new interpretation. Thus, this research made an important contribution to the composition of the criteria for the measurement of project success. In particular, there are 17 different criteria for a project to be considered successful, depending on its relationship with the organization's strategy. This research outcome represents a fundamentally new approach to interpreting the success of projects, because previously it was believed that a project has to meet certain criteria to be considered as successful, otherwise, unsuccessful. Now, we can say that even if a project does not meet, for example, the budget constraints and deadlines, its success can still be interpreted in a different dimension or in a more creative view in terms of the project's outcomes. We do not claim that all projects are successful, but it is necessary to look at projects based on what they produce from different angles, for which we identified 17 criteria, while confirming that projects with future potential(s) have the greatest impact on the growth of GCI indicators.

Previous studies in this direction have shown that it is relevant to evaluate projects according to different criteria of success beyond just "budget-term-content". The influence of time on the interpretation of project success needs to be highlighted [15]. In the short term, one project may not seem successful, but in the long term, it can be interpreted differently. But the project environment is dynamic and forever changing, so success factors can change their levels of influence over time. Therefore, it is necessary to constantly monitor success criteria and identify new ones or determine their levels of impact on projects [45].

Also, each organization, depending on its size, has its own concept of success, where large companies are focused on planning and quality and small companies are focused on communication and leadership [46].

The identified criteria, notably the capacities to "create new business opportunities," "improve processes in the organization and in the market," and "increase the reputation of the performer/locality/country," hold significant importance for project evaluation, as this study substantiates. In the realm of management and organizational research, project studies have emerged as a thriving subfield, shedding new light on how engaging in projects has enduring effects on businesses' capabilities and structures. Such studies help address a historical gap in understanding the role of projects in shaping organizations while suggesting that projects offer a fruitful avenue for further interdisciplinary research and dialogue within management and organization studies [47].

In this context, it is noteworthy that other researchers have previously explored the idea of levels (such as organizational design, value creation, value capture, and value destruction) and perspectives of projects, suggesting the need for further expansion and investigation. These scholars have advocated for a broader examination of projects with more extensive scope and influence, encompassing diverse types of organizations, including those beyond the traditional business milieu, such as public, non-governmental, and various other entities. The inclusion of these varied organizational forms is pivotal, as they represent a wide spectrum of values that drive the participation of diverse actors in projects [48]. In the current work, we delved into specific levels and viewpoints concerning projects, yet our ongoing research deepens this exploration by examining projects of broader scope and impact. This expanded focus encompasses organizations that extend beyond the traditional business context, such as public, non-governmental, and various other entities. These diverse organizational forms are integral to our analysis as they encompass a wide spectrum of values that motivate diverse actors to participate in projects.

In this vein, it is worth thinking about the sustainability of the use of project tools, which in the future may affect the significance of owning a first-level Project Management Success. It should be noted that according to this study, one of the most important criteria for success was the 16th criterion, "opens up new opportunities related to people." Here it is necessary to emphasize that opportunities for people should be created regionally, both for the population and for local communities, as this helps to understand which project is the most valuable and effective [49].

A limitation of the study is that selected projects had a greater impact on the growth of GCI scores than others. Hence, other projects not selected may have a different set of success criteria.

The success radar of Kazakhstan's projects can help project managers focus on practical project management tools and certain success criteria so that their respective projects can potentially bring more valuable results to the country than would otherwise be the case. Also, each country can determine its success radar and identify which success criteria can influence the growth indicators of the country. Future studies should look at a larger sample and examine the correlation between different success factor rankings.

This research aims to contribute to the scholarly discourse by shedding light on the hitherto unexamined relationship between national projects and the Global Competitiveness Index of the nation. By probing the potential impact of such projects on Kazakhstan's GCI and, consequently, its socio-economic conditions, this study seeks to provide valuable insights for policymakers, researchers, and stakeholders invested in the nation's socio-economic development. The findings may offer guidance on optimizing the planning and implementation of national projects to achieve the overarching goal of enhancing both global competitiveness and the well-being of the Republic of Kazakhstan's citizens.

6- Conclusion

The concept of project success has been evolving over time. The pandemic also made its impact on the understanding of the concept, while showing several gaps and shortcomings that exist in the relevant knowledge. Now, organizations initiate various projects to achieve their respective goals. However, for this end, one needs to understand how projects are considered successful in order to create such projects. This study found that each project needs to meet its specific conditions of success, a particular combination of relevant criteria. These specific conditions include 4 levels: project management success, project success, business success, and potential for the future. In particular, this study determines the criteria for each level of success that a project could potentially meet, although the project might meet a different combination of success criteria. Within the framework of our research, a systematic analysis of the Global Competitiveness Index (GCI) was conducted to identify the indicators in which the Republic of Kazakhstan holds high positions. Concurrently, we identified projects that exert a significant influence on improving these indicators, resulting in the identification of 19 key projects. The analytical process encompassed in-depth interviews with the top management of these projects and their teams to discern the criteria for project success. The primary objective of this study was to ascertain whether those projects that possessed substantial potential for the future, particularly in light of specific project success criteria, impacted the growth of the GCI for the Republic of Kazakhstan.

In summary, this study has provided compelling evidence that projects with a forward-looking perspective significantly impact the progression of the Global Competitiveness Index (GCI). This discovery propels future research inquiries towards the intricate quantification of this impact that is expected to transcend the current simplistic binary evaluations. Beyond academic inquiry, this research's ramifications extend into the domain of technical regulation within the Republic of Kazakhstan, where the identified criteria are poised to underpin a scoring model for project selection. The paramount objective of this initiative resides in the optimization of project portfolio composition, emphasizing the prioritization of endeavors conducive to national prosperity. Ultimately, this work underscores the practical feasibility of tailoring success criteria to align with each nation's unique aspirations. Such insights offer invaluable guidance to decision-makers and stakeholders tasked with shaping a nation's trajectory towards growth and enhanced competitiveness through the strategic selection and forecasting tools applied to project portfolios. The novelty of this research lies in its pioneering exploration of the influence of forward-looking projects on the dynamics of the Global Competitiveness Index (GCI). This study offers a systematic analysis and identification of success criteria for projects to contribute to GCI improvement; it sheds light on the significance of these criteria for future strategic project management and national development. Furthermore, this research breaks new ground by providing the most comprehensive description, as of this writing, of projects with future potential and by employing diverse success criteria to assess such projects' impacts. Thereby, this work fosters a deepened understanding of strategic project selection and its implications for a nation's growth and development of competitiveness. In conclusion, this research underscores the pivotal role of forward-thinking projects and their success criteria in shaping a nation's competitiveness, while offering valuable insights for informed decision-making and strategic development.

7- Declarations

7-1- Author Contributions

Conceptualization, A.A. and Sh.S.; methodology, A.A. and L.V.; software, A.A. and S.S.; validation, A.A., L.V., and J.Y.F.; formal analysis, A.A. and Sh.S.; investigation, A.A. and J.Y.F.; resources, A.A. and Sh.S.; data curation, L.V. and J.Y.F.; writing—original draft preparation, A.A. and Sh.S.; writing—review and editing, L.V., J.Y.F., and S.S.; visualization, A.A. and Sh.S.; supervision, A.A.; project administration, A.A.; funding acquisition, L.V. All authors have read and agreed to the published version of the manuscript.

7-2- Data Availability Statement

The data presented in this study are available on request from the corresponding author.

7-3- Funding

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7-4- Institutional Review Board Statement

Not applicable.

7-5- Informed Consent Statement

Not applicable.

7-6- Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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