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RESEARCH ARTICLE
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Global Trends of Gender Studies in Tourism: a Bibliometric Analysis Using Scopus Database

Stalifa Bektursyn[1] | **Sholpan Abdreyeva**[1]* | **Imanaly Akbar**[1]

[1] Al-Farabi Kazakh National University, Almaty, Kazakhstan

Corresponding author:
***Sholpan Abdreyeva** – Cand. Sc. (Econ.), Associate Professor, Al-Farabi Kazakh National University,Almaty, Kazakhstan. Email: sholpan.abdreyeva_2016@gmail.com

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Abstract

Different articles on gender studies in tourism were retrieved using Scopus, one of the most popular databases. The research articles are considered between 2003 and 2022. Scopus analyzer is used to get analysis results such as documents by year, source, country, etc. VOSviewer Version 1.6.17 is used to analyse different units such as co-authorship, co-occurrences, citation analysis, etc. Statistical analysis and network analysis show the maximum number of articles published in 2020 and 2022, with the United States contributing the most significant number of documents. The results also show that the number of publications was minimal in the first ten years, and the growth was uneven. Still, in the following ten years, the number of published articles gradually increased, especially in 2019, when the number of publications increased significantly. Researchers from the USA, UK and Australia publish nearly 40% of all articles worldwide, ahead of 48 other countries and territories. At the same time, the top three most productive universities from each of the top 10 countries belong to the three countries mentioned above. Gender research in tourism has been studied at the initiative of scientists from democratically developed English-speaking countries and some Western countries, and it can be said that mass interest has only been awakened since the IV World Women's Conference held in 2019. Network analysis of different parameters indicates that there is a lot of scope to contribute to further research in terms of Women's Status, Empowerment and Sustainability.

Keywords: Economy, Tourism, Business, Gender Studies, Bibliometric Analysis, Author Keyword, Co-occurrences, Co-authorship, VOSviewer

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1. INTRODUCTION

The concept of gender appeared in the second wave of Western feminism (1963-1980). To emphasize the role of social culture in gender, feminists of that time proposed to distinguish between genders, concluding that people have two genders: one is biological gender, and the other is social gender, that is, genders created by society and culture. The formulation of this theory not only interprets the meaning of the concepts of masculinity and femininity with the limited differences represented by physiological sexes but also transforms the relations between the sexes into their social hierarchy and power relations.

The integration of gender theory in the tourism study began in the 70s of the 20th century. Feminist tourism scholars have tried to criticise society for protecting women, a socially weak and marginalised group. The content of the study includes the impact of tourism on the social culture of the host country, crime and social problems caused by tourism and many other aspects. In the mid-90s of the 20th century, with the deepening of feminist academic research and the convening of the IV World Conference on Women, gender research in tourism also peaked.

Currently, gender issues have become one of the relevant topics in tourism research. The basis of tourism development is a gendered society consisting of representatives of both sexes. The development of tourism and the development of activities related to tourism include gender relations. The variability and complexity of gender relations directly affect the sustainable growth of tourism. Studying tourism issues from the gender perspective has significant theoretical and practical value. Therefore, it attracts more and more attention from scientists.

In the past 40 years, with the rapid development of the feminist movement and academia worldwide, significant changes have occurred in gender studies from the discipline system to the academic theory. To accomplish growth and sustainable development, gender equality and women's empowerment are essential, as without them, half of humankind would be deprived of rights and opportunities. Gender equality is the fifth priority aim in the Sustainable Development Goals (SDGs, 2015), which the United Nations (UN) has identified as a crucial issue for growth and development. Tourism studies in marketing, human resources, entrepreneurship, development, planning, and many other fields have been becoming more and more interested in applying a gender perspective recently (Figueroa-Domecq et al., 2015; Pritchard & Morgan, 2017; Mooney, 2020; Figueroa-Domecq et al., 2020; Alarcón & Cole; 2019, Segovia-Pérez et al., 2019; Costa et al., 2017). It is also shown that there is much room for growth and advancement in this field of study (Tribe, 2006; Chambers et al., 2017). Additionally, as the World Tourism Organization for the UN has noted (2011, 2019), the intersection of gender and tourism is a field that necessitates a deeper comprehension of the relationship between the participation of a wide range of social actors, including researchers, entrepreneurs, employees, tourists, public administration, Non-Governmental Organizations, etc. (Chambers et al., 2017).

The implementation of a gender approach in the evaluation of tourism has shown notable differences between men and women for an extensive set of issues (e.g. employment, entrepreneurship and demand). Often, as a result of social stereotypes roles and the social construction of gender this difference turns into a disadvantage for the latter, and higher vulnerability. Consequently, tourism research helps with the identification, understanding and dissemination needed to reduce gender inequality. Even though gender studies in this industry are increasingly relevant tourism (Figueroa-Domecq et al., 2020) as a research area has been developed in parallel with feminist and gender studies, and they rarely intersect or crossover in a sustained or significant way (Pritchard, 2018; Ferguson & Alarcon, 2015). This lack of critical thinking and the resulting failure of many researchers to fully incorporate gender in the evaluation of the tourist experience, has often led to partial and superficial conclusions. For this reason, it is necessary to broaden and deepen gender research in tourism applying a true feminist perspective.

Therefore, the aim of this article is to attract more notice from scholars to conduct in-depth research on gender issues in the tourism industry by evaluating the trends of gender studies in tourism globally.

2. LITERATURE REVIEW

In the sociological study of tourism, gender has always been a critical frontier issue. Since the 1980s, studies on gender equality in tourism have generally been debated and made more widely known (Kabil et al., 2022). The initial research examined the gender persistence in tourist destinations, as well as gendered differences in tourism perceptions at various levels of development, and examination of power dynamics that lead to gender disparities (Boley et al., 2017; Figueroa-Domecq & Segovia-Perez, 2020). In general, since the 1990s, which is considered a turning point in the gender and tourism literature, tourism research has been discussed from a gender perspective and become famous. At this time, Kinnaird and Hall (1994) established the triple pillars, which are essential for comprehending the connection between gender and tourism. The first pillar chosen for tourism-related activities is based on social interactions that are gendered, complicated, and diverse. The second pillar focused on the influence of politics, economics, culture, society, and the environment on gender relations. The final one is based on the ideas of gender equality and disparity as well as variety in age, class, and religion. These pillars have created a platform for four critical dimensions in the field of tourism research: the gendered traveller, the gendered host, the gendered marketer, and the gendered tourism landscape (Figueroa-Domecq & Segovia-Perez, 2020).

This study area had grown by the 2000s thanks to studies on gendered employment, gender and sex tourism, and gender and sustainability (Pritchard & Morgan, 2000). International organizations substantially impact the existing scholarly literature regarding development trends for the interaction between gender and tourism. The United Nations (UN), the World Tourism Organization (UNWTO) and the International Labor Organization (ILO) play a key role in raising awareness of gender equality in the tourism sector through the following three key documents: the 2030 Agenda for Sustainable Development (UN, 2015), the Global Report of Women in Tourism (UNWTO, 2010), and the International Perspectives on Women and Work in Hotels, Catering, and Tourism (ILO, 2013), respectively. Due to the growing interest in the gender perspective in the tourist industry among international organizations and scholars, there is a need for a thorough review of how to approach this area of study (Kabil et al., 2022).

The relationship between the two fundamental components, "people and place", is the social phenomenon known as tourism (Mansvelt, 1998). From a "people" standpoint, tourism seems to be a demographic and psychological field in which the actions and social stereotypes of the traveller are essential factors that might influence the entire aspect of tourism (Holden, 2005). Men and women, in terms of demographics, contribute differently to the tourist industry and its various aspects, including employment, marketing, resource management, tourism development and planning, and academic research in the tourism industry (Kabil et al., 2022). Women and the tourism business have a mutually beneficial partnership that benefits both sides. From one perspective, tourism helps women's lives by creating job opportunities, assisting with participation in the labor market, and promoting general well-being, good health, and self-affirmation (Abou-Shouk et al., 2021). On the other hand, women make the tourism industry more robust and resilient. An essential prerequisite for sustainable tourism development is gender equality in the distribution of tourism's economic resources.

Women's critical role in various sub-sectors of the tourism industry can easily be demonstrated numerically. In general, 54% of workers in the tourism sector are female (UNWTO, 2010). In certain nations, including Thailand, Panama, and countries in Latin America, tourism employs

almost twice as many women as other economic sectors (Kabil et al., 2022). The International Labour Organization (ILO) estimates that women comprise 60–70% of the workforce in the hotel and travel industries (Organization, 2010). In addition, women are more likely to work for themselves in the tourism industry than in the general economy in many nations, mainly Europe. Furthermore, a study of the hosts on accommodation platforms revealed one of the more intriguing data that illustrates the promising role of women in the hostel industry. For instance, more than a million (or 59%) of Airbnb's hosts are women (World Bank, 2017). These numbers and other facts emphasize and clarify women's value in the tourist industry.

Women's participation in leadership is measured by indicators such as their employment in the labor market, education, the wage gap, and participation in parliament (Kireyeva et al., 2021). The Republic of Kazakhstan strongly emphasises gender equality as it develops because it is the cornerstone of the nation's economic and social progress (Mukhamadiyeva et al., 2019). However, the growth of female entrepreneurship occurs while maintaining their insignificance in terms of turnover and number of employees (Satpayeva et al., 2020). Although international ratings confirm that Kazakhstan is a leader in Central Asia in eliminating the causes of gender inequality, there are still significant gender differences in key areas (Khamzina et al., 2020). Women's entrepreneurship drives tourism in resource-scarce destinations, but little is known about why local women enter business and what determines their success during times of crisis (Filimonau et al., 2022). The division of labor in Kazakh society remains traditional and strongly gendered. However, tourism has changed the division of labor between couples to some extent (Talinbayi et al., 2019).

All the different scientific fields have tended to achieve the SDGs since the United Nations declared them in 2015, and one of the most prominent of these was tourism. Goal No. 5 of the SDGs was "Gender Equality", which opened the door for developing various gender-related research projects in the tourist industry (UN, 2015). Gender equality is a crucial sign of sustainable tourism, where the sustainability of tourism is improved by enhancing women's situations (Alarcón & Cole, 2019). At the same time, the condition of women is gradually improving thanks to the tourism sector (Cohen & Cohen, 2019; Rinaldi & Salerno, 2020). Significant attention has been given to how tourism might improve women's employment and income to advance gender equality (Ferguson, 2011). However, research and education on gender equality in tourism is still fundamental. The SDGs' fifth goal, which relates to women's empowerment, is divided into several sub-goals that aim to promote gender equality. These sub-goals included community and civil society involvement, employment, entrepreneurship, education and training, leadership, decision-making, etc.

Therefore, this article aims to analyze the global research trends in gender tourism using publication outputs, co-authorships between authors and affiliated countries, and co-occurrences of author keywords. and presents the necessary main concepts for applying a gender perspective in tourism research. The evolution in feminist paradigms supports this, as well as the new potential research methods and the project’s design from a gender perspective. This conceptual framework aims to provide a theoretical framework that enhances the development of gender research in tourism.

3. METHODOLOGY

Based on the results of the academic literature database, bibliometric analysis study is a mechanistic way to comprehend the global research trends in a certain field. Exploring the significant analytical contributions of academic research and relationships is made possible by bibliometric methods. Thus, the method has assisted in the conceptual growth of various scientific disciplines (Di Stefano et al., 2010). This method distinguishes bibliometric analysis papers from

review papers, which are primarily meant to address the most recent advancements, difficulties, and potential future directions of a particular issue (Khudzari et al., 2018).

3.1. Data source and search strategy

There are many popular databases worldwide, such as Scopus, web of science, google scholar, Scimago etc. These databases are having a very wide range of publications. Out of these Scopus- the most popular and one of the largest databases, is used for the analysis. We found a total of 566 publication results using the keywords ("gender and tourism") used in the initial search. There is no any restriction on country, language etc. Each publication has the information such as author, country, citations, documents, sources etc. After appropriate screening, this information is used for analysis (see Figure 1).

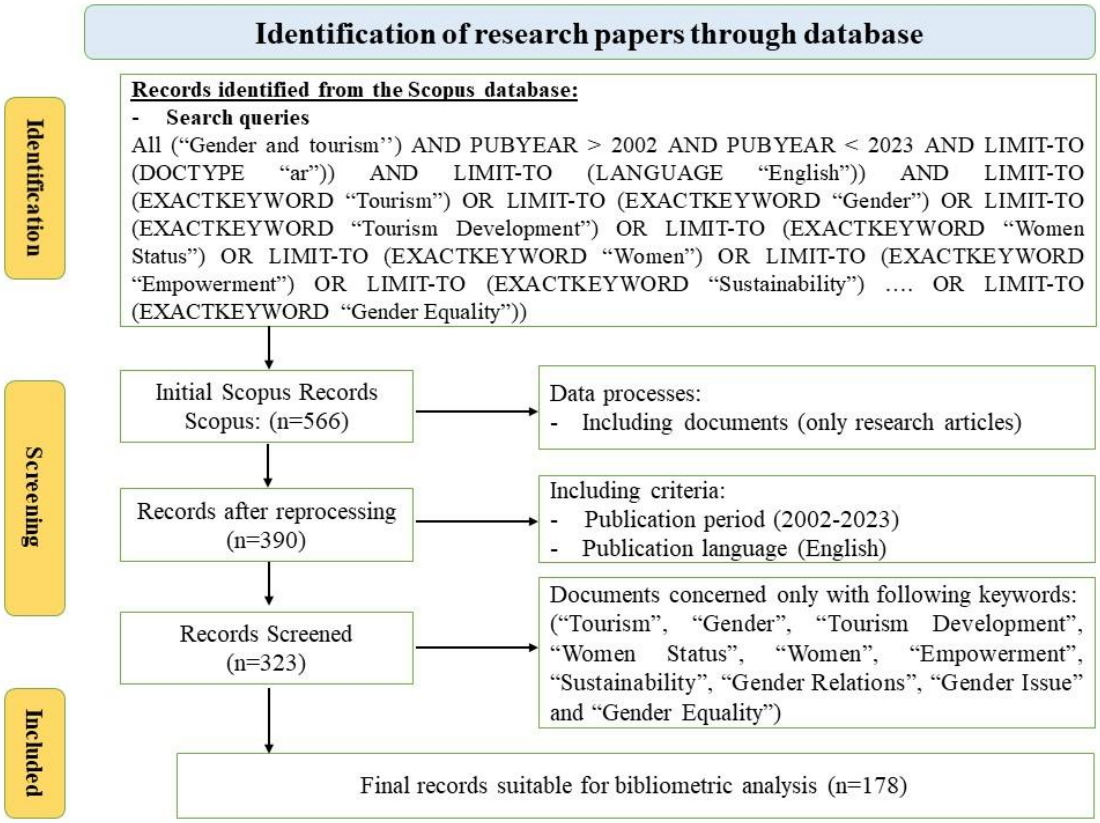

FIGURE 1. Gender tourism diagram for data collection and refinements

Note: compiled by authors

Collection of data for conducting bibliometric analysis went through three main stages. The first step is to select the optimal database that matches our research area and goals. Consequently, Scopus was chosen as the main database to obtain the required data set to be studied through bibliometric analysis. The selection of Scopus was based on several reasons, such as: (i) it contains a wide range of published articles, (ii) it includes journals and publications with a higher index than other databases (e.g. Google Scholar) and (iii) it is more efficient for metric analysis,

because it offers complete information of all bibliometric analysis units such as authors, sources and citations (Pranckutė, 2021).

The second step is identifying academic works according to the research objective and scientific direction. From January 10, 2023, the authors of this study initially selected 566 published research papers from the Scopus core collection using the search queries shown in Figure 2. In the first screening step, we excluded improper publications for criteria such as books, book chapters, conference papers and reviews within the found publication to include only research articles. As a result, 390 articles were selected. These articles were then refined by publication period (last 20 years) and document language (only English), resulting in 323 articles. These notes have undergone extensive research by the authors based on word processing. The first stage was to identify the publications according to the scope and purpose of this research; it was assumed that the articles should be in the area where gender and tourism intersect. In the second stage, we selected articles that considered gender as the primary demographic dimension in the field of tourism in its context. They were chosen according to the following keywords: ("Tourism", "Gender", "Tourism Development", "Women Status", "Women", "Empowerment", "Sustainability" " Gender Relations", "Gender Issue", and "Gender Equality"). As shown in Figure 2, 178 articles were finally identified

3.2. Bibliometric maps

Citation, bibliographical, and author keywords information of 178 articles were exported to VOSviewer (version 1.6.18), Centre for Science and Technology Studies, Leiden University, the Netherlands), a software tool for constructing and visualizing bibliometric maps. Maps created using VOSviewer include items. The items in this study are the subjects of interest, such as the authors' keywords or the countries. Any pair of items may have a link between them, which is a connection or relationship between the items. The strength of each link is indicated by a positive numerical value. The stronger the relationship, the higher this value. In a co-authorship analysis, the number of publications co-authored by two associated nations is shown by the link strength between them, whilst the number of publications co-authored by all affiliated countries is shown by the overall link strength.

Similar to co-occurrence analysis, the frequency of publications where two keywords appear together is indicated by the connection strength between author keywords. The user manual for VOSviewer contains information on all of its functions (Van Eck and Waltman).

3.2.1. Analysis of co-authorship

In the analysis of co-authorship, we included all 51 countries affiliated with 170 authors and 326 organizations. The minimum number of documents to be examined in VOSviewer was set to 1. The affiliated countries/territories grouped into 5 continents: Africa, America, Asia, Europe and Oceania.

3.2.2. Analysis of co-occurrence

In terms of analyzing co-occurrence of all keywords, author keywords and index keywords, there were 43 all keywords, 16 author keywords and 33 index keywords from 178 articles respectively, which meet the threshold. The minimum number of occurrences of a keyword to be examined in VOSviewer was set to 5. To display the average publication year, frequency, and link strength of the keywords, overlay visualization method was chosen. The color of a keyword denotes the typical publishing year of the documents where it appears.

4. FINDINGS AND DISCUSSION

4.1. Evolution of the scientific production and growth of research interest

For a period of 20 years, a total of 178 academic articles have been published in Scopus indexed journals. Figure 2 shows that between 2003 and 2011, the number of Scopus-level articles investigating gender aspects in the field of tourism is very low, and the annual publication number fluctuates between 1 and 6.

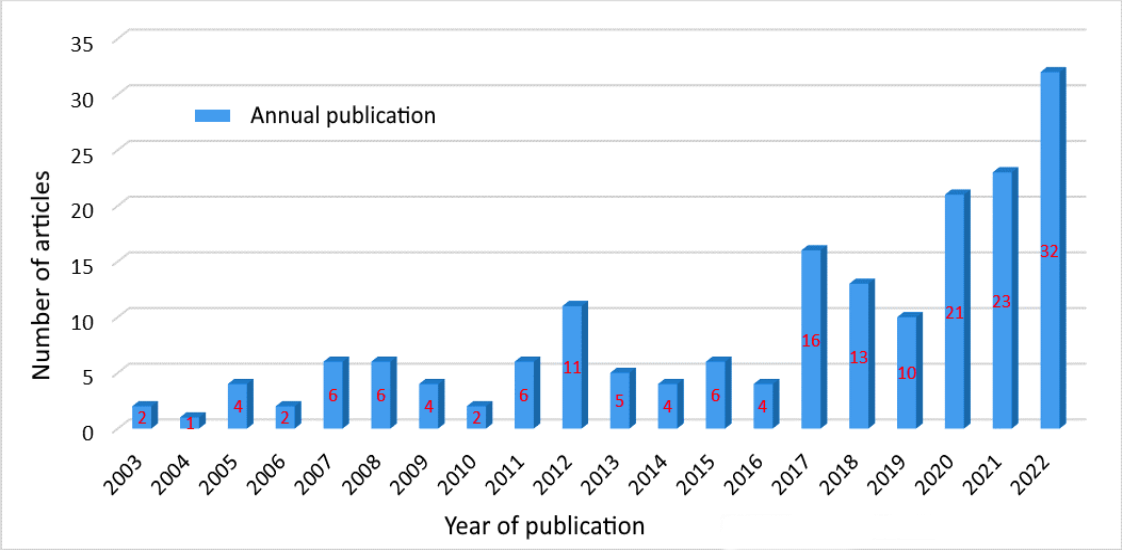

FIGURE 2. Annual numbers of research papers on gender tourism studies indexed in Scopus from 2003 until 2022

Note: compiled by authors

In 2012, the number of articles suddenly increased and reached 11, but this phenomenon did not continue. In the next four years, the number of annual publications stagnated, and only about five articles were published each year. In 2017, interest in the study of gender tourism suddenly increased again, showing a 4-times increase compared to the previous year (reached from 4 to 16). Unfortunately, in the next two years, the number of annual publications gradually decreased, and in 2019 it dropped to 10. In 2020, the number of annual publications exceeded 20 for the first time. Since then, yearly publications have continuously increased, leading to a quick rise in cumulative total publications. Consequently, it is anticipated that the annual publication will keep growing. However, most of these articles require a fee to access the information they contain. We believe that publication in an open-access journal will probably result in more citations for an article. For example, when we analysed the articles we searched for, we found that only about 3% of the 34 articles in 2022 were published as open-access types.

Gender issues in tourism are addressed in various research disciplines, and many research groups worldwide are actively working in these areas. Figure 3 provides a pie chart of specific subject categories focused on the Scopus Core collection. Publications on gender tourism research are divided into 11 subject categories.

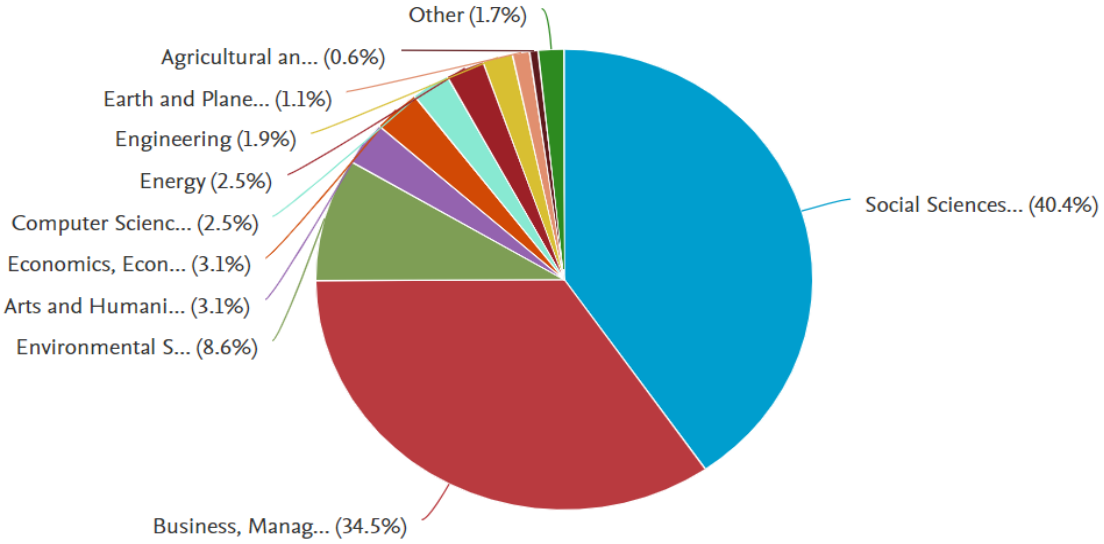

FIGURE 3. The numbers of subject categories on gender studies in tourism

Note: compiled by authors

Analysis on subject area showed that gender studies in tourism are mainly published in the field of Social Science (40.4%) and Business Management (34.5%). The next 5 places were occupied by publications classified by the following subject areas: Environmental Science (8.6%), Arts and Humanities (3.1%), Economics and Finance (3.1%), Computer Science (2.5%) and Energy (2.5%). Indeed, Gender Research is a multidisciplinary area and 4 of the publications (1.1%) was categorized under Earth and Planetary Science subject area.

4.2. Preferred journals

Among them most journals were published by Taylor & Francis with 4 in total. Elsevier took the next place in the ranking of the most productive journals with 3 in total. The rest three journals were published by the Multidisciplinary Digital Publishing Institute (MDPI), Scientific Advisory Group for Emergencies (SAGE) and Wiley-Blackwell. Our results showed that the top 10 most productive journals are owned by five different publishers (Table 1).

TABLE 1. Top 10 most productive journals on gender tourism studies with their most cited article

No.	Journal	TP (%)	TC	CiteScore 2022	The most cited article (reference)	Times cited	Publisher
1	Annals of Tourism Research	17 (9.6)	10,558	15.9	Family business in tourism. State of the art	245	Elsevier
2	Journal of Sustainable Tourism	16 (8.9)	8,884	18.9	A critical analysis of tourism, gender and poverty reduction	116	Taylor & Francis
3	Sustainability	9 (5.1)	281,274	5.8	Exploring the experience of creative tourism in the northern region of	18	MDPI

					Portugal—a gender perspective		
4	Current Issues in Tourism	6 (3.3)	9,526	13.7	Promoting gender equality and empowering women? tourism and the third millennium development goal	103	Taylor & Francis
5	Tourism Geographies	6 (3.3)	4,454	22.0	Critical tourism studies: new directions for volatile times	29	Taylor & Francis
6	Tourism Management	5 (2.8)	16,569	22.9	Sensation seeking and tourism: Tourist role, perception of risk and destination choice	316	Elsevier
7	Tourist Studies	4 (2.2)	486	4.8	Feminist and gender perspectives in tourism studies: The social-cultural nexus of critical and cultural theories	73	SAGE
8	Asia Pacific Journal of Tourism Research	4 (2.2)	2,256	6.8	Female empowerment and tourism: a focus on businesses in a Fijian village	65	Taylor & Francis
9	Journal of Hospitality and Tourism Management	4 (2.2)	6,060	10.1	Female tourism entrepreneurs in Bali, Indonesia	59	Elsevier
10	International Journal of Tourism Research	4 (2.2)	2,162	7.6	Sustaining cultural tourism through higher female participation in Nigeria: The role of corporate social responsibility in oil host communities	29	Wiley-Blackwell
Note: compiled by authors							

The most productive journal was Annals of Tourism Research with 17 articles covering 9.6% of the total publications, followed by Journal of Sustainable Tourism (16, 8.9%) and Sustainability (9, 5.1%). Tourism Management, an Elsevier journal, had not only received the highest number of citations with a total of 16,569, but one of their articles published in 2008 was also the most cited article, with 316 citations.

According to the Cite Score 2022 report, four journals had a Cite Score of above 15. Journals of the highest and lowest Cite Score belonged to Tourism Management (22.9), and Tourist Studies (4.8), respectively. Although ranked 7th with 4 articles in Scopus, the total citation and Cite Score of Tourist Studies was significantly lower compared to other journals. This was likely due to the publisher organization (SAGE) of publication, which is a British Government body, making it less popular among scientific writers

Furthermore, we are aware that Cite Score may affect an author's choice of journals in order to publish their most original and noteworthy work. Based on citation information from the Scopus database, Cite Score, an Elsevier-Scopus alternative to the Clarivate Analytics Impact Factor, is a metric for assessing journal impact. Nonetheless, in our view, Cite Score shouldn't be the only metric used. In addition to Cite Score, authors should think about the journal's ability to reach the intended audience and advance the discipline (Khudzari et al., 2018).

4.3. Leading countries, top institutions, and international collaboration

About 35% of the global publications was contributed by the United States and the United Kingdom indicating these two countries are key players in the gender tourism research progress. USA was the leading country with 32 publications, covering 18% of the global total publications. The UK was the second most productive country with only 3 publications less than the USA. After that Australia come in the third country with 18 publications. Among the 10 most productive countries, Indonesia, Italy and the Netherlands are in last place with the same number of publications (3).

Regarding the top academic institutions, the University of the West of England was ranked in first place, with 7 publications. And the Griffith University come after in Australia with 5 publications. One of the interesting facts shown by the results of the research is that although the USA is the leader in the number of publishing articles, the academic institutes in the USA are not included in the top three. We reasoned that, due to the large number of research institutions in the United States, published articles were not usually concentrated in a single organization.

Figure 4 shows the top 10 most productive countries contributing to the gender studies in tourism worldwide.

Rank	Country	TPC	The most productive academic institution	TPI	Rank	Country	TPC	The most productive academic institution	TPI
1	United States	32	Eastern Michigan University	3	6	New Zealand	11	Auckland University of Technology	3
1	United Kingdom	29	University of the West of England	7	7	South Africa	9	University of Johannesburg	4
3	Australia	18	Griffith University	5	8	Indonesia	6	Universitas Udayana	2
4	Spain	15	Universidad Complutense de Madrid	4	9	Italy	6	Niccolò Cusano University	3
5	China	14	Guilin Tourism University	3	10	Netherlands	6	Breda University of Applied Sciences	2

FIGURE 4. The top 10 most productive countries and academic institutions in gender tourism publications

Note: compiled by authors

The closer two countries are located to each other in VOSviewer, the stronger their relatedness and the stronger the link between the two countries, the thicker the line. The highest number of countries per region came from Asia (14), followed by Europe (11), America (9), Africa (4) and Oceania (2). The findings of co-authorship showed that the U.S. was the country with the most significant association, with ten co-authorships connected to 7 countries/territories.

Results of co-authorship showed that the UK was the most affiliated country, linked to 13 countries/territories with 29 times of co-authorship. The list was followed by Australia (11 links, 18 co-authorships), China (10 links, 14 co-authorships), Italy (6 links, nine co-authorships), Canada (4 links, six co-authorships), and others. It was also shown that about 80% of the listed

countries had international collaborative publications with less than ten countries. In addition, only the researchers in Ghana, Greece, Jordan, Poland, Singapore, Turkey and Vietnam were not affiliated with any other country for publishing articles on gender studies in tourism.

The distribution of countries/territories per region is shown in Figure 5.

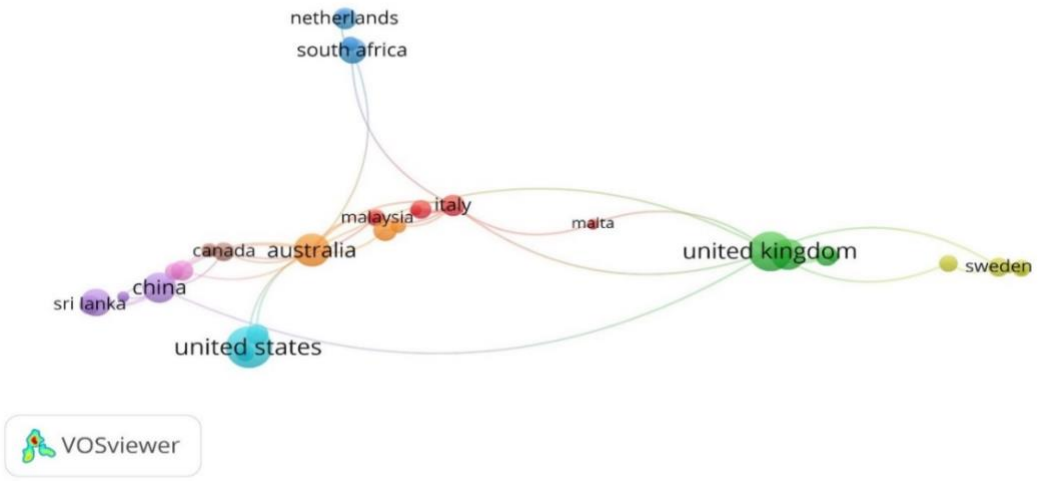

FIGURE 5. A screenshot of bibliometric map created based on co-authorships with network visualization mode

Note: compiled by authors

The variety of research partners, the large percentage of foreign postgraduates/visiting scholars, and the robust research funding are some potential drivers of the dynamics of international collaboration. To maintain the longevity of international collaboration, it is also critical to have a flexible and reliable research policy.

4.4. Leading authors

Lists the 10 most prolific authors in gender tourism studies, affiliated to seven countries as follows; United States (4 authors), Canada (1 authors), New Zealand (1 author), Netherlands (1 author), Austria (1 author), Spain (1 author) and United Kingdom (1 author). The first publications ranged between year 1994–2008 in which 8 authors had a role as the first author, 1 as the second co-author, and 1 as the third author. Although there are no specific rules in the order of authorship, the former position is usually associated with seniority and supervisory role (see Table 2).

TABLE 2. List of the 10 most prolific authors in gender tourism research area

No.	Author	Scopus Author ID	Year of 1st publication	TP	H-index	TC	Current affiliation	Country
1	Getz, Donald	6603795742	1994a	121	49	6,971	Haskayne School of Business	Canada
2	Lepp, Andrew	14013317600	2002a	52	26	3,074	Kent State University	United States
3	Tucker, Hazel	56216669300	2001a	67	24	1,388	Otago Business School	New Zealand

4	Nawijn, Jeroen	35368884700	2008a	42	23	1,295	Breda University of Applied Sciences	Netherlands
5	Meng, Fang	44661559900	2005a	71	22	1,550	University of South Carolina	United States
6	Torres, Rebecca Maria	8075873500	2002a	35	16	990	The University of Texas at Austin	United States
7	Yang, Li	55733124700	2008a	18	13	574	Western Michigan University	United States
8	Liu, Wei	56436984700	2008c	15	13	738	International Institute for Applied Systems Analysis	Austria
9	Ferguson, Lucy	35951753100	2007b	15	9	320	Universidad Complutense de Madrid	Spain
10	Jordan, Fiona	24341223400	1997a	12	9	424	University of Gloucestershire	United Kingdom

*a First author
b Co-author and c Last author

Note: compiled by authors

Getz Donald from Canada led the list with a record of 121 publications since 1994, 49 h-index, and 6,971 times citations. The 2nd top author from Kent State University, Lepp Andrew, has 52 publications and an h-index of 26. In contrast, the 3rd leading author from Otago Business School, Tucker Hazel and the 5th top author from the University of South Carolina, Meng, Fang, has 67 publications and an h-index of 24, and 71 publications and an h-index of 22, respectively. This indicates that the relationship between the h-index and publications is not proportional. This is because the h-index is given only based on the citation counts of articles published in Scopus-indexed journals. Authors from the Universidad Complutense de Madrid (Spain) and the University of Gloucestershire (UK) were individually ranked 9th (Lucy Ferguson) and 10th (Jordan Fiona) with the same h-index (9).

It should be noted that the authors for the most cited articles listed in Table 1 does not necessarily to appear in Table 2. Their names would only be found in both tables if they had published prolifically such as authors Getz Donald, Meng Fang and Tucker Hazel.

4.5. Author keywords

A total of 633 author keywords was recorded, among which 460 (72.7%) were used only once, 84 keywords (13.3%) were used twice, and 30 (4.7%) were used thrice. After re-labeling synonymic single words and congeneric phrases, 16 keywords met the threshold of minimum 5 occurrences for the mapping in VOSviewer.

4.5.1. Terminology and concept

Our results showed that ‘gender’ was the most frequently encountered keyword with 69 occurrences and 50 links to other keywords (Figure 6). We also came across the use of general terms such as ‘tourism’ (57 occurrences, 56 links), ‘women’ (22 occurrences, 29 links) and ‘gender equality’ (12 occurrences, 13 links). We also found some attributes—substratum, process, and configuration used to name the gender tourism. Examples of substrate/mechanism related

gender tourism were ‘development’ (6 occurrences),’ ‘empowerment’ (8), ‘intersectionality’ (7), and ‘identity’ (6).

It is also interesting to see how a particular term is established. For instance, as a term, empowerment originates from American community psychology and is associated with the social scientist Julian Rappaport (1981). However, the roots of empowerment theory extend further into history and are linked to Marxist sociological theory (Burton & Kagan, 1996), and it has been popularized in social science. Consequently, the term is widely used in many publications related to the gender incorporating women's empowerment.

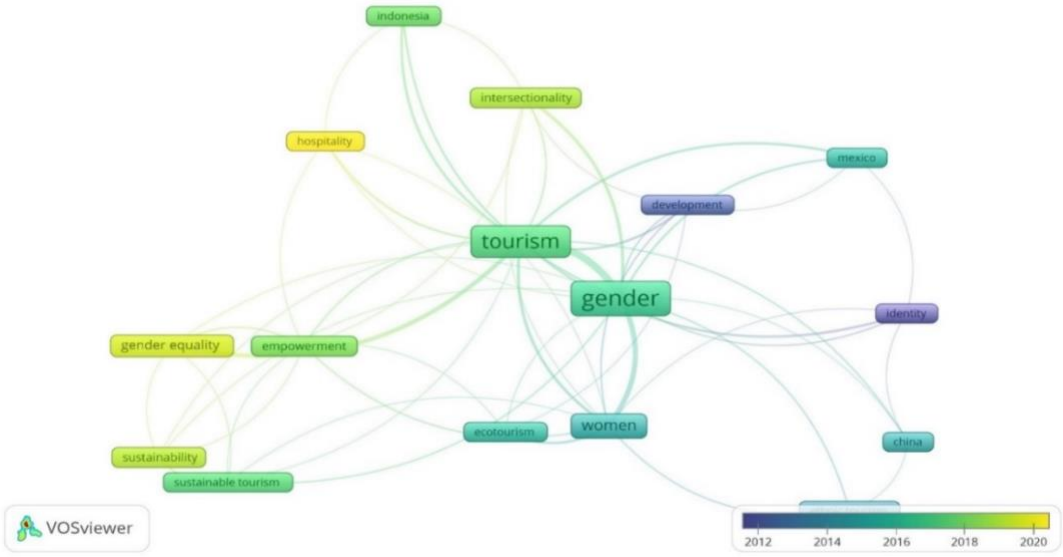

FIGURE 6. A screenshot of the bibliometric map created based on author keywords co-occurrence with overlay visualization mode

Note: compiled by authors

4.5.2. Topics of interest

From the results of the analysis of gender studies in tourism obtained from our research work, especially from the number of publications in high-ranking journals each year during the period 2003-2022, we can see that researchers have begun to show interest in this topic only in the last five years. To analyse what directions the authors were interested in researching this topic, we analysed the main keywords used to search for scientific articles in this field.

To fully cover the topic of gender in tourism, as indicated in the research method of the article, we selected articles with the title "Gender and Tourism" in the search. Then, we sorted the number of publications using the following ten keywords that are closest to the topic from among the found keywords. They are "Tourism", "Gender", "Tourism Development", "Women Status", "Women", "Empowerment", "Sustainability", " Gender Relations", "Gender Issue" and "Gender Equality". The result of the analysis of the number of appearances of the above keywords in VOSviewer was as follows. A total of 942 keywords were recorded. After re-labelling synonymic single words and congeneric phrases, 43 keywords met the minimum threshold of five occurrences for the mapping in VOSviewer. The keywords "Tourism" have been used 84 times, and the keywords containing "Gender" were repeated 73 times. It can be said that these two keywords formed based on the main search topic in our research.

Our results found that one of the most frequently encountered among the main selected intersections in gender tourism research was "Tourism Development". Compared to the other secondary keywords, "tourism development" appeared the most with 32 occurrences. Although the following ranking keywords, "Women Status" and "Women", have the same number of occurrences 22 times, their "Link strength" indicator is different. For example, "Women Status" has 115 "Link strength", which is twice as much as "Women". From this, we can say that "Women's Status" is one of the most critical points in gender research.

The results also showed that keywords associated with "Empowerment" and "Sustainability" were repeated 17 and 15 times, respectively. It was determined that "Empowerment" and "Sustainability" are some of the most critical areas in the study of gender tourism, which is considered one of today's new and relevant research topics.

4.6. Distribution of gender tourism publications based on most common secondary keywords

Positive connections were found between the results of the sub-theme search and the main theme search based on the number of articles and author keyword occurrences. Figure 7 shows that tourism development was the most popular sub-theme with 32 articles in Scopus and 16 occurrences in VOSviewer. This was followed by women status (22 articles and 12 occurrences), women (22 articles and 10 occurrences) and empowerment (17 articles and 8 occurrences).

Furthermore, research interest in certain areas can also be analyzed by the link strength of two keywords. For example, "Tourism" had 202 links connected to 43 other keywords, namely, "Tourism Development", "Women Status", "Women", "Empowerment", and "Sustainability" while "Gender" had 156 links connected to the same number of keywords. It is suggested that research interest on "Tourism" was stronger compared to "Gender" as shown by the link strength (Figure 8).

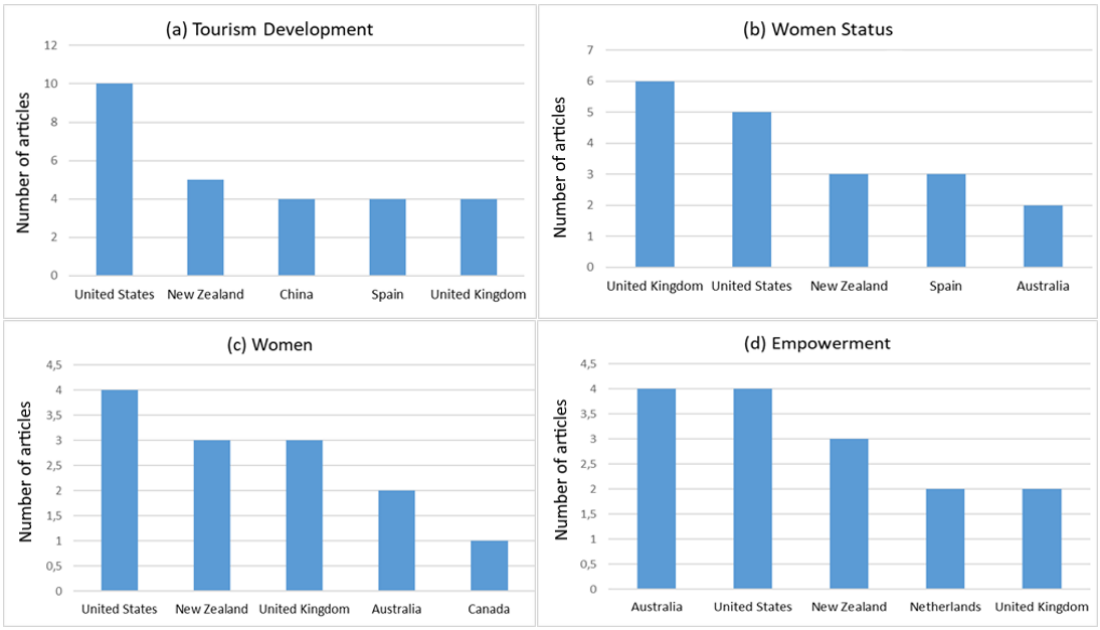

FIGURE 8. Five countries with the most publications on the selected most occurrence keywords in gender tourism

Note: compiled by authors

It can be said that the number of articles covering the fields of "Tourism Development", "Women Status", "Women" and "Empowerment" in gender studies in tourism is almost non-existent. accordingly, articles related to this field were published somewhat more during 2010-2013. And since 2014, in general, the number of publications has gradually increased. This suggests that researchers are realizing that the study of gender alone cannot be the only goal, but rather the benefits of joint research with many fields (including tourism development) for the purposes of eliminating gender inequality, increasing women's decision-making competence, increasing public status/equal opportunities for education, etc.

It is found that most publications related to the tourism development, women status, women and empowerment came from the USA, UK AND Australia, with the New Zealand being the second except on the women status and empowerment (Figure 8). Also, in general, China, Spain, Canada, and the Netherlands were among the top 5 countries publishing articles on each of them.

5. CONCLUSIONS

This study has provided an overview of gender tourism research trends based on 178 publications retrieved from the Scopus database. Publication growth has been rapid since 2019, and it is anticipated to continue to rise. This breakthrough can be connected with the IV World Women's Conference held in 2019. We have discovered countries/academic institutions (e.g. UK, USA and Australia) with comparatively more publications and strong international collaborations. These entities allow researchers from other countries (e.g. Indonesia, Italy and the Netherlands) to broaden their research collaborations. According to the rating of the authors working in this field, the researchers of more developed English-speaking countries such as Canada, the USA and New Zealand are in the lead. We concluded that this reflects the fact that women's rights are well protected in those countries, and the importance is attached to increasing women's competence. Research into gender tourism is now a global concern thanks to the promotion of these countries. At the same time, a relatively close network of cooperation was formed between countries. Despite many recent cooperatively authored papers, there is still a need to strengthen cooperation among scientific institutions substantially. It should also be noted that while many researchers are active in national and international co-authorship networks, some of which are closely clustered, many researchers are still relatively isolated from each other. More collaborations between researchers and international co-authorship will undoubtedly lead to fostering even higher quality studies in gender tourism publications.

The search results may not cover all studies related to gender studies in tourism available on Scopus by restricting the search of ("gender and tourism") in titles and abstracts. This is because some researchers did not refer to their systems as gender tourism but instead used different terms (e.g. women empowerment, gender disparity). Also, co-occurrence analysis of author keywords covered only 90% of 178 articles due to missing author keyword information from specific journals.

Future research comparing the results from several databases, including Scopus and Web of Sciences, is advised. In the search results from the Web of Science, for instance, a feature known as "hot paper" automatically displays the most popular publications on the subject; this function is still lacking in Scopus. This hot document feature lists important works that receive much attention quickly after publication, as seen by their rapid and considerable increase in citations. A more thorough investigation will benefit from bibliometric analysis using multiple data sources.

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AUTHOR BIOGRAPHIES

Stalifa Bektursyn – PhD Candidate, Al-Farabi Kazakh National University, Almaty, Kazakhstan. Email: stalifa2527@gmail.com, ORCID ID: https://orcid.org/0009-0004-7573-7098

***Sholpan Abdreyeva** – Cand. Sc. (Econ.), Associate Professor, Al-Farabi Kazakh National University, Almaty, Kazakhstan. Email: sholpan.abdreyeva2016@gmail.com, ORCID ID: https://orcid.org/0000-0002-5962-7196

Imanaly Akbar – PhD, Senior Lecturer, Al-Farabi Kazakh National University, Almaty, Kazakhstan. Email: akbar.imanaly@gmail.com, ORCID ID: https://orcid.org/0000-0001-5531-4179

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Planning a Risk Management System for PPP projects to Increase the Competitiveness of Business Structures

Nurbakhyt Nurmukhametov[1]* | **Kamar Beketova[2]** | **Kenzhegul Khassenova[1]** | **Saltanat Yusupova[1]** | **Anna Dubel[1]**

[1] S.Seifullin Kazakh Agrotechnical Research University, Astana, Kazakhstan
[2] Korkyt Ata Kyzylorda State University, Kyzylorda, Kazakhstan
[3] L.N. Gumilyov Eurasian National University, Astana, Kazakhstan
[4] S.Seifullin Kazakh Agrotechnical Research University, Astana, Kazakhstan
[5] Institute of Environmental Protection – National Research Institute, Krakow, Poland

***Nurbakhyt Nurmukhametov** - Cand. Sc. (Econ.), Associate Professor, S. Seifullin of the Kazakh Agrotechnical Research University, Astana, Kazakhstan. Email: nyrbahit73@mail.ru

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Abstract

This article addresses the critical need for effective public-private partnership (further - PPP) models amidst economic, social, and political challenges in Kazakhstan. The results of the study are aimed at improving the identification of risks for making informed decisions. It delves into scientific achievements relevant to assessing business activity and nurturing entrepreneurial culture. Employing comparative analysis, the research examines domestic PPP practices, drawing insights from statistical data. The findings emphasize PPP's role in ensuring national economic competitiveness, with legislative improvements positively impacting growth. The analysis of foreign practices critically examines the evolution of public-private partnership (PPP) development in Kazakhstan by juxtaposing it with the experiences of leading nations. The United Kingdom has demonstrated successful partnership models based on transparency, clear terms, and mutually beneficial relationships, serving as an example for Kazakhstan in enhancing collaboration between the public and private sectors. The SWOT analysis identifies inefficiencies, stressing the importance of transparent project teams and systematic risk management. Sectoral insights highlight a decline in private sector involvement, emphasizing the need for regulatory improvements and risk reduction in PPP implementations. The study emphasizes PPP's indispensable role in Kazakhstan's socio-economic development, advocating for continuous reforms and advanced risk management. The proposed PPP project management algorithm aims to foster efficiency, address challenges, and stimulate economic activity, paving the way for sustainable infrastructure development.

***Keywords**:* Economics, Public-Private Partnership, Business Structures, Private Sector, Project, Planning, Risk Management, Management Mechanism

SCSTI: 06.81.12

***JEL Code**:* G32, O16, O21

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1. INTRODUCTION

Today, in light of new realities, Kazakhstan is experiencing certain economic, social and political difficulties, which greatly affects the development of structural and production relations in economic sectors. Global challenges in the context of new approaches to economic management determine the need to comprehend modern scientific achievements in the practice of public-private partnership (hereinafter - PPP) as economic entities in order to assess their business activity, which is the driving force behind the development of socio-economic processes, the creation of various organizational and business structures, forms of interaction in the public sector and private business, the formation of Kazakhstan's entrepreneurial culture.

Research in this area is due to the fact that the expansion of possible cooperation between a public institution and private business, the process of managing PPP projects causes various problems that are associated with risk sharing, attracting non-state financing, improving management efficiency and attracting new technologies.

The rationality of using limited resources in the production of goods and services and meeting the social needs of the population by PPP subjects is one of the important economic categories for conducting research within the framework of the new economy of Kazakhstan. This will take business in Kazakhstan to a new level, in the form of a reorientation of business processes in the private sector from short-term goals to the implementation of a long-term development and cooperation strategy, which increases business activity and cooperation of PPP business structures. Accordingly, with the growing need for infrastructure in Kazakhstan, it is necessary to expand opportunities for PPP, since the state budget cannot fully provide financing for social facilities. In particular, as the OECD data shows, the need to develop PPP in Kazakhstan is justified as follows.

Kazakhstan's infrastructure needs are growing as its economy and population grow. Analysis of statistical data for 2019 shows that with Kazakhstan's GDP growing by 4.3% per year, the country's infrastructure spending will average $292 billion (or 3.93% of GDP) until 2040, which, compared with the current level of spending, means an increase in the investment deficit amounted to $84 billion (1.11% of GDP). Although this gap tends to be observed in all sectors, it is more noticeable in cross-border infrastructure, energy and roads; it also affects the construction of new infrastructure, as well as the operation and maintenance of existing infrastructure. It is estimated that about 75% of the existing infrastructure requires replacement or reconstruction (OECD, 2019).

The results of a study by Kazakhstani experts indicate that in the implementation of PPP investment projects, risk assessment during planning is insufficient and is due to the fact that public-private partnership is used as a way to solve social infrastructure problems. This is a lack of quality life support facilities: healthcare and education organizations, telecommunications facilities, communications, gas supply, energy supply, heat supply, water supply and sanitation, housing and communal services. Today, meeting the social needs of the population accounts for more than 87% of PPP investment projects from the total number of projects being implemented in Kazakhstan.

PPP markets in the regional context of Kazakhstan are still at the stage of formation or development, therefore for promoting private sector investment in infrastructure and creating sustainable projects acceptable to all participants in this process, ongoing regulatory reforms and institutional strengthening are needed. Especially in terms of planning and risk management that arise during the implementation of investment projects. With the help of a clear construction of an algorithm for planning and managing PPP risks, it is possible to provide support in developing efficiency and solving various problems associated with infrastructure and PPPs, in developing sustainable infrastructure projects and in delivering efficient and efficient public services through

PPPs. Therefore, the scientific article also discusses investment issues climate change, formulate effective market rules and create strong legal and institutional framework for ensuring private sector participation in infrastructure development through PPP.

The purpose and hypothesis of the scientific article is to identify possible losses during the implementation of the PPP mechanism in the context of improving mechanisms for the effectiveness of risk management planning, as well as to develop proposals for stimulating the economic activity of PPP. The scientific significance of this article is justified by the fact that an algorithm has been proposed for planning a risk management system for PPP investment projects to achieve common goals and socio-economic benefits for all participants in the implementation of PPP.

2. LITERATURE REVIEW

The competitiveness of business structures and the institution of the state in the implementation of joint investment projects largely depends on the creation of PPP infrastructure, since its main role is aimed at meeting the social needs of society. The effectiveness of the implementation of PPP projects is ensured by the rational functioning of contractual mechanisms of interaction between private entrepreneurship and the state, aimed at eliminating and reducing the negative impact of risks for the successful implementation of the PPP project.

According to some scholars, the concept of PPP is interpreted as an agreement under which the private sector uses public assets and provides infrastructure services usually offered by the state (Schwartz et al., 2013). Therefore, each of the PPP participants carries out their subsequent distribution among the participants of the PPP project and plans the activities of each partner on risk management (Kondratieva, 2015). At the same time, the results of the study revealed the applicability of the risk matrix in the planning of the PPP project risk management system, which is a "living mechanism" and can be changed by agreement of the PPP project participants (Sokolov & Maslova, 2013). Thus, each of the project participants minimizes risks with a clear reflection of the planning system in PPP investment projects.

The use of the PPP project risk management planning system in foreign practice is one of the most optimal ways to build a partnership mechanism between the state and private business (Arekeeva, 2018; Special Report, 2018). A review of foreign literature allows the authors of the article to focus their research on planning a risk management system in the process of investing and creating infrastructure for the formation of an effective PPP institution and its infrastructure management, since the business community participates in "state" projects, creating large public infrastructure facilities (Shokhin & Oganisyan, 2020) by planning possible risks of state entrepreneurship activities. An effective way to prevent such a situation is to develop a risk matrix for a PPP project, which includes a list and description of all risks for this PPP project, an indication of the party taking the risk, and, in some cases, ways to prevent risks, actions to minimize them. Accordingly, due to the lack of experience in risk management in combination with the PPP regime, there is an urgent need to identify and early warning of risk factors throughout the process of implementing PPP projects (Shao et al., 2021). It should be emphasized that according to foreign scientists, twenty-nine key barriers were selected and classified into six groups of barriers (Kim & Le Touc, 2021). However, they are not sufficiently defined to determine the criteria for systematization of planning possible risks at all stages of the implementation of PPP projects.

The need to attract private resources to infrastructure using the PPP model is of particular importance in the current crisis period due to the depletion of public sources, as well as a reduction in foreign direct investment (Poor, 2022), despite the complex nature of the manifestation of risks in PPP investment projects. In fact, the experience of foreign countries in the use of PPP in

comparison with the experience of Kazakhstan can be very indicative on many issues, in particular on planning a risk management system taking into account the industry affiliation of PPP projects in a crisis, which is little studied in domestic science.

In the project planning system, the values of risks associated with contracts, political risks, capital repair risks, information risks and employee risks pose initial serious threats, but decrease with the transfer of the PPP project (Guo et al., 2023). At the same time, the planning of the risk management system should be taken into account by both the state institution and business structures in order to minimize them throughout the entire stage of the implementation of the PPP investment project. According to the authors of the article, most models of investment behavior of PPP participants proceed from the simple assumption that the investment decisions of PPP participants are based on a simple calculation of costs and benefits. The main critical success factors were proper risk assessment and their distribution among private parties, a realistic assessment of project estimates, risks and revenues, as well as the avoidance of ambiguous contract wording (Fathi & Shrestha, 2023). Firms invest today to the extent that their expected future benefits outweigh current costs, without taking into account the potential risks associated with changing circumstances over time. The involvement of the private sector is crucial for the introduction, allocation of financial risks and promotion of technological innovation (Taron et al., 2023).

The issues of risk management problems in domestic practice will be further focused on the study of methods for predicting possible risks of PPP projects in order to attract the attention of foreign investors for the conclusion of long-term contracts. With the introduction of the algorithm for planning structured risk management systems for PPP projects, the effectiveness of this process is to ensure the rational use of financial resources of participants in PPP projects and ensure its successful implementation.

3. METHODOLOGY

In the process of writing this scientific article on the analysis of the planning of the risk management system of PPP projects and the effectiveness of interaction between the two main subjects of the social goods market, methods of scientific knowledge and comparative analysis were used, which involve comparing domestic PPP practice with foreign experience in the development of PPP projects, characterizing the development of infrastructure and the impact of PPP projects on the socio-economic development of the country. In this regard, the only practical and large-scale method of studying the effectiveness of the PPP management system planning is the structuring of the PPP project management algorithm aimed at improving the qualitative measurement of unforeseen risks at all stages of the implementation of PPP investment projects in order to analyze the purposeful joint policy of business structures and the state in the field of PPP development and support.

The empirical base of the study consists of statistical data and indicators of the effectiveness of the development of PPP projects obtained from the official website of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan. This information, based on the SWOT analysis method, made it possible to identify and systematize the strengths and weaknesses, opportunities and threats to the effectiveness of the PPP mechanism in Kazakhstan and to build a mechanism of interaction between the two sectors of the PPP economy based on the planning method.

To reveal the content of the article, the scientific results and the work of domestic and foreign scientists on the planning of the risk management system of PPP projects were studied. In the process of conducting the review as a method of studying scientific literature, reports, publications of international organizations and relevant studies were used, which form the theoretical and

methodological basis for the study of issues of planning the risk management system of PPP projects in the context of ensuring the competitiveness of public and private entrepreneurship. When writing the article, various approaches to risk management of PPP projects were studied to improve methods for reducing unforeseen risk events in implementing PPP investment projects.

The article proposes an algorithm for planning a risk management system for PPP projects to establish trust between the institution of the state and business entities, taking into account the use of the classical general scientific methodology in the context of assessing possible risks using a specific goal, namely standard and unique methods of scientific analysis, such as induction and deduction, analysis and synthesis, a systematic approach, graphical method - visualization of the results. The analytical research methodology based on a systematic approach was applied when writing this article.

Statistical information obtained from official open sources of various entities interested in PPP projects was used as an information base for writing the article. An extensive database, in our opinion, will provide an excellent opportunity to assess the region's socio-economic development based on the planning and risk management of PPP investment projects and identify the main problems that negatively affect the development of PPP in general. For the accessibility of the presentation of the material, methods of graphic illustration are used, which allows us to understand in more detail the essence of the development of PPP at the present stage. The planning method determines the effectiveness of the implementation of PPP projects by taking into account the rational measurement of the risk management system, the content of which is determined by economic, legal, political, social, technical, industrial, and environmental conditions.

4. FINDINGS AND DISCUSSION

The impact of global changes on economic development once again confirms the importance of developing entrepreneurial structures, including the importance of the PPP mechanism in ensuring the competitiveness of the national economy and the development of a socially oriented market model.

Practice confirms the need for legal regulation of investment projects, primarily compliance with the principles of functioning of the financial mechanisms of PPP projects. Therefore, attention should be paid to improving the mechanism for the development of private investment and strengthening the role of public authorities in the implementation of PPP projects, which is confirmed by the results of analytical data. Thus, in the period from 2003 to 2016, 23 contracts totalling 61 billion tenge were concluded between the state and the private sector. In 2017, 160 contracts totalling 146 billion tenge were signed, and by 2020 the figures will increase several times: 800 contracts worth 1.8 trillion tenge were signed after the adoption of the Law “On Public-Private Partnership” in 2015, the situation in the sphere of interaction between the two market entities improved. Significantly improved (Shapovalova & Queen, 2019) the legislative framework for regulating the relationship of trust between participants in PPP investment projects and the planning of risk management systems is controlled by regulatory legal acts that contribute to improving the PPP development process.

Analysis of the practice of foreign countries shows that for the implementation of projects based on the PPP mechanism, the leading countries are distributed as follows: the share of Great Britain is 39%, France - 17%, Germany - 13%, Spain - 12% and the share of other countries is 20%. The undisputed leader is the United Kingdom, which was the first to use the partnership mechanism between business and the state (Abdumomunova, 2016). Among the priority measures for the development of PPP in the innovation sphere in the United States, the legal framework for the creation and transfer of technologies was highlighted (Nikolaev, 2021). It should be noted that the experience of PPP development in developed economies can be adapted

to Kazakhstan's PPP project development system. According to the authors of the study, new relations of cooperation between private business entities and the state in the context of the global economic crisis will allow the implementation of investment projects in terms of maintaining aggregate demand, which is more attractive for public procurement and foreign investment. At the same time, risks are increasing, so it is necessary to strengthen monitoring and planning of the possible risk management system within the framework of PPP projects in Kazakhstan (Figure 1).

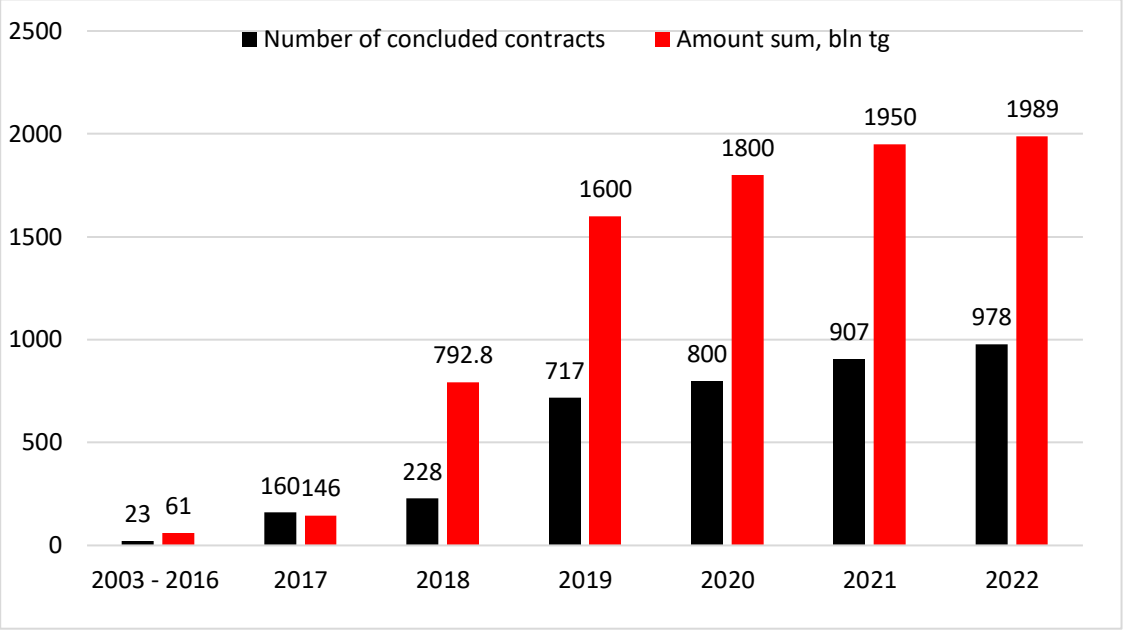

FIGURE 1. PPP investment projects

Note: compiled by authors

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Practice confirms that it is quite challenging to assess the economic and social impact of the implementation of PPP projects, and the effectiveness of the assessment is possible only at the

level of quantitative measurements since interest in the PPP institute depends on the capital intensity of the project. We should not forget that large projects require significant investments that domestic private business does not have. Foreign companies invest in most large projects (more than 87%) with competitive advantages over Kazakhstani business structures.

The results of the research showed that the strengthening of the role of PPP as a mechanism of interaction between the institution of the state and the private sector is due to the adoption of the law "On Public-Private Partnership" (2015), which replaced the Law "On Concessions" (1991). Legislative measures have created more flexible approaches to managing effective interaction between public and private partnerships. As a result, favorable conditions for the development of PPP are based on the removal of many restrictions, trust management, lease agreements, service contracts, the implementation of projects at the local level, the conclusion of project agreements on private initiative, which expanded the economic freedom of private business entities and improved the quality of products and services provided. The results of the implementation of the new Law had a positive impact on the development of cooperation between public and private structures, as evidenced by the statistics of the Kazakhstan PPP Center on concluded contracts in the period from 2003 to 2020 (Bednyakov, 2022).

However, the analysis of statistics for 2019 - 2020 shows that the growth rate of contracts (projects) has significantly decreased, the main reason is the COVID-2019. Therefore, this situation affects the implementation of projects and the emergence of risks at the global level. Analysis of data for the period from 2021 to 2022 shows that 34 PPP projects were implemented in the region at different stages. For 2023, there were an additional 22 projects, agreements were concluded. The total amount of state obligations paid from the local budget in accordance with the agreements is 3.5 billion tenge.

There are 5 projects in the healthcare sector. The contract period is from 2018 to 2024, with government obligations amounting to 1.8 billion tenge. There are 2 projects in the road sector. The contract period is from 2018 to 2022 (service maintenance of the Chapaevo-Zhangala-Saykhin highway, 0-337 km. East Kazakhstan region, installation and maintenance of 81 controlled and 162 stationary video cameras of the Suncar Smart City intelligent video surveillance system in the Baiterek region of East Kazakhstan region). State liabilities amount to 1.6 billion tenge. In the field of veterinary medicine, there is 1 project and the contract period is from 2021 to 2025 (services for maintenance and deworming, identification, sterilization, vaccination of stray dogs and cats in the city of Uralsk). State obligations amount to 80 million tenge.

In the field of education, 13 projects for 2020 - 2028 (trust management of school canteens with ongoing repairs and replacement of equipment in 44 secondary educational schools in the city of Uralsk and eight secondary educational schools in the city of Aksai, Burlinsky district of the West Kazakhstan region; re-equipment of a residential building for a kindergarten) Data projects are implemented without any payment of government obligations. In the healthcare sector, 1 project will be implemented from 2021 to 2023 (providing services to a radiation therapy center based on the State Enterprise at the Regional Oncology Dispensary in Uralsk). This project is being implemented without any payment of government obligations.

The economic effect of PPP projects is primarily determined by the number of implemented projects (including innovative ones) jointly by the state and private business. Accordingly, innovative PPP projects are particularly vulnerable in the context of global changes, as there are economic risks. Therefore, developing a risk management system to implement PPP projects is necessary.

The innovative and scientific component is not fully reflected in the development content and the implemented projects. It affects the economic and social effect. That is, there is a considerable

gap between the fundamental and applied part of research. Investing through public-private partnership mechanisms could help to reduce this gap (Database and others, 2018).

PPP mechanism of interaction between the two sectors of the economy has advantages compared to other forms of entrepreneurship (joint entrepreneurship), since the implementation of investment projects is protected and guaranteed by the state in the conditions of a pandemic. The data analysis on the research subject made it possible to identify and systematize the strengths and weaknesses, opportunities and threats to the effectiveness of the PPP mechanism in Kazakhstan using the SWOT analysis method (see Table 1).

TABLE 1. SWOT analysis of the effectiveness of the implementation of PPP projects

Strengths	**Weaknesses**
-Availability and distribution of risks between project participants; -Optimal way to solve socio-economic problems; - Reducing the current burden on the budget; - Provision of jobs; - Competitive pricing policy; - Improving management efficiency; -Guarantees for the implementation of innovative projects.	-Limited budgetary and human resources; -Weak PPP project planning system; -Imperfection of the PPP legislative framework (tax component); - Lack of experience in the field of PPP projects; -Weak development of the innovation sphere; -Unequal power relations of partnership members; -Lack of risk management mechanisms for PPP projects.
Opportunities	**Threats**
-Stable development and predictable profitability of projects; - Project risk insurance; - Tax benefits and preferences; -Attracting new technologies and innovations; -Adoption of systematic measures aimed at increasing the motivation of private entrepreneurs to participate in the innovation process; -Raising to the level of a legislative act only general and conceptual issues that give an unambiguous idea of the PPP model in the Republic of Kazakhstan.	-Bureaucratic and corrupt; -Financial risks, lack of proven mechanisms for financing services; -Insufficient knowledge of PPP mechanisms and the consulting services market on the part of government agencies; -Reduction in the number of contracts concluded due to the global crisis (COVID-2019 pandemic).
Note: compiled by authors	

The results of the SWOT analysis showed that the inefficiency of the implementation of PPP projects is affected by a number of shortcomings and the system itself needs to implement a stimulating fiscal policy aimed at increasing the number of private business entities, improving collateral conditions, creating favorable conditions and stable guarantees for participants in the implementation of investment projects. In addition, other reasons for inefficiency in the implementation of PPP investment projects were identified - poor-quality development of the project content. In this regard, it is necessary to create a project team from independent expert auditors to ensure the project's transparency. This allows a practical approach to project development, foresee and assess possible risks and manage them, and prevent corruption components in project management.

Project management mechanisms are significant in improving project implementation efficiency; the essence is to solve possible problems and identify risks based on a system-oriented approach to planning a PPP project risk management system. Analytical data on PPP projects

confirms that the existing infrastructure of investment projects has been modernized, within the framework of which special attention is paid to social facilities: education, healthcare, housing and utilities, energy.

In February 2021, there were 1.3 thousand projects in the country, including 275 projects at the tender stage, 864 projects at the implementation stage, 38 contracts were terminated (Shapovalova & Queen, 2019), while the most significant number of concluded PPP investment projects fall on the regions. In terms of regions, Turkestan region accounted for the most projects: 266. East Kazakhstan region (256 projects) and Zhambyl region (93). Consequently, the total volume of attracted and planned investments amounted to 1.1 trillion tenge. It is worth noting that Almaty region is the leader among the regions in terms of assets (289.5 billion tenge) (Database and others, 2018). The main subjects of the implementation of PPP projects by private business are small and medium-sized enterprises, while most of the operating companies with the participation of private business and the state work in the field of information and communications (115 enterprises, minus 5.7% per year). Joint ventures are also involved in professional, scientific and technical activities and the water supply sector.

According to the Kazakhstan Center for Public-Private Partnership, in January 2021, 672 enterprises with state participation were registered in the country - 2.5%, which is less than a year earlier. 86.3%, or 580 companies are operating enterprises, minus 1.4% for the year.

In February 2021, there were 1.3 thousand projects in Kazakhstan, including 275 projects at the tender stage, 864 projects are being implemented, 38 contracts have been terminated. In terms of regions, Turkestan region accounted for the most projects: 266, East Kazakhstan region (256 projects) and Zhambyl region (93). The total volume of attracted and planned investments amounted to 1.1 trillion tenge. It is worth noting that the Almaty region is the region's leader in terms of investments (Remington et al., 2017).

More detailed statistics on operating enterprises with the participation of the institute of the state are presented in Table 2.

TABLE 2. Small and medium-sized businesses in the implementation of PPP projects with the participation of state-owned enterprises

No.	Sphere of entrepreneurial activity	Number of enterprises (units)				Growth (2022 to 2019, %)
		2019	2020	2021	2022	
1	Information and communication	127	115	111	112	-11,8
2	Professional, technical and scientific activities	91	86	82	83	-9,6
3	Water supply, waste collection, treatment and disposal, pollution elimination activities	61	50	50	50	- 18,03
4	Education	39	38	33	28	-28,2
5	Financial and insurance activities	37	34	31	36	-2,7
6	Support and administrative services activities	33	33	30	34	2,9
7	Supply of electricity, gas, steam, hot water and air-conditioned	31	31	30	30	-3,3
8	Transportation and warehousing	32	31	31	31	-3,2
9	Construction	31	29	29	30	-3,3
10	Real estate transactions	36	25	25	27	-33,4
11	Public health and social services	29	22	22	23	- 26.3
12	Art, entertainment and recreation	17	22	22	22	29,5
13	Public administration and defense, compulsory social security	21	19	17	15	-19,0

14	Mining and quarrying	10	8	8	11	10.1
15	Manufacturing industry	13	8	7	8	-38,2
16	Agriculture, forestry and fisheries	14	6	6	7	-50
17	Wholesale and retail trade, car repair	12	6	5	8	-33,3
18	Provision of accommodation and catering services	2	1	1	1	-50
19	Provision of other services	27	19	17	18	-33,3
	Total	663	580	557	588	

Note: compiled by authors

The analysis of the table data shows that the most significant number of PPP projects falls in the sphere of entrepreneurship related to information and communication since it is directly related to the implementation of the State Program "Digital Kazakhstan" with the participation of all Ministries (there are 18 of them) of the Government of the Republic of Kazakhstan. However, the increase in 2021 has a downward trend and amounted to -11.8%.

In general, for all types of economic activity, the growth (2021 to 2019, %) of small and medium-sized enterprises has a negative value, which is explained by a decrease in the involvement of the private sector in the implementation of PPP projects and the general economic conditions in the country.

The sectoral structure of PPP projects is characterized by the supporting positions of the following sectors of the economy: education (378 contracts worth 77 million tenge were concluded), healthcare (143 contracts worth 55 million tenge) and energy and housing and communal services (56 contracts worth 377 million tenge). Recent projects are being implemented in the field of aerospace industry, environmental protection, telecommunications and solid waste management. This indicates that the innovative activity of the business sector of Kazakhstan testifies to the successful implementation of 864 PPP projects in 2022 year. On the other hand, there is a high degree of risk in the implementation of PPP projects.

On the part of the state, measures are being taken to improve the implementation of PPP projects, the Government is particularly interested in regulating efficiency and investment incentives, as well as improving risk management mechanisms and reducing their level in the content and implementation of PPP projects.

5. DISCUSSIONS

The study results confirm that the Kazakhstan model assigns excellent importance to line ministries and regions in the successful practice of public-private partnerships. They are given greater independence in implementing projects. It seems logical that the supervising ministries and local executive bodies can better identify the needs in their industry and region that could be met through PPP projects and have the right to independently determine organizations for developing and examining documentation for such projects.

A large amount of power inevitably carries corruption risks. Legislatively, such risks are prevented through the implementation of appropriate standards. Some of the latest amendments include, for example, the following measures:

– by choosing private partners exclusively on a competitive basis, exceptions to this rule occur only by decision of the government (direct negotiations) for unique objects;

– on a more precise definition of the types of public-private partnerships;

– on specifying the object of public-private partnership;

– to create a digital platform for collecting, processing, storing information in the field of public-private partnerships, holding competitions and monitoring project implementation, other innovations.

Thus, based on the experience of introducing the mechanism of public-private partnership in our country, we can conclude that the Kazakhstan methodological model of PPP in terms of risk management during investment. Investment projects should be based on the following approaches:

– a balance between the independence of sectoral government bodies and regions and the legislative reduction of corruption risks of such independence;

– progressive improvement of legislation and institutions of public-private partnership, including based on constant monitoring of the practice of implementing PPP and current international experience;

– increasing competence, expanding and practical cooperation with the expert community in the field of public-private partnership;

– development of main directions, implementation of methodological support, coordination and leadership in the field of public-private partnership by the central government body for state planning with the involvement of a specialized organization (Center for the Development of Public-Private Partnership).

It seems advisable to continue to adhere to these approaches, adding new options to this model, as reflected below. The effectiveness of the implementation of PPP projects is determined by the effectiveness of the planning of the risk management system, the content of which is determined by economic, legal, political, social, technical, industrial and environmental conditions. These conditions in the implementation of the project should be taken into account both by the institution of the state and by private business. Suppose these conditions are not assessed taking into account their significance in the PPP project. In that case, the probability of the degree of risk impact on the project implementation process increases. The goals of the state - obtaining social results and recognition of society as a whole, and the private sector, increasing social responsibility in order to obtain entrepreneurial profits, decreases. Therefore, to achieve mutual goals and socio-economic benefits for all participants, it is necessary to develop a mechanism for planning a risk management system for PPP investment projects (Figure 2).

The PPP project risk management system is procedure aims to reduce possible losses associated with its implementation. It is carried out by making management decisions, identifying, analyzing risks, developing planned measures to minimize the negative consequences of the occurrence of risk events. The basis for developing effective planning of a PPP project risk management system is the quality and volume of information used and the variability of project conditions. Data flows ensure the interaction of PPP subjects and is implemented by performing functions and powers throughout the entire life cycle of a PPP project. At the same time, there is a system for monitoring the implementation of PPP projects by the public partner represented by the state. This indicates the importance of the information resource during the implementation of the partnership project, the quality indicators of which depend on the concentration and distribution of information flows in the enterprise (Rubtsov et al., 2022)

In Kazakhstan, such attractive instruments as a direct agreement, payment for success, compensation for currency risks, already introduced into legislation, cannot be resolved only within the framework of the existing public-private partnership model. Therefore, the task of modernizing the current planning and risk management model comes to the fore when the main emphasis is on financial support instruments. International experience shows that funds have been created in some countries that provide financial support to PPP projects. The current model can be strengthened, among other things, by creating a Fund for Financing PPP Projects with financial and legal resources to provide comprehensive support to PPP market entities. The proposed

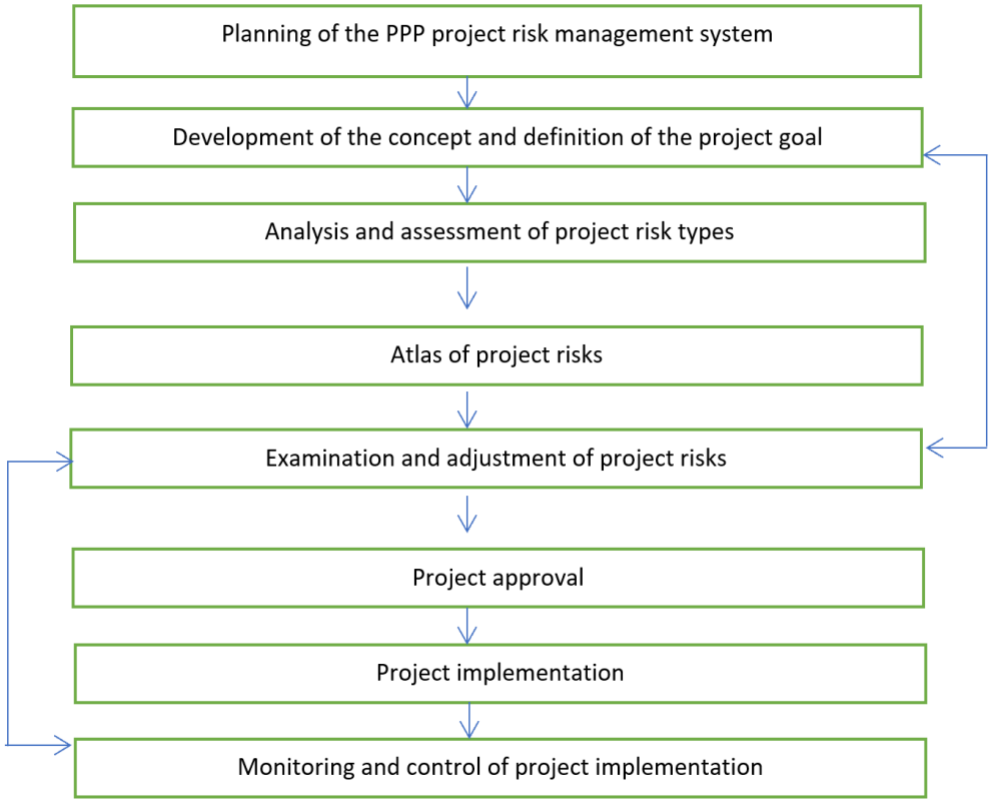

FIGURE 2. Planning of the PPP project risk management system

Note: compiled by authors

measures will raise the development of PPP to a new qualitative level and attract more investors to meet the urgent needs of the population. Each stage of planning a risk management system affects the duration, quality and scale of implementation, as well as the participants' expectations to obtain a social effect and entrepreneurial profit in the implementation of PPP projects.

The development of the project concept presupposes the feasibility of implementing and matching the purpose of the PPP project to the strategic priorities of developing the economy and private business structures. Possible risks are associated with the fact that in addition to analyzing the existing risks of the project that need to be adjusted, it is necessary to predict unforeseen types of risks, for example, related to innovations in the economy that can bring the project to a new level and improve its conditions. Consideration of each type of risk can be carried out in terms of the causes of this type of risk (Semenova, 2021).

At the stage of project implementation analysis, the scope of risk exposure and their consequences, acceptability, risk management methods, possible ways to reduce them are identified, the head (responsible person) is determined, and the project passport is approved. At the same time, it is crucial to assess the identified risks in order to determine the probabilities of their occurrence and consequences, the level of threats impeding the implementation of the project, based on the results of which a risk map is developed that describes the types, methods and methods of risk management.

One of the critical stages of planning a project risk management system is the monitoring and quality control of the implementation of PPP projects, which ensures, from the point of view of

microeconomics, the quality of the implementation of PPP projects, and from the point of view of macro processes, contributes to the development of the infrastructure of business structures and ensures the effective use of financial capital, human and production resources in the economy as a whole. As a result of monitoring, most private entrepreneurs realize the importance of proven areas of state support. The most important of them are financial and credit support, as well as support in the form of tax benefits for business entities involved in the implementation of PPP business projects. This topic becomes especially relevant during the crisis period when the implementation of projects is postponed, financing opportunities are reduced and the risks of bankruptcy of private partners increase. Thus, lockdowns and a slowdown in economic activity in all countries affected companies' financial stability in various industries, including infrastructure (Krasnopeeva & Morozkina, 2021). Therefore, it is necessary to use the best practices of effective PPP project management, where it is recommended to quantify unforeseen events (risks) and potential contingent financial resources associated with PPP projects, as well as transparently provide information about the cost of risks in PPP projects. In addition, the study's authors emphasize the importance of developing effective rules for all participants in the PPP market and reforming the financing system to consider all budget expenditures comprehensively. Therefore, when planning a risk management system for PPP projects, it is advisable to fully consider and study the process of phased implementation of PPP investment projects, taking into account the assessment of planned financial resources.

According to the degree of significance, a very high risk of PPP projects is associated with the lack of mechanisms for the return of investment costs of private business. For example, more than 90% of private business structures note that the unreturned costs can be directed to creating engineering and communication infrastructure, which is the main object of private investment today. Ensuring the return of these expenses will reduce the level of possible risks in the production infrastructure of private business entities.

6. CONCLUSIONS

From the above algorithm, it should be noted that within the framework of a PPP project, the planning of a risk management system begins with the anticipation of possible risk events, and in order to reduce the degree of risk for the application of the developed risk response system, that is, a risk management system for a specific PPP project. Suppose the risk system can be formed on the basis of some formalized list. In that case, the analysis of the degree of danger and the choice of methods for responding to or preventing risks in most cases is based on the experience of participants in the PPP project. At the same time, risk minimization work cannot be carried out exclusively when planning a PPP project. At the stage of its implementation in a constantly changing dynamic external environment, it is also necessary to continually implement measures to identify risks and develop ways to respond to possible risk events, analyze the risk management capabilities of each project partner, and assess the effectiveness of management measures risks. Competent risk planning will allow the project participants to see in advance the possible dangers of the project and prepare for their elimination.

In modern conditions, the implementation of PPP investment projects fully fits into the business structure in the implementation of strategic objectives, improving the welfare of society and ensuring the competitiveness of business structures in Kazakhstan. As long as the market does not solve social issues in the economy, new ways of developing economic relations are needed through the interaction and interconnection of the institution of the state and the private sector in order to effectively manage the production factors and create the infrastructure of the market of Kazakhstan in the context of global changes.

During the validity of the Law of the Republic of Kazakhstan dated October 31, 2015 "On Public-Private Partnership", 100 amendments were made. The document's largest number of amendments were made in 2017, 2021, 2022. Analysis of changes, additions and exceptions showed that the most significant changes were made in 2017, 2021 and 2022 (15, 22, 21, respectively), the largest number of additions was created in 2021.

The analysis showed that in the context of COVID-2019, education remains a priority for developing PPP projects. Still, at the same time, it is necessary to implement innovative projects involving financial and technological resources, which will contribute to the development of the PPP mechanism and the country's socio-economic growth. The peculiarity of the development of this form of interaction of market entities is predetermined by the implementation of PPP projects in conditions of economic instability, when the institution of the state acts as a guarantor for their performance in the social sphere, thereby creating conditions for the stable development of entrepreneurial structures.

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AUTHOR BIOGRAPHIES

***Nurbakhyt N. Nurmukhametov** – Cand. Sc. (Econ.), Associate Professor, Acting Professor, S. Seifullin of the Kazakh Agrotechnical Research University, Astana, Kazakhstan. Email: nyrbahit73@mail.ru, ORCID ID: https://orcid.org/0000-0002-8551-0573

Kamar N. Beketova – Cand. Sc. (Econ.), Associate Professor, Department of Economics and Management of Korkyt ATA Kyzylorda University, Kyzylorda, Kazakhstan. Email: kamar82@mail.ru, ORCID ID: http://orcid.org/0000-0001-5094-9140

Kenzhegul Khassenova – Cand. Sc. (Econ.), Associate Professor, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan. Email: n_kenzhegul@mail.ru, ORCID ID: http://orcid.org/0000-0003-4787-2028

Saltanat Yusupova – Cand. Sc. (Econ.), Associate Professor, Senior Lecturer of S. Seifullin of the Kazakh Agrotechnical Research University, Astana, Kazakhstan. Email: abay.saltanat@bk.ru, ORCID ID: http://orcid.org/0000-0001-9878-8948

Anna A. Dubel – PhD, Professor, AGH in Krakow, AGH University of Krakow, Poland. Email: a.bubel@bk.ru, ORCID ID: http://orcid.org/0000-0001-6562-8976

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The Effects of Trade Related Sanctions on Russia on Kazakhstan's International Trade in Goods

Kairat Moldashev[1,2*]

[1] SDU University, Kaskelen, Kazakhstan

[2] Narxoz University, Kazakhstan

Corresponding author:
***Kairat Moldashev** – SDU University, Kaskelen, Kazakhstan.
Email:kairat.moldashev@sdu.edu.kz

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Abstract

The aim of this study is to explore the effects of sanctions on the international trade of Kazakhstan using data from TradeMap database. The Russia-Ukraine conflict has brought instability to the broader Eurasian continent and significantly affected neighboring states. Kazakhstan and Russia share the second-longest international land border and both participate in the Eurasian Economic Union with a high level of economic integration. Given Kazakhstan's landlocked status, the country relies on Russian territory for its main export routes. Despite expectations of potential issues with oil and gas transportation for Kazakhstan due to sanctions on Russia, there was an increase in mineral exports from Kazakhstan in 2022, resulting in a positive trade balance. High energy prices and inflation in the EU at the start of the invasion led to the delay of oil and gas import bans by the bloc until late 2022. There is also evidence of sanction evasion by Kazakhstani companies, reflected in changes in the structure of exports to Russia. This has prompted visits by officials from sanctioning countries and increased monitoring. Overall, the conflict and subsequent comprehensive sanctions have created uncertainty for investors and require scenario-based long-term planning and additional compliance costs. It is recommended to improve awareness of local companies about the possibility of violating sanctions through corporate training and cooperation with business associations. This will help local businesses to prevent the risk of being subjected to secondary sanctions.

Keywords: Economy, Sanctions Effect, Eurasian Economic Union, Sanctions Busting, Russia, Ukraine, Trade, International Trade

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1. INTRODUCTION

The Russia-Ukraine conflict and Western sanctions have placed the Kazakh government in a very difficult situation. On one hand, Kazakhstan is a member of the Eurasian Economic Union, sharing the second-longest land border with Russia, which happens to be its largest trade partner and currently under sanctions. On the other hand, Kazakhstan is part of the international community, heavily reliant on investments from and exports to European countries. Public opinion in Kazakhstan favors Ukraine due to its complicated history with the Russian Empire and Soviet past. During the St. Petersburg Economic Forum, President Tokayev, seated next to Putin, openly rejected the idea of recognizing the Donetsk and Luhansk "republics" by Kazakhstan, affirming the country's commitment to a peaceful resolution of the conflict. The Kazakh government is also cooperating with Western countries to prevent the re-export of sanctioned goods to Russia through Kazakhstan, though with limited success.

As members of the Customs Union since 2010 and the Eurasian Economic Union since 2015, Kazakhstan and Russia have eliminated customs borders for trade in goods. However, checkpoints and post-customs mobile monitoring groups remained in place due to a high number of exceptions from the Common External Tariff and concerns about re-export. It's worth noting that until 2022, Russia maintained a more protectionist stance among the EEU members to prevent the re-export of Chinese products through Kazakhstan and Kyrgyzstan, as well as to curb grey imports. However, in March 2022, Russia formally allowed grey imports and liberalized trade with its partners to encourage the re-export of banned goods through the territory of EEU members. This trade policy reversal, prompted by sanctions, has impacted trade flows among EEU members, including Kazakhstan's foreign trade.

The war in Ukraine has also led to disinvestment in the Russian economy, with Western companies closing their Russian branches or selling them to local companies for symbolic sums. Many Russian companies and investors have found it challenging to operate within the jurisdiction of an occupying country and have started relocating to other territories. The Kazakh government has seized this opportunity to attract foreign investment, with the Ministry of Digital Development, Innovations, and Aerospace Industry of the Republic of Kazakhstan being particularly active in this regard.

There are other direct and indirect effects of sanctions on the Kazakh economy, including migration, logistical challenges, and political risks. The influx of Russian youth escaping mobilization has led to skyrocketing rent prices in major cities of neighboring countries. The war and sanctions have disrupted logistics, lengthened trade routes, increased insurance fees, and raised transportation costs. While some companies in Kazakhstan have been able to profit from increased investment and business activity, the overall situation with the war has made it difficult to plan strategically for long-term growth. Though sanction have affected different aspect of Kazakh economy, this article focuses solely on the influence of trade-related sanctions on Kazakhstan's international trade flows.

The main purpose of this article is to explore effect of sanction on international trade of Kazakhstan by comparing trade flows in 2022 with previous year exports and imports.

2. LITERATURE REVIEW

Economic sanctions, frequently used as a tool to exert political pressure or achieve foreign policy objectives, have garnered substantial attention in the fields of international relations and economics. These measures lack universal applicability, with their impact on the economies of targeted nations being the result of a complex interplay of various factors. This literature review aims to discuss the overall effect of sanctions, their impact on international trade, and their

consequences on third countries that are neither the senders nor the targets of sanctions. One of the most immediate and conspicuous effects of economic sanctions is the reduction in economic output experienced by the targeted nations. Studies indicate that nations subjected to sanctions typically witness a decline in their Gross National Product (GNP). For instance, sanctions imposed on Iran from 2011 to 2014 caused a 17% decline in the country's GNP (Gharehgozli, 2017). This economic downturn can be attributed to various factors, including trade constraints and financial instability. Such sanctions-induced economic downturns often lead to increased inflation rates and volatile exchange rates (Wang et al., 2019). Furthermore, these adverse impacts extend to the labor market, with unemployment rates tending to rise as a result of sanctions (Hatipoglu & Peksen, 2018). The next subsection delves into the literature regarding the effects of sanctions on international trade.

Sanctions and International Trade

Economic sanctions, in the form of export or import bans, have significant effects on international trade. When sanctions are comprehensive, they lead to a substantial reduction in trade volumes experienced by the sanctioned country due to the disruption of trade networks (Caruso, 2003). In cases of non-comprehensive sanctions, they may lead to an increase in trade opportunities for third-party countries. While sanctions may curtail commerce between the sender country and the targeted nation, international firms can step in to offset the losses through trade with the sanctioned country via its allies to benefit from extra rents (Early, 2009). Thus, economic sanctions can inadvertently redirect trade flows and create opportunities for businesses in third-party countries.

The impact of sanctions extends beyond the confines of the targeted nation and can potentially affect global trade volumes. Calculations by Felbermayr et al. (2019) show a sharp increase in the effect of sanctions on global trade in 2002, estimating its value to be equal to 2 trillion USD. The anticipation of sanctions can divert trade flows before bans are imposed, resulting in trade-related costs. Some case studies show the persistence of negative effects after sanctions are lifted due to "sunk costs" (Özdamar & Shahin, 2021) and the possibility of the sanctioned country's government continuing to protect local producers (Pond, 2017).

Moreover, the ability of each party to reduce expenses while enhancing their capacity to harm the opponent is dictated by their relative strengths in exports and internal production. Sanctions tend to be effective when the imposing country has an edge in products exported to the targeted nation. However, they are prone to failure if the targeted country has a varied range of exports or holds a competitive advantage in its exports (Kavakli et al., 2020)

The sanctions imposed on Russia in response to its full-scale invasion of Ukraine in 2022 had limited effects on Russia's overall GDP and economic growth. The expectations of a plummeting GDP were not realized as Russia continued to export its natural resources, maintained exchange rate stability, and benefited from high prices for commodities and agricultural goods. The trade surplus reached a record 198 billion USD in 2022, thanks to the delay in sanctions, high energy prices, and a decline in Russian imports (Demertzis et al., 2022).

Despite effective management by the Bank of Russia to initially mitigate financial instability and protect the real economy, the broader impact of the sanctions began to manifest. Russia's fiscal revenues started to suffer, and as the sanctions continued to broaden, it became evident that the economy would face significant medium to long-term challenges (Demertzis et al., 2022; Wiśniewska, 2023). The withdrawal of numerous western firms from the Russian market as a result of a 'self-sanctioning' trend had its own set of consequences. This voluntary exodus, coupled with the eventual energy decoupling by the EU and Russia's inability to find equal alternatives, posed a severe threat to the Russian economy, undermining its stability and growth prospects (Wiśniewska, 2023). The estimation of the economic effects of sanctions shows that the most

significant negative effect in the coming years is expected from the withdrawal of foreign direct investment (Mahlstein et al., 2022). Finally, a critical consideration is the potential for countersanctions.

Economic sanctions can also have significant effects on third countries, which are countries not directly involved in the imposition of sanctions but have economic ties with the sanctioned country. Some studies suggest that sanctions can create trade opportunities for third countries as they may step in to fill the void left by the sanctioning countries (Early, 2009). Recent studies on sanctions have focused on the effects of sanctions busting (Jeong, 2023; Peterson, 2021; Preble, 2023). For sanctions to achieve political objectives, the sender countries should involve multilateral institutions and signal third countries about the consequences of sanctions busting (Jeong, 2023).

Overall, sanctions tend to decrease trade between the sanctioned country and its partners. Studies of firm behavior show that sanctions lower the probability of companies trading with target countries, though the effects depend on company and market characteristics (Crozet et al., 2021). Third-party states also incur the economic costs of sanctions. These costs can influence sanction costs for senders and targets, depending on these states' actions. When sanctions are imposed through institutions like the UN, which requires the compliance of all member states, countries with close economic ties to the target economy face significant costs (Özdamar & Shahin, 2021). However, if the target country is of high political and economic importance to third countries, alignment with senders' sanctions is less likely.

Economic sanctions imposed on Russia after the occupation of Crimea but before the full-scale invasion in 2022 had limited indirect effects on Kazakhstan. Kazakhstan is not directly involved in the imposition of sanctions but has strong economic ties with Russia. The restrictions had no effect on transportation costs for Kazakh oil and gas, and there was no sanction busting effect for multilateral sanctions. On the other hand, the sanction busting effect was more evident in the case of Russian counter-sanctions, with the possibility of re-export of sanctioned goods via Kazakhstan to European markets (Aituar, 2021). The effects of the 2022-23 multilateral and comprehensive sanctions on Kazakhstan and other members of the Eurasian Economic Union (EEU) require investigation based on emerging trade and other economic data.

3. METHODOLOGY

The main purpose of this article is to explore the effects of sanctions on Russia on the trade patterns of Kazakhstan. This article is based on a descriptive analysis of secondary data. Trade data is obtained from the Trademap database and is based on statistics as reported by Kazakhstan. Information related to sanctions is sourced from the European Commission's official website and US government pages. Sanctions in the form of export bans are categorized based on HS 6 digits, and a more detailed analysis of trade in goods is conducted at this level. The supportive evidence of governments' actions related to sanctions is based on reports from official or established private media outlets. Data on inflation, interest rates, and other macroeconomic indicators is obtained from the National Bank of Kazakhstan.

While previous studies have focused on the effects of sanctions on targeted countries, this study explores their impact on a third country – Kazakhstan, a trading partner of Russia. Sanctions typically affect trade networks by diverting trade flows (Caruso, 2003). Companies in sanctioned countries establish new routes and may cooperate with rent-seeking firms in third countries, potentially leading to sanction-busting. This study investigates trade diversion and possible

sanction-busting by examining changes in Kazakhstan's trade flows, with a particular focus on exports to Russia.

First, overall trade data is presented, followed by a discussion of the most significant changes in 2022. As most of the changes were related to Kazakhstan's export structure, a comparison of these changes with Russian imports and the list of sanctions is provided.

4. FINDINGS AND DISCUSSION

For the Kazakh economy, which highly depends on the production and export of mineral products, the biggest challenge was the issue of transportation. More than eighty percent of Kazakh oil is exported through the Caspian Pipeline Corporation's (CPC) pipeline that goes through Russian territory. Although Western countries introduced export and import bans on many goods and sanctioned individuals and companies in Russia, there was little distortion in resource transportation volumes (see Table 1).

TABLE 1. Overall exports and imports of goods (Kazakhstan – World)

Indicator	2020	2021	2022
Exports	46,949,697	60,321,024	84,391,615
Imports	38,081,411	41,415,435	50,043,643
Trade Balance	8,868,286	18,905,589	34,347,972
Note: compiled by author			

Rising energy prices in the EU, combined with Russia's dependence on oil revenues, resulted in a steady flow of oil and gas. Exports of Kazakhstan increased by 39.9% in 2022 compared to the previous year, exceeding eighty-four billion USD. Imports also increased slightly, and the positive trade balance for 2022 exceeded thirty-four billion USD.

The composition of trade partners has not changed significantly in 2022. Figure 1 shows the main trade partners of Kazakhstan and their share in the country's total trade over the last five years.

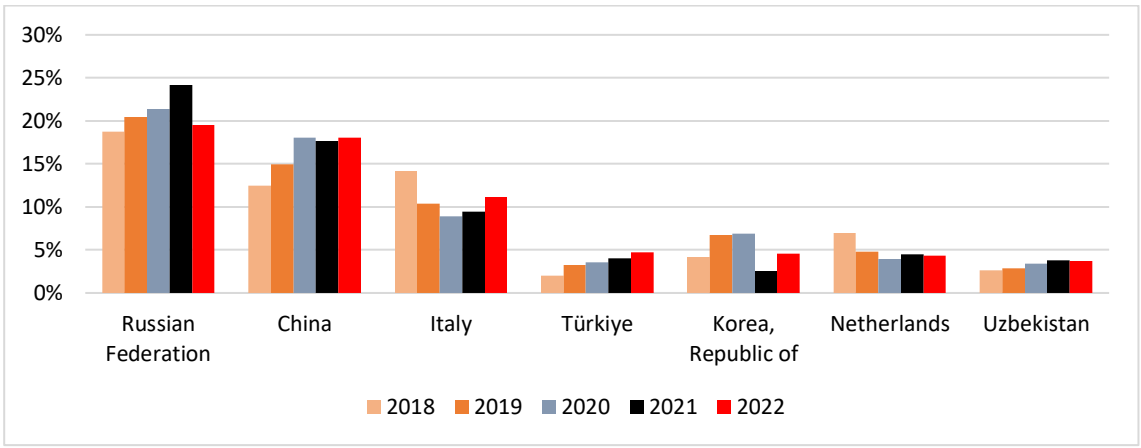

FIGURE 1. Main trade partners of Kazakhstan 2018-2022

Note: compiled by author

Russia still remains the main trade partner of Kazakhstan. However, there is a sharp decline in Russia's share of Kazakhstan's total trade, reversing the trend of recent years. China is moving towards becoming the main trade partner, and Uzbekistan's share has been increasing.

The structure of exports mostly remained the same with a dominance of mineral products (see Table 2, which covers around 95% of Kazakhstan's exports).

TABLE 2. Main exports categories (Kazakhstan to World)

Code	Product label	2020	2021	2022	Increase in 2022 (value)	Increase (compared to 2021)
'TOTAL	All products	46,949,697	60,321,024	84,391,615	24,070,591	39.9%
'27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral	27,329,211	34,820,911	51,803,184	16,982,273	48.8%
'72	Iron and steel	3,175,924	4,973,319	5,561,961	588,642	11.8%
'26	Ores, slag and ash	3,141,746	4,195,622	4,243,169	47,547	1.1%
'74	Copper and articles thereof	2,792,950	3,392,545	3,821,047	428,502	12.6%
'28	Inorganic chemicals; organic or inorganic compounds of precious metals of rare-earth metals	2,339,269	2,511,508	3,584,600	1,073,092	42.7%
'10	Cereals	1,363,252	1,659,902	2,225,869	565,967	34.1%
'85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television	185,840	664,605	1,639,590	974,985	146.7%
'84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	317,670	609,035	1,275,762	666,727	109.5%
'25	Salt; sulphur; earths and stone; plastering materials, lime and cement	456,580	743,101	1,169,847	426,746	57.4%
'79	Zinc and articles thereof	620,901	735,418	834,451	99,033	13.5%
'76	Aluminum and articles thereof	522,908	779,960	825,877	45,917	5.9%
'11	Products of the milling industry; malt; starches; inulin; wheat gluten	516,353	492,572	820,776	328,204	66.6%
'71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad	698,895	858,918	788,397	(70,521)	-8.2%
'12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal	358,360	382,778	639,275	256,497	67.0%
'15	Animal, vegetable or microbial fats and oils and their cleavage products; prepared edible fats	200,166	216,692	531,611	314,919	145.3%
'87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	203836	310491	490865	180,374	58.1%

Note: compiled by author

However, there was a significant increase in exports of items under categories such as Electrical machinery and equipment (HS code 85), Nuclear reactors, boilers, machinery (HS code 84), and Vehicles other than tramway (HS code 87). The increase in exports of mineral and

agricultural products produced in Kazakhstan is logical due to drastic price hikes amid the war in Ukraine. However, the significant increase in exports of electrical equipment and machinery has already attracted the attention of officials in the EU and the US, as many items in categories with HS codes 84, 85, and 87 are subject to export bans as part of sanctions imposed on Russia (Global Trade Alert, 2023; Implementation of Additional Sanctions Against Russia and Belarus Under the Export Administration Regulations (EAR), and Refinements to Existing Controls, 2023; EU Sanctions, 2023).

Figure 2 shows the categories in Russian imports that exhibited the most notable decrease in 2022.

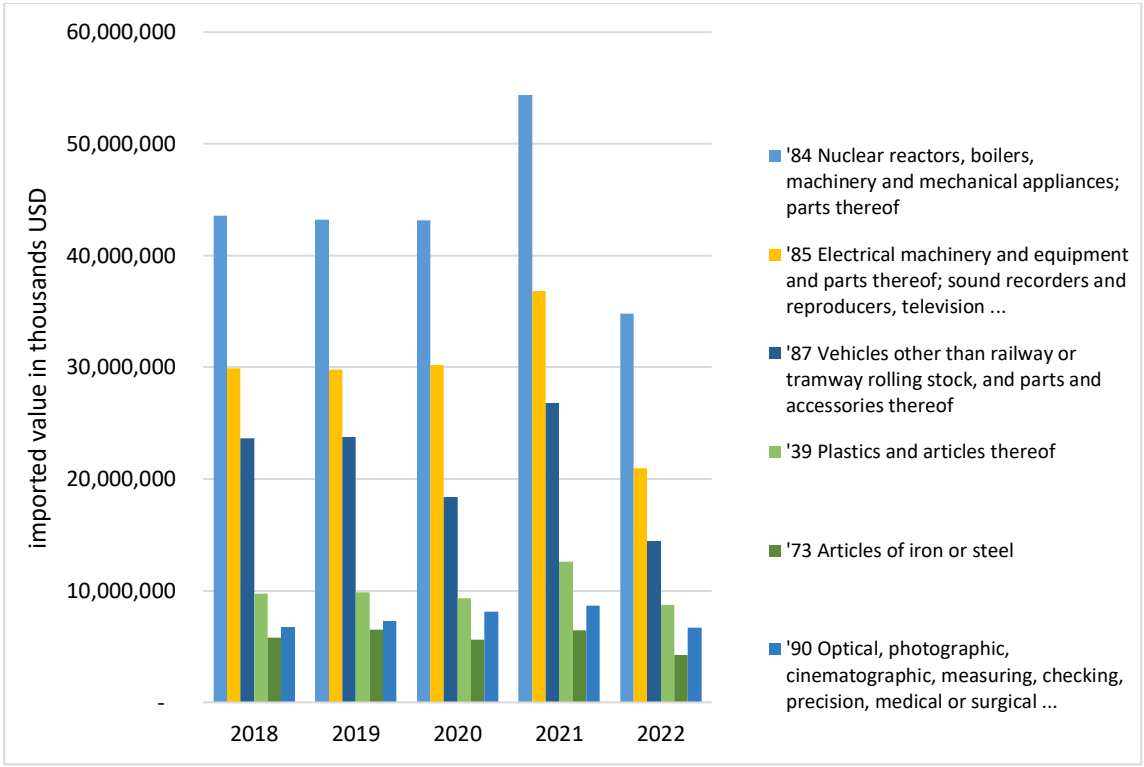

FIGURE 2. Import categories with most significant drop in volume (Russia's imports from World)

Note: compiled by author

The sanctions affected Russia's imports, which decreased from 293.5 billion USD in 2021 to 194.4 billion USD in 2022. When compared to the sanction's lists issued by the EU Commission and the US government, the imports in categories 39, 40, 73, 84, 85, 87, and 90 (HS 2-digit classification) declined by 50.8 billion USD. Although the decline was quite significant, Russia continued importing goods in these categories. Firstly, not all goods in these categories are under sanctions, and some subcategories allow for export (sanction lists are mostly published based on 6-digit HS codes). Secondly, Russia was able to import some sanctioned goods through countries that haven't imposed any sanctions, including trade partners like Kazakhstan.

Given the recent focus of Western countries on monitoring the implementation of sanctions, there is a growing risk of secondary sanctions for countries and individual companies in case of non-compliance. Table 3 shows Kazakhstan's exports to the Russian Federation. We have listed the first ten categories that showed the highest increase in value in 2022 compared to the previous

year. These categories correspond to those in Figure 1, and many items within these categories are under sanctions. We used the term 'Risk of sanctioned items' because not all items under the two-digit categories are on the export ban list, and for detailed analysis, six-digit HS codes should be used. Moreover, the sanctions were imposed at different times throughout 2022 and 2023, and some sanctioned goods were exported before the export bans were put in place. For certain goods on the export ban lists, there is a process of certification rather than a complete ban.

Therefore, the data in Table 3 should be treated with caution and should not lead to the conclusion that all of the goods indicated there were in violation of the sanctions regime or part of sanctions busting.

TABLE 3. Kazakhstan exports to Russian Federation (Categories with highest increase in value in 2022)

Code	Product label	Value in 2020	Value in 2021	Value in 2022	Increase in 2022 (value)	Increase (compared to 2021)	Risk of sanctioned items
'84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	108536	128161	837326	709165	553%	Yes
'85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television	91715	122867	827400	704533	573%	Yes
'28	Inorganic chemicals; organic or inorganic compounds of precious metals of rare-earth metals	610452	704193	1368440	664247	94%	Yes
'25	Salt; sulphur; earths and stone; plastering materials, lime and cement	102641	169651	285069	115418	68%	Yes
'87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	49874	88803	199043	110240	124%	Yes
'79	Zinc and articles thereof	84226	149361	228201	78840	53%	Yes
'90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical	6163	19036	92411	73375	385%	Yes
'39	Plastics and articles thereof	72833	112896	182066	69170	61%	Yes
'71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad	932	3426	65047	61621	1799%	Yes
'38	Miscellaneous chemical products	22283	16975	76874	59899	353%	Yes
Note: compiled by author							

More detailed evaluation of exports of sanctioned goods to Russia was done using 6-digit HS codes. It should be noted that some share of values exported to Russia might have taken place before the sanction were imposed. Table 4 displays sanctioned items under category 85 - 'Electrical machinery and equipment and parts thereof...' along with the values of exports from Kazakhstan to Russia in the last three years. Only goods with changes in export values exceeding ten million USD in 2022 are provided, as the list is lengthy. It should be noted that the increase in exports of these goods from Kazakhstan to Russia coincides with an increase in imports of

them to Kazakhstan from the rest of the world, which hints at possible re-exports. This data is publicly available and is subject to scrutiny by Western partners of Kazakhstan and other Central Asian nations. Kazakhstan has already taken action to monitor and prevent the re-export of sanctioned goods to Russia. However, more specific measures are yet to be clarified and fine-tuned in order to take effect.

TABLE 4. The exports of items under sanctions in category 85

Product code	Product label	2020	2021	2022	Change in 2022
852872	Reception apparatus for television, colour, whether or not incorporating radio-broadcast receivers	609	7	151591	151584
851713	Smartphones for wireless networks	0	0	142670	142670
851762	Machines for the reception, conversion and transmission or regeneration of voice, images	3068	1933	39501	37568
852852	Monitors capable of directly connecting to and designed for use with an automatic data processing	12	20	29491	29471
850819	Vacuum cleaners, incl. dry cleaners and wet vacuum cleaners, with self-contained electric motor	0	0	24351	24351
852859	Monitors (excl. with TV receiver, CRT and those designed for computer use)	318	309	11249	10940
851650	Microwave ovens	0	0	10928	10928
852869	Projectors (excl. with TV receiver, designed for computer use)	4	20	10620	10600
Note: compiled by author					

It is expected that Western countries will prioritize compliance with existing sanctions rather than increasing the number of sanctioned items, as evident in the 11th sanctions package introduced by the EU. This package is more restrictive regarding the transit of goods through Russian territory and provides mechanisms for the implementation of secondary sanctions. The transit of goods is targeted due to the possibility of sanctioned items from the EU to Central Asian countries being unloaded on Russian territory before reaching their final destination, with fake reporting. The secondary sanctions aim to prevent re-exports by targeting specific companies. Overall, companies tend to comply with comprehensive sanctions, as shown in previous research (Crozet et al., 2021). In the case of sanctions on Russia, they are imposed by the major trade partners of Kazakhstan. However, branches or affiliates of Russian companies relying on sanctioned products might continue to circumvent sanctions. This will increase monitoring costs for Kazakhstan and other EAEU member states' governments.

5. CONCLUSIONS

The first months of the conflict resulted in significant logistical issues that were later resolved, albeit with an increase in transportation costs. The fears of tenge devaluation in early 2022 did not materialize due to the growth in exports from Kazakhstan, which increased the supply of foreign currency, and capital controls in Russia prevented a surge in demand for USD and Euro that would have affected the tenge's value. The rise in transportation costs, mass exodus of Russian citizens avoiding mobilization to neighboring countries, including Kazakhstan, and other factors led to a 20.3% inflation rate in 2022. The National Bank of Kazakhstan relied on monetary measures to combat inflation, and the base rate increased from 10.25 in January to 16 by October 2022. Although it had some limited impact on controlling inflation, the high base rate negatively

affects economic activity. The effects of the aforementioned factors are yet to be fully identified, and in this article, we focused solely on the trade in goods.

Overall, there were no drastic changes in Kazakhstan's top trade partner portfolio and trade volumes. The total export value increased despite transportation issues, leading to a rise in the positive trade balance. Major changes were observed in trade structure, with booming exports in certain categories, including electrical equipment and machinery. Most of the exports of electrical equipment and machinery went to Russia, and this trend has attracted the attention of Western partners of Kazakhstan, who suspected sanctions busting. Although some firms received short-term benefits from re-exports, overall, the war and subsequent sanctions have created significant challenges for Kazakhstani companies.

Further shifts in Russia towards a wartime economy and a decrease in industrial output for export purposes will diminish Russia's role in Kazakhstan's economy as the main trade partner. Given that most of the investment in Kazakhstan flows from Western countries and most of the oil is exported to EU countries, the Kazakh government will introduce further measures to comply with sanctions against Russia. It is expected that costs related to compliance with the sanctions regime will rise, and companies will need more experts in this field. Several universities in Kazakhstan have already started cooperation with European partners to establish programs or minors related to Strategic Trade Control (STC). The term STC was mainly used for controlling dual-use products and technology related to nuclear, chemical, and biological weapons. However, the war in Ukraine, with the use of drones and high-precision equipment, broadens the definition of dual-use products, as parts of electrical equipment and machinery can be used for military purposes.

Apart from logistics issues and compliance-related costs, there is a problem of uncertainty. It is more difficult for companies to plan and invest in a turbulent environment amid increasing transportation and insurance costs. To adapt, companies and state institutions need to invest in foresight scenario-based planning to navigate the uncertain future in the region. Even if we consider the most optimistic scenario, where Russia withdraws troops from Ukraine, sanctions against Russia, particularly on dual-use products that can be used to develop advanced weapons and military technology, are highly likely to remain in place for decades. Kazakhstan is still subject to trade limitations with the US due to the Jackson-Vanik amendment adopted in 1974, although this amendment no longer applies to Russia. Therefore, policymakers and companies in Kazakhstan should develop long-term strategies to mitigate adverse effects and avoid future risks.

It is recommended to increase awareness about the risk of sanction-busting for local companies through corporate training and business associations. This will help local companies avoid secondary sanctions. Universities can also contribute by offering courses to students, as part of lifelong learning or extension programs, aimed at training specialists in risk management, compliance, and strategic trade control. To prevent country-level sanctions, the government may enhance monitoring of trade in goods on the sanctions list. However, such monitoring should not significantly increase the cost of doing business for firms already struggling with plummeting logistics and compliance costs.

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AUTHOR BIOGRAPHIES

***Kairat Moldashev** – PhD, Associate Professor, SDU University, Kaskelen, Kazakhstan, Email: kairat.moldashev@sdu.edu.kz, ORCID ID: https://orcid.org/0000-0001-6558-6004

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The Analysis of the Relationship Between Innovation and the Development of the Agro-Industrial Complex in Kazakhstan

Gabit N. Asrepov[1]* | **Gulzhazira D. Kenzhebayeva [2]** | **Zhanat Zh. Baishukurova[2]** | **Sandigul Zh. Kelbetova[2]** | **Ardakh Azimkhan[3]**

[1] Kazakh-Russian International University, Aktobe, Kazakhstan

[2] K. Zhubanov Aktobe Regional University, Aktobe, Kazakhstan

[3] Non-profit Joint Stock Company "Toraigyrov University", Pavlodar, Kazakhstan

Corresponding author:
***Gabit Asrepov** – PhD candidate, Kazakh-Russian International University, Aktobe, Kazakhstan
Email: asrepov.gabit@mail.ru

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EJEBS

Abstract

This study investigates the relationship between innovation and the agro-industrial complex's (AIC) development in Kazakhstan. In the context of global shifts in technology, labor, and capital markets, the research examines the role of innovation in enhancing the AIC's competitiveness. The primary focus is on the dynamics of innovation in agriculture, particularly how it influences factors like human capital, innovation activity levels, and the role of science and scientists. The research employs a two-stage methodology involving descriptive analysis and hypothesis testing, using SMART-PLS software for data-driven analysis. Key indicators considered include employment in agriculture, innovation activity, and agricultural credit loans. The period from 2013 to 2019 is analyzed, testing hypotheses about the impact of agricultural credit loans on innovation, the influence of innovation on agriculture's share in GDP, and its effect on the number of farms. The results highlight the significant role of innovation and financial support in advancing Kazakhstan's agricultural sector. Agriculture Credit Loans and the increase in the Number of Farms substantially boost innovation in the AIC contributing to its growth and greater GDP share. While the Share of Agriculture in GDP also positively impacts innovation, its effect is less pronounced. The research underscores the necessity of collaboration between agricultural enterprises and research institutions and the vital role of financial support in driving sustainable growth and development.

Keywords: Economy, Agro-Industrial Complex, Innovations, Innovative Development, Innovation Activity, Sustainable Development, Kazakhstan

SCSTI: 68.75.21

JEL Code: Q16, Q18, L52

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1. INTRODUCTION

The modern era is characterized by rapid and profound changes in sectors of the economy, including environmental aspects, science, technology, and socio-cultural aspects of society. Innovation is decisive in ensuring competitive advantage, sustainability, and the need to rise to challenges. By supporting the processes of change and progress, innovation becomes the driving force of economic progress and the main driving force shaping this modern face of society.

With the development of new economic and sustainable paradigms such as the bioeconomy, circular economy, resource efficiency and biorefinery, the understanding that as these concepts are applied to the lean economy, research into the relationship between innovation and productivity in agriculture has become increasingly important (Viaggi, 2015).

Among the various sectors of the economy, the agro-industrial complex (AIC) is one of the most important, as it is directly related to ensuring food security, considering consumer demands and severe environmental and socio-economic problems. The effective functioning and development of the agricultural sector require innovative approaches and solutions that can increase productivity and improve product quality.

Innovation plays an important and decisive role in the modern development of the agro-industrial complex. It is considered a key mechanism for increasing competitiveness, business efficiency and the sustainability of economic activity in this industry. Global trends, such as changes in the labor market and availability of capital and technology, impact the agricultural sector and create new opportunities and challenges for enterprises (Chikov, 2020; Nurmanbetova et al., 2021).

Introducing new technologies plays a crucial role in expanding agricultural production in Kazakhstan. The availability and application of scientific developments in rural areas and the effectiveness of advisory services are possible factors for solving problems at present (Souca et al., 2021)

Continuous innovation is a system of consistent activities for implementing scientific developments. Agricultural production, characterized by high complexity, requires a particular approach to organizing the innovative activities of business entities.

In developed countries, specialized centres of knowledge and ideas are being formed in the agricultural sector, which allows agriculture to move to a higher level of technology based on experience, knowledge and scientific achievements.

Agriculture in the Republic of Kazakhstan has significant potential and extensive opportunities. The diverse climatic conditions in the country allow the cultivation of almost all crops in the temperate thermal zone and the development of livestock farming. The government of Kazakhstan is actively focusing on attracting the latest technologies and promoting innovation in agriculture. In 2020, Kazakhstan received a $500 million loan from the World Bank to implement the Sustainable Livestock Development Program. The goal of the program is to support the sustainable development of livestock farming through the development of infrastructure for open-grazing livestock and the creation of a monitoring system for beef production following international standards (Timakova, 2020).

However, despite all the efforts, the main problem in Kazakhstan is creating conditions for its sustainable growth and increasing the competitiveness of products for developing the agricultural sector. The solution to this problem includes ensuring the stable development of agriculture and improving the quality of its products through stimulating innovative activity based on the development and use of advanced types of innovation, reflecting the latest scientific and technical achievements.

The primary goal of this research is to investigate the multifaceted relationship between innovation and the development of the agro-industrial complex in Kazakhstan. The study analyses this relationship by examining key indicators encompassing various domains. Particular attention

will be paid to factors such as human capital, the level of innovation activity, and the role of science and scientists in this context. As part of the study, current trends, challenges and opportunities associated with the difficulties of modern agricultural systems will be examined, and practical recommendations for enhancing innovation in the agro-industrial complex will be offered.

2. LITERATURE REVIEW

In the modern world, economic policy is an important indicator of the national economy and ensures food security for millions of people. One of the most important aspects of agriculture is innovation. Financial support and demographic changes, such as an ageing population and changing labor force structure, play a crucial role in developing an innovative economy in the economic sector. Wheeler (2008) discusses organic farming as a potential innovation in agriculture and examines factors influencing agricultural professionals' attitudes toward this innovation. The role of the scientific community is emphasized in the context of promoting innovation in agriculture, where the scientific community evaluates technologies and practices such as organic farming, conducting research and providing scientific justification.

Financial support and lending for agricultural enterprises is highlighted as a key factor for increasing production efficiency and meeting the food needs of the population. This contributes to the formation of a competitive innovative economy, including the rural sector, which is important for ensuring sustainable development, increasing labor productivity in agriculture and improving product quality (Chen & Yada,2011; Dorzhieva & Dugina, 2015). One of the main conditions for development is the use of advanced scientific and technological achievements, new highly efficient methods of rural production, as well as the modernization of agricultural enterprises (Mexmonov, 2019). Sokolova and Litvinenko (2020) highlighted innovation's social and economic benefits for society and the state. Innovation helps improve living standards and the quality of products, create new jobs and reduce social inequality, especially in rural areas. The authors note that the need for more qualified personnel is one of the barriers to innovation in agribusiness. Moreover, the introduction of new technologies requires specific knowledge and skills. Technology plays a decisive role in innovative development. The introduction of automation, artificial intelligence and robotics can significantly increase labor productivity and competitiveness of agricultural enterprises (Faskhutdinova et al., 2020; Hrustek, 2020).

Innovation and willingness to adopt new technologies play an important role in the growth of agribusiness. However, developing countries have low investment in research and development (R&D), which limits access to new technologies and innovations (Lybbert & Sumner, 2012). Adenle et al. (2017) discuss the role of innovation in agriculture and its impact on sustainable development and the conditions under which official development assistance can be more effective in promoting sustainable development in agriculture in sub-Saharan Africa. Also, factors influencing the introduction of new technologies in agriculture are highlighted, including social, cultural, economic and technological characteristics, as well as the role of market regulators and social norms and values in adopting new technologies. It is highlighted that African agriculture is undergoing a technological revolution, and there is growing support for advanced technologies due to the unsustainability of traditional farming methods. However, adopting advanced technologies is only a partial solution for agriculture in Africa. It mentions factors such as farm size, technology adoption costs and the influence of neighboring farmers playing an essential role in adopting new agricultural technologies. Adopting new technologies also depends on factors such as labor intensity, land-saving technologies and farmer innovation. Additionally, access to finance plays an important role in the development of agribusiness in Africa. However, the lack of reliable financial institutions and weak links with global financial systems and capital markets are major barriers to agribusiness investors. High inflation and macroeconomic instability may

also increase operating costs and create uncertainty for investors (Adenle et al., 2019; Pathak et al.,2019). Implementing innovation still requires significant financial resources, and this limits the ability of small and medium-sized agricultural enterprises to finance innovative projects, which could lead to sector consolidation.

Particular attention is paid to demographic changes, such as the ageing population and the changing structure of the labor force. These changes bring significant transformations to the labor market, which poses severe challenges for agricultural enterprises, especially in the context of urbanization and a declining rural population. Anastasiou et al. (2021) state that demographic changes in rural Greece significantly impact innovation in the country's agribusiness sector. The Greek countryside is characterized by increasing demographic vulnerability linked to broader social and economic issues. This vulnerability is exacerbated by the diversity and unevenness of the population in Greece, which contributes to inequality and impacts social and economic development in local rural areas. The influence of demography on innovation in the agricultural sector can be seen in the fact that the increasing ageing of the population and the outflow of young rural workers are reducing the share of the active working population available for agriculture and innovation in this area (Jansuwan & Zander, 2021; Ngadi et al., 2023). An ageing population also means that rural areas may need more competent workers with young, innovative ideas. Demographic changes such as ageing populations and declining birth rates, which simultaneously lead to population decline have significant impacts on sustainability and have important implications for achieving the Sustainable Development Goals. However, this issue has received limited political and practical attention (Jarzebski et al.,2021)

There is a need to improve financial services and economic infrastructure and invest in research and innovation to promote agribusiness development and thus contribute to the region's economic growth and poverty alleviation. Access to credit in the rural sector is critical in accelerating the adoption of agricultural technologies and increasing productivity. By providing access to credit, farmers can afford to adopt technologies. This, in turn, can lead to increased yields, improved quality of agricultural products and increased income for farmers (Wangwe & Lwakatare, 2004). The number of farms, their agricultural systems and their characteristics play an important role in understanding innovation activity in agriculture, providing context and factors influencing the adoption of innovations. Additionally, farm size, access to credit, and other farmer characteristics in their decision to innovate play a crucial role (Läpple et al. (2015). Moreover, the development of rural finance related to financial support of agricultural business can significantly contribute to innovation in agriculture and that the effectiveness of rural finance has a more significant impact in regions with low market orientation (Liu et al., 2021).

Conducted review of existing studies of innovation development in agriculture highlighted the importance of access to finance and number of business entities in agriculture as key indicators for innovation development in agriculture. Studies provided qualitative research as questionnaires and majority used secondary data. Nevertheless, it must be considered that the period of observation covered in the literature was about ten years or more. there is still lack of complex studies.

Current scientific article highlights the importance of innovation for the agricultural sector and several key factors that determine successful innovative development in this industry, such as access to qualified personnel, financing, technology, and social benefits for society and the state. This analysis is essential for understanding and facilitating innovation processes in the agribusiness sector.

3. METHODOLOGY

The research methodology for current study was developed based on the provided literature review. Much of the existing studies in the attempt to analyze the relationship between

innovation and agriculture development rely on human capital. Therefore, it is often that studies used demographic indicators. At the same time studies show that financial support for agribusiness development is crucial in developing countries. Therefore, the research methodology consists of two main stages, which are illustrated in Figure 1.

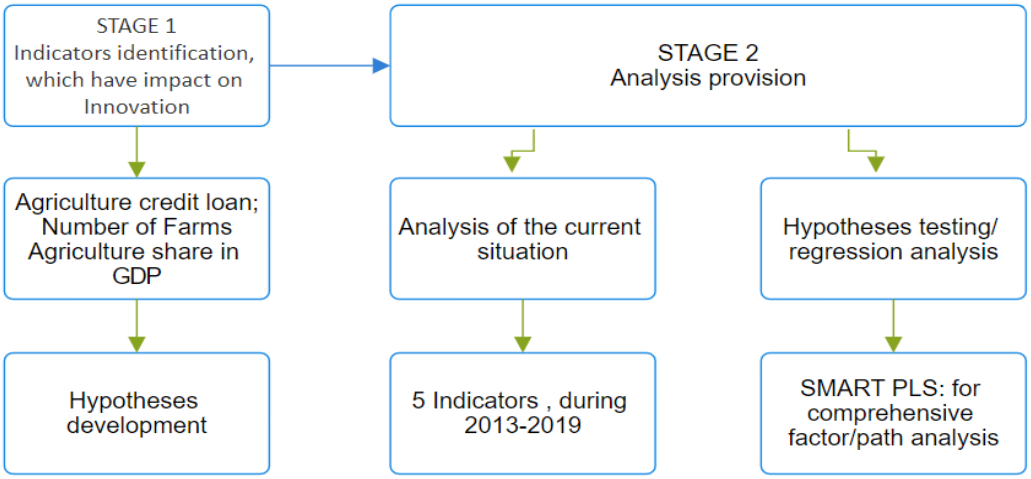

FIGURE 1. Research stages

Note: compiled by authors

STAGE 1. Based on the literature review, key groups of indicators were identified for descriptive analysis and hypothesis testing. Thus, for the analyses of current situation, there were selected five indicators:

(1) Number of people employed in agriculture, forestry and fisheries.
(2) Number of employees engaged in research and development activities.
(3) The level of innovation activity and the share of innovative products in GDP.
(4) The number of enterprises in the agro-industrial complex and their share in GDP.
(5) Issuance of loans to agriculture through the Agrarian Credit Corporation (in billions of KZT)

Based on the data-driven analysis and in-depth literature review, three fundamental hypotheses were formulated to assess specific relationships within the context of the agro-industrial complex in Kazakhstan:

Hypothesis 1: Agriculture Credit Loan has a significant positive impact on innovation development.

Hypothesis 2: Innovation has a significant positive impact on the share of agriculture in GDP.

Hypothesis 3: Innovation has a significant positive effect on the number of farms.

In order to analyzing the relationship between innovation and the development of the agro-industrial complex in Kazakhstan there identified main indicators:

Innovation activity is a measure of the degree of involvement and activity of organizations or industries in the processes of introducing and developing innovations. This indicator assesses the readiness and ability of economic entities to introduce new ideas, technologies or methods in their activities. Innovation activity may include aspects such as the amount of investment in research

and development, the number of patented technologies, the level of collaboration with academic and research institutions, and the success of implementing innovations in practice. This indicator is an important component of assessing the innovative potential and competitiveness of economic entities.

The dynamics on the credit loan for development of agriculture. Financial support and lending. Much attention is paid to the role of financial support and lending to agricultural enterprises in achieving sustainable development of the agro-industrial sector.

The share of the agro-industrial complex (AIC) in the gross domestic product (GDP) is the percentage of the gross value added of agriculture and related industries to the total gross economic output of the country. This indicator reflects the contribution of agriculture to the overall economy and can serve as an indicator of the economic influence of the agricultural sector. The high share of the agro-industrial complex in GDP may indicate the significant contribution of agriculture to the economic development of the country.

The indicator *"Number of Farms"* refers to the number of agricultural enterprises that operate in a certain territory or country. This indicator may include all types of agricultural enterprises, including farms, large agricultural firms and cooperatives. A large number of agro-industrial complexes may indicate a significant contribution of the agricultural sector to the overall structure of production and employment in a given territory.

Software justification. SMART-PLS software was used for the analysis provision.

PLS-SEM stands for "Partial Least Squares Structural Equation Modeling." It is a methodology used in research to analyze complex relationships between variables in models, especially in cases where data may be multimodal or does not adhere to a normal distribution.

Partial Least Squares (PLS) is a regression analysis method used to estimate parameters in models with numerous variables and intricate structures. PLS works by minimizing the sum of squared residuals, allowing for efficient modeling of multiple variables. Structural Equation Modeling (SEM) is a method for estimating and testing structural relationships between latent (unobservable) variables based on their observed indicators. SEM involves parameter estimation and hypothesis testing of structural relationships. PLS-SEM is flexible and applicable in cases of small samples. This makes it preferable for current research as the main limitation to this research was lack of data. Therefor the observing period includes from 2013 to 2019 (Atker et al., 2017).

Model. Next, an analytical model approach was developed to assess the impact of innovation on agricultural development in Kazakhstan. Coefficients of determination (R-squared) were calculated for each dependent variable to assess how well the model fit the data. An analysis was also conducted to assess the reliability of the innovation measures. A path analysis was conducted to assess the impact of innovation on agriculture and the impact of agricultural lending on innovation development.

4. FINDINGS AND DISCUSSION

The initial phase of this study involves a meticulous examination of pertinent indicators to illuminate the intricate relationship between innovation and the burgeoning agro-industrial complex within the context of Kazakhstan. Figure 2 provides data on the employed population in agriculture, forestry and fisheries and the number of workers carrying out research and development work from 2013 to 2019.

According to the data, there has been some growth in the employed population in the agriculture, forestry and fisheries group from 2013 to 2016, with a peak in 2016 (1,360 people). After 2016, a decline began, and by 2019, the employed population had decreased again but remained above the original level (831 people in 2013). The overall trend in this category shows instability and fluctuations in employment in agriculture, forestry and fisheries over the period.

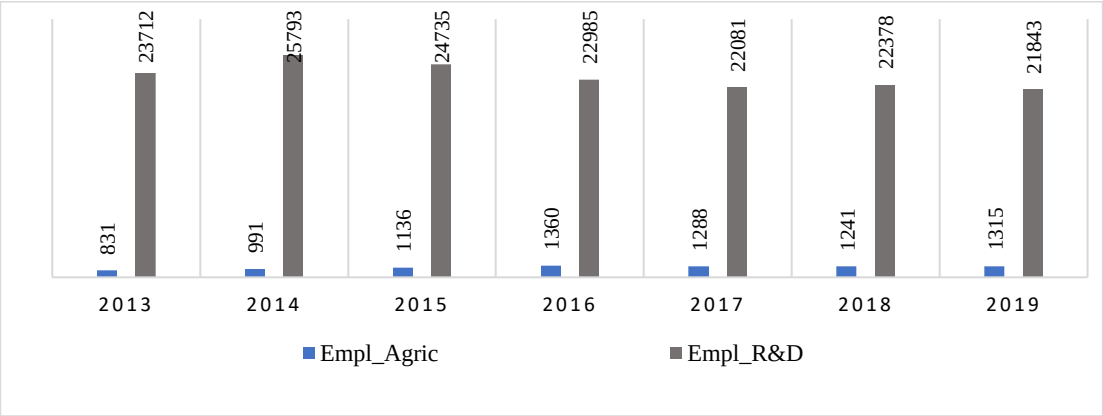

FIGURE 2. Number of employed people in agriculture, forestry and fisheries and the number of workers carrying out research and development work for 2013-2019

Note: compiled by authors based on Bureau of National Statistics (2022)

The number of employees in research and development also shows some fluctuations during the period, but they are less pronounced than in the previous category. The maximum number of employees (25,793 people) was registered in 2014, and the minimum value (21,843 people) was registered in 2019. The general trend indicates a moderate decline in the number of workers in this category, but it remains relatively stable.

The level of activity in the field of innovation ranges from 8 to 11 during the study period. Notably, the activity level began to increase in 2016, peaking in 2018 and 2019. This may indicate a more active innovation development in this area in these years. Moreover, the share of innovative products in GDP ranges from 0.92% to 1.72% during the analyzed period. In 2015, there was a sharp decline in the share of innovative products, but after that, it began to grow, reaching a peak in 2018. In 2018, the highest share of innovative products in GDP was recorded (1.72%), which may indicate an increase in the contribution of innovation to the regional economy (see Figure 3).

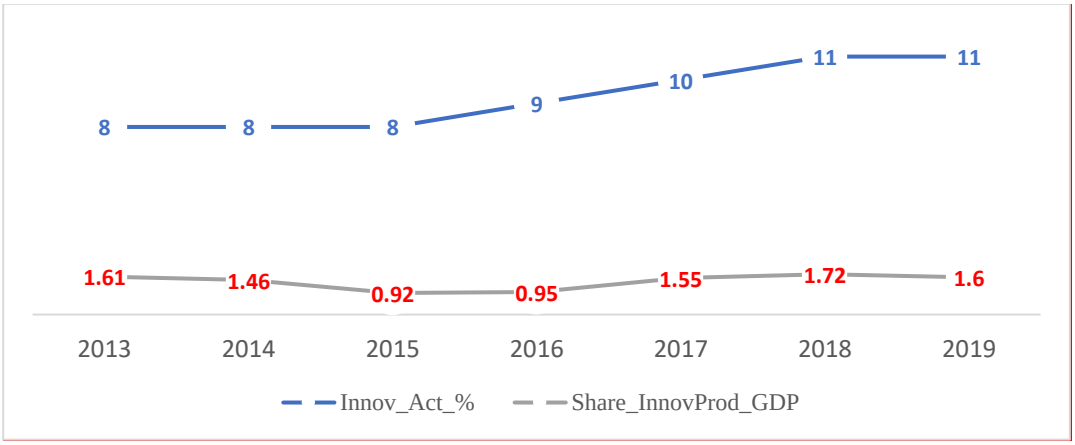

FIGURE 3. Level of activity in the field of innovation and the share of innovative products in GDP

Note: compiled by authors based on Bureau of National Statistics (2022)

The data shows that the employed population in agriculture, forestry and fisheries is subject to significant fluctuations. At the same time, the number of workers engaged in research and development activities is less subject to fluctuations and remains at a more stable level. Understanding these trends can help develop appropriate development strategies for the region.

Based on the data provided, we can conclude that the level of activity in the field of innovation began to grow in the second half of the analyzed period (since 2016), and the share of innovative products in GDP also showed an increase, especially in 2018. These data may indicate more active innovative development of the region and its contribution to the economy.

The number of agro-industrial complexes and the share of agro-industrial complexes in GDP gradually increased from 2013 to 2019, which may indicate the growth of the agro-industrial sector in the country. During the analyzed period, agro-industrial complexes increased by approximately 107,706 enterprises. The share of the agro-industrial complex in GDP also fluctuates during the period, but the general trend indicates an increase in this share. It is important to note that in 2013, the share of the agricultural sector was 17% of GDP, and by 2019 it increased to 32%. This growth indicates a more active participation of agriculture in the economy of Kazakhstan (see Figure 4).

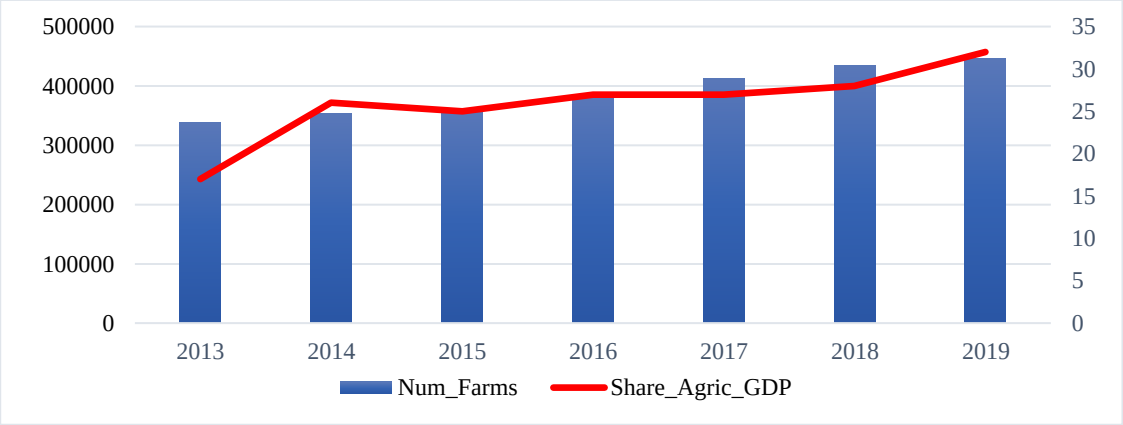

FIGURE 4. Number of agro-industrial complex and share of agro-industrial complex in GDP for 2013-2019

Note: compiled by authors based on Bureau of National Statistics (2022)

Based on the data provided, we can conclude that agriculture in the country is showing growth, which indicates the significant role of agriculture in the country's economy and its increased contribution to GDP. Agricultural lending in Kazakhstan remains low, and the state is crucial in providing financial support to agricultural producers. The most important institution providing preferential loans to agriculture in the country is JSC Agrarian Credit Corporation (ACC). The corporation played a significant role in lending to the country's agricultural sector, providing more than half of all loans (52.6%) in the amount of 488.1 billion tenge by the end of June 2020.

During the analyzed period, there was a stable increase in the volume of lending to the agricultural sector. The lending volume increased from 38.118 billion tenge in 2013 to 157.847 billion tenge in 2019. This trend indicates a gradual increase in financial support for agriculture during the analyzed period (see Figure 5).

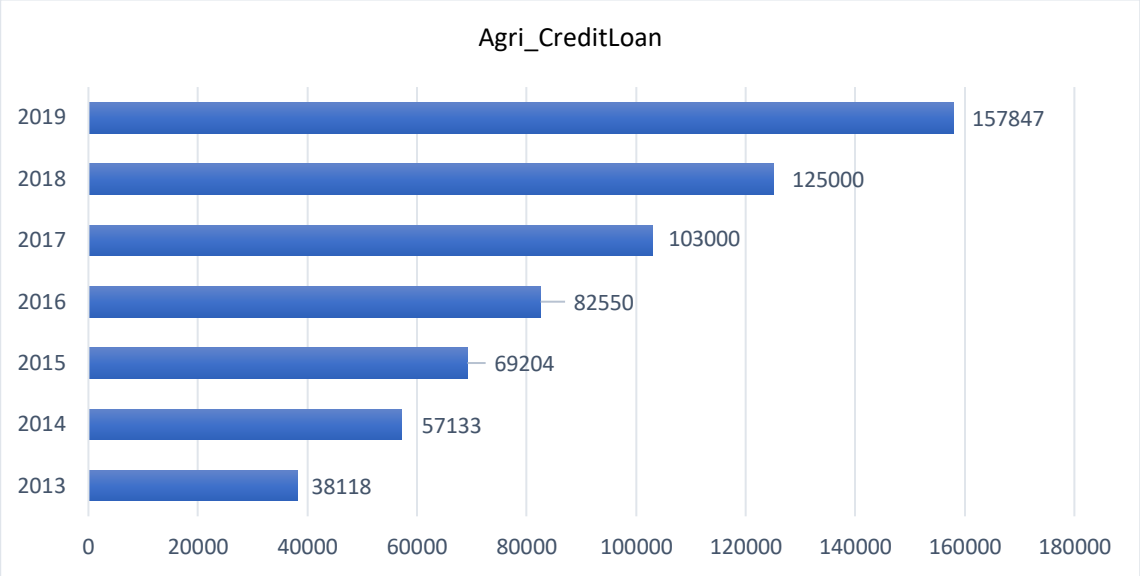

FIGURE 5. Lending to agriculture through Agrarian Credit Corporation JSC, billion KZT

Note: compiled by authors based on Bureau of National Statistics (2022)

In order to understand the dynamics, we can calculate the growth rate of lending to the agricultural sector. Therefore, it is necessary to calculate the relative change in lending volume relative to the previous year:

2014: (57133 - 38118) / 38118 ≈ 0.498 (or 49.8%)
2015: (69204 - 57133) / 57133 ≈ 0.211 (or 21.1%)
2016: (82550 - 69204) / 69204 ≈ 0.192 (or 19.2%)
2017: (103000 - 82550) / 82550 ≈ 0.245 (or 24.5%)
2018: (125000 - 103000) / 103000 ≈ 0.213 (or 21.3%)
2019: (157847 - 125000) / 125000 ≈ 0.262 (or 26.2%)

Growth rates vary but remain positive on average, indicating a steady increase in lending volumes. The overall dynamics show that the agricultural sector in the country is receiving more and more loans, which can contribute to its growth and development. This is a positive sign for the agricultural industry as financial support can help improve productivity and ensure sustainable development. Next, there was conducted analysis of the impact of Innovation on agriculture development in Kazakhstan. The model is provided in Figure 6.

High R-squared values indicate a good fit of the model to the data. The results show that the model explains the variation in the variables well: Innovation: 83.9%, Number of Farms: 90.6% and Share of Agriculture to GDP: 43.5%. To assess the reliability of innovation measurements, the following analyzes were conducted (see Table 1).

TABLE 1. Construct reliability and validity results

Variable	**Cronbach's alpha**	**Composite reliability (rho_a)**	**Composite reliability (rho_c)**	**Average variance expected (AVE)**
Innovation	0.956	0.971	0.978	0.958
Note: compiled by authors				

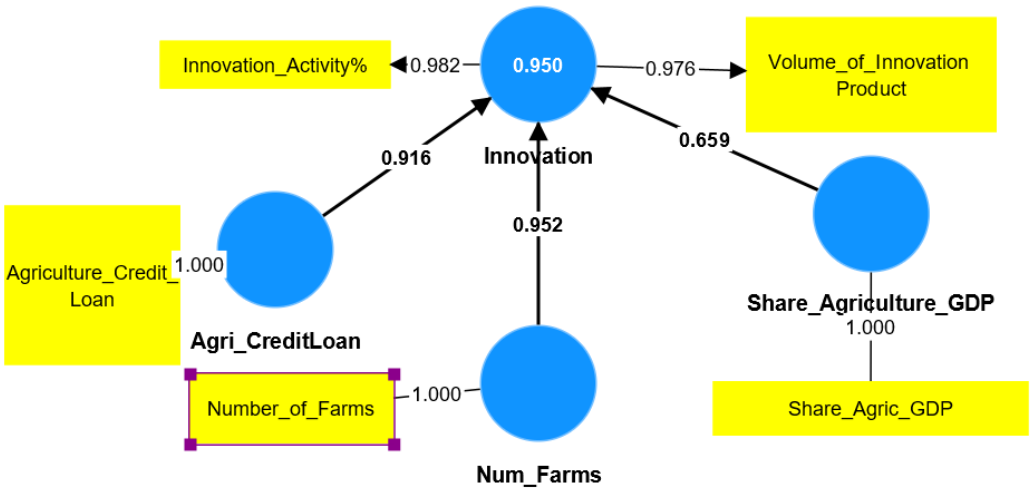

FIGURE 6. Model results

Note: compiled by authors

Cronbach's alpha: 0.971 is a high value, indicating high internal reliability of the measurements. Composite reliability (rho_a): 0.978 is also a high value indicating the reliability of the measurements. Average Variance Extracted: 0.958 is also a high value, indicating good convergent validity.

Path coefficients analysis was conducted to estimate the effect of one innovation on agriculture and the effect of credit loan to agriculture businesses on innovation development. The results show the following significant paths in Table 2.

TABLE 2. Path coefficients

Indicator	Original Sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Agriculture Credit Loan -> Innovation	0.916	0.918	0.134	6.833	0.000
Innovation -> Number of Farms	0.952	0.950	0.129	7.379	0.000
Innovation -> Share of Agriculture to GDP	0.659	0.721	0.178	3.709	0.000
Note: compiled by authors					

Agriculture Credit Loan -> Innovation: Coefficient of 6.833 with T-statistic and p-value of 0.000, indicating a statistically significant positive effect of Agriculture Credit Loan on Innovation. *Innovation -> Number of Farms*: Coefficient of 7.379 with T-statistic and p-value of 0.000, indicating a statistically significant positive effect of Innovation on Number of Farms. *Innovation -> Share of Agriculture to GDP*: Coefficient of 3.709 with T-statistic and p-value of

0.000, indicating a statistically significant positive effect of Innovation on Share of Agriculture to GDP.

So, based on the results provided, the models have good explanatory power and confirm the statistically significant impact of Agriculture Credit Loan on Innovation, Innovation on Number of Farms and Innovation on Share of Agriculture to GDP.

The power of the Innovation variable on Number of Farms (Coefficient = 7.379) is significantly higher than the power of Innovation on Share of Agriculture to GDP (Coefficient = 3.709). This means that each change in innovation activity has a stronger impact on the number of farms than on the share of agriculture in GDP.

Both coefficients are statistically significant at the 0.05 significance level (p-value is 0.000 for both). This means that there is a statistically significant positive effect of Innovation on both dependent variables.

The T-statistic for Innovation -> Number of Farms (7.379) is higher than for Innovation -> Share of Agriculture to GDP (3.709). This also indicates a stronger statistical effect of Innovation on the number of farms. Overall, the results show that innovation activity has a stronger and statistically significant positive effect on the Number of Farms than on the Share of Agriculture to GDP.

The summary of the results of the research analysis are performed in Table 3.

TABLE 3. Research results

No.	Hypotheses	P value	R squared	Result
H 1	Agriculture Credit Loan has a significant positive impact on innovation development.	0.000	83.9%	Supported
H 2	The share of agriculture in GDP. has an insignificant positive impact on innovation development	0.000	43.5%.	Supported: partially
H 3	The number of farms has a significant positive impact on innovation development	0.000	90.6%	Supported
Note: compiled by authors				

The results of the research showed that all predictors (the number of farms, the share of agriculture to GDP and agriculture credit loan) have impact on the innovation development. However, depending on the R-squared the level of the impact of each predictor is different. Thus, the number of farms and agriculture credit loan have significant positive impact on the innovation development – Hypotheses 1 and 3 are supported. In contrast, the R-squared for the share of agriculture in GDP is lower, which allows to conclude that it has insignificant impact on the innovation development and only explains 43.5%. of the change in the dependent variable. Therefore, Hypothesis 2 is supported partially, as its impact is insignificant.

5. CONCLUSIONS

In conclusion, this study embarked on a comprehensive exploration of the intricate relationship between innovation and the development of Kazakhstan's agro-industrial complex. There were developed three hypotheses of which two were supported and one partially supported.

In alignment with the hypotheses, the path analysis unveiled significant positive effects. Agriculture Credit Loan demonstrated a substantial positive impact on innovation development, affirming the importance of financial support (Hypothesis 1). Share of Agriculture in GDP exerted an insignificant positive influence on Innovation (Hypothesis 3) and there was a significant positive influence of the Number of Farms on Innovation (Hypothesis 2), reinforcing its role in driving growth within the agro-industrial complex.

The results revealed noteworthy trends and patterns within the agro-industrial sector. Notably, the employed population in agriculture, forestry, and fisheries exhibited fluctuations, while the number of workers engaged in research and development activities remained relatively stable. These findings underscore the importance of understanding the dynamics of employment within the sector, which can inform strategic development initiatives.

Moreover, the level of innovation activity experienced an upswing from 2016 onwards, indicating a growing impetus for innovation within the region. The concurrent rise in the share of innovative products in GDP, particularly in 2018, further underscores the increasing contribution of innovation to the regional economy. These trends signify a positive trajectory in terms of innovative development.

The growth in the number of agro-industrial complexes and their rising share in GDP underscore the burgeoning significance of the agricultural sector in Kazakhstan's economy. This expansion suggests that agriculture is assuming a more substantial role in the nation's economic landscape.

The analysis of lending to the agricultural sector revealed a consistent increase in lending volumes during the period under examination. This positive growth trend is indicative of increased financial support for agriculture, which is crucial for enhancing productivity and ensuring sustainable development within the sector. According to the results obtained, there were developed following recommendations.

Given the statistically significant positive effect of Agriculture Credit Loan on Innovation, policymakers could focus on initiatives that enhance access to credit for agriculture businesses. This might involve creating favorable credit policies, reducing interest rates, or establishing credit facilities tailored to the needs of the agricultural sector. Recognizing the strong positive impact of innovation on both the Number of Farms and the Share of Agriculture to GDP, stakeholders could develop and support innovation programs in the agricultural sector. This might include funding research and development, providing incentives for adopting new technologies, and fostering collaboration between research institutions and farmers.

Since the research emphasizes the significance of innovation in driving agricultural outcomes, policymakers could invest in capacity-building programs. This could involve training farmers and agricultural businesses in modern farming techniques, technology adoption, and sustainable agricultural practices. Given the potential variability in the impact of predictors, stakeholders in Kazakhstan could benefit from collaborating with international organizations and other countries facing similar challenges. Sharing best practices, lessons learned, and successful policy interventions can contribute to more effective and tailored strategies for the agricultural sector.

In summation, this research underscores the pivotal role played by innovation in fostering the development of Kazakhstan's agro-industrial complex. It highlights the importance of financial support mechanisms and the adoption of advanced technologies in propelling sustainable growth within the sector. This study contributes to the body of knowledge surrounding innovation and agricultural development, providing valuable insights for policymakers, researchers, and stakeholders invested in the progress of the agro-industrial complex in Kazakhstan.

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AUTHOR BIOGRAPHIES

***Gabit N. Asrepov** – PhD candidate, Kazakh-Russian International University, Aktobe, Kazakhstan. Email: asrepov.gabit@bk.ru ORCID: https://orcid.org/0000-0003-2566-8720

Gulzhazira D. Kenzhebayeva – Master of Finance, Senior Lecturer, K. Zhubanov Aktobe Regional University, Aktobe, Kazakhstan. Email: meru12122012@mail.ru, ORCID: https://orcid.org/0000-0003-3708-2591

Zhanat Zh. Baishukurova – Master of Finance, Senior Lecturer, K. Zhubanov Aktobe Regional University, Aktobe, Kazakhstan. Email: zhan_76_zhan@mail.ru, ORCID: https://orcid.org/0000-0003-4418-9688

Sandigul Zh. Kelbetova – Master of Finance, Senior Lecturer, K. Zhubanov Aktobe Regional University, Aktobe, Kazakhstan, Email: sandigulka@mail.ru, ORCID: https://orcid.org/0009-0000-1472-8527

Ardakh Azimkhan – PhD, Associate Professor, Non-profit Joint Stock Company "Toraigyrov University", Pavlodar, Kazakhstan. Email: armoni04@mail.ru, ORCID: https://orcid.org/0000-0001-6633-5477

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Organizational Ambidexterity and Resilience: Moderating Effect of Transformational Leadership

Saya Zhaxylyk[1*]

[1] KIMEP University, Almaty, Kazakhstan

Corresponding author:
*__Saya Zhaxylyk__ – PhD candidate, KIMEP University, Almaty, Kazakhstan.
Email: saya.zhaxylyk@kimep.kz

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Abstract

Businesses are still learning how to cope with system stress that overwhelmed the whole world during the Global Financial Crisis (GFC) in 2007-2008, COVID-19 pandemics in 2020, and other crises. Thereby, enterprises will be able not only to deal with uncertainty, that is becoming a "new standard", but to benefit from it. As a result, the focus of the leaders has shifted from short-term, operational continuity to resilience. Earlier research suggested organizational ambidexterity as one of its antecedents and key factors for firms' long-term survival and prosperity. However, little is known about the leadership role in ambidexterity literature. Most of the previous research were conducted in developed countries and placed emphasis on conceptual studies. Thus, the main purpose of this study is to statistically examine the moderating effect of transformational leadership in the relationship between organizational ambidexterity and resilience using a sample of 323 usable questionnaires gathered from more than 80 Kazakhstani firms. The results of regression analysis statistically confirmed that organizational ambidexterity positively and significantly correlated with resilience. Further, results revealed the moderating role of transformational leadership in the linkage above. The study came up with an unexpected finding that transformational leadership directly and significantly influences resilience. The primary practical implication of this study is that leaders realize the feasibility of their investments in developing ambidextrous capabilities in their organizations and, particularly, senior management, since it was statistically proven in this research that it leads to higher resilience.

Keywords: Organizational Ambidexterity, Business, Resilience, Transformational Leadership, Emerging Economies, Enterprise

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1. INTRODUCTION

Today's dynamic business environment requires an organization to adapt quickly to changes is a key success factor. Flexibility includes the ability to innovate, respond effectively to market changes, and make decisions in an uncertain environment. In the context of constantly changing economic and social conditions, resilience becomes not only a desirable characteristic, but also a necessity for long-term survival and development. Half of the companies on the Fortune 500 in the millennium left off the list in just two decades (Grobys et al., 2023). This has been true for Kazakhstan, the largest economy in Central Asia. The year after the COVID-19 pandemic, every fourth legal entity registered in the republic suspended its activities. In 2022, this figure increased by another 15.5% (Bureau of National Statistics, 2023). The preceding evidence demonstrates that in times of exponential change, it is not the quantity or profitability that is important but resilience.

Resilience in the business context is defined as the organizational capability to foresee, plan for, react to, and adjust to gradual change and unexpected interruptions to survive and thrive (Douglas, 2021). Thus, the concept of resilience is not only about “bounce back” or defensive resilience when an organization is trying to respond to disruptions. It is also about "bounce forward" or progressive resilience when, despite challenging circumstances, the organization takes advantage of possibilities and implements sustainable performance (Hepfer & Lawrence, 2022).

In 1991, March stated that the primary factor in an enterprise's long-term survival and prosperity is the balance between two dimensions of organizational ambidexterity: exploration of new possibilities and exploitation of old certainties (March 1991). Since March's seminal research, the emerging interest in the topic has spawned a range of conceptual and empirical studies. Research data indicates that following an ambidextrous strategy leads organizations to increase overall profitability (Zu et al., 2022), innovations (Farzaneh et al., 2022), sales growth (Chakma et al., 2021), and firm survival of both SMEs and large organizations (Colberg, 2022, Iborra et al., 2020).

In addition, it was empirically supported that organizational ambidexterity is more valuable under conditions of market and technological uncertainty (Gayed & Ebrashi, 2022). Given the age of volatility in which most businesses operate nowadays, ambidexterity is becoming a heated topic. The relevance of this issue to Kazakhstan is determined by uncertainty in the country's transition economic environment.

This research contributes to the extant literature by filling two apparent gaps. First, despite many studies on the consequences of organizational ambidexterity, this concept of resilience has not been investigated to a great extent. To our knowledge, this study is the first to explore this relationship in Kazakhstan. Second, previous studies focused on the direct effect of leadership practices on the success of exploration and exploitation, while the "role of senior team and leadership behaviors remains less clear” (O'Reilly & Tushman, 2013, p.18). Third, there has been a lack of clarity around what factors affect the strength or direction of the relationship between ambidexterity and resilience, especially a lack of empirical studies among developing countries.

The current research attempts to address these gaps by answering:

RQ1: Is there a significant relationship between organizational ambidexterity and resilience?

RQ2: Does transformational leadership moderate the relationship between organizational ambidexterity and resilience?

Thus, the study focuses on the relationship between organizational ambidexterity and resilience and investigates the possible moderating effect of transformational leadership in this influence process.

2. LITERATURE REVIEW

2.1. Relationship between organizational ambidexterity and resilience

Over the last few decades, we have been living in times of tremendous system stress, from the global financial crisis of 2007-2009 to the COVID-19 financial crisis of 2020 and the war in Ukraine. In this regard, there has been significant interest in the topic of organizational resilience (Do et al., 2022). Leaders around the world brought the focus of their attention on strengthening the resilience of their organizations, highlighting the importance of resilience over ensuring short-term, operational continuity during crises. Practitioner journals or daily newspapers, including Harvard Business Review, The Economist, and the New York Times, provide methods for enhancing an organization's resilience (Hillmann & Guenther, 2021). Recently, this idea has garnered fresh traction in reputable business publications, with studies by Clement and Rivera (2017), Khan and colleagues (2018), and Su and Jung (2023) as examples. The above-mentioned scientific research, both in academia and industry, has abundantly proven that resilience is especially vital nowadays due to the more dynamic and uncertain nature of the corporate environment (Reeves et al., 2022)

There is, however, still little research, mainly empirical, on antecedents and moderators, measurement, and operationalization of organizational resilience (Linnenluecke, 2017; Simsek, 2018). In other words, leaders are convinced of the need to develop resilience. However, they do not know how. Recent studies are proposing organizational ambidexterity to ensure resilience during the period of incremental changes (Stokes et al., 2019; Iborra et al., 2020). The capability of an organization to simultaneously investigate and use its internal and external resources to fulfill current business demands and be flexible enough to adjust to changes in the market in the future is known as organizational ambidexterity (Raisch & Birkinshaw, 2008; Cao et al., 2009; O'Reilly & Tushman, 2013).

The topic gained momentum in the academic literature after March's seminal article on exploration and exploitation as two means of ambidexterity, and critical elements in organization survival and prosperity. Scholars have driven the further development of the concept and investigated that ambidexterity positively affects resilience (Gibson & Birkinshaw, 2004; He & Wong, 2004; Lubatkin et al., 2006).

While some researchers believe that exploration and exploitation are competing activities that demand distinct structures, processes, and cultures, others state that they may and ought to complement one another (Chen & Katila, 2008). The latter are supporting their arguments with empirical studies of Ford, Hewlett-Packard, USA Today, and other giants in different industries that managed exploitation-exploration trade-offs through different approaches to ambidexterity and are demonstrating increased resilience (O'Reilly & Tushman, 2013).

Consequently, comprehensive research on antecedents, moderators, and mediators was developed. Scholars have discussed the effect that economic uncertainty and leadership might have on ambidexterity. Although there are many studies on firm performance as an outcome of organizational ambidexterity, the research on the ambidexterity-resilience linkage remains limited. In today's turbulent environment, the ability of firms to "bounce back and forward" is as vital as performance.

2.2. The moderating role of leadership in the organizational ambidexterity – resilience link

Previous studies have emphasized that leaders are playing an important role in fostering organizational ambidexterity. According to Tushman and O'Reilly (1997) ambidexterity internal procedures of senior management team promote ambidexterity. The same authors extended their

investigations in further study of ambidextrous leadership, concentrating on thirty-five endeavors by fifteen company units across nine distinct industries to introduce groundbreaking innovations. Over 90% of ambidextrous businesses in this research met their objectives and were effective at both taking advantage of the present and looking toward the future. All those organizations had one common characteristic: they created a division between their new, experimental units and their old, exploitative ones, enabling the existence of distinct cultures, institutions, and procedures. This is yet another piece of evidence that suggests the importance of leadership in operationalizing ambidexterity.

Several studies have identified leadership as a helpful component for integrating contextual and structural ambidexterity. For instance, Gibson and Birkinshaw (2004) highlighted the "important role played by senior executives in making an organization context effective and developing ambidexterity". Similarly, Smith and Tushman (2005) examined the integrative processes that leadership teams may use to effectively handle the conflicts that result from structural division in ambidextrous firms.

It is generally accepted in the literature that the selection of transformational leadership style is best suitable in circumstances where a change in the status quo is necessary Jansen et al., 2009), which also applies to ambidexterity that is more appropriate in dynamic markets where conditions are changing (O'Reilly & Tushman, 2013; Yu et al., 2023).

In contemporary literature, the most widely researched established leadership theory of recent years, transformational leadership, has been linked to phases of organizational genesis (Mathende & Yousefi, 2021; Wei & He, 2022), decline and renewal (Al-Murshidi et al., 2023), as well as chaotic and uncertain circumstances and generally low organizational performance (Garad et al., 2022). Meanwhile, predictable and stable surroundings, as well as mature companies with sufficient performance, are more suited for transactional leadership (Arikan, 2023).

Although some research suggests that ambidexterity is encouraged by transformational leadership traits (Kozcu & Ozmen, 2021), there has been virtually no empirical research on the moderating role of transformational leadership in the ambidexterity-resilience linkage in developing countries, one of the most volatile and rapidly growing markets in the world.

Thus, this paper aims to explore further how leaders may enhance the effect of organizational ambidexterity on resilience and to what extent these actions connect to a transformational leadership approach. The research framework is presented in the following Figure 1.

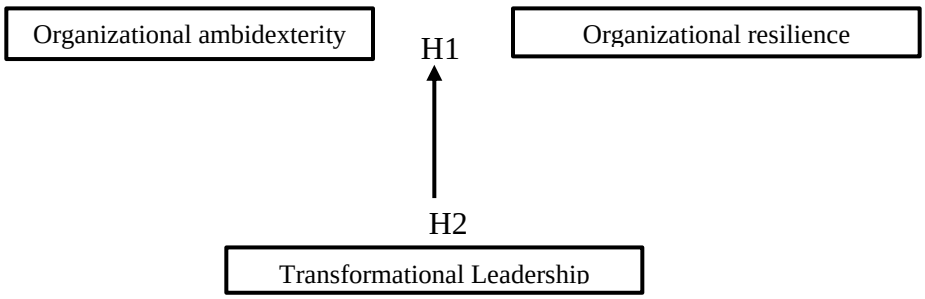

FIGURE 1. Research framework

Note: compiled by author

According to Figure 1, research framework above the study investigates the influence of organizational ambidexterity on organizational resilience and the possible moderating effects of leadership in the influence process.

2. METHODOLOGY

The main purpose of the research was to empirically assess the relationship between organizational ambidexterity and resilience, and the moderating effect of transformational leadership in this linkage.

Based on the analysis of the literature, the following hypotheses are proposed:

H1 = There is a significant relationship between organizational ambidexterity and organizational resilience.

H2 = There is a moderation effect of transformational leadership in the relationship between organizational ambidexterity and organizational resilience.

The study follows a quantitative method. The author employed multi-item survey data collected from 323 employees in more than 80 organizations in Kazakhstan during March - November 2020. Collecting materials for this research at the height of the coronavirus pandemic, enabled us to test the hypothesis using the strategic data from the highly turbulent times. This is especially valuable since, as previously discussed, the level of environment dynamism and uncertainty is a boundary condition for organizational ambidexterity (Raisch & Birkinshaw, 2008).

A total of 400 questionnaires were distributed. After having discarded the respondents who have not replied to all the questions, responses with missing data, and outliers, our study continued 323 respondents' feedback.

The author used measurement tools from prior studies, which were subjective measures to collect responses and published them in English. From the ideation of Brislin (1970), the author translated them in the Kazakhstan context using a back-translation method. The back-translation procedure attests to generating an accurate response because it is purported to contextualize the measures in a specific context (Brislin, 1970). In this method, the survey questionnaires the author translated into Kazakh and retranslated into English by a panel of bilingual experts. The retranslation was then checked to observe if there were any significant differences from the original. This retranslation process was continued till no significant difference was observed between the original language and the native language (Fan et al., 2019).

Table 1 below presents eight items that were used for measuring ambidexterity.

TABLE 1. Survey questions on organizational ambidexterity

No.	Survey questions
1	Our organization accepts consumer demand changes that go beyond our existing products and services
2	Our organization often uses new opportunities in new markets
3	Our organization regularly explores new technologies
4	Our organization is actively attracting new customers from new target groups
5	Our organization is constantly working to improve the efficiency of products and services production.
6	Our organization constantly improves the quality of existing products and services.
7	Our organization regularly raises the level of automation of its operational processes
8	Our organization regularly examines and takes action to meet the existing needs of its customers.
Note: compiled by author	

Organizational ambidexterity was measured using exploration and exploitation variables. To operationalize ambidexterity exploration and exploitation were multiplied. To mitigate the potential for multicollinearity the author mean centered the exploration and exploitation variables before obtaining their product. This measurement is adapted from He and Wong (2004), Gibson

and Birkinshaw (2004), and Cao et al. (2009) and is in line with generally accepted measures in ambidexterity literature.

Table 2 below presents items that were used for measuring four organizational resilience dimensions.

TABLE 2. Survey questions on organizational resilience

No.	Survey questions
1	Our organization can successfully overcome the consequences of unforeseen events
2	Our organization can withstand and resist external pressure
3	Our organization can withstand stressful situations, while not losing the focus on priority (core) goals and needs of the company.
4	Our organization does not refuse to follow its strategic course in case of difficulties and is able to preserve its positions.
5	Our organization adapts quickly to changing circumstances.
6	Our organization responds promptly to the destructive factors causing disruptions in the work of the organization
7	Our organization restore services quickly during unexpected events
8	Our organization can promptly develop and apply alternative scenarios to benefit from any negative circumstances.
9	Our organization can use other facilities when its own facilities cannot be used
10	Our organization employ alternative options to sustain operations during unexpected events
11	Our organization can re-allocate resources (human, financial, etc.) within the company
12	Our organization has a copy of company's most important files through backing up the database
13	Our organization can prioritize the tasks in case of unexpected events. (RS)
14	Our organization is capable of sustaining operations with limited funding.
15	Our organization can mobilize internal resources in case of unforeseen situations.
16	Our organization has sufficient reserve resources to support the company's operations during unforeseen situations.
Note: compiled by author	

The author created a set of measuring items for robustness, redundancy, resourcefulness, and rapidity since there were none available for the four organizational resilience characteristics proposed by Bruneau et al. (2003) (Table 2. Survey questions on resilience). Bruneau et al. (2003) supplied an operational definition for each dimension, which was used to produce the items.

Table 3 below presents items that were used for measuring transformational leadership.

TABLE 3. Survey questions on transformational leadership

No.	Survey questions
1	Managers in our organization puts the good of the company before his/herself
2	Managers in our organization are trying to increase the level of enthusiasm of employees and get the necessary amount of work done from them without any threat or pressure.
3	Managers in our organization treat each employee as individuals with different needs, abilities, and aspirations
4	Managers in our organization encourage followers to try new approaches, and their ideas are not criticized because they differ from the managers' ideas
Note: compiled by author	

The transformational leadership section of the survey was modified from the seminal multi-factor leadership questionnaire (Bass 1999; Bass & Avolio, 1997). This measure is one of the most preferred among leadership scholars and shows a strong validity result and reliability (Bass et al., 2003).

All the items in the survey questionnaire were measured using a 6-point Likert scale ranging from strongly disagree (1) to strongly agree (6). To test the hypothesis, a set of models was developed and tested with multiple hierarchical linear regression analyses. Model 1 includes dependent variables (resilience) and independent variables (ambidexterity and transformational leadership).

In addition, an interaction term must be created between the independent and moderator variables, which was called INT and stands for multiplication between the independent variable "ambidexterity" (AMB) and moderator variable "transformational leadership" (TRL). Model 2 includes the interaction effect along with the independent variables.

Statistical analysis was performed by using the IBM SPSS Statistics v29 software. After importing the data into SPSS, the standardized value of independent variables was computed, i.e. ambidexterity and transformational leadership, to avoid possible multicollinearity issues down the road. To calculate the interaction, effect the author computed the product between independent (ambidexterity) and moderator variable (transformational leadership). Finally, the author regressed the dependent variable on the independent variable, moderator, and interaction effect in two blocks. Results are shown and discussed further in the next section.

3. FINDINGS AND DISCUSSIONS

Linear regression analysis was conducted to assess whether transformational leadership does moderate the relationship between organizational ambidexterity and resilience. Table 4 below represents the Model Summary.

TABLE 4. Model Summary

Model	R	R Square	Adjusted R Square	Std.Error of the Estimates
1	,647a	,418	,415	169,70353
2	,654b	,427	,422	168,62009

a. Predictors: (Constant), TRL, AMB
b. Predictors: (Constant), TRL, AMB, INT
TRL – transformational leadership; AMB – ambidexterity;
INT – interaction term;
RES – resilience
Sample size: 323

Note: compiled by author using the IBM SPSS Statistics v29

As explained before, by transferring the interaction term (Model 2) it is possible to test if the addition of the interaction term to the existing regression model (Model 1) improves the prediction of resilience (RES). This allows to determine whether the interaction term is statistically significant. This regression model with all three variables included in the equation – ambidexterity, transformational leadership and interaction term called Model 2 in the results generated by this procedure. Therefore, the effect of the addition of the interaction term will be the difference between Model 1 and Model 2. Model 1 R Square is 0.418, the same statistical measure for Model 2 equals 0,427, meaning that the independent variables and intersection explain almost 42 and 43 percent consequently of the variation in the dependent variable. This difference in R squares shows the increase in variation explained by the addition of the interaction

term. Thereby, the model summary proves that transformational leadership does moderate the relationship between ambidexterity and resilience.

To determine the statistical significance of this difference, the one-way ANOVA was used. The results of the analysis are presented in Table 5 below.

TABLE 5. ANOVA

Model		Sum of Squares	df.	Mean Square	F	Sig.
1	Regression	6624906,231	2	3312453,11	115,019	<,001b
	Residual	9215772,14	320	28799,28		
	Total	15840678,37	320			
2	Regression	6770636,41	3	2256878,803	79,376	<,001c
	Residual	9070041,964	319	28432,733		
	Total	15840678,374	322			
a. Dependent Variables: RES b. Predictors: (Constant), TRL, AMB c. Predictors: (Constant), TRL, AMB, INT TRL – transformational leadership; AMB – ambidexterity; INT – interaction term; RES – resilience Sample size: 323						
Note: compiled by author using the IBM SPSS Statistics v29						

The one-way ANOVA examines the means of the groups in question and evaluates whether any of them are statistically significantly different from one another. In this case, the one-way ANOVA shows significance (Sig. <,001).

Table 6 exhibited a strong causal effect between the independent variable Ambidexterity and the dependent variable Resilience (P-value <,*001*).

TABLE 6. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	356,162	56,555		6,298	<,001
	AMB	14,882	1,714	,400	8,685	<,001
	TRL	105,977	12,875	,379	8,231	<,001
2	(Constant)	354,138	56,201		6,301	<,001
	AMB	14,698	1,705	,395	8,623	<,001
	TRL	104,801	12,804	,375	8,185	<,001
	INT	19,464	8,598	,096	2,264	,024
a. Dependent Variable: RES TRL – transformational leadership; AMB – ambidexterity; INT – interaction term; RES – resilience Sample size: 323						
Note: compiled by author using the IBM SPSS Statistics v29						

Since the P-value is P-value ≤ 0.05, the relationship between the Ambidexterity and Resilience variables is significant. Thus, summing up the results of the statistical analysis reported in Table 4 and Table 5, it could be concluded that Hypothesis 1 is supported.

Table 6 and Table 7 reported that the interaction term (INT) has a P-value of 0.024. Since the P-value is lower than 0.05, it could be considered that the moderator variable Transformational leadership affects the relationship between the independent variable Ambidexterity and the dependent variable Resilience. Therefore, Hypothesis 2 is also supported.

Finally, the moderation effect results were checked and presented in Table 7 below.

TABLE 7. Excluded Variables

Model		Beta In	T	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	INT	,096b	2,264	,024	,126	,994

a. Dependent Variable: RES
b. Predictors in the Model: (Constant), TRL, AMBspss
TRL – transformational leadership; AMB – ambidexterity; INT – interaction term; RES – resilience
Sample size: 323

Note: compiled by author using the IBM SPSS Statistics v29

This research was aimed at investigating whether pursuing exploratory and exploitative activities simultaneously results in higher levels of resilience. To enable such an examination, the empirical research has not only explored organizational ambidexterity-resilience linkage but has also examined the moderating role of transformational leadership.

The results of the conducted experiments show that organizational resilience could be strongly influenced by the ability to balance exploration and exploitation activities, or being ambidextrous, thus supporting Hypothesis 1.

A similar conclusion was reached by Ibora, Safon and Dolz (2020), who stated empirically that ambidexterity is one of the antecedents of organizational resilience. Researchers investigated 2765 Spanish SMEs that faced the recent global economic and financial crisis. In this connection, it must be noted that these results are also consistent with our assumption that ambidexterity is more valuable during economic uncertainty, or, as in the case of Ibora et al.(2020) study, just after a threatening and stressful external event.

Interestingly, Table 6 reported that transformational leadership has not only a significant moderating effect in ambidexterity-resilience linkage but also directly significantly influences organizational resilience. The present results are consistent with Valero et al. (2015) and Trudel et al. (2022) works that deal with the direct effect of transformational leadership on resilience. Despite the similarity between our results and those of colleagues, there are some important differences between both the data and the methods used in the investigations. Data in these studies were collected among public and non-profit organizations.

Data for Odeh et al. (2023) research was also collected at times of COVID-19 and pointed out the strengthening relationship between transformational leadership and resilience during turbulent times, which is perfectly in line with our findings.

Vakilzadeh and Haase's (2020) study went beyond our findings providing a more specific explanation of the nature of leadership-resilience linkage. The author divided organizational resilience into three main stages: anticipating, coping, and adapting to the crisis situation. The findings of their research pointed out that the role of leadership is particularly important during the first two stages.

When comparing our results to those of older studies, it must be pointed out that, even though some of the articles have not used resilience as a term, its operational definition was mentioned, i.e. long-term survival, ability to survive and prosper. Thus, overall, our findings are in accordance with findings reported by Hill and Birkinshaw (2014), He and Wong (2004), O'Reilly and Tushman (2008).

In summary, research findings contribute to a growing body of evidence demonstrating that being ambidextrous is one of the key factors for building resilient organizations, and transformational leadership moderates this linkage, explaining the significance of the leadership role.

5. CONCLUSIONS

The primary outcomes of the regression analysis run confirmed that there is a strong causal effect between organizational ambidexterity and resilience, and the moderator variable transformational leadership influences this linkage. Surprisingly, the data revealed the direct significant impact of transformational leadership on resilience.

The contributions of this study are threefold. First, capabilities that enable resilience were investigated, the topic that researchers recommended focusing on. Second, our study contributes to the critical gap in the resilience literature, such as empirical studies. One reason for the scarce quantitative evidence for resilience being a consequence of ambidexterity is the difficulty of measuring this construct. Third, our paper brings new evidence to existing literature that the role of the leader in the ambidexterity and long-term survival linkage is more complex and demands further investigation. Fourth, most studies on the outcomes of ambidexterity were focused on performance rather than long-term influence. This paper provided evidence that investing in developing ambidextrous competencies increases resilience, i.e., has a long-lasting effect. Despite the increasing interest of scholars in the ambidexterity-resilience linkage, there were few investigations of developing countries, one of the fast-growing economies in the world, that deserve more significant consideration from scholars.

The primary practical implication of this study is that leaders realize the feasibility of their investments in developing ambidextrous capabilities in their organizations since it was statistically proven in this research that it leads to higher resilience. This is especially important given the practitioner's perception of resilience that the corresponding management costs are high and that it entails additional bureaucratic procedures.

Finally, although the findings statistically support the ambidexterity-resilience relationship and the moderating role of transformational leadership in this linkage, its most important contribution may be that it raises various intriguing questions for future study.

In interpreting the findings, several limitations should be considered. First, this study relies solely on quantitative research; thus, qualitative research could be done to explore the topic further. Second, two cities of Kazakhstan were involved in the analysis, namely Almaty and Astana. To increase the generalizability of the results, it is recommended to include other cities or other developing countries for a more in-depth study. Despite these limitations, the present research has enhanced our understanding of the relationship between organizational ambidexterity and resilience and the role of transformational leadership in this link. There is hope that the current research will stimulate further investigation of this critical area. In terms of future studies, in addition to those mentioned above, it would be helpful to extend the current findings by examining the possible effect of other leadership styles and moderators and exploring ambidextrous leadership concepts.

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AUTHOR BIOGRAPHIES

***Saya Zhaxylyk** – PhD candidate, Senior Lecturer, KIMEP University, Almaty, Kazakhstan, email: saya.zhaxylyk@kimep.kz, ORCID ID: https://orcid.org/0000-0003-4632-3043

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Evaluation of the Effectiveness of the "Green" Growth Policy Pursued at the Regional Level in the Republic of Kazakhstan

Oxana Denissova[1]* | **Anargul Belgibayeva[2]** | **Saltanat Suieubayeva[1]**

[1] D.Serikbayev East Kazakhstan Technical University, Ust-Kamenogorsk, Kazakhstan

[2] Sh.Ualikhanov Kokshetau University, Kokshetau, Kazakhstan

Corresponding author:
***Oxana Denissova** – Cand. Sc. (Econ.), School of Business and Entrepreneurship, D. Serikbayev East Kazakhstan Technical University, Ust-Kamenogorsk, Kazakhstan.
Email: denokkas@mail.ru

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Abstract

The purpose of the article is to evaluate the effectiveness of the "green" growth policy pursued at the regional level. An analysis of various approaches to assessing the sustainability of the socio-economic development of the region is presented. To achieve this purpose, a comprehensive methodology was used, considering territorial factors and sectoral conditions for the development of the regions. Domestic and foreign experience in assessing the sustainability and effectiveness of the territory development were analyzed. Existing methods for assessing the region stability are studied. An integral indicator of sustainable development of the region is calculated, which includes indicators of economic, environmental, and social sustainability. The typology of Kazakhstan regions has been carried out according to the level of their environmental and economic development for the purposes of developing an effective environmental and innovation policy. It has been proved that the list of socio-economic indicators used in the calculation of the integral index makes it possible to determine with a sufficient degree of certainty the effectiveness of the ongoing regional development policy from the standpoint of observing the principles of "green" growth. It has been revealed that the modern model of socio-economic development of the country and its regions requires further efforts to develop adequate indicators of "green" development that consider economic, social and environmental components in a balanced way. The empirical conclusions of the work can find practical application in the process of developing an effective environmental and economic regional policy.

Keywords: Regional Economy, Sustainable Development, Regional Policy, Green Economy, Integral Index

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1. INTRODUCTION

Since independence and after a period of economic recession, Kazakhstan has experienced rapid economic growth, based mainly on the development of the extractive industry. The need to change the economic trajectory by moving away from the resource-based economy, its modernization and diversification, and the transition to an innovative knowledge-intensive economy based on the principles of "green growth" is the main political task today. Thus, according to the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for the period 2016-2020, the real increase in the gross domestic product of Kazakhstan amounted to 49.3%, while the share of the mining and oil and gas industries in the gross domestic product for the specified period decreased from 20 % to 17%. The volume of expenses for environmental protection is growing every year. If we compare 2017 with 2021, it can be seen that the volume of costs increased by 59.1% and amounted to 417 billion tenge. In the structure of costs, payments for air protection and climate change problems increased by 15.2%, the costs for wastewater treatment increased by 74%, for waste management increased by 62.5% and more than twice for other areas of environmental protection activities.

In addition, one of the essential aspects of modern economic realities is the process of economic regionalization, which means the need to consider regional characteristics when developing practical tools to stimulate the "green" model of the development of the Republic's economy. When substantiating the directions of transition to the green economy in Kazakhstan, the current level of its formation should be assessed, and the differentiation of the country's regions development dictates the need to take into account territorial features when conducting such an assessment (Varavin & Kozlova, 2018).

The sustainability assessment of the territory development (country, region), taking into account the influence of economic, social, environmental, and institutional factors, is a very relevant scientific and applied problem. The issues of determining indicators that allow assessing sustainable development's achievement level remain topical.

The study's relevance is confirmed not only by the global trend and concern for creating favorable environmental conditions but also by considering the exhaustibility of sources of fossil raw materials and the objective need to find alternative ways to develop the energy sector.

The study aims to evaluate the effectiveness of the "green" growth policy pursued at the regional level. To achieve this goal, a comprehensive methodology was used, taking into account territorial factors and sectorial conditions for the region’s development.

Research hypothesis: the region's environmental state and development trend depend on the state's economic, environmental, and social policies.

The research questions are:

- to study the existing methods for assessing the region's sustainability;
- to calculate an integral indicator of sustainable development of the region, which includes private indicators of economic, environmental, and social sustainability;
- to carry out a typology of Kazakhstan regions according to their environmental and economic development level to create an effective environmental and innovation policy.

2. LITERATURE REVIEW

The official definition of a "green" economy used in the scientific literature was given by UNEP in 2009: “it is a system of economic activities associated with the production, distribution, and consumption of goods and services that lead to an improvement in the well-being of people in the long term, without exposing future generation to significant environmental risks and scarcity of resources”.

The definition of "green" growth was first proposed by the Economic and Social Commission for Asia and the Pacific (ESCAP). In 2005, the ESCAP Declaration was adopted in Seoul, in which "green" growth was adopted as a strategy for achieving sustainable development. "Green" growth is a “growth that emphasizes environmentally sustainable economic progress to promote low-emission, socially inclusive development”. South Korea was the first country to develop a "green" growth plan and adopt it as a national economic model (Kasztelan, 2017).

Over the past few years, the idea of a "green economy" has become vital for achieving sustainable development in developing and developed countries (Houssam et al., 2023). Green growth is essential today where countries strive to balance economic development and environmental sustainability (Huang, 2023). Scientific understanding of "green" transformational processes in the modern world has become the subject of research by many foreign scientists (Bowen & Fankhauser, 2011; Johnstone, 2022).

Governments, organizations, and people worldwide have recognized the urgent need to move towards “greener” and more sustainable economy (Liu et al., 2023). Indeed, the world is now focused on achieving green economic development, defined as a combination of low carbon emissions, resource efficiency, and environmental sustainability.

Many scientists have recently made attempts to generalize the conceptual foundations of the "green" economy. In their study, Zomonova and Gomboev (2012) consider practical experience in developing a “green” economy at the international, regional, and national levels.

Klyuchenovich, Zalygina, and Podvorskaya (2012) considered the problems of forming a theoretical and practical basis for transforming macroeconomic models of production and consumption in the direction of a “green” economy.

According to Vavilonskaya (2012), enterprises and investors consider money invested in the environment as an expense without taking into account the real return on investment through increasing the cost of products, improving the image of the enterprise, and opening new sales markets, and environmental indicators have not become the same criteria for enterprises activities as economic and social ones.

Klavdienko (2012) considered the main directions along which the modernization of China's energy sector is being carried out at the present stage, paying particular attention to the measures taken by the People’s Republic of China government to stimulate energy saving, the introduction of technologies for generating “clean” energy, and the use of international technology transfer.

Sampson (2011) examined the relationship between green global economy policies and environmental governance restructuring. He believes that there is no serious movement towards a global “green” economy because the main body for environmental governance is missing.

However, the ongoing research has not adequately reflected a theoretical understanding of the influence of regional characteristics on the national model of the "green" economy formation. Separate areas are covered in the works of Nurgisaeva and Tamenova (2013), Antonova (2013), Fomina (2022), Korchagina (2012), Sharafutdinova, Izmailova and Akhmetshina (2013), Zabelina and Parfenova (2021), Alferova (2020), Shkiperova and Kurilo (2021). Nurgisaeva and Tamenova (2020) analyzed the conceptual foundations of the “green” economy. They believe that its development is one of the most critical tasks for the entire world community to achieve sustainable development of the entire planet Earth.

Antonova (2013), conducting a study to find new factors influencing regions' development, considers the region a relatively independent part of the country, separated in the process of territorial division of labor, differing from other territories in several features.

Fomina (2022) believes that there is a need to consider all aspects of sustainable development: environmental, social, and economic. In this regard, it is relevant to monitor and measure the development sustainability of regional socio-ecological-economic systems the pace of change, and determine the development vector of the main components and their interrelationships.

Shkiperova and Kurilo (2021) emphasize the importance of forming trajectories for the sustainable development of territories, which remains an essential task in implementing regional policy. To make informed management decisions and formulate national and regional policies on sustainable development, it is necessary to have the results of an analysis of the socio-ecological-economic situation.

The scientific literature contains a sufficient number of works devoted to the issues of selecting indicators for measuring the sustainable development of regions. The possibility of creating an indicators system reflecting the social, economic, and environmental spheres of sustainable development, at the same time suitable for regional measurement and interregional comparison, is being discussed. In this regard, it has become relevant to consider the principles of selecting indicators of regional development to establish patterns and differences in forming a system for assessing the sustainability of regional economic development (Alferova, 2020).

Sagan (2004) emphasized that to explain and understand the diversity of regional processes, only the characteristics considered most important in a given period are used. Ramos and Pires (2013) note that measurement systems are often not translated into decision-making towards sustainable development.

According to Korchagina (2012), "sustainable development involves the simultaneous solution of diverse and largely contradictory problems of economic growth, subject to the preservation of the quality of the living environment, assessed primarily from the standpoint of the environment and the social sphere".

Some authors develop the theory of regional economics based on expanding theoretical and methodological approaches to assessing inclusive growth and development of regions (Sharafutdinov et al., 2018).

Zabelina and Parfenova (2021), for a comprehensive assessment of the region's well-being level, proposed supplementing the multiplicative model based on the extended welfare function with a composite environmental index. This index considers people's environmental living conditions, representing an essential aspect of well-being.

It seems logical that for the regions of Kazakhstan, characterized by profound differences in economic specialization, spatial polarization of human capital, varying degrees of investment activity, and diverse natural conditions, it is impossible to create a universal guide to the transition to the "green rails" of development. Naturally, for different types of regions, both the tasks in this area and the tools for solving them will differ.

In this regard, it is significant to carry out a typology of Kazakhstan regions according to their environmental and economic development level to develop an effective environmental and innovation policy. This is possible only based on diagnostics of the ecological and economic state of the region. Therefore, great practical interest is the development of a methodology for calculating the environmental and economic index for regions, considering the environmental sustainability of development in a broad context, including environmental, economic, and social factors.At present, certain theoretical and practical experience has already been accumulated in the indicators creating of sustainable development. However, due to methodological, statistical problems and complexities, there is no generally recognized unified indicator. This justifies the importance of developing an integral indicator of the economic development of Kazakhstan regions, which characterizes the stability degree of the country and its regions, the environmental friendliness of the development trajectory of individual territories. Taking into account the summary assessments of the ecological and economic state of the region in the investment policy will make it possible to develop an environmentally acceptable option for the economic growth of the territory.

The effectiveness essence of the ongoing policy of Kazakhstan regional development from the standpoint of observing the principles of "green" growth is to ensure the coordination of the

economic, environmental and social components of community's growth, subject to priority development, restoration and use of its potential to meet the needs of present and future generations.

The sustainable development goal of any region is the creation of an economically developed region, ensuring the well-being of its citizens by improving the living standards of the population and ensuring its employment; rational use of resource potential based on management system improvement in the conditions of the appropriate legal field and clear interaction between state and regional policies; increasing the efficiency of the production and economic complex.

An assessment of the sustainable development of individual sectors of the region's economy is also necessary in determining the sustainable development. This is an inevitable process, but a particular industry may or may not have the ability for sustainable development. In National report (2010) indicated the main task of implementing the "green growth" policy is to prepare the national economy for the transition to a sustainable development path, the achievement of which in modern conditions requires an immediate rejection of the extensive use of natural resources and the search for more progressive and innovative business models.

Thus, in scientific publications, attempts are made to build a set of key indicators of "green" growth that are important for regional policy, uniting various sectors and society levels. The main problem here is the availability of data, the right balance between the various criteria for selecting indicators, a systematic understanding of the relationships between indicators and the various conditions for using them.

3. METHODOLOGY

To achieve this goal, theoretical research methods were used in the work: analysis - to reveal the theoretical provisions of the concept and identify topics of discussion, synthesis - to determine the key points and the sequence of ongoing changes and additions, and generalization - to formulate conclusions and conclusions.

The source for obtaining research material is the Taldau information and analytical system of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, which ensures their availability and comparability. The chronological framework of the study includes a ten-year time period (from 2012 to 2022), which makes it possible to identify patterns and trends in the green growth policy pursued at the regional level in the Republic of Kazakhstan.

The effectiveness of the ongoing state development policy from the standpoint of observing the principles of "green" growth involves ensuring positive dynamics in the level and quality of the population's life, using new factors and conditions for this purpose, including a balanced reproduction of economic, social and environmental potential localized in a certain territory.

Currently, in foreign practice, there are various approaches to assessing the effectiveness of the ongoing regional development policy from the standpoint of observing the principles of "green" growth, but they are practically not used to manage development in Kazakhstan.

The article proposes to evaluate the effectiveness of this policy according to the methodology of the Institute of Economics of the Ural Branch of the Russian Academy of Sciences (Tsibulsky, 2000). The decision to apply this methodology to assess the effectiveness of the "green" growth policy pursued at the regional level in the Republic of Kazakhstan is explained by the fact that when calculating the integral indicator of sustainable development of the region, territorial factors and sectoral conditions for the development of the region are taken into account.

The methodological principles for constructing an integral indicator are:

- the principle of information security: the information base should be available for all subjects of the Republic of Kazakhstan;

- the principle of simplicity and reproducibility of calculations: the integral indicator should be simple in calculations, based on a limited number of indicators;

- the principle of flexibility: the possibility of transforming the indicator - adding new indicators or excluding irrelevant ones.

In accordance with the identified principles, at the initial stage, the criteria for the stability of regional systems are determined, which will be analyzed to form the appropriate conclusions. To systematize the presentation of the results obtained in the study course, the development of analytical tables was used.

At the next stage, the differences between the regions are assessed based on the calculation of the level of economic, social and environmental sustainability, and then - the integral indicator. The method of comparative analysis based on the method of Euclidean distances is used here. It allows selecting an indicator-ideal, and then assessing the degree of proximity-range of indicators of other regions relative to the ideal value. To conduct such an assessment, the indicators of the regions are expressed in shares relative to the ideal indicator taken as a unit by formula (1):

$$a_i = \frac{x_i}{\max x_i}, b_i = \frac{\min x_i}{x_i}, \quad (1)$$

where ai, bi is the level of development of the i-th region according to the indicator;

xi is the value of the indicator;

max xi, min xi are the ideal value of the indicator, which is taken as the threshold value of the indicators.

Next, the indicators of the levels of economic, social and environmental sustainability are calculated, for which the arithmetic mean estimate is found using the formula (2):

$$Uj = \frac{\sum_{i=1}^{n} a_i, b_i}{n}, \quad (2)$$

where Uj is an indicator of the level of sustainability of each component of sustainable development.

At the final stage, an integral indicator is formed as the arithmetic mean of private indicators (formula (3)):

$$U = \frac{U_{econ} + U_{socia}l + U_{eco\log}}{3}, \quad (3)$$

where Uecon - economic stability; Usocial - social sustainability; Uecolog - environmental sustainability.

Very important in the formation of the integral indicator is the interpretation of the obtained results, for which threshold values are determined. Since the integral indicator is in the range from 0 to 1, an example of ranking the indicator values can be presented as follows (see Table 1).

The following criteria were chosen as the basis for assessing the effectiveness of the ongoing development policy of Kazakhstan from the compliance standpoint with the principles of "green" growth:

- economic: gross regional product (GRP) per capita; investment in fixed assets per capita; average per capita cash income of the population; the degree of depreciation of fixed assets;

- social indicators: the ratio of incomes of 10% of the most and 10% of the least well-to-do population; the proportion of the population with incomes below the subsistence level as a

TABLE 1. Ranking the values of the integral effectiveness indicator of the ongoing regional development policy from the compliance standpoint with the principles of "green" growth

Thresholds	**Interpretation of the effectiveness indicator of the ongoing regional development policy from the compliance standpoint with the principles of "green" growth**
From 0 to 0,1	Unsustainable development
From 0,1 to 0,5	Weakly sustainable development
From 0,5 to 0,7	Medium sustainable development
From 0,7 to 0,9	Sustainable development
From 0,9 to 1	Highly sustainable development
Note: compiled by authors based on source Tsibulsky (2000)	

percentage of the total population; an unemployment rate; share of the economically active population;

- environmental: emissions of air pollutants from stationary sources per capita, the amount of current environmental protection costs, the number of emission sources, the presence of hazardous waste at enterprises.

An analysis of existing approaches allows us to conclude that there is also no single point of view among scientists when determining the criteria for the stability of regional systems. Some consider the achievability of development goals, the ability of the system to function and develop as a criterion of sustainability, others consider the system to be within the given limits, the zone of stability, others consider balance, adaptability, etc.

4. FINDINGS AND DISCUSSIONS

When choosing a methodology for assessing the sustainability of a region, first of all, it is necessary to determine the approach that will be applied. The analysis of foreign and domestic experience made it possible to single out two main approaches to assessing the sustainability of the socio-economic development of the region.

The first approach uses a set of indicators characterizing various aspects of sustainable development. This complex contains from two to four groups of indicators (economic, social, environmental, and institutional).

The second approach involves the development of one integral indicator that reflects the overall sustainability degree of the territory development. As a rule, this indicator is aggregated from three indicators: economic, environmental, and social. If the value of the indicator increases, this means that we can talk about sustainable balanced development of the region, if it decreases, then we can talk about the instability of the process.

The first approach based on the formation of indicators set is more widely used. These are such methods as the UN Millennium Development Goals, the UN Sustainable Development Reporting Guidelines, the Organization for Economic Co-operation and Development (OECD) indicator system, The World Development Indicators) of the World Bank, environmental accounts of the European Community, indicators of pressure on the natural environment of the Statistical Office of the European Union (Eurostat), etc. (Korchagina, 2012).

At the same time, many researchers see prospects for using an integral indicator that reflects the overall degree of sustainability in the regional socio-ecological and economic systems development. A number of such indicators can be given as:

(1) Environmental Sustainability Index, developed by Yale and Columbia Universities for the World Economic Forum in Davos (2001).

(2) Index of Sustainable Economic Welfare (ISEW), used in a number of European countries (Germany, Great Britain, Austria, the Netherlands). The index was proposed in 1989 by J. Cobb and G. Daly (USA).

(3) Human Development Index (HDI), calculated on the basis of the integration of the three main components that characterize human development (longevity, education, income).

(4) Integrated Environmental Indicators developed by the Worldwide Fund for Nature (WWF): The Ecological Footprint, Living Planet Index.

(5) Inclusive Development Index (Green GDP), proposed in the report "Prosperity in a broad aspect", presented at the UN Conference on Sustainable Development (Rio + 20, Brazil), held in June 2012.

(6) Genuine Savings Index, developed by the World Bank researchers to assess the sustainability of national economies.

The first step in the formation of an integral indicator of the sustainability of the economic development of the region is the definition of indicators.

Indicators of sustainable development of the region are not immutable, once and for all established. They are determined on the basis of internal factors characterizing the economic, social and environmental development of the regions.

After determining the indicators, it is necessary to proceed to the next stage - the assessment of differences by region (formula 1).

Table 2 shows an assessment of differences by region using the example of the East Kazakhstan region for 2012 and 2022.

TABLE 2. Assessment of differences in the sustainable development of the East Kazakhstan region for 2012 and 2022

Indicator	**2012**				**2022**			
	Maximum	**Minimum**	**By East Kazakhstan region**	**ai, bi**	**Maximum**	**Minimum**	**By East Kazakhstan region**	**ai, bi**
Economic Indicators								
Gross regional product, million tenge (+)	5205156,1 (Almaty)	678897,0 (Zhambyl region)	1736853,8	0,33	19066587,1 (Almaty c.)	1387602,0 (Zhetysu region)	3898056	0,20
The volume of manufactured innovative products, million tenge (+)	73279,0 (Pavlodar region)	618,6 (Mangystau region)	33592,5	0,46	528652,6 (Kostanay region)	983,8 (Ulytau region)	58127,5	0,11
Investments in fixed capital, million tenge (+)	1076933 (Atyrau region)	68990 (North Kazakhstan region)	241630	0,22	2910114,2 (Atyrau region)	333149,434 (North Kazakhstan region)	834080,468	0,29
Level of activity in the field of innovation, % (+)	12,7 (West Kazakhstan region)	1,0 (Akmola region)	8,1	0,64	15,2 (North Kazakhstan region)	4,7 (West Kazakhstan region)	8,8	0,58
Average monthly nominal salary of employees, tenge (+)	165975 (Atyrau region)	58415 (North Kazakhstan region	73677	0,47	406166 (Atyrau region)	187501 (North Kazakhstan region)	224700	0,55
∑				0,42				0,35

Social Indicators								
The share of the population with incomes below the subsistence level in % of the total population, % (-)	10,4 (Mangystau region)	1,7 (Astana)	6,1	0,28	8,1 (Mangystau region)	1,9 (Astana)	4,8	0,40
Funds ratio (ratio of 10% of the most and 10% of the least wealthy population), times (-)	6,2 (Akmola region)	3,0 (Mangystau region)	6	0,5	7,45 (Almaty c.)	3,23 (Shymkent)	6,78	0,48
Life expectancy at birth, years (+)	73,25 (Astana)	66,51 (North Kazakhstan region)	67,68	0,92	76,75 (Astana)	70,7 (North Kazakhstan region)	72,07	0,94
Depth of poverty, % (-)	1,8 (South Kazakhstan region)	0,2 (Almaty)	1,5	0,13	1,9 (Mangystau region)	0,3 (Astana)	1,1	0,27
∑				0,46				0,52
Environmental Indicators								
Air pollutant emissions from stationary sources per capita, kg (-)	847,0 (Pavlodar region)	8,0 (Almaty)	105	0,08	23772,9 (Pavlodar region)	23,21 (Turkestan region)	2785,6	0,01
The volume of current costs for environmental protection, thousand tenge (+)	18777275 (Atyrau region)	381525 (Astana)	9285217	0,49	76753130 (Atyrau region)	1948430 (Turkestan region)	40108281	0,52
Number of pollutant emission sources, units (-)	22114 (Atyrau region)	5150 (Astana)	18194	0,28	28904 (Atyrau region)	5456 (Shymkent)	22234	0,25
∑				0,28				0,26
Note: compiled by authors								

An analysis of the indicators of economic, social and environmental development of Kazakhstan regions, selected to calculate the integral indicator for assessing the development sustainability of the regional system, allows us to state that in 2012-2022 their values have changed. Consequently, changes have also taken place in the ongoing policy for the development of Kazakhstan regions from the standpoint of observing the principles of "green" growth.

Further, according to formula 2, the indicators of the levels of economic, social and environmental sustainability were calculated. Before proceeding to the analysis of the stability indices dynamics of Kazakhstan regions, it should be noted that certain changes occurred in the administrative-territorial division of the Republic of Kazakhstan during the analyzed period.

So, in 2018, Shymkent became a city of republican significance, and the South Kazakhstan region was renamed the Turkestan region. In 2022, three new regions were created: Abay (separated from the East Kazakhstan region, formerly known as Semipalatinsk), Zhetysu (separated from Almaty region, formerly known as Taldy-Kurgan) and Ulytau (separated from Karaganda region, formerly known as Dzhezkazgan). Thus, due to the absence of Abai, Zhetysu

and Ulytau regions in 2012, a comparative analysis of the dynamics of economic, social and environmental sustainability indices for the above regions was not carried out.

Analysis of the dynamics of the index of economic stability of the regions of Kazakhstan in 2012 and 2022 is presented in Table 3.

TABLE 3. Index of economic stability of Kazakhstan regions

Region	2012	2022	Increase↑/Decrease↓
Akmola	0,18	0,35	+0,17↑
Aktobe	0,41	0,42	+0,01↑
Almaty	0,29	0,29	0,00
Atyrau	0,65	0,64	-0,01↓
West Kazakhstan	0,47	0,26	-0,21↓
Zhambyl	0,31	0,25	-0,06↓
Karaganda	0,40	0,53	+0,13↑
Kostanay	0,27	0,49	+0,22↑
Kyzylorda	0,32	0,34	+0,02↑
Mangystau	0,35	0,33	-0,02↓
Pavlodar	0,48	0,41	-0,07↓
North Kazakhstan	0,16	0,37	+0,21↑
Turkestan	0,35	0,31	-0,04↓
East Kazakhstan	0,42	0,35	-0,08↓
Astana city	0,42	0,57	+0,15↑
Almaty city	0,55	0,65	+0,1↑
Note: compiled by authors			

An analysis of the index dynamics of economic stability of Kazakhstan regions for the period from 2012 to 2022 shows that in almost half of the regions (Atyrau, West Kazakhstan, Zhambyl, Mangystau, Pavlodar, Turkestan, East Kazakhstan regions) the stability of the economy has decreased. And only 9 regions ensured the growth of economic stability. The greatest decrease in the indicator is noted in the West Kazakhstan region. In the West Kazakhstan region, a decrease in the index of economic stability was facilitated by a decrease in the volume of manufactured innovative products, which in 2022 decreased by 20.4% compared to 2012 (2012 - 24804.9 million tenge, in 2022 - 19753, 0 million tenge), as well as a decrease in the level of activity in the field of innovation from 12.7% to 4.7%, i.e. almost 3 times.

Analysis of the dynamics of the index of social sustainability of the regions of Kazakhstan for the period in 2012 and 2022 is presented in Table 4.

TABLE 4. Index of social sustainability of Kazakhstan regions

Region	2012	2022	Increase↑/ Decrease↓
Akmola	0,46	0,58	+0,12↑
Aktobe	0,65	0,61	-0,04↓
Almaty	0,68	0,66	-0,02↓
Atyrau	0,60	0,85	+0,25↑
West Kazakhstan	0,54	0,62	+0,08↑
Zhambyl	0,57	0,69	+0,12↑
Karaganda	0,55	0,58	+0,03↑
Kostanay	0,53	0,62	+0,09↑
Kyzylorda	0,51	0,67	+0,16↑
Mangystau	0,58	0,59	+0,01↑
Pavlodar	0,53	0,61	+0,08↑
North Kazakhstan	0,41	0,52	+0,11↑
Turkestan	0,49	0,58	+0,09↑

East Kazakhstan	0,46	0,52	+0,06↑
Astana city	0,77	0,92	+0,15↑
Almaty city	0,85	0,53	-0,32↓
Note: compiled by authors			

As for the index of social sustainability, its best value was noted in Atyrau region, which was able to strengthen its positions, ensuring an increase in the indicator by 0.25 points. Also, in 12 regions of Kazakhstan, an increase in this indicator is observed.

The largest decrease in the indicator is noted in Almaty (-0.32). A negative impact on the social stability index, which caused its decline, was exerted by such a factor as the share of the population with incomes below the subsistence minimum in % of the total population, the coefficient of funds (the ratio of 10% of the most and 10% of the least well-to-do population).

Analysis of the dynamics of the index of environmental sustainability of the regions of Kazakhstan for the period in 2012 and 2022 is presented in Table 5.

TABLE 5.Index of environmental sustainability of Kazakhstan regions

Region	**2012**	**2022**	**Increase ↑/ Decrease ↓**
Akmola	0,27	0,20	-0,07↓
Aktobe	0,34	0,36	+0,02↑
Almaty	0,34	0,15	-0,19
Atyrau	0,42	0,43	+0,01↑
West Kazakhstan	0,24	0,34	+0,1↑
Zhambyl	0,32	0,41	+0,09↑
Karaganda	0,42	0,27	-0,15↓
Kostanay	0,41	0,21	-0,2↓
Kyzylorda	0,34	0,40	+0,06↑
Mangystau	0,19	0,21	+0,02↑
Pavlodar	0,52	0,29	-0,23↓
North Kazakhstan	0,29	0,14	-0,15↓
Turkestan	0,30	0,53	+0,23↑
East Kazakhstan	0,28	0,26	-0,02↓
Astana city	0,37	0,34	-0,03↓
Almaty city	0,50	0,27	-0,23↓
Note: compiled by authors			

The ecological situation is most stable in Atyrau, Turkestan, Kyzylorda and Zhambyl regions, which are leading in 2022 in this indicator. In other areas of the data, the indicator is at a low level of 0.15-0.36, compared with economic and social indices.

The most difficult ecological situation is observed in the North Kazakhstan and Almaty regions. As a result of the decline in the environmental sustainability index, these two areas are at the bottom of the list of regions. The low values of the environmental sustainability index are primarily due to high emissions of air pollutants from stationary sources per capita, as well as an increase in the number of sources of pollutant emissions.

When ranking the regions according to the integral indicator value of sustainable development of the region, it was found that the top three in terms of this indicator include the same regions, but in a different order. So, in 2012, the three leading regions looked like this: Almaty, Atyrau region, Astana. Ten years later, the picture has changed a little: Atyrau region, Astana, Almaty.

At the final stage, it is necessary to form an integral indicator of the ongoing development policy effectiveness of Kazakhstan regions from the standpoint of compliance with the principles of

"green" growth according to formula 3 (see Table 6).

TABLE 6. Integral indicator of the ongoing policy effectiveness of Kazakhstan regions development from the standpoint of compliance with the principles of "green" growth

Region	2012	Grade	2022	Grade	Increase ↑/ Decrease ↓
Akmola	0,30	13	0,38	9	+0,08↑
Aktobe	0,47	5	0,46	5	-0,01↓
Almaty	0,44	7	0,37	10	-0,07↓
Atyrau	0,56	2	0,64	1	+0,08↑
West Kazakhstan	0,42	8	0,41	8	-0,01↓
Zhambyl	0,40	9	0,45	6	+0,05↑
Karaganda	0,46	6	0,46	5	0,00
Kostanay	0,40	9	0,44	7	+0,04↑
Kyzylorda	0,39	10	0,47	4	+0,08↑
Mangystau	0,37	12	0,38	9	+0,01↑
Pavlodar	0,51	4	0,44	7	-0,07↓
North Kazakhstan	0,29	14	0,34	11	+0,05↑
Turkestan	0,38	11	0,47	4	+0,09↑
East Kazakhstan	0,39	10	0,38	9	-0,01↓
Astana city	0,52	3	0,61	2	+0,09↑
Almaty city	0,63	1	0,48	3	-0,15↓
Note: compiled by authors					

The region-outsider in both 2012 and 2022 remains the North Kazakhstan region, which occupies the last place in the ranking. In nine regions of the country, an increase in the integral indicator is observed. At the same time, the largest growth was noted in Astana and the Turkestan region (+0.09). To obtain comparative generalizing characteristics of the sustainable development of Kazakhstan regions, a regions grouping was compiled according to the level of the integral indicator of the ongoing regional development policy effectiveness from the standpoint of compliance with the principles of "green" growth in 2012 and 2022, the results of which are presented in Table 7.

Table 7 shows that 12 regions of Kazakhstan in 2012 had a threshold value of the integral indicator in the range of 0.1-0.5 and belonged to regions with weakly sustainable development, and 4 regions belonged to regions with medium sustainable development (Atyrau and Pavlodar regions, Astana and Almaty city).

The dynamics of the effectiveness integral index of the ongoing regional development policy from the standpoint of compliance with the principles of "green" growth allows us to draw a number of conclusions:

(1) firstly, not a single region fell into the zone of sustainable and highly sustainable development both in 2012 and 2022. There is also not a single region in the zone of unsustainable development.

(2) secondly, most regions of Kazakhstan are in the zone of weakly sustainable development.

(3) thirdly, in 2022, two regions (Almaty city, Pavlodar region) moved from the group with medium sustainable development to the group with low sustainable development.

Summing up, we can conclude that the methodology used in the course of the study allows us to obtain a relative assessment of the ongoing regional development policy effectiveness from the compliance standpoint with the principles of "green" growth. With a small amount of information

TABLE 7. Grouping Kazakhstan regions according to the level of the integral indicator of the ongoing regional development policy effectiveness in terms of compliance with the principles of "green" growth in 2012 and 2022

Thresholds	Interpretation of the sustainable development indicator	Region	
		2012	2022
From 0 to 0,1	Unsustainable	-	-
From 0,1 to 0,5	Weakly sustainable	Akmola, Aktobe, Almaty, West Kazakhstan, Zhambyl, Karaganda, Kostanay, Kyzylorda, Mangystau, North Kazakhstan, South Kazakhstan, East Kazakhstan	Akmola, Aktobe, Almaty, West Kazakhstan, Zhambyl, Karaganda, Kostanay, Kyzylorda, Mangystau, Pavlodar,North Kazakhstan, Turkestan, East Kazakhstan, Almaty city
From 0,5 to 0,7	Medium sustainable	Atyrau, Pavlodar, Astana, Almaty city	Atyrau, Astana
From 0,7 to 0,9	Sustainable	-	-
From 0,9 to 1	Highly	-	-
Note: compiled by authors			

required for the calculation, the integral indicator has a certain sensitivity and information content. Thus, it is possible to:

(1) conduct a comparative assessment of various territories stability;

(2) measure the actual value of the economic, social and environmental sustainability of the region;

(3) more reasonably assess the prospects for the socio-economic development of the region;

(4) determine the efficiency of using the resources of the territory;

(5) identify areas of economic, social and environmental activities that are most consistent with the goals of the region's development;

(6) objectively assess the work effectiveness of state authorities in the region.

The list of socio-economic indicators used in the calculation of the integral index makes it possible to determine with a sufficient degree of certainty the effectiveness of the ongoing regional development policy from the standpoint of observing the principles of "green" growth. It is also important that the information base of the study is the official data of state statistics agencies, which ensures their availability and comparability.

5. CONCLUSIONS

Based on the definition of the integral indicator of sustainability, the article assesses the effectiveness of the "green" growth policy pursued at the regional level. The typology of Kazakhstan regions has been carried out according to the level of their environmental and economic development for the purposes of creating an effective environmental and innovation policy. The dependence of the ecological state and the development trend of the region on the economic, environmental and social policy implemented by the state are revealed.

The empirical conclusions of the work can find practical application in the process of developing an effective environmental and economic regional policy. Thus, according to the results of the analysis, it can be recommended not to implement destructive projects with a strong

environmental impact in the regions of Kazakhstan that have high index values, and in regions with low index values, it can be recommended to diversify production in order to reduce the environmental burden.

The results of the study showed that the current model of socio-economic development of the country and its regions requires further efforts to develop adequate indicators of "green" development that take into account economic, social and environmental components in a balanced way.

The dynamics analysis of the integral indicator of the ongoing regional development policy effectiveness from the compliance standpoint with the principles of "green" growth showed that most regions of Kazakhstan are in the zone of weakly sustainable development, not a single region fell into the zone of sustainable and highly sustainable development both in 2012 and 2022. Consequently, the decrease in the stability of regional economies requires adjustment of the economic, social and environmental policy pursued by the regions, the development of measures aimed at reducing the negative impact of external and internal environmental factors, as well as the search for mechanisms to increase the stability of regional systems.

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AUTHOR BIOGRAPHIES

***Oxana K. Denissova** – Cand. Sc. (Econ.), Associate Professor, D. Serikbayev East Kazakhstan Technical University, Ust-Kamenogorsk, Kazakhstan. Email: denokkas@mail.ru, ORCID ID: https://orcid.org/0000-0001-7899-500X

Anargul S. Belgibayeva – Cand. Sc. (Econ.), Associate Professor, Sh. Ualikhanov Kokshetau University, Kokshetau, Kazakhstan. Email: anar.belgibayeva@gmail.com, ORCID ID: https://orcid.org/0000-0001-5583-0624

Saltanat N. Suieubayeva – Cand. Sc. (Econ.), Associate Professor, D. Serikbayev East Kazakhstan Technical University, Ust-Kamenogorsk, Kazakhstan. Email: Suyeubaeva@mail.ru, ORCID https://orcid.org/0000-0002-0290-6290

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Financial Intermediation and Fixed Capital Formation in Zimbabwe

Upenyu Sakarombe[1]* | **Lloyd Badze[2]**

[1] Zimbabwe Ezekiel Guti University, Bindura, Zimbabwe
[2] National University of Science and Technology, Bulawayo, Zimbabwe

Corresponding author:
***Upenyu Sakarombe** – Lecturer Zimbabwe Ezekiel Guti University, Bindura, Zimbabwe. Email: usakarombe@staff.zegu.ac.zw

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Abstract

Business sustainability is heavily constrained by the shortage of affordable finance of adequate duration and quality. This affects producers and traders' capacity to reorganize their production and exchange systems to attain dynamic competitiveness. Ensuring sufficient and cost-effective high-quality finance in the nation facilitates financial intermediation. The traditional method of channelling and allocating financial resources in an economy has predominantly been carried out by the banking sector. Notably, the level of intermediation had been largely lower than the expected especially during the Covid-19 era implicating as serious problem of disintermediation. This study analyses the impact of financial intermediation on capital formation in Zimbabwe using Autoregressive Distributive Lag (ARDL) model from the first quarter of 2011 to the fourth quarter of 2020. The study finds that the financial intermediation process in the country remains largely weak to enable gross fixed capital formation which facilitates business sustainability. Financial disintermediation by banks is also reducing business sustainability. Several initiatives are suggested to alleviate financial restrictions within the country. One significant proposal involves enhancing competition in the banking sector by further liberalizing it. This is aimed at reducing the cost of credit, fostering financial innovation, and promoting increased credit circulation.

Keywords: Sustainability Covenants, Financial Covenants, Non-Financial Covenants, Economic Growth, Sustainability Performance Management, Management Control System, Business

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1. INTRODUCTION

Money neutrality is central to the Classical economics in macroeconomic management. The school of thought highlighted the idea that money is neutral, implying that it has no impact on the real sector involved in producing goods. In contrast, in his influential work "The General Theory," Keynes demonstrated that money significantly influences actual economic activities (Stamp, 1931). By 1930, he emphasized the crucial role of the banking sector in economic growth. Since the development of the general theory, economists have been certain that finance plays a critical role in the development of the real sector. Subsequent debates revolved around whether finance precedes or follows the development of the real sector. Levine (1997) established that the financial sector leads to productivity growth and natural economic development.

In Zimbabwe, the importance of finance cannot be overlooked. Sufficient and top-notch financing available at an affordable expense for the nation guarantees financial intermediation. Financial intermediation is the mechanism through which financial institutions direct funds from those with excess funds to businesses and consumers. This process is predominantly influenced by the arrangement and behavior of financial institutions (Myerson, 1995), which has consequences for determining the activities that receive funding. Such determinations play a crucial role in influencing productivity and the long-term viability of businesses.

The Zimbabwean economy is at a drastic juncture in its development. On the one hand, the currency has been on a downward trend, depreciating by over 5,000 percent in three years, leading to a high preference for the United States dollar for domestic transactions. The exchange rate fell from ZWL$2.5: USD1 as of March 2019 (RBZ, 2019) to ZWL$142: USD1 in March 2022 (RBZ, 2022). Classical international monetary institutions, that is, the World Bank and the International Monetary Fund (IMF), are not willing to advance bailouts (Chitongo et al., 2020) due to long-standing legacy debts leading to the government resorting to domestic sources of finance imposing a threat of crowding out private investment. The government setting a repressive policy of 200 percent interest rate (Bloomberg, 2022) in a bid to curb speculative borrowing fueled by exchange rate management policies, which facilitate arbitrageur activities. On the other hand, the economy is characterized by many business opportunities characterized by the mushrooming of small to medium enterprises, most of which are informal. More than 60 percent of the economy is accounted for in the informal sector (Sakarombe, 2020).

The Zimbabwean economy has become entwined in the worldwide pattern of growing financial liberalization and market accessibility, mirroring conventional viewpoints on economic operations. Like advanced economies and prominent emerging markets, the drive for increased competition, pursuing higher returns, establishing business footholds in regional and international markets, achieving economies of scale, portfolio diversification, and embracing technological innovation propels financial liberalization and cross-border capital movements in Zimbabwe.

A significant consideration is the degree to which the financial intermediation process, both in terms of quality and quantity, can alleviate the financial limitations experienced by producers, marketers, and workers. This holds crucial importance as the financing aspect is a significant constraint affecting the expansion and transformation of businesses. This study focuses on assessing how financial intermediation influences capital formation in Zimbabwe. The primary objective is to understand the impact of financial intermediation on the facilitation or hindrance of capital formation, thereby affecting the sustainability of businesses. This inquiry is vital because theoretical frameworks and empirical evidence from fieldwork suggest that financial intermediation plays a substantial role in shaping capital formation, particularly in business investments within agriculture, industry, and services.

2. LITERATURE REVIEW

2.1. Financial intermediation in Zimbabwe

Financial intermediation encompasses all the channels through which financial resources are directed from surplus economic agents to deficit agents to support business and consumption activities. To better understand this, exploring the distinctions between classical intermediaries and direct financiers is beneficial. Classical intermediaries, such as commercial banks, credit unions, and insurance companies, gather deposits from savers, pool them, and then lend them to firms and households (Moro-Visconti, 2021). On the other hand, direct finance, involving market-based institutions like stock markets, bond issuers, and venture capital funds, provides financing directly to those in need without intermediaries (Lessambo, 2022). Both theory and empirical evidence demonstrate that the composition of the financial system, specifically the relative significance of direct versus intermediary finance, impacts investment. This influence arises from the fact that these two types of financiers prefer different activities based on risk profiles, and the age of the business, and assign varying importance to factors like reputation and collateral compared to the potential viability of the project.

In recent years, financial progress has been characterized by increased financial innovation and deeper financial markets. From an innovative perspective, several new products, such as mutual funds, stocks, and trust funds, have been introduced to the market. However, the Zimbabwean economy witnessed the collapse of modern financial institutions such as merchant banks, discount houses, and other money market institutions. However, there is a pop-up of investment banks and venture capital funds. Capital markets remain primarily dominated by a few large companies that apprehend the efficient market hypothesis outcomes, inadequate secondary trading on stock markets as Finsec is finding its ground on the market, and a preference for debt finance by some of the larger companies. As a result, the financial framework primarily relies on intermediaries rather than markets. Nevertheless, while the structure is significant, the effectiveness and quality of financial intermediation have the potential to compensate for structural considerations in numerous instances. Given that financial intermediation in Zimbabwe is primarily bank-based, the study concentrates on the main trends in the banking sector. At a broader level, Zimbabwe has been experiencing a contraction in financial sector activities starting from a high base. As Figure 1 shows, financial deepening, as measured crudely by the financial sector's contribution to GDP, increased somewhat from 2010 to 2018.

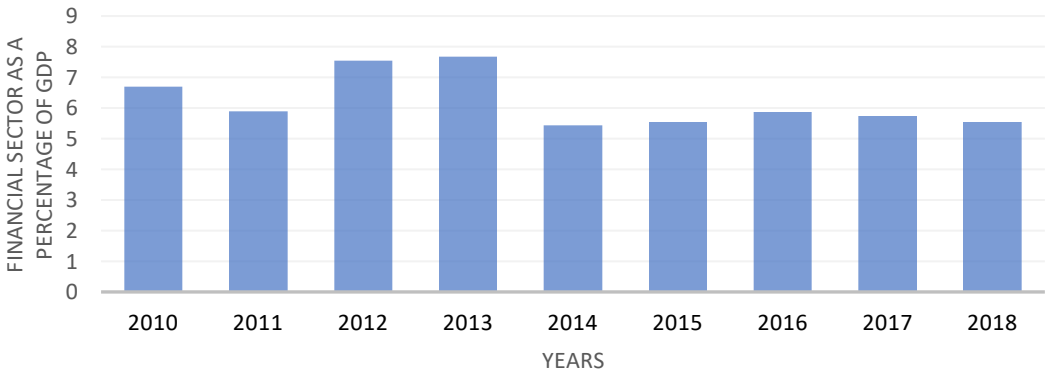

FIGURE 1. Financial sector contribution to GDP

Note: compiled by authors

The banking sector is highly oligopolistic with five banking controlling more than 50 percent of the market. Moreover, liquidity preference ratios, which represent the ratio of narrow money supply to the broad money stock, pose a significant limitation on financing. This is due to the fact that elevated liquidity preference ratios indicate a greater public preference for cash, checking accounts, and other liquid instruments, leading to a reduced level of converting bank liabilities into long-term financing. Somewhat, liquidity preference seem to be too high to encourage business investment. Households seem to have a strong preference for liquid instruments to maintain their levels of consumption.

Figure 2 illustrates that the average liquidity preference for Zimbabwe was relatively elevated, reaching around 70 percent during the period from 2011 to 2019.

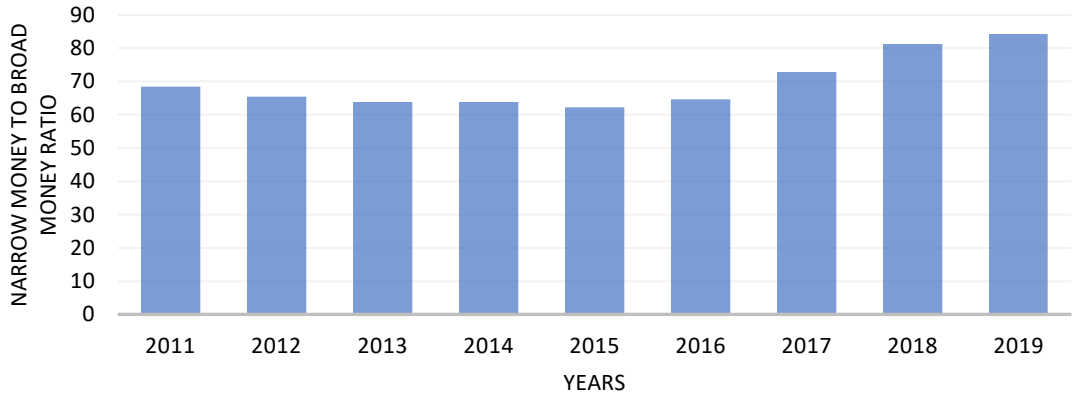

FIGURE 2. Narrow Money to Broad Money Ratio

Note: compiled by authors

Crucially, the process of intermediation can be examined by considering both the financial cost and non-price/cost elements, encompassing the volume and excellence of finance, competition and concentration within the sector, and institutional structures, among other factors. The interplay of these elements ultimately shapes the efficiency and efficacy of intermediation and influences its capacity to drive business investment and sustainability.

2.2. The cost, quantum and quality of finance in Zimbabwe

Zimbabwean enterprises face ongoing limitations and difficulties related to the expense, quantity, and quality of financing required for maintaining operations, expanding, upgrading, and restructuring to meet competition and explore new markets. Additionally, the significance of finance quantity and quality is accentuated in an era of globalization, where the competitiveness of production relies not only on factor productivity and technical efficiency but also on the quality of financial intermediation.

Given the substantial reliance on commercial bank funding by businesses, the most tangible aspect of financial costs is the interest rate on loans, advances, and overdrafts. This is further compounded by elevated bank charges (Gwatiring, 2020) and fees for various services (Ntini et al., 2022). The interest rate on loans is comparatively high on an international scale, preventing business investment, particularly for small enterprises (Pasara, Makochekanwa, and Dunga, 2021). The high cost of finance reflects some level of financial fragmentation, insufficient competition, marked by oligopolistic tendencies in the banking system, relatively high average

operational costs due to limited business volumes resulting from the constrained minimum efficient scale (size) of financial institutions, and macroeconomic challenges in the country.

The broad interest rate spreads in the banking sector, representing the difference between interest rates on loans and overdrafts and those paid on deposits, serve as a clear indicator of financial inefficiency and the elevated cost of finance for businesses. Decomposing the interest rate spread is valuable, as it reveals several aspects. It signals the risk and expectation of borrower default, efficiency and market power levels in the banking system, inflation, liquidity, exchange rate, and institutional risks, as well as the favorability of the regulatory regime and taxation of the banking system, especially by monetary authorities.

Several theories seeking to explain the investment behaviour of business firms and governments exist in the literature. These include the marginal efficiency of capital hypothesis, the Accelerator theory of investment, and Tobin Q's investment theory.

The Marginal Efficiency of Capital Hypothesis is a Keynesian concept that stipulates the rate of discount, which equates the present value of net expected revenue from an investment of capital to its cost. The idea plays a significant role in the Keynesian theory of investment by explaining that the level of investment is determined by the marginal efficiency of capital relative to the interest rate (Timlin, 2019). If the marginal efficiency rate is higher than the interest rate, investment will be stimulated; if not, investment will be discouraged. This concept is based on the ordinary mathematical technique of computing the present value of a given series of returns discounted at a specified discount rate.

The Accelerator theory of investment suggests that as demand or income increases in an economy, so does the investment made by firms Benedictow and Hammersland, 2020). Furthermore, accelerator theory indicates that when demand levels result in excess demand, firms have two choices of how to meet demand. It is either to raise prices to cause demand to drop or to increase investment to match demand. The theory proposes that most companies choose to increase production, thus increasing their profits. The thesis further explains how this growth attracts more investors, accelerating growth.

The Tobin Q-Theory of investment arose from fundamental shortcomings in both the accelerator theory and the neoclassical theory of investment. One key issue with these theories is the implicit assumption that the capital stock adjustment to its desired level is instantaneous and complete in each period. To address this, an adjustment cost function was introduced to the optimization problem, as proposed by Treadway in 1969. The second issue is the neoclassical and accelerator theories' lack of consideration for expectations. Brainard and Tobin addressed these problems in 1968. In 1969, Tobin formulated the Tobin Q-Theory of investments, asserting that investment decisions are made until the market value of assets equals the replacement cost of assets.

Additionally, the neoclassical theory can be made logically equivalent to the Q-theory by incorporating a marginal adjustment cost function into the profit function. The Q-theory of investment, as proposed by Brainard and Tobin (1968) and Tobin (1969), is, in some respects, reminiscent of ideas put forth by Keynes in 1936. Keynes, for instance, argued that stock markets guide investors, stating, "There is no sense in building up a new enterprise at a cost greater than at which an existing one can be purchased" (Baddeley, 2003).

Scholars have proposed several theories on financial intermediation, with the formal introduction of the theory by Goldsmith (1969) and Shaw (1973). Their work identified the financial environment, comprising both money and capital markets, as playing a crucial role in economic development. As part of economic development services, financial institutions offer loanable funds to deficit units. The loanable fund theory, an enhanced theory of interest rates, supports the assistance of financial intermediation. According to this theory, interest rates are determined by the demand for and supply of loanable funds, where higher demand leads to higher

interest rates relative to the supply of money. The equilibrium interest rates are negotiated by both surplus and deficit unit agents. Loanable funds, therefore, serve as a form of financial intermediation that fosters capital formation in countries like Zimbabwe.

While no studies have explored the relationship between financial intermediation and fixed capital formation in Zimbabwe, there are related studies from other regions. Existing studies investigated the impact of capital formation on the growth of the Nigerian economy. Findings suggested a positive and significant influence of capital formation on economic development in Nigeria. Similarly, Ezirim, Torbira, and Amuzie (2016) studied the financial intermediation of insurance companies and capital formation in Nigeria, revealing a relationship between intermediation and capital formation. In Cameroon, Forgha, Sama, and Aquilas (2016) explored financial intermediation, domestic investment, and economic growth, finding no causality flow from financial intermediation to GDP.

In Nigeria, Adeniyi, Adeyinka, and Babayaro (2019) examined insurance companies and the efficiency of financial intermediation, showing a positive correlation among the variables. Yakubu, Abokor, and Balay (2021) re-examined the impact of financial intermediation on real sector growth in Turkey, indicating positive short-run and long-run effects. While these studies are related, the scope and variables in this work are different. As a result, the findings from this study may vary, contributing to the enrichment of the body of knowledge.

3. METHODOLOGY AND DATA

The methodology was formulated based on the theoretical principles of the Loanable Funds Theory (LFT). According to this theory, when there is an increased demand for loanable funds, interest rates rise in relation to the available supply of funds. Both surplus unit and deficit unit agents engage in negotiations to establish an equilibrium interest rate. This theory is closely connected to financial intermediation, as financial intermediation plays a crucial role in rejuvenating capital accumulation. Therefore, the theory inherently establishes a connection between sectoral financial intermediation and the potential for capital formation in Zimbabwe.

The model can be presented as follows (1):

$$GCF_t = \alpha_0 + \beta_1 CBD_t + \beta_2 LTDR_t + \beta_3 NIY/IY_t + \beta_4 IRS_t + \varepsilon_t \qquad (1)$$

Where GSF represents the Gross Fixed Capital Formation, measuring business sustainability; CBD represents Commercial bank deposits as a percentage of GDP; LTDR represents Loan-to-deposit ratio to measure the propensity to intermediate; NIY/IY represents non-interest income to interest income ratio to measure the level of disintermediation; and IRS represents the interest rate spread (the difference between lending rate and deposit rate) variable. IRS can also reflect the level of competition as high spread shows market power in the market (Moore and Craigwell, 2002). Equation (1) was estimated using the Autoregressive Distributed Lag (ARDL) method.

The ARDL model is a dynamic single regression equation designed to forecast the values of the dependent variable using both the current values and the lagged values of the explanatory variable. This method allows for the simultaneous estimation of short-run and long-run coefficients, alleviates the need for determining the integration order, is particularly suitable for application on small sample sizes, and is adaptable to variables with different optimal lag lengths. Prior to conducting the estimation, an examination of the time series properties of interest was carried out through unit root tests and correlation analysis. This preliminary step is crucial because the ARDL model is applicable only when none of the variables has an integration order of 2, i.e., I (2).

The ARDL specification requires that all variables be endogenous as presented below (2):

$$\Delta GDF_t = \alpha_0 + \sum_{j=1}^{p} \theta_j \Delta GCF_{t-j} + \sum_{j=0}^{q} \vartheta_j \Delta CBD_{t-j} + \sum_{j=0}^{q} \varphi_j \Delta LTDR_{t-j} + \sum_{j=0}^{q} \tau_j \Delta NYI/IY_{t-j} + \sum_{j=0}^{q} \omega_j \Delta IRS_{t-j} + \beta_0 GCF_{t-j} + \beta_1 CBD_{t-j} + \beta_2 LTDR_{t-j} + \beta_3 NIY/IY_{t-j} + \beta_4 IRS_{t-j} + \varepsilon_t \quad (2)$$

The short-term effects are captured by the differenced terms, while the variables in their original levels account for the long-term effects. The F-test is employed to examine the presence of a long-term relationship as it assesses the collective significance of lagged levels of the involved variables. Pesaran et al. (2001) introduced two sets of asymptotic critical values for the F-test: the lower critical bound and the upper critical bound. The lower critical bound assumes that all variables are integrated of order zero (I(0)), indicating no cointegrating relationship among the variables. On the other hand, the upper bound assumes that all variables are integrated of order one (I(1)), signifying cointegration among the variables. If a long-term cointegrating relationship is established, then an error correction model must be estimated to determine the short-term coefficients. The specifications of an ARDL error correction model are given below (3):

$$\Delta GCF_t = \alpha_0 + \sum_{j=1}^{p} \theta_j \Delta GCF_{t-j} + \sum_{j=0}^{q} \vartheta_j \Delta CBD_{t-j} + \sum_{j=0}^{q} \varphi_j \Delta LTDR_{t-j} + \sum_{j=0}^{q} \tau_j \Delta NYI/IY_{t-j} + \sum_{j=0}^{q} \omega_j \Delta IRS_{t-j_1} + \pi_4 ECT_{t-1} \quad (3)$$

The residuals from the estimation of the long-run model (2) are used to derive the ECT term which is the error correction term. Data used were on a quarterly basis from 2011 to 2020. Data on all variables were collected from the Reserve Bank of Zimbabwe except for Gross Capital Formation (GCF) which were collected from the World Bank database. The GDP and GCP data were spliced to match the quarterly series intervals.

4. ANALYSIS AND RESULTS

The data shows that the mean gross fixed capital formation (GCF) is 13.96 while the average commercial bank deposit ratio to GDP (CBD) is 14.751. Loan to deposit ratio (LTDR), Non-interest income to interest income ratio (NIY/NY) and Interest rate spread (IRS) have 61.456, 51.83 and 40.003 as their respective averages. Table 1 contains the descriptive statistics of the variables employed by the study.

TABLE 1. Descriptive Statistics

	GCF	CBD	LTDR	NIY/IY	IRS
Mean	13.9649442	14.751	61.456	51.83	40.003
Median	11.9478569	15.20	56.56	46.78	38.54
Maximum	24.5772602	40.00	98.567	93.67	59.93
Minimum	2.00044127	4.00	18.760	40.67	12.34
Observations	40	40	40	40	40
Note: compiled by authors					

However, it negatively relates with NIY/IY and IRS. Such relationships are expected and concur with theory, though the coefficients present a weak relationship.

Table 2 has the correlation results of the variables. There exists a positive relationship between the measure of business sustainability (GCF) and the first two variables, CBD and LTDR.

TABLE 2. Correlations Matrix

	GCF	CBD	LTDR	NIY/IY	IRS
GCF	1				
CBD	0.135	1			
LTDR	0.236	0.402	1		
NIY/IY	-0.050	-0.656	-0.098	1	
IRS	-0.347	-0.525	-0.281	-0.478	1
Note: compiled by authors					

The Augmented Dickey-Fuller test was employed where all series were found to be integrated of order one I (1) at 1 percent level. The results of the stationarity tests are presented in Table 3.

TABLE 3. Stationarity Results

Variable	Level	Result	1st Difference	Result
GCF	-1.409 (0.240)	Non-stationary	-6.070*** (0.000)	Stationary
CBD	0.222 (0.056)	Non-stationary	-7.500*** (0.001)	Stationary
LTDR	0.433 (0.793)	Non-stationary	-8.003*** (0.000)	Stationary
NIY/IY	-2.005 (0.106)	Non-stationary	-4.021*** (0.001)	Stationary
IRS	-1.900 (0.182)	Non-stationary	-9.053*** (0.000)	Stationary
***represents statistically significant at 1 percent level, figures in parenthesis are probability *Note:* compiled by authors				

The Akaike Information Criteria (AIC) was used to select the optimal lag length for estimation. After specifying the ARDL (GCF: CBD; LTDR; NIY/IY; IRS), the optimal lag length established is (1, 1, 3, 1, 3). The study used the F-Bounds cointegration test to check for the existence of a long-term relationship between real money demand and its determinants. The results of the ARDL model confirmed the existence of long run relationship. This is because the outcomes of bounds test for co-integration reveal the existence of long-run relationship at 1% level, given the F-statistic value of 8.441 which are over the Pesaran critical value of I(1) 5.68 at 1% level of significance. The results are presented in Table 4.

TABLE 4. F-Bounds Test Results

Model	**Non-Linear ARDL**	
Test Statistic	Value	k
F-Statistic	8.441***	5
Critical Value Bounds		
Significance	I(0) Bound	I(1) Bound
10%	2.26	3.35
5%	2.62	4.18
1%	3.41	5.68
***represents statistically significant at 1 percent level *Note:* compiled by authors		

The long run results from the ARDL reveal that commercial bank deposits (CBD) and Loan to deposit ratio (LTDR) are positively related to business sustainability in Zimbabwe. Nonetheless, non-interest income to income ratio (NIY/NY) as a proxy for financial disintermediation and interest rate spread (IRS) as it measures competitiveness are negatively

related to business sustainability in Zimbabwe. As banks get more deposits and increase their advances, economic agents increase their investment in fixed capital formation. However, a rise in financial disintermediation and the difference between the deposit rate and the lending rate discourages creation of fixed capital formation in the economy. Although, this resonates with the Loanable Funds economic theory, the coefficients are economically weak as they are largely below zero in absolute terms. The only coefficient that is mostly economically significant is the measure of financial disintermediation (NIY/IY). A significant reduction in business sustainability is being driven by disintermediation activities which banks are sometimes concentrating on.

Results in Table 5 represent estimations of the ARDL model.

TABLE 5. The Linear ARDL Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Short-run Results				
D(GCF)	0.0105***	0.0012	8.7500	0.0000
D(CBD)	0.0003***	0.0001	3.000	0.0045
D(LTDR)	0.3924	0.3432	1.1435	0.2735
D(LTDR(-1))	0.0988	0.4155	0.2377	0.8158
D(LTDR(-2))	1.0009***	0.3643	2.7475	0.0009
D(NIY/IY)	-70.8800**	30.7801	-2.3028	0.0134
D(IRS)	-0.0000***	0.0000	-6.2742	0.0000
D(IRS(-1))	-0.0000	0.0000	-0.5468	0.5938
D(IRS(-2))	0.0000***	0.0000	3.0367	0.0095
CointEq(-1)	-0.4179***	0.1399	-4.4159	0.0007
Long Run Results				
CBD	0.0000***	0.0000	-5.7212	0.0001
LTDR	0.0000***	0.0000	5.5705	0.0001
NIY/IY	-88.5479***	14.599	6.0655	0.0000
IRS	-0.0000***	0.0000	-3.6887	0.0027
C	-2079.0717***	345.2559	-6.0218	0.0000

***represents statistically significant at 1 percent level

** represents 5 percent while * represents 10 percent level.

Note: compiled by authors

The short run results for the ARDL model reveal that the error correction term is negative and statistically significant. The ECT term is -0.4179 with an interpretation that about 42 percent of the disequilibrium in business sustainability in the long run is corrected for in the next quarter. This is a low rate of adjustment towards the equilibrium since it is below 50 percent. Consistent with the long run results, lagged variables included on the explanatory parameters have same coefficients signs and they are also economically weak.

The diagnostic results in Table 7 and the stability results in Figure 1 reflect the goodness of fit of the estimated model. The model was satisfactorily specified with an R-squared in excess of 80 percent. The estimated CUSUM tests' values presented in Figure 1 are within critical values. Therefore, a stable model is assured.

In Table 7 there are presented diagnostic results for the Non-linear ARDL Model.

TABLE 7. Diagnostic Tests

Diagnostic Test	**Non-Linear ARDL**
Adjusted R-squared	0.8292
F-Statistic	9.9071 (0.0001)
S.E. of Regression	0.6276
Squared Residual Sum	4.7259
DW	2.3470
J B Normality Test	0.4133 (0.8133)
Breusch-Godfrey Correlation LM Test:	1.1879 (0.3445)
Note: compiled by authors	

In Figure 1 there are presented stability results for the Non-linear ARDL Model.

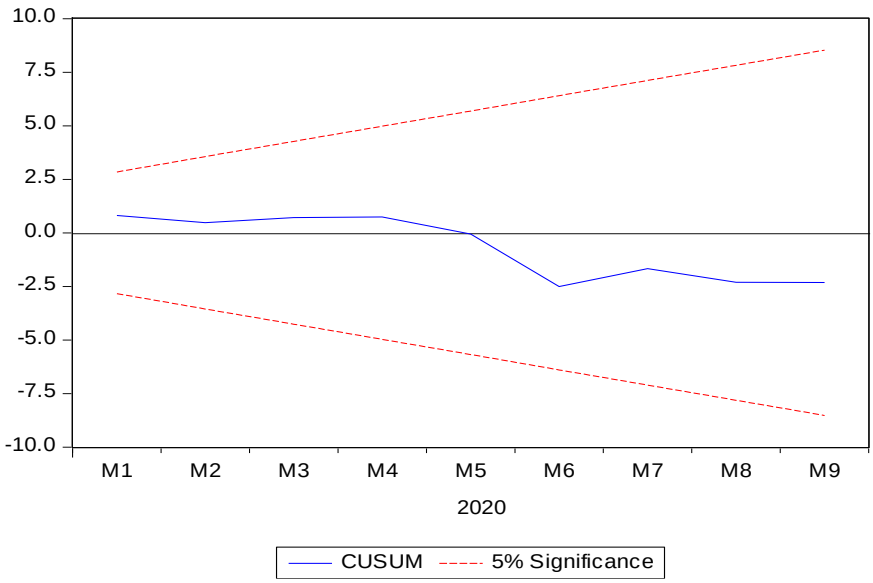

FIGURE 1. Stability Results: Non-linear ARDL Model

Note: compiled by authors

5. CONCLUSIONS

The quantity and quality of finance remains one of the most important constraints on business sustainability in Zimbabwe. Intermediation continues to be driven largely by commercial banks and, given the oligopolistic market structure, the cost of finance remains high as the interest spread is large thus making the supply, quality and maturity inadequate for many businesses. This study analyses the impact of financial intermediation on capital formation in Zimbabwe using Autoregressive Distributive Lag (ARDL) model from the first quarter of 2011 to the fourth quarter of 2021. The study finds that the financial intermediation process in the country remains largely weak to meet the requirements of sustaining business operations. An indication of financial disintermediation was found to be regressive on the fixed capital formation. This affirms the reality that Zimbabwean businesses are consistently hindered and confronted by the challenges associated with the cost, quantity, and quality of financing required for day-to-day operations, expansion, upgrading, and restructuring to effectively compete and explore new markets.

Additionally, the volume and quality of financial resources are particularly crucial in an era of globalization, where the competitiveness of production depends not only on factor productivity and technical efficiency but also significantly on the quality of financial intermediation. To address these financial constraints in the country, several measures are proposed. A key recommendation involves fostering increased competition within the banking sector through further liberalization. This initiative aims to reduce the cost of credit, stimulate financial innovation, and promote a more substantial flow of credit.

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AUTHOR BIOGRAPHIES

***Upenyu Sakarombe** – Lecturer, Zimbabwe Ezekiel Guti University, Bindura, Zimbabwe. Email: usakarombe@zegu.ac.zw, ORCID ID: https://orcid.org/0000-0002-8555-1914Edson

Lloyd Badze – Lecturer, National University of Science and Technology, Bulawayo. Email: lbadze@gmail.com

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Discourse to the Factors of Decision-making of Students in Choosing a University Major

Leila K. Mardenova[1*] | **Saira Yessimzhanova**[1] | **Saloomeh Tabari**[2]

[1] Kenzhegali Sagadiyev University of International Business, Almaty, Kazakhstan

[2] Cardiff Business School, Cardiff University, Cardiff, United Kingdom

Corresponding author:
*** Leila K. Mardenova** – PhD Candidate, Kenzhegali Sagadiyev University of International Business, Almaty, Kazakhstan. Email: Mardenova.leila@gmail.com

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Abstract
The purpose of this paper to investigate the factors that influence students' choice of major, by conducting a literature review and identifying research gaps. There was adopted a methodical approach PRISMA that included a systematic literature review based on the Scopus database. The results of this study indicate a noteworthy trend in the literature related to major choice within the Scopus Database. The number of papers on this topic has exhibited consistent growth since 2008, reaching a peak in 2021, albeit with an annual publication count not exceeding 12 articles. Prominent authors have primarily contributed to discussions surrounding major choice, with a focus on the medical and engineering fields, while engagement with business-related disciplines, such as marketing, management, remains limited. Notably, most retrieved documents were articles (85%), with a minority being reviews (15%), some of which did not directly align with the research question. The affiliations of these documents were predominantly associated with research centers and universities in the United States, underscoring a gap in contextualizing major choice within the Kazakhstani and broader Commonwealth of Independent States (CIS) region. In summary, this study underscores a growing interest in major choice research since 2008, predominantly concentrated in specific disciplines and geographic regions, with notable disparities in representation among academic fields. Key factors that play a pivotal role in shaping students' decisions regarding their majors were identified. This paper emphasizes the foundation for the empirical research related to customers in roles of students and stakeholders in higher education institutions based on CIS countries.

Keywords: Factor, Academy, Academic Major Choice, Study Choice, Students, Decision Making, Higher Education, Management

SCSTI: 06.63.65

JEL Code: I23, I24, M30

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1. INTRODUCTION

It is important for universities to comprehend the preferences of their consumers, or students, in order to meet their needs and expectations. Knowledge of what students seek in a university or educational program enables institutions to tailor their offerings to align with those preferences and attract more students, resulting in increased enrollment, retention, and student satisfaction. Additionally, such knowledge can inform decisions regarding marketing, recruitment, and retention strategies, as well as program and curriculum development. Ultimately, a sound understanding of student preferences can help universities remain competitive in the educational marketplace and better serve the needs of their students and other stakeholders (Kanevska, 2021).

The increasing number of students indicates that competition among universities for students is set to intensify. Specifically, the competition among higher education institutions (HEIs) to attract the brightest and most promising prospective students, who may significantly enhance the academic distinction of their institutions, is mounting. In order to attract potential students, universities must possess a comprehensive array of resources and tools that meet students' needs, thereby enabling them to achieve their strategic missions and goals. Presently, a majority of students belong to Generation Z, necessitating research into understanding the needs and behaviours of this demographic, as well as those of Generation Alpha in the coming years. The emphasis on these generations is due to their unique characteristics as prospective students, learners, and workers, which differ from earlier generations as a result of their exposure to vast amounts of information and the availability of this information in the digital age, resulting in a tendency to focus only on receiving constant attention and delivery (Duffy et al., 2018).

Annually, universities encounter the obstacle of vying with other institutions to entice students to fill the places of graduated students and obtain high-achieving students for better ranking scores among universities. Therefore, a primary concern of this investigation pertains to students' preferences and demands who represent subjects of particular higher education institutions (HEIs), generating value for the university on a monetary, intellectual, and cultural basis. Therefore, notwithstanding debates (Guilbault, 2016) about students' role in the HEIs, we reframe their role for this study as being regarded as customers and consumers.

An example of dissatisfaction with the current major choice of graduates can be shown in the Informational Technologies field in Kazakhstan. The national report for 2022 related to the digitalization strategy of Kazakhstan, conducted by the Centre of Human Resources Development (CHRD, 2022), revealed that only 31% of IT graduates are employed in their respective fields, with the remaining 69% pursuing alternative professions or further studies. Additionally, there is insufficient data on Kazakhstani IT graduates employed outside the country. Surprisingly, of those working in the IT sector within Kazakhstan, 56% did not major in IT in college or at any higher education institution. Therefore, understanding the factors that influence student choice of both university and major is important in comprehending their consumer preferences and developing a customer cluster, particularly with the entrance of Generation Z into higher education and the workforce (Chicca & Shellenbarger, 2018). This literature analysis aims to enhance and organize knowledge on students' choices as consumers, with a particular focus on major and university selection during undergraduate studies. A systematic review of literature related to major choice is also necessary.

The primary aim of this article is to identify the factors discovered during the research related to students' choice of academic majors. This research serves as a foundational step in paving the way for the future research endeavors focused on CIS countries. The study employs a literature review method such as systematic literature review conducted on the Scopus database analyzed using descriptive statistics. The findings and discussion sections will explore how the results align with the demands of the 21st century. The implications of the scoping literature review will suggest further areas of research. The article concludes with a brief summary of the research

limitations. The study primarily relies on the bibliographic research method of scoping a systematic literature review.

The research gap pertaining to students' choice of majors in Kazakhstan primarily lies in the dearth of empirical studies originating from within Kazakhstan itself. To facilitate academic advancement, the initial phase of this study for future research entails conducting a comprehensive literature review encompassing factors identified in studies conducted abroad. Many of the studies are conducted in Western countries and may not be directly applicable to the Kazakhstani educational market. Additionally, there is a lack of recent studies that take into account the impact of digitalization and the changing demands of the 21st century on student consumer preferences and behaviour. Finally, while some studies focus on the factors affecting major choice, there is a lack of comprehensive and systematic reviews of the existing literature on major choice, especially in the Kazakhstani context.

2. LITERATURE REVIEW

Despite the number of studies of Sustainable Development Goals by authors worldwide, a gap in research related to achieving the goals in the regional context, in the context of worldwide threats, and the renewal of the Concept needs to be sufficiently studied. Based on the conducted literature review, seven main indicators were selected (gross regional product per capita, food security, unemployment rate, poverty rate, crime, education, and pollution) to assess the sustainable development of regions of Kazakhstan.

2.1. Consumer research in HEI

Understanding the students as consumers and their decision making between majors is important for the HEIs. In recent years, the concept of consumer preferences has gained importance in the marketing of higher education. Understanding consumer preferences is crucial for making effective marketing decisions to improve business performance. Researchers have used various methods such as conjoint analysis (Nazari and Elahi, 2011) to examine the preferences of consumers who choose between educational options. Marketing has been identified as a critical factor in the success of higher education institutions (HEIs) (Gornostayeva, 2016), and research has demonstrated the necessity of constant and daily marketing management to attract and retain new students. The analysis of websites and social media platforms has also been found to be useful in determining consumer preferences (Stefko et al., 2016; Sousa et al., 2019; Olinichenko et al., 2020). Studies have emphasized the importance of understanding the needs and expectations of consumers, and the use of digital technologies to target potential customers. The focus on the Generation Z concept and the modelling of consumer behaviour in the educational market has been identified (Aleshnikova et al., 2020) as an important area for future research (Stebliuk & Kuzmenko, 2021). In conclusion, this study highlights the significance of continued marketing research and the need for HEIs to adapt to a constantly evolving competitive environment.

Kanevska (2021) proposed a novel conceptual model for educational marketing management that highlights the importance of consumer research as a key factor in marketing success, aligning with the aim of this article to research the preferences of the students which considered as consumers. Practical implications for marketing management of educational services are also described in the study, which could facilitate cross-country comparisons of educational marketing management systems. Howarth et al. (2021) conducted a mixed methods study to explore the relationship between MOOCs and consumer preferences in selecting an educational institution and to identify the aims and preferences of students. Additionally, universities and colleges may offer a range of services and develop their brand, such as Massive Open Online Courses

(MOOCs), which have gained widespread popularity in light of the COVID-19 pandemic.

Therefore, we research the factors that play crucial roles in choosing an academic major.

2.2. University choice

The students and their perception about the major and the university play the important role in decision making. According to new research on universities, there are 3 knowledge transfer strategies which affect the prestige, development, income of the future alumnus and university's brand itself (Giuri et al., 2019). Universities may address the goals through thoroughly constructed strategies. But the marketing in education will enhance the power of strategy and will inform the receivers (of information) about these goals and to find the students and teachers who will align with this motto. Therefore, to become prestigious university after setting the strategy, it is necessary to have strong educational marketing.

The fear of the students in front of the big financial debts and how does it influence the choice of major and university was studied by Callender and Jackson (2008). It is related to Kazakhstan, because, in Kazakhstan prospective students also consider the university and major choice depending on the (financial) background of the family if they family is poor, but this stress does not affect the choice of students whose background is equal to or more than middle class. In answer to question what or who else influences the choice of university, Johnston (2010) said that the important influencer in choosing a university is a parent (mostly mothers) and non-personal sources of information did not persuade as much as personal. Therefore, according to it, we can say, that it is relatable to explore the educational and occupational background as well as financial background of the family of the student under the research. Even if the demographic variables cannot be controlled, Malik and Hussain (2020) explored them and how does it affect to career choice and supported previous works on importance of the parents influence (their occupation or experience), financial background and additionally, added factors that were not mentioned before as birth order, and personal interest of parents. Dawes and Brown (2002) in their research developed an idea of choice implementing it with economical model of brand choice with 6 variables and also found counter argumentative finding that impersonal or commercial source of information as prospectuses, brochures were ranked by students as most persuasive when choosing a university or major.

2.3. Major choice

Choosing a major in this circumstance means two perspectives such as:

1) Choosing a speciality before entering a university when the student comes to university first for admission and had to choose a major which will be a choice in the beginning of the study before exploring the courses and lecturers;

2) Choosing a speciality at university after studying the main courses by choosing right complect of the classes for a degree in a particular area such as in Kazakhstan and many other countries in CIS countries.

Brown and Strange (1981) emphasized the importance of students' career perspectives in deciding their majors, which can also affect their anxiety levels, particularly among undergraduate students. While college or university choice of major has been a relevant topic for overseas studies, especially in the USA, it is crucial to consider the factors influencing countries with a "melting pot" culture, which involves a variety of different cultural and racial groups (Kivisto, 2002). Simpson (2001) studied the relationship between societal status factors such as gender, race, and education, and students' major choices in the US. Further research by Simpson (2003) explored the influence of parents on major choices. Pulver and Kelly (2018) investigated the link

between the Myers Briggs Type Indicator (MBTI) test and college major choices among undergraduates, while Balsamo et al. (2012) focused on how personality traits can affect college major choices. Other studies on personality and major choice were conducted by authors such as Caprara et al. (2006). Anelli and Peri (2014) studied how the gender of siblings of admitted students can affect major choices through homogeneity in family gender. Major choice is highly correlated with job satisfaction, stability, career opportunities, and rewards (Berger, 1988; Weidman et al., 1992). However, Beffy et al. (2012) researched major choice in France when future earnings were unknown. Additionally, Yagmur Akbulut and Arlen Looney (2009) identified interest in study subjects, outcome expectations, and sophistication as factors influencing students' major choices in IT specialties. Table 1 below shows the factors that influence the major choice of the students based on different research papers.

TABLE 1. List of factors influencing major choice of students based on literature review

No	Authors / Year	Factors/Variables
1	Lindsay Noble Calkins, Andrew Welki (2006)	Interest in the subject, Good performance in major classes, Perceived marketability of the major, Expected future income, Approachability or friendliness of the faculty, Teaching reputation of faculty in the department, Expected income after graduation, Preparation for graduate school, Difficulty of course work in the department, Availability of internships, Previous high school courses, Parental encouragement and opinion, Advice and encouragement of high school teachers freshman/sophomore
2	Wei Zhang (2007)	Job availability, Job security, Job salary, Social image, Personal image, Aptitude workload, Difficulty of IS major, Difficulty of IS curriculum, Genuine interests in IS field, Salient referents: family, friends, fellow students, advisors, professors
3	Lewis C.M., Yasuhara K., Anderson R.E. (2011)	Ability, enjoyment, fit, utility, and opportunity cost
4	Webber D.A. (2014)	High school graduates with NO college experience, AFQT (the Armed Forces Qualification Test) (word knowledge, paragraph comprehension, arithmetic reasoning, and mathematics knowledge), mother's education, Rotter score, Rosenberg Self-Esteem Scale
5	Thomson N.D., Wurtzburg S.J., Centifanti L.C.M. (2015)	Empathy quotient (EQ) (emotional reactivity, social skills, cognitive empathy), demographics of the undergraduates
6	Anelli M., Peri G. (2015)	Family demographics (income, education, marital status, number of children in the family), siblings' gender, type of school they attended
7	Tchuente G. (2016)	High school curriculum, postsecondary outcomes
8	Hastings J.S., Neilson C.A., Ramirez A., Zimmerman S.D. (2016)	Financial literacy, loan literacy, information sources, knowledge about earnings and cost fundamentals, stated reasons for application plans, search costs, value placed on financial outcomes when making college choices, awareness of desirable degree choices outside of their consideration set, accuracy of expectations about earnings and costs, past student outcomes in terms of earnings and costs, likelihood of enrollment in degrees where past students have fared poorly, likelihood of dropping out when uncertainty is resolved
9	Arcidiacono P., Aucejo E.M., Hotz V.J. (2016)	Individual background and family characteristics, academic preparation and performance, aspirations, and constraints
10	Mishra et al. (2017)	Knowledge of job market, knowledge of curriculum, information sources, personal influences, family, graduates, instructor’s/advisor’s guidance, reputation of the institution, perceived difficulty of the course/curriculum, job availability
11	Jaradat & Mustafa (2017)	Sources of information and influence, job characteristics, fit and interest in the subject
12	Fosnacht & Calderone (2017)	Potential income, student loan debt, educational aspirations (ref: Bachelor's), per capita income, student athlete, parental education, part-time enrollment, Greek-life member, transfer student, grades (mostly A's or mostly C's or lower), student loan debt

13	Perera & McIlveen (2018)	Belief about course enjoyment, expected grades, expected labor market outcomes (exp. stab. of employment, exp. prob. of having a job, exp. salary, prob. of choosing), salary, probability of employment
14	Ehlert et al. (2019)	RIASEC interests (Realistic, Investigative, Artistic, Social, Enterprising, Conventional), Mini-IPIP (Extraversion, Agreeableness, Conscientiousness, Neuroticism, Intellect/Imagination)
15	Ludwikowski et al. (2019)	Learning (reflecting on past decisions, focusing on knowledge development after the decision has been made, changing behavior), avoidance (allowing others to make the decision), information gathering (collecting facts, assessing strategies, evaluating options prior to making a decision), impulsivity (rushing to make a decision, lack of consideration of the consequences of a decision)
16	Griffith & Main (2019)	Internal factors: abilities (arithmetic reasoning, verbal ability, spatial ability, computational ability, clerical ability, perception), personality (extroversion, agreeableness, conscientiousness, emotional stability, openness to experience), interests and self-efficacy (rated how much they would like to perform each work activity)
17	Shewach et al. (2019)	Peer ability, distribution of peers by race and gender, gender of the instructor
18	Perera & McIlveen (2018)	HSGPA, SAT, composite of HSGPA and SAT, SES (mother's education, father's education, family income), degree goal, student scores in AP credits, advanced coursework index
19	Enget et al. (2020)	Gender, perceived difficulty, imposter phenomenon, perceived opportunity
20	Minaya V. (2020)	Grading scale
21	Arnold I.J. (2020)	Effect of gender on major choice for subfields within an economic bachelor program, grade sensibility (by gender)
Note: compiled by authors		

Table 1 shows the recent works researched factors affecting students in choosing an academic major. The intake from the comprehensive literature review demonstrates an extensive list of factors and variables that were mentioned and tested in various studies. Across multiple studies that were made in different countries and circumstances, several factors remain unchangeable and might be considered pivotal. Those factors are Interest in the subject (Calkins & Welki, 2006; Zhang, 2007; Tchuente, 2016; Ludwikowski et al., 2019, etc.); Good performance in major classes (Zhang, 2007; Shewach et al., 2019; Enget et al., 2020; Minaya, 2020; Arnold, 2020); Perceived marketability of the significant and Expected future income (Zhang, 2007; Hastings et al., 2016; Mishra et al., 2017; Jaradat & Mustafa, 2017; Baker et al., 2018) and Teaching reputation of faculty in the department (Calkins & Welki, 2006; Mishra et al., 2017). We note the importance of the intrinsic and extrinsic motivations leading the decision-making process of the students. Therefore, one of the intrinsic motivations is researched from a psychological perspective, i.e., each student's personality might forecast the choice of the significant (Thomson et al., 2015; Perera & McIlveen, 2018; Ludwikowski et al., 2019). About the extrinsic motivations, we understand that the parental influence as their education, economic situation in the household, the number of siblings of the students – everything plays a significant role.

A significant choice emerges as a decision-making process between internal factors, such as pure interest in the subject, and external factors, such as parental opinions and financial considerations. Understanding how these factors interact and their relative significance is pivotal for educational institutions, as it informs strategies for academic program development, advising services, and career counseling.

Table 1 also shows the influence that is directly linked to academic performance as ability and academic preparation and performance, as well as external influence related to social ties and bonds, job availability, career, and economic returns overall. This diversity accentuates the multifaceted nature of the significant choice process, where students weigh personal aspirations against external expectations and practical considerations.

This compilation of factors also considers the geographical location and time of publication of each research. The data included starting from 2000 to 2020, which might shed light on the economic dynamics, which also could have implications for significant choice factors. For example, economic conditions, politics, job markets, and cultural norms may exert varying degrees of influence across different regions.

The factors influencing students' primary choice, as defined in Table 1, reflect the complex tapestry of individual aspirations, societal influences, and practical considerations. Recognizing the multifaceted nature of this decision-making process equips educational stakeholders with the insights needed to foster a supportive environment for students and inspire future research endeavors in this evolving field.

3. RESEARCH METHODS

This article was written using a Systematic Literature Review (SLR) method (Xiao & Watson, 2017) to develop a fresh overview of existing records on students' major choices, and students' specialisation choices at college and university. The SLR is used for evaluating and building a literature review part for the research problem with existing knowledge to conceptualize the issue and systemize the existing knowledge (Borrego et al., 2014).

The SLR is a structured method that helps to identify the gaps (Paul & Criado, 2020), so it can help to further develop a future agenda for the next research, to help other researchers.

The main objectives to prefer this method are given below:

(1) To describe the ways how to find records and select from them papers related to the student's major/speciality choice at college and/or university.

(2) To find out the most cited publications, authors, and countries researching this problem.

(3) Identify the research gap in studying this topic.

In this SLR article, the research question will be analyzed, data collection, the methodology of the research, the research questions, and quality assessment criteria for the selection and data analysis. The methodology is retrieved from Moher et al. (2015) on PRISMA-P statement (PRISMA transparent reporting of systematic reviews and meta-analyses).

The eligibility criteria were used to select papers for the systematic literature review (SLR). Included in the review were articles, conference proceedings, and reviews related to students' primary or specialty choices at the college or university level. The focus of the review was on the areas of business, management, economics, education, decision-making sciences, and social sciences. At the same time, clinical studies related to medical research, as well as studies related to biology (involving animals) and engineering, were excluded.

The utilized information sources were primarily scientific databases, namely Scopus, Web of Knowledge (also known as Web of Science or WoS), and EBSCO, which were accessed through the university library. These databases are widely recognized for their ability to retrieve scholarly articles, books, and conference proceedings.

The search strategy employed the following keywords in Scopus: "major", "choice", "speciality", "university", and "college". This resulted in a total of 4081 records. The search was subsequently refined by limiting the subject areas to Business, Management and Account; Social Sciences; Psychology; and Decision Sciences, and filtering for English-language publications. The choice of social science areas at this moment is closely related to the interdisciplinary feature of the study as consumer research is the type of marketing research that includes the social sciences, such as human behaviour and human psychology that will affect the economics of the HEIs. This yielded 127 documents. A similar search was conducted in Web of Knowledge (Web of Science), which resulted in 12 articles. In the EBSCO database, four keywords were used, and four articles were found.

For further quality assessment, access to the research was a criterion. So, the results were decreased (we will see how much is left after scanning all abstracts on the spreadsheets).

The selection process involved manual screening of the search results exported to a spreadsheet, which entailed reviewing the abstracts of each record to eliminate any clinical studies. The spreadsheet captured the exported details, including topic, authors, year of publication, source title, citations, affiliated organizations, and abstracts, and additional columns were added to prepare for quality assessment of the articles, which involved identifying the methods, theories, samples, constructs, and general observations. Duplicate entries were removed by cross-checking the DOI numbers.

The next step is to examine the secondary data from a Bureau of National Statistics database as demographics and education. Analyse the dynamics of the number of students in higher educational organisations.

To determine the prevalent methods and theories in relation to students' significant or specialty choice at the college and university level, various aspects of the research were explored, including the methodology employed, the type of research (conceptual, empirical, etc.), and the samples used. The geographical location of the studies was also examined to identify regions where research on this topic is particularly prominent. Due to geographical and temporal constraints, the authors conducted their work independently and utilized digital tools to monitor progress.

Finally, we retrieved metadata for these 127 (later will be filled after scanning the research) articles, which included information with author name, the title of the research, year of publication according to the database, abstract, source name, affiliations, and other complete information delivered by the databases. Then, we manually searched those articles that were selected to study in-depth and were related to students' choice of primary and specialty. We found 63 articles related to the research topic.

4. FINDINGS AND DISCUSSION

The papers related to the topic of major choice which were published in Scopus Database journals have started to increase since 2008. The peak of the published number of papers was in 2021. The documents are not exceeding 12 articles per year. Analyzing the results of the search is demonstrated in the following diagrams below in Figure 1.

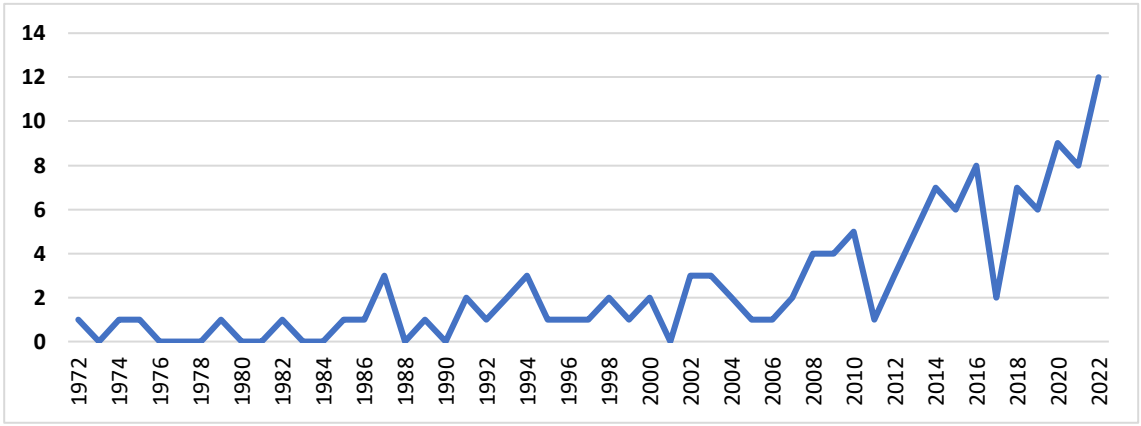

FIGURE 1. Documents by year

Note: compiled by authors

The most popular authors who were writing about the major choices were Borges N.J., Duffy R.D., Harpaz I., etc. Most of the authors' papers were related to the major choice in the medical field, engineering field and rarely in business fields such as accounting, and finance. That is the huge gap in literature related to business and economics.

The retrieved papers were mostly articles and 15% were reviewed. Majority of the papers were out of the scope of the research question, related to career opportunity choices, and choices itself as an economical phenomenon.

The documents' affiliations were related to the research centres and universities based in the USA. Therefore, the context of Kazakhstan and the regional context of CIS countries is being a gap in its information in the Scopus Database.

Figure 2 shows scientific documents by country or territory.

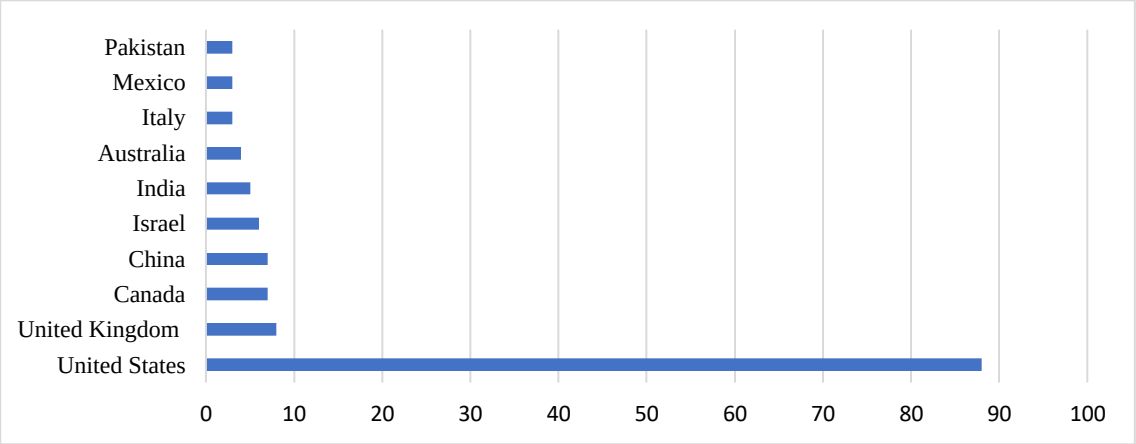

FIGURE 2. Documents by country or territory

Note: compiled by authors

As it was shown above, the territory of the authors from where the works were accepted are related to the USA and then UK. One reason is - these countries are ranked as top countries to study abroad, therefore there is a competition to gain potential clever, perspective students.

In summary, it has been shown from this section that the topic is in a majority was studied well in the USA, the UK and very less information in the context of Eurasian countries, especially CIS. Also, the interest in the major choice topic is slightly increasing since 2008. Additionally, the interest in major choice is mostly researched in medical studies majors rather than economical majors.

The paragraph discusses the findings of a study regarding the geographical distribution of authors whose works were accepted in relation to the topic of major choice. The study showed that works on the topic were primarily studied in the USA and the UK, likely due to these countries being top destinations for studying abroad and their competition for talented students. The study also found that there was limited research on the topic in Eurasian countries, especially the Commonwealth of Independent States (CIS), and that interest in the topic has slightly increased since 2008. Furthermore, the research on major choice was predominantly conducted in medical studies rather than economic studies.

The table below (table 2) shows the trend dynamic in Kazakhstan from 2000 to 2020. Overall, the number of students in organizations of higher education has increased in Kazakhstan from 2000 to 2020, with the total number of students increasing from 440,715 in 2000 to 576,557 in 2020. Some regions, such as Almaty and Shymkent city, saw significant increases in the number

of students, while others, such as Atyrau and Kyzylorda, saw decreases. Astana city saw the highest percentage increase in the number of students between 2000 and 2020, with a growth of 172.99%. The percentage change in the number of students between 2000 and 2010 varied across regions, with some regions experiencing growth and others experiencing a decline.

Table 2 displays the number of international students in different regions from the year 2000 to 2020.

TABLE 2. Dynamics of number of students and international students of HEIs in Kazakhstan, 2000-2020

Number of students of organizations of higher education organization, ppl (%)				**Number of international students, ppl (%)**			
Region	**2000**	**2020**	**2000/2010**	**Region**	**2000**	**2020**	**2000/2010**
Republic of Kazakhstan	440,715	576,557	30.82	Republic of Kazakhstan	5982	29069	385.94
Akmola	11,516	12,111	5.17	Akmola	8	147	1737.50
Aktobe	26,172	27,090	3.51	Aktobe	67	1009	1405.97
Almaty	5,641	10,753	90.62	Almaty	78	189	142.31
Atyrau	16,238	12,407	-23.59	Atyrau	34	251	638.24
West Kazakhstan	15,290	27,121	77.38	West Kazakhstan	237	181	-23.63
Zhambyl	22,262	24,953	12.09	Zhambyl	161	2056	1177.02
Karagandy	52,308	41,650	-20.38	Karagandy	358	1638	357.54
Kostanai	18,243	19,574	7.30	Kostanai	54	318	488.89
Kyzylorda	14,668	11,169	-23.85	Kyzylorda	112	36	-67.86
Mangistau	7,253	7,574	4.43	Mangistau	232	1459	528.88
Pavlodar	13,996	17,144	22.49	Pavlodar	58	400	589.66
North Kazakhstan	9,035	8,016	-11.28	North Kazakhstan	132	329	149.24
Turkistan*	10,866	12,043	10.83	Turkistan*	835	1221	46.23
East Kazakhstan	35,943	32,104	-10.68	East Kazakhstan	289	920	218.34
Astana city	21,768	59,425	172.99	Astana city	100	1696	1596.00
Almaty city	122,955	163,357	32.86	Almaty city	2026	6458	218.76
Shymkent city	36,561	90,066	146.34	Shymkent city	1201	10761	796.00
Note: compiled by authors based on Bureau of National statistics (2022)							

The data is presented in terms of the actual number of international students and the percentage change over the two decades. From the table, it can be observed that the number of international students has significantly increased in all regions, ranging from a 46.23% increase in one region to a whopping 1737.50% increase in another region. The regions with the highest increase in the number of international students are also the ones with the smallest number of international students in the year 2000. On the other hand, some regions experienced a decrease in the number of international students from 2000 to 2020. Overall, the table highlights the growth in international student mobility across the regions over the past two decades.

There are various possible reasons for the rise in the number of students in higher education institutions in Kazakhstan, including government policies that have encouraged young people to pursue higher education, population growth, and economic development leading to an increased demand for educated workers. The differing growth rates in different regions may be influenced by factors such as the availability of educational institutions, regional economic conditions, and demographic trends.

Regarding the increase in the number of international students, potential causes may include the globalization of higher education, growing recognition of the quality of education in Kazakhstan, and a rise in demand for skilled professionals in the global job market. The fact that the regions with the smallest numbers of international students in 2000 experienced the highest increases suggests that these regions may have actively sought to attract more international students through targeted policies and marketing efforts. Conversely, regions with declining numbers of international students may be affected by factors like economic conditions or shifts in the priorities of prospective international students.

According to the systematic literature review, there were defined several factors that might be universally common for most of the cases and also some of them were specific to the culture, territory and politics of the country where the studies were conducted.

The analysis of the search results demonstrated that the topic of major choice has been predominantly studied in the USA and UK, with limited research conducted in Eurasian countries, especially CIS. The interest in the topic has slightly increased since 2008, but the majority of the research has been focused on medical studies rather than economic studies. These findings indicate the need for further research on the topic in different contexts and disciplines, particularly in the CIS region. This information can be valuable for policymakers, educators, and students who are interested in the major choice decision-making process.

The examination of demographic and educational data indicates that there is a lack of consistency in the trends of both overall student enrollment and the number of international students, despite the growth of Kazakhstan's population. The declining number of students in some regions may be attributed to the unattractiveness of universities in Kazakhstan, as well as potential dissatisfaction among students. This issue may be compounded by job-related variables associated with different majors, as larger cities may offer more appealing job prospects than smaller regions. To comprehensively comprehend the factors influencing student demand across regions, it is essential to conduct surveys and interviews to gain insights into consumer preferences.

In terms of the factors, there is a limitation of the systematic literature review in not being able to provide primary data on how these factors are affecting the student's choice of major in a particular country or particular HEI. With the known models of behaviour, these factors might become predictors for predicting the behaviour of the students in the early stages. Therefore, there is a need to conduct research regarding the significance of the factors influencing the decision-making process of the students and their parents or caregivers (in case students are under 18).

5. CONCLUSIONS

This paper offers a comprehensive review of the literature that investigates students' major choices in higher education institutions. The available open-access articles were used to synthesize the concepts and factors that have been proposed in the field.

The literature review highlights the importance of understanding consumer preferences in the marketing of higher education. Studies included in the literature review have used various methods to examine consumer preferences, including conjoint analysis and analysis of websites and social media platforms. Marketing has been identified as a critical factor in the success of higher education institutions (HEIs), and research has demonstrated the necessity of constant and daily marketing management to attract and retain new students. The study also emphasizes the importance of continued marketing research and the need for HEIs to adapt to a constantly evolving competitive environment. Moreover, the review discusses the importance of educational marketing management and how it facilitates cross-country comparisons of educational marketing management systems. Finally, the review explores university choice and major choice, including factors such as financial background, family background, and personal interest. The review

concludes that continued research on consumer preferences, educational marketing management, and university and major choice is essential for improving the performance of HEIs in a competitive environment.

With the increasing demographic situation and interest of foreign students in studying abroad and choosing Kazakhstan as a destination, it is imperative to understand students' preferences as consumers and the factors that shape these preferences. This understanding is crucial for policy-making, curriculum development, and student recruitment and retention strategies. In conclusion, this paper underscores the need for continued research in the field to improve our understanding of the students' major choice decision-making process to increase the awareness of the choices of students and human capital in economics.

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AUTHOR BIOGRAPHIES

***Leila Mardenova** – PhD Candidate, Management and Business Chair, Kenzhegali Sagadiyev University of International Business, Almaty, Kazakhstan. Email: mardenova.lei@uib.kz, ORCID ID: https://orcid.org/0000-0003-0510-3765

Saira R. Yessimzhanova – Dr. Sc. (Econ.), Professor, Kenzhegali Sagadiyev University of International Business, Almaty, Kazakhstan. Email: saira_sr@mail.ru, ORCID ID: https://orcid.org/0000-0002-9921-3457

Saloomeh Tabari – PhD, Lecturer in Marketing & Strategy, Cardiff Business School, Cardiff University, Cardiff, United Kingdom, Email: TabariS@cardiff.ac.uk, ORCID: https://orcid.org/0000-0002-0645-4789

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Digitalization and Labor: the Role of Online Education in Global Workforce Development

Bazhan Turebekova[1] | **Aidar Konysbay**[1]* | **Elena Popkova**[2]

[1] al Farabi Kazakh National University, Almaty, Kazakhstan
[2] RUDN University, Moscow, Russia

Corresponding author:
*** Aidar Konysbay** – PhD candidate, al Farabi Kazakh National University, Almaty, Kazakhstan.
Email: akonisbai@gmail.com

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Abstract

This research explores the profound impact of digitalization on the labor market and evaluates the role of online education in equipping individuals with the necessary skills for the digital economy. The study focuses on how technological advancements are reshaping job roles, the increasing vulnerability of certain occupations to automation, and the effectiveness of online educational platforms in addressing these emerging skill requirements. Utilizing a qualitative research methodology, the study involved a survey with 105 participants, encompassing various demographics and educational backgrounds. The questionnaire was designed to gather insights into users' experiences, preferences, and perceptions regarding online education and assess the competitive landscape of online educational platforms. The findings reveal a significant transformation in the labor market due to digitalization, characterized by a growing demand for highly skilled workers and decreased opportunities for less educated ones. Online education emerges as a crucial tool in bridging the skill gap, with a wide array of courses catering to the needs of a technology-driven economy. The study also highlights critical factors influencing users' choice of online educational platforms, including the quality of course material, platform reputation, and course relevance. Furthermore, the research uncovers diverse user preferences for different online platforms, indicating a trend toward a flexible and multifaceted approach to online learning. This study contributes to understanding the dynamics between digitalization, the labor market, and online education.

Keywords: Digital Transformation, Workforce Development, Online Education, Labor Markets, Economy, Digital Economy

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1. INTRODUCTION

In an era where digital transformation is reshaping economies and labor markets across the globe, understanding the interplay between technological advancements and workforce development has become paramount. Progress in this area represents technological innovations and global changes in education and training approaches. Online education, as one of the most dynamically developing segments in the field of education, has a significant impact on the development of human resources worldwide. In addition, digital competencies are becoming an integral part of the modern labor market, playing a key role in the global development of the workforce. With a particular focus on the effects of digitalization on labor market dynamics and the evolving role of online education in skill development, the research aims to offer insights into these global trends while also providing a detailed analysis of specific national initiatives. This study situates itself at the confluence of these dynamic changes, exploring how nations are navigating the challenges and opportunities presented by the digital age.

Kazakhstan's strategic digital initiative, "Digital Kazakhstan" initiated in 2017, serves as a primary case study in this context. This ambitious program was designed to transform critical economic sectors, develop ICT infrastructure, and foster an environment conducive to technological entrepreneurship. By 2022, Kazakhstan had made significant strides in its digitalization efforts, achieving substantial internet penetration and narrowing the urban-rural digital divide.

On the international front, the digital economy's rapid expansion is a testament to the global nature of this transformation. Reports from the International Monetary Fund (IMF) indicate that the global digital economy is outpacing the overall global economy in terms of growth. Leading this surge are countries like the United States and China, while European initiatives like the Digital Single Market are striving to harness digital opportunities for business growth and consolidate Europe's leadership in the digital domain (Ülgen, 2022).

Mirroring the global scenario, Kazakhstan's IT sector will experience significant growth by 2022, particularly in cities like Astana and Almaty, which have become the country's critical economic and IT hubs. This growth is reflective of global IT sector trends, where worldwide IT spending is reaching new heights, as indicated in reports by Gartner.

Astana Hub technopark, established in 2018 in Kazakhstan, exemplifies the digital hubs driving growth in various regions. Like other global IT centers, such as Silicon Valley in the USA and Bangalore in India, AstanaHub has played a crucial role in stimulating IT sector development in the region (Abzhalelova et al., 2023).

A critical global challenge addressed in this study is the worldwide shortage of digital skills. According to the European Commission, a significant portion of the European population lacks fundamental digital competencies, highlighting a gap in workforce development. In this regard, Astana Hub's initiatives in Kazakhstan, which include providing educational programs to over 15,000 individuals, represent a proactive approach to bridging this skill gap (Smagulova & Goncalves, 2023).

In conclusion, the principal aim of this investigation is to critically analyze the impact of digitalization on the labor market, with a particular emphasis on the role of online education in equipping the workforce with essential skills for a digitized economy. This encompasses examining the transformation in job requirements due to technological advancements, categorizing occupations based on their vulnerability to automation, and evaluating the effectiveness of virtual educational platforms. The study weaves together Kazakhstan's progress with broader global trends and data, offering a comprehensive perspective on the implications of digital transformation on an international scale.

2. LITERATURE REVIEW

The digital economy is a system of economic, social, and cultural relations based on digital information and communication technologies. It affects manufacturing, healthcare, education, and other areas, promoting more efficient use of resources and requiring developing new skills and educational systems for successful adaptation (Zaborovskaia et al., 2020; Miao, 2021).

Digitalization is having a significant impact on the workforce, changing the nature of work and skill requirements. Indicators of the effects of digitalization may include the percentage of tasks being automated in a given occupation, changes in demand for certain job skills, and the level of acceptance of new technologies in the workplace. The main aspects of the impact of digitalization on the labor market include automation, changes in job tasks and the demand for certain skills (Sievering, 2018). Androniceanu et al. (2020) noted that the high digitalization of a country correlates with higher GDP per capita and that countries that intensively implement digital technologies often have higher levels of economic well-being.

The polarization of the labor market occurs due to changes in the demand for specific skills caused by changes in technology and education (Mellacher & Scheuer, 2021). Technological changes such as the introduction of computers have a more significant impact on widening the wage gap than globalization. Computer technology has an impact on the demand for various skills and the level of those skills, leading to an increase in the demand for highly skilled workers and a decrease in the demand for less educated ones. Thus, ICT and digitalization are associated with increased productivity, but there is also a decreased labor share. This suggests that technology adoption, while improving productivity, may place some pressure on the workforce (Van Reenen, 2011; Cette et al., 2021).

Consequently, the need to prepare educational systems for the changing demands of the labor market and the importance of adapting education to new skills and competencies will be in demand in the era of Industry 4.0. plays a crucial role in ensuring that future generations are prepared for new challenges associated with the changing nature of labor markets (Szabó-Szentgróti et al., 2021). Bührer et al. (2016) identified three occupational vulnerability classes. High vulnerability to automation concerns jobs where routine or algorithmic tasks can be easily automated. This includes administrative tasks, sales, finance, and some journalism. Moderate vulnerability to automation contains jobs that are partially susceptible to automation due to the development of new technologies but require higher levels of interpersonal skills or creativity. For example, part of the medical professions, education, and part of journalism, where a high level of intuition and social intelligence is required. Low vulnerability to automation in professions where complex interpersonal skills, creativity, and human factors play a key role. This includes the field of personal services such as education, healthcare, tourism, and gastronomy, where complex interpersonal communications are the basis of work and are still challenging to automate.

One of the mechanisms for adapting to modern conditions in the labor market is online education, which helps to expand the circle of workers with up-to-date digital skills. Online education is becoming an essential factor in the digital economy. Piroșcă et al. (2021) noted that online education requires workers to not only adapt to constant changes but also effectively use new technologies. Digitalization and automation of work are leading to changes in the skills necessary, creating the need to constantly update and acquire new competencies to function effectively in the modern work environment.

Digital transformation requires updating educational approaches to meet the modern economy and labor market requirements. New technologies such as artificial intelligence, autonomous technology, and big data require workers to have advanced digital skills. IT specialists are becoming in demand in the labor market, but functional digital skills are also important for the overall development of society. Hetmańczyk (2022) noted that online courses provide access to a

large amount of educational content of varying levels of complexity - from short-term training to university courses. These resources can be tailored to the learner's individual goals and preferences. Online platforms and resources also include new teaching methods and educational support, including the use of various digital tools, content standardization, and the use of social media for educational purposes.

3. METHODOLOGY

This study adopted a qualitative data collection method using a survey. The survey was conducted online. The sample included participants with different levels of technological literacy, which helped to assess how the usability and accessibility of online platforms affect the user experience. Of the 120 questionnaires sent, 105 were returned fully completed, which is approximately 87,5% of the response. This is considered a high response rate for online surveys and indicates a significant interest in the research topic among the target audience. In addition, the number of questionnaires submitted ensures the statistical significance and representativeness of the results. Observations related to returnability and questionnaire completion may be useful for planning future studies.

The questionnaire was divided into several blocks of questions. The blocks included questions that related to the general preferences and needs of respondents in the field of online education, as well as an analysis of the competitive position of various online platforms. This approach allowed us to gain a deep understanding of the opinions and preferences of the study participants, as well as their views on the competitive environment in the field of online education.

Use of online education. These questions aim to measure users' experiences with online education and the frequency of their interactions with such platforms. They help to identify the level of penetration and prevalence of online educational resources among respondents.

Assessing the importance and choosing online courses. These questions aim to explore the criteria that users consider important when choosing online courses and platforms. They are focused on identifying the key factors influencing the decision to choose a particular course.

Rating of quality and convenience. These questions are aimed at assessing user experience and satisfaction with the quality of learning on online platforms, as well as the usability of mobile learning applications. They help measure user satisfaction with the variety of content and assess the relevance of the courses provided.

Financial aspects and vision of the future. These questions cover the financial aspects of online education, including users' willingness to pay for tuition, their assessment of course prices, and their vision for the future of online education. They provide insight into financial motivations and user perceptions of what the future of online education will look like in terms of course diversity and affordability.

The questions included both closed questions with the possibility of choosing one or more answer options, as well as open questions allowing respondents to give their comments and opinions.

During our research, we will examine the impact of technological trends on the choices of students and consumers of online educational services. A high response rate and a large number of complete questionnaires increase the quality and reliability of the collected data. This provides a more accurate and comprehensive view of the views and preferences of the target audience. Furthermore, we plan to analyze the dynamics of demand, identify preferences in terms of formats and teaching methodologies, and determine the factors influencing the attractiveness of various educational offerings.

Particular attention will be given to analyzing the competitive landscape in the online education sphere. We will study service delivery strategies, innovative approaches to learning,

and factors that define the competitiveness of educational platforms. The research findings will help identify key features shaping success in this market.

4. FINDINGS AND DISCUSSION

Analysis of the demographic data of the questionnaire on the topic "Assessing the demand for online educational services and analyzing competition in the field of online education" provides valuable information about the characteristics of respondents, which will help to better understand the target audience and tailor marketing strategies to their needs.

In Figure 1 there is presented data on the age of respondents and the level of their education.

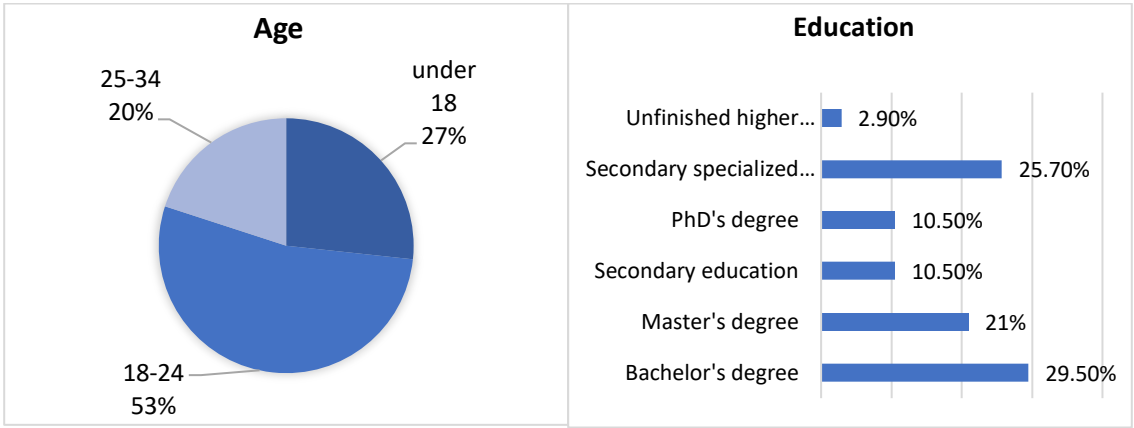

FIGURE 1. Demographic description

Note: compiled by authors

The majority of respondents were between 18 and 24 years old, which indicates the popularity of online education among young people. However, it is also important to pay attention to the interest of teenagers and older age groups. Respondents with different levels of education provide an opportunity to reach a wide range of consumers. Online educational programs can be of interest to both students and those who have already completed their education. Summarizing, the obtained demographic data allows us to highlight key aspects that should be taken into account when developing marketing strategies in the field of online education. For example, personalized courses aimed at youth audiences, as well as educational programs that provide a variety of difficulty levels, can be effective methods of attracting and retaining customers.

The next block of questions considers research goal analysis. The first question aims to ascertain whether individuals have any prior experience with such services, establishing a baseline for their interaction with online education. Meanwhile, the second question seeks to specify and enumerate the particular online educational services or platforms the respondents have utilized, providing a detailed understanding of their past experiences within the realm of online education.

1.*"Have you already used online educational services?"*

The majority of respondents (50%) had already used online educational services for professional development, which underscores their active interest in educational programs in this field. Use for educational purposes is also prominent (28%), suggesting that online education is also popular in the educational sector. It is important to note that almost half of respondents (48%) have not yet used online educational services, but are considering this possibility in the future. This indicates the potential for expanding the audience and increasing demand for such services. Therefore, developing and promoting new educational products can be a successful strategy,

given the interest and readiness to use online education in the future.

In Figure 2 there is presented data on respondents' engagement with online educational services.

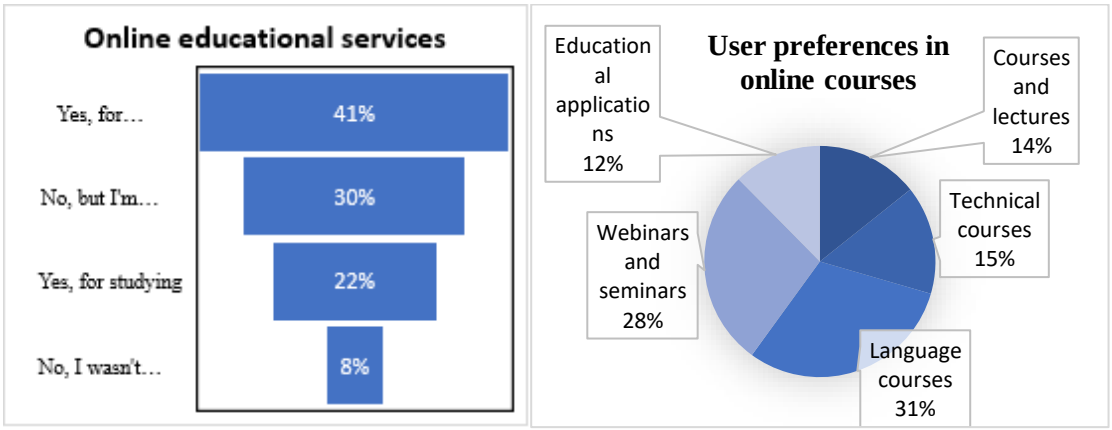

FIGURE 2. Respondents' engagement with online educational services

Note: compiled by authors

2. *"Which online educational services have you already used?"*

The results of this question provide valuable data for understanding user preferences in online education. Webinars and seminars turned out to be the most popular, which indicates a desire to gain knowledge in an interactive form. Language courses also have a high level of interest, indicating a need for foreign language learning. Technical courses and educational applications also occupy a significant share.

Next, in Figure 3 there is presented data on the frequency of usage and the perceived significance of online educational platforms.

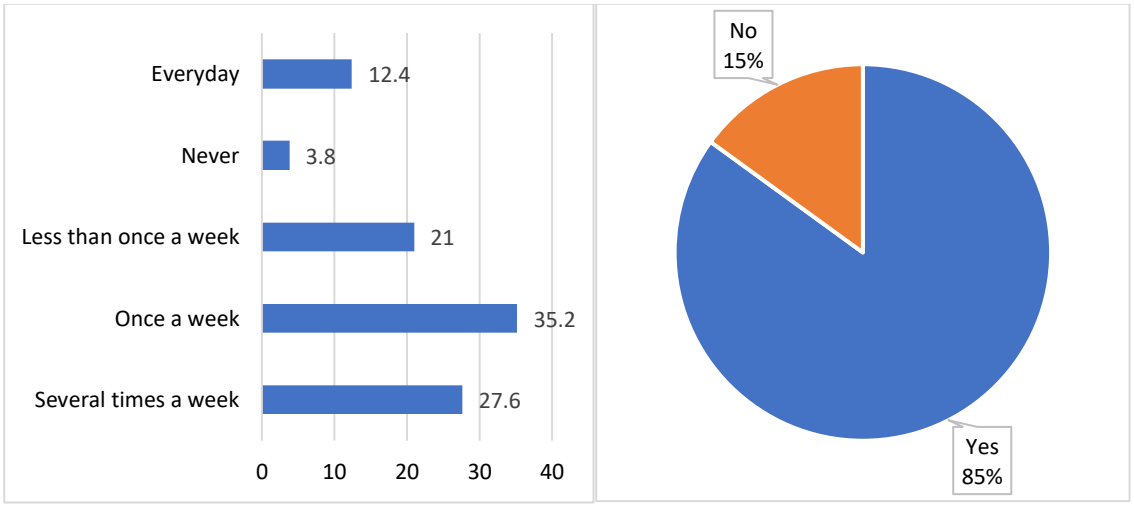

FIGURE 3. Frequency of usage and the perceived significance of online educational platforms.

Note: compiled by authors

3. *"How often do you use online educational platforms?"*

The distribution of frequency of use of the platforms shows that the majority of respondents prefer regular training, with almost half of users using the platforms several times a week. However, the proportion of those who use the platforms daily is also significant. These results highlight the continued interest of users in online education, which may serve as an incentive to expand and improve educational offerings. Particular attention should be paid to improving content and optimizing platforms to meet the growing needs of regular and active users.

4. "*Do you consider online educational services important for your personal and professional development?"*

The obvious predominance of positive answers indicates a high assessment of the importance of online educational services for the personal and professional development of respondents. This fact highlights the growing role of online education in people's lives, and their willingness to use this type of service to enrich their knowledge and skills. This is an important signal for educational service providers to continue to invest in diverse and high-quality educational programs, taking into account the needs and expectations of users.

Next, the data on preferences and priorities when choosing online educational services is provided in Figure 4.

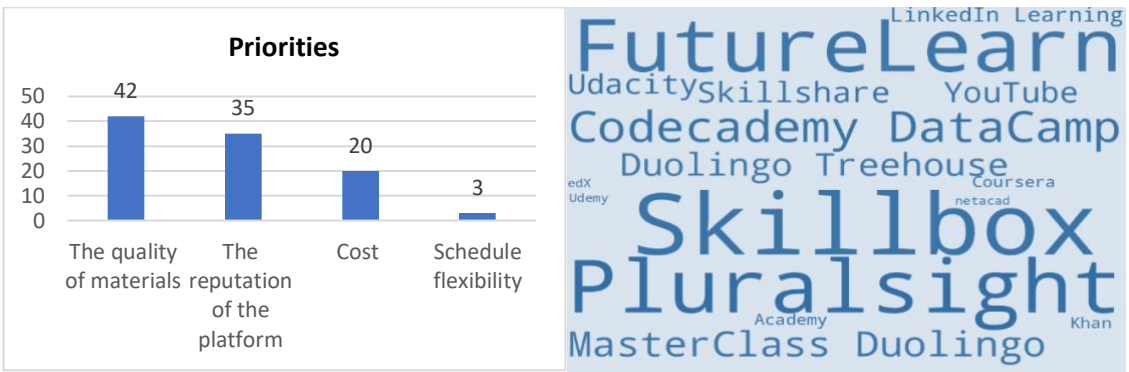

FIGURE 4. Preferences and priorities when choosing online educational services

Note: compiled by authors

5. *"What do you think is most important when choosing online education courses?"*

Quality of materials is key: The majority of respondents (42%) consider the quality of the material provided to be the most important when choosing online educational courses. This highlights the importance for educational platforms to focus on developing high-quality learning materials. 35% of respondents pay attention to the reputation of the educational platform. This indicates that the platform's image and status play a significant role in the decision to use its services. Although cost ranks third among preferences (20%), it remains a significant factor. Platforms can attract more users by offering competitive prices, especially when combined with high quality. Schedule flexibility is a lower priority: Schedule flexibility is the least important factor when choosing courses (3%). Perhaps most respondents believe that scheduling flexibility is an added bonus, but not a deciding factor.

Overall, the results indicate that users place particular importance on the quality of content and the reputation of the platform, and also consider the cost of services. Schedule flexibility is rated less highly, which may indicate that most respondents consider it an additional, but not a key, aspect of choice.

6. *"Which online educational platforms do you prefer?"*

1. Udemy: This platform is one of the leaders in the preferences of respondents. Many people choose Udemy as their preferred destination for online learning.

2. LinkedIn Learning: Also a popular platform among respondents, indicating its importance in the field of online education.

3. Skillbox: This platform also has its own audience, and some respondents choose it.

4. Khan Academy: The Khan Academy platform is also prominent in preferences, especially when combined with other platforms.

5. Coursera and edX: Both platforms offering courses from top universities also received recognition among respondents.

6. Duolingo: Popular in the language learning category.

7. YouTube: Mentioned in responses, perhaps as an additional learning resource.

Overall conclusion: There is a variety of preferences among respondents, and many of them prefer to combine several platforms to receive a well-rounded education. This also highlights the importance of having a variety of online education resources and courses.

7."*How often do you switch between different platforms for online learning?"*

Single platform preference: Some respondents rarely or never switch between platforms and prefer to use only one (15%). Change by course: Most respondents periodically switch between platforms depending on what courses are offered (70%). This may indicate that it is important for them to select the optimal resources for specific learning. Constant search for new materials: A significant portion of respondents actively search for new materials and often switch between platforms (15%). This may reflect a desire for diversity and a wide range of training. Overall, most respondents prefer flexibility in their choice of platforms, switching based on specific needs and course offerings. However, there is also a proportion of users who prefer to stay on one platform, which may be due to a consistent and satisfactory learning experience on the chosen resource.

8."*Which online education platforms or providers do you think compete most successfully in the market, and why?"*

There are many platforms and providers in the online education market that successfully compete with each other. Of the platforms and providers listed in the open question, the most successful and competitive are Coursera, Udemy, edX and LinkedIn Learning.

Coursera offers a wide selection of university courses, while Udemy focuses on courses created by instructors. Both providers have a good reputation and offer convenient conditions for use.

edX is successful due to its partnerships with leading universities to provide high quality education. LinkedIn Learning, on the other hand, provides corporate training and professional development, making it attractive to employees and entrepreneurs.

Also worth mentioning are skillshare, pluralsight and Khan Academy, which offer a variety of courses in creative skills, information technology and education for all ages, respectively.

Some providers, such as YouTube, Codecademy, and DataCamp, provide accessible and free training, allowing many people to gain knowledge in various fields.

Overall, choosing a platform or provider depends on your learning goals and interests. Each provider has its own strengths and specialization, and choosing a specific platform will be determined by your educational needs and desires. Features may also be a reason for enrolling in online courses.

9.*"What factors influence your decision to choose one online educational platform over another?"*, the following key factors influencing users' choice can be identified:

- User reviews and ratings are important factors when choosing an online educational platform, as they help provide information about the quality and effectiveness of the platform.

- The reputation and reliability of the platform also plays a role in the decision, as users prefer

to trust proven and reliable platforms.

- The cost of courses matters to many people as it can be a deciding factor when choosing a platform.
- Additional features and resources are attractive to users because they offer additional opportunities for learning and development.
- Course variety and accessibility are also important as users look for platforms that offer a wide variety of courses and allow them to study at a time that suits them.
- A user-friendly interface can also influence the choice of platform, as users prefer ease of use when studying or learning new materials.

Next, in Figure 5 there is provided data on key factors influencing users' choice between different online educational platforms. Based on the results of the question.

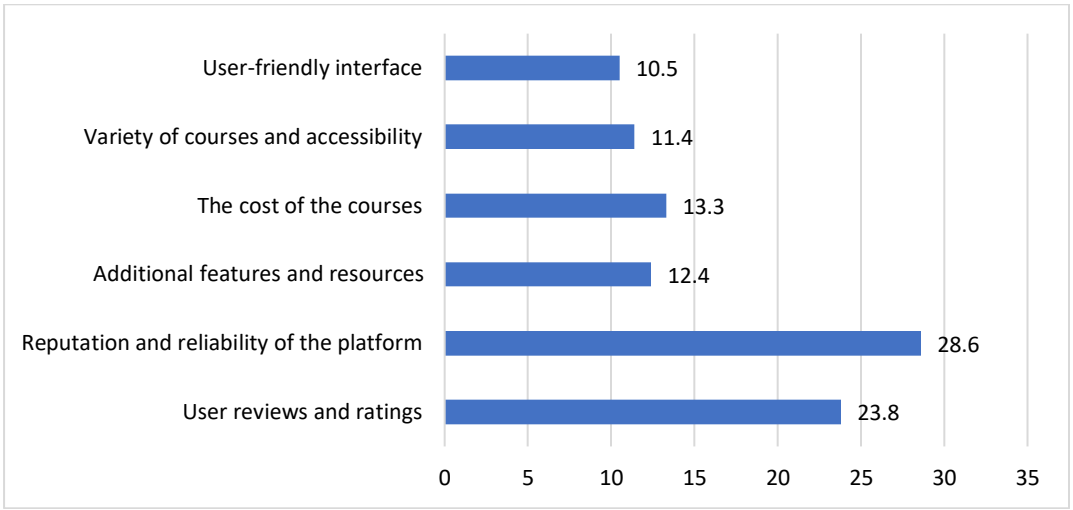

FIGURE 5. Key factors influencing users' choice between different online educational platforms

Note: compiled by authors

Reviews of the quality of learning on online platforms vary, but are generally positive. Most users rate the quality of training as 4 or 5 compared to traditional training. This may indicate that many people consider online learning to be an effective and high-quality means of acquiring knowledge.

11. *"How do you rate the quality of learning on your chosen platforms?"*

The average rating of the quality of training on the selected platforms is 3.4 out of 5. The opinions of the participants are varied, with ratings both below average (1 and 2) and above average (4 and 5). This indicates different perceptions of the effectiveness of the educational programs offered by the platforms. Some respondents highly value the materials, teaching methods and resources provided, while others may experience some difficulty or expect improvement in some areas.

It is important to note that scores that are above average indicate a positive perception of online education among the majority of respondents. However, the low ratings highlight the importance of continuously improving platforms and adapting to learner needs to achieve even higher quality standards.

12. *"How convenient is it for you to use mobile applications for learning?"*

The average usability rating for mobile learning apps is 3.6 out of 5. The majority of participants rate the usability positively (4 and 5 points), highlighting the benefits of making learning accessible anywhere. However, there are scores below average (1 and 2 points), which

may indicate problems or an unsatisfactory interface for some users. This diverse set of ratings highlights the importance of further optimizing mobile apps to meet the expectations and needs of all users.

Thus, to attract users and remain competitive, online education platforms must pay attention to user ratings, platform reputation and reliability, course costs, course availability and variety, additional features and resources, and user-friendly interface. Next, data on evaluation of the quality of training is given in Figure 6.

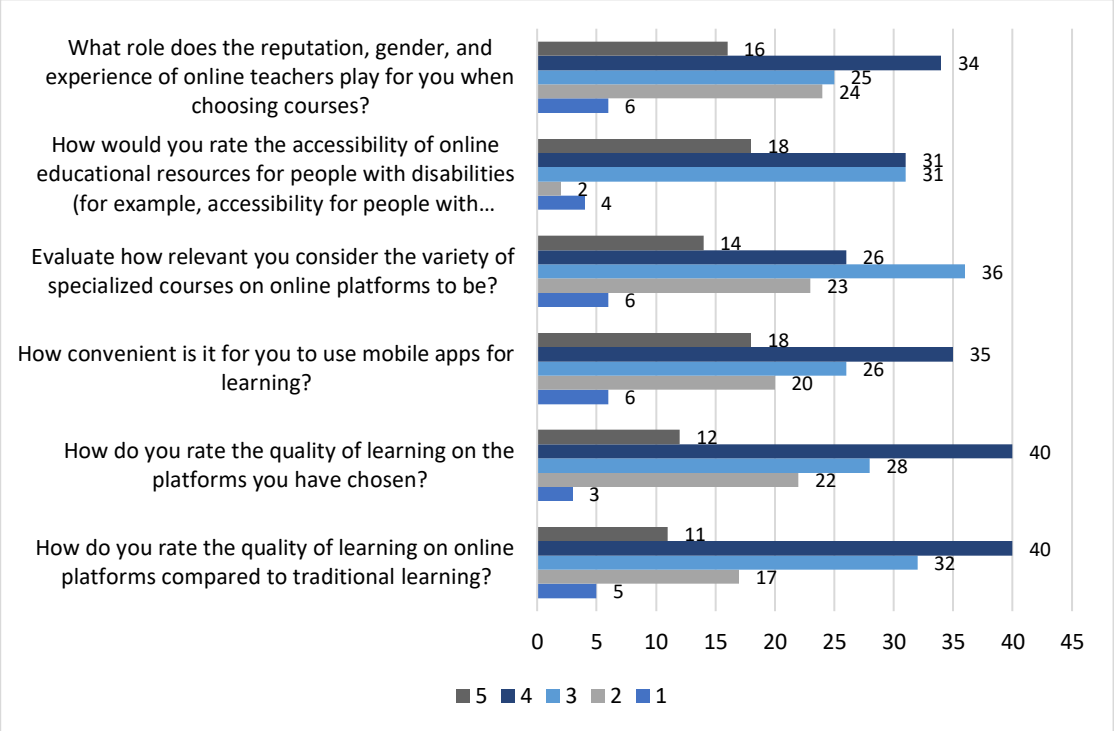

FIGURE 6. Evaluation of the quality of training

Note: compiled by authors

10. *"Evaluation of the quality of training".*

13. *"Assess how relevant you think the variety of specialized courses on online platforms is"*

The average rating for the relevance of the variety of specialized courses on online platforms is 3.3 out of 5. Participants highly rate the relevance of the courses offered (4 and 5 points), noting their compliance with modern requirements and interests. However, there are also below-average scores (1 and 2 points), which may indicate insufficient variety or obsolescence of some training programs. To improve the overall user experience, attention should be paid to updating and expanding the range of courses offered, taking into account relevance and demand

14. *"What role do the reputation, gender, and experience of online teachers play for you when choosing courses?"*

The reputation of online teachers is rated by participants at 3.3 out of 5. When choosing courses, respondents attach importance to the reputation of the teacher, highly appreciating its impact on the quality of education. Half of the participants note that the gender of the teacher is important for them when choosing a course, while the experience is rated average. This may indicate that for some users the teacher's experience is important, but is not a decisive factor. To

improve course selection and increase user trust, it is worth continuing to focus on the reputation of teachers, as well as providing detailed information about their experience and qualifications.

15. *"How would you rate the accessibility of online educational resources for people with disabilities (e.g. accessibility for persons with disabilities)?"*

Survey respondents rate the accessibility of online educational resources for people with disabilities at an average of 3.5 out of 5. This indicates that the perceived accessibility of such resources can be improved. Online platforms should address issues of barriers and improve accessibility for persons with disabilities, thereby ensuring equal educational opportunities for all users.

Next, in Figure 7, there are results of assessing the willingness of users to pay for online educational services while providing high-quality training. This allows us to assess the extent to which users are willing to invest in education if they are provided with quality training.

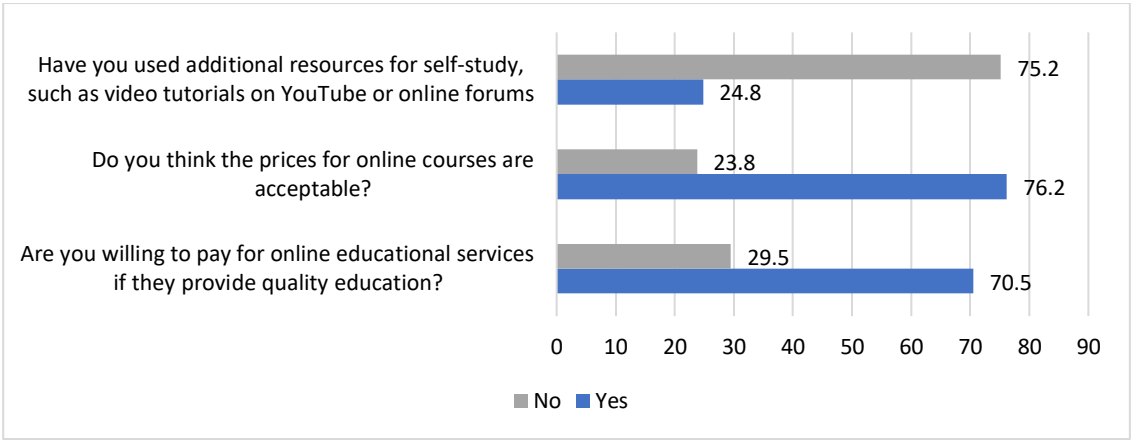

FIGURE 7. Assessment of the willingness of users to pay for online educational services

Note: compiled by authors

Conclusion for question 19 "Are you willing to pay for online educational services if they provide quality training?"

The majority of respondents (yes - 80%, no - 20%) are willing to pay for online educational services if they provide quality training. This indicates that people value the opportunity to receive a quality education and are willing to invest money in it. Thus, there is a market potential for online educational services provided that high quality learning is provided.

16. *"Do you think the prices for online courses are reasonable?"*

The majority of participants (80%) find prices for online courses reasonable, indicating their willingness to invest in education provided the quality of services provided is adequate. However, there are 20% of respondents who consider prices unacceptable. This may be due to different expectations regarding tuition costs and the availability of budget options.

The majority of survey participants, 87% (Figure 23), confirm that they used additional resources for self-study, such as YouTube video tutorials or online forums. This demonstrates the widespread use of a variety of online resources to enrich their education. Such additional materials can significantly expand and deepen students' knowledge, making the learning process more flexible and individualized.

The next two questions delve into financial considerations and future perspectives regarding online education. The first question aims to gauge the monetary extent to which individuals are willing to invest in online learning services on a monthly basis. It assesses their budgetary

willingness and potential financial commitment towards accessing educational resources online (Figure 8). The second question delves into participants' perceptions of the future landscape of online education. It seeks insights into their visionary perspective regarding what elements or aspects they believe will hold significance in the future of online learning. This question explores their anticipations and expectations for the evolving dynamics of online education.

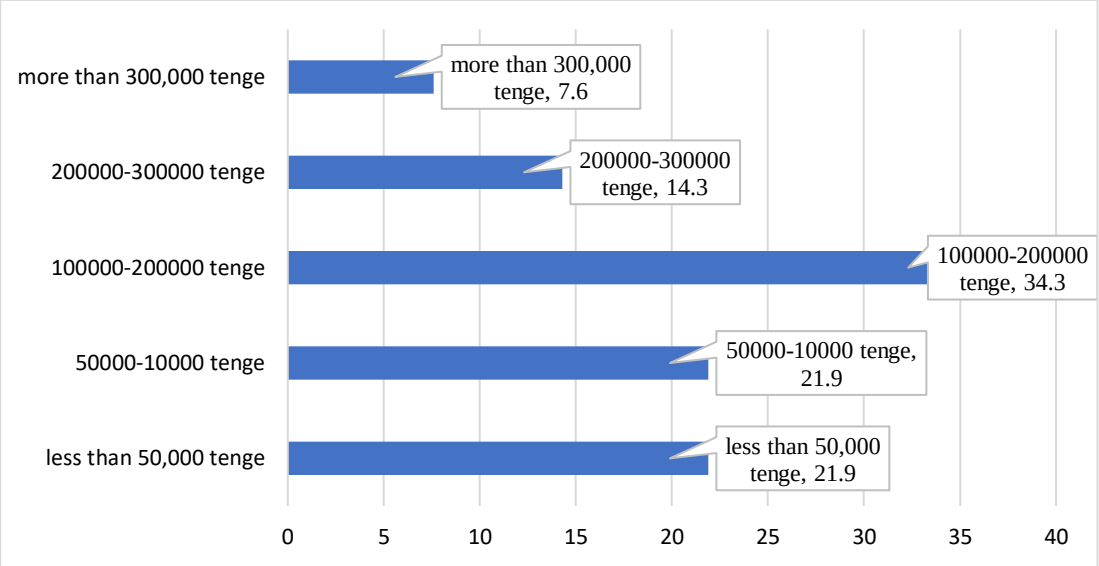

FIGURE 8. Financial Aspect

Note: compiled by authors

17. *"How much are you willing to pay for online learning services per month?"*

The majority of respondents demonstrate a willingness to pay for online learning services. The distribution of answers across cost ranges shows that the majority preferred average costs, such as 50-100 thousand KZT and 100-200 thousand KZT per month. This indicates that people are willing to invest in education and prefer a reasonable balance between cost and quality of services provided.

18. *"How do you see the future of online education? What do you think will be important?"*

Survey respondents highlight several key areas for the future of online education. Increasing interactivity in training and expanding the offer of specialized courses are considered important elements. These aspects highlight the importance of actively engaging students and providing a variety of educational opportunities. It is also noted that the majority of respondents see potential in the increased use of artificial intelligence, which could contribute to more effective and personalized learning. Overall, the future of online education, according to participants, will focus on creating more interactive, accessible and technologically advanced educational platforms.

6. CONCLUSIONS

The empirical evidence presented in this study highlights a strong correlation between high levels of digitalization and economic prosperity, positing digital literacy as an indispensable skill in the contemporary economic landscape. This inference is bolstered by the observed market-driven response of online education platforms that are increasingly offering courses to enhance digital skills, thereby reflecting the burgeoning demand for such competencies in the workforce. The study further accentuates the dynamic nature of labor market demands, as evidenced by the

impact of digitalization, such as automation and the evolution of job tasks, which necessitates a paradigm shift in skill requirements and underscores the imperative for continuous learning and adaptation. The popularity of online courses for professional development, as discerned from the survey responses, mirrors the workforce's recognition of the need to perpetually adapt to novel technologies and evolving work environments.

Moreover, the frequent engagement with online educational platforms and the diversity of courses chosen by respondents signifies a trend towards lifelong learning. This is further corroborated by the willingness of individuals to invest in quality online education and their interest in perpetually updating skills through diverse platforms, highlighting lifelong learning as a critical component of career development in the modern era.

These findings have profound implications for educational policy. They underscore the necessity for policies that emphasize the development of digital literacy from an early age and encourage lifelong learning, ensuring that the workforce remains versatile and equipped to adapt to new technologies and shifting job requirements. Such policies might encompass support for online education platforms, incentives for continuous professional development, and the integration of digital skills training within traditional education systems. Providers of online education should focus on enhancing the quality of instructional materials, upholding platform credibility, and ensuring the relevance of courses to meet the dynamic needs of the digital economy.

Online educational offerings must address issues of accessibility and inclusivity, especially for individuals with disabilities, to guarantee equal opportunities in education. Both governmental and private sectors are advised to invest in digital literacy initiatives, thus ensuring a workforce adept at adapting to the changing digital landscape. Further investigations should delve into the long-term effects of digitalization on global job markets and the role of online education in mitigating challenges associated with automation and technological progress.

In conclusion, the study's findings advocate for a future where digital literacy and continuous learning are integral to career success. This necessitates an adaptation of educational policies to create ecosystems that foster and support these elements within the education system and the broader workforce, thereby yielding significant economic and social benefits through the creation of a more adaptable, skilled workforce, leading to enhanced economic productivity, reduced skill gaps, and elevated employability.

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AUTHOR BIOGRAPHIES

Bazhan Turebekova – PhD, al-Farabi Kazakh National University, Almaty, Kazakhstan. Email: bazhan.turebekova@kaznu.edu.kz, ORCID ID: https://orcid.org/0000-0003-0946-9211

***Aidar Konysbay** – PhD candidate, al-Farabi Kazakh National University, Almaty, Kazakhstan. Email: akonisbai@gmail.com, ORCID ID: https://orcid.org/0009-0006-2317-3272

Elena Popkova – Doc. Sc. (Econ.), RUDN University, Moscow, Russia. Email: elenapopkova@yahoo.com, ORCID ID: https://orcid.org/0000-0003-2136-2767

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