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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

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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.

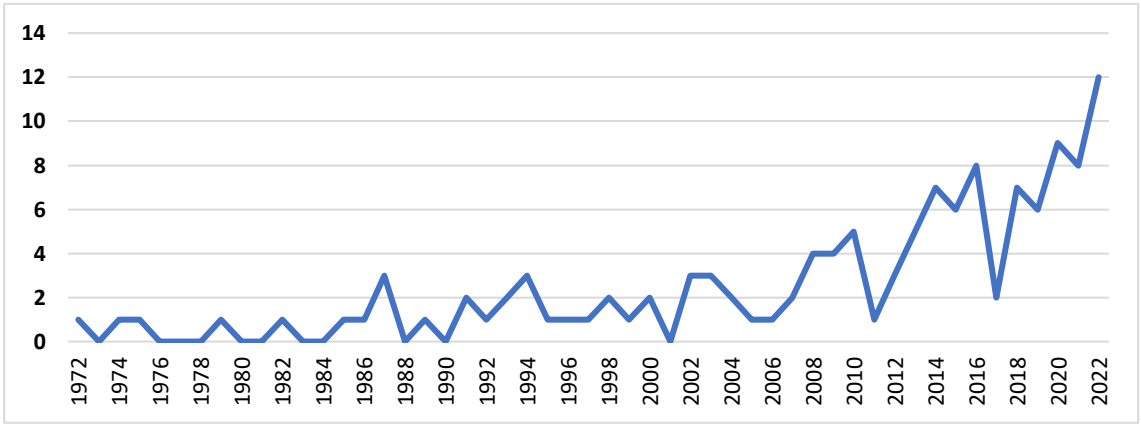

FIGURE 1. Documents by year

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.

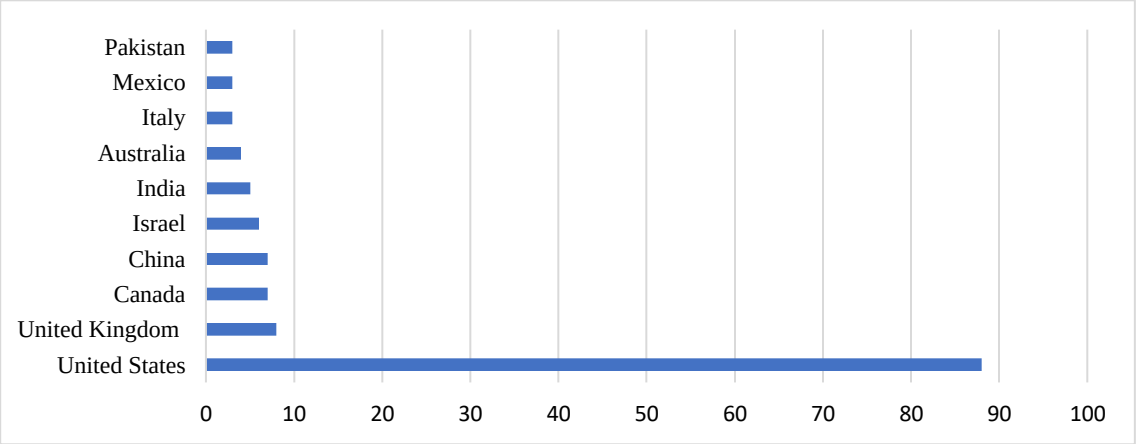

FIGURE 2. Documents by country or territory

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