

Beyond Borders: Understanding Intellectual Migration among Kazakhstani Graduates of Foreign Universities

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Abstract

This article explores the intellectual migration patterns of Kazakhstanis who have completed their studies at foreign universities. Through a survey conducted among 1,111 graduates and interviews with 44 individuals holding master's and doctoral degrees from renowned global institutions, this study examines the factors influencing the Kazakhstanis' decisions to relocate to other countries. The findings reveal that the primary motivations for permanent migration include competitive salaries (54%), high level of socio-economic development in the destination country (52%), prospects for career advancement (38%), access to quality education and healthcare (32%), and lower levels of corruption (28%). Moreover, the research highlights that the preferred countries for highly qualified specialists from Kazakhstan are USA, Great Britain, and Canada. Logistic regression models indicate that individuals with prior work experience abroad, those who studied in the UK, and those residing in the suburban areas of Kazakhstan are more likely to move to another country for permanent residency.

Keywords: Academic mobility, factors of migration, graduates of foreign universities, intellectual migration, Kazakhstan.

Introduction

The global landscape of higher education has witnessed a significant rise in the number of international students pursuing educational opportunities outside their home countries. According to the Migration Data Portal, in 2020 alone, approximately 6.3 million students were studying abroad, with a considerable concentration in countries such as United States of America, the United Kingdom, Australia, Germany, Canada, France, and China (Migration Data Portal, 2020). While the existing research on educational migration primarily focuses on the factors driving young individuals to study abroad, it is equally important to examine the reasons behind their decisions to either stay or move abroad after completing their education. The policymakers are increasingly recognizing the significance of retaining highly skilled specialists within their own countries, leading to a growing interest in understanding the dynamics of intellectual migration.

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By gaining insights into the motivations and considerations of international graduates, policymakers can develop and implement proactive strategies to encourage the retention of these valuable human resources.

One critical aspect to consider is the potential challenges faced by international students during their academic journey, which may impact their access to quality education and their overall academic success. Studies have revealed that international students often encounter difficulties in adapting to new educational systems, cultural differences, and language barriers, which can contribute to lower academic performance and early departure from their programs (OECD, 2010). Therefore, it is crucial to investigate the factors influencing the decision-making process of international graduates regarding their post-education plans, particularly whether they choose to remain in the hosting country or return to their country of origin.

This research aims to bridge the gap in existing literature by examining the phenomenon of intellectual migration among Kazakhstani graduates who have completed their studies at foreign universities. By focusing on this specific population, we can gain a deeper understanding of the factors that influence their choices to either stay or move abroad.

The findings of this research will provide valuable insights for policymakers, educational institutions, and other stakeholders involved in shaping intellectual migration policies. By identifying the factors that push Kazakhstani graduates to seek opportunities abroad, policymakers can devise targeted strategies to enhance the retention of highly skilled specialists within the country. These strategies may include measures to improve the domestic socio-economic environment, enhance career prospects, foster quality education and healthcare systems, and address issues such as corruption. Ultimately, the goal is to create an ecosystem that encourages intellectual mobility while simultaneously fostering the retention of talent to contribute to the development and growth of the country.

Method

Research Design

This research study utilizes a mixed-methods approach, incorporating both a survey and in-depth interviews, to comprehensively examine the factors influencing the intellectual migration decisions of Kazakhstani graduates from foreign universities. The methodology employed in this study ensures a robust analysis by capturing both, quantitative and qualitative data, providing a

holistic understanding of the research topic. Through the analysis of the survey data collected from 1,111 graduates of foreign universities and the interviews conducted with 44 Kazakhstani individuals holding master's and doctoral degrees from prestigious global institutions, this study aims to shed light on the underlying motivations and considerations that shape their migration decisions.

Survey

The survey component of this study involved collecting data from 1,111 Kazakhstani graduates who completed their studies at foreign universities (Bokayev & Kaimoldiyev, 2022). The survey questionnaire was designed to capture relevant information regarding the participants' migration intentions, socio-demographic characteristics, educational background, work experience, and other variables that could potentially influence their decision to relocate abroad. The key question in the survey was, "Would you like to move to another country for permanent residence?" with response options of Yes or No. By examining the responses to this question, the study aimed to identify the factors associated with the graduates' inclination to move abroad.

In-depth Interviews

In addition to the survey, in-depth interviews were conducted with 44 Kazakhstani individuals who are alumni of prestigious international institutions (Bokayev & Kaimoldiyev, 2022). These interviews provided rich qualitative insights into the participants' motivations, considerations, and experiences related to their decisions to either stay in their home country or move abroad. The interview questions focused on understanding their readiness to relocate, preferred destination countries, reasons for choosing specific countries, and factors contributing to their decision-making process.

The reliability and validity of the instruments

Ensuring the validity and reliability of research findings is crucial, and this study employed specific measures to address these aspects. The validity and reliability of the research instruments, including the survey and in-depth interviews, were assessed through a combination of sample representation and content evaluation.

To achieve an accurate representation of the Kazakh students studying abroad, the study involved a sample of 1,111 graduates from foreign universities. This sample size was considered sufficient to obtain reliable and generalizable results. The utilization of online surveys played a significant role in achieving population generalizability, allowing for a broader reach and diverse participant inclusion.

To further enhance the validity of the research instruments, in-depth interviews were conducted with 44 graduates. These interviews aimed to ensure the appropriateness of the survey content and validate the obtained results. The feedback obtained from the participants during the in-depth interviews helped evaluate the consistency of the research findings with the anticipated outcomes. Additionally, the in-depth interviews served as an instrument of triangulation, enabling participant checks and the evaluation of research outcomes from multiple perspectives.

By employing a combination of online surveys and in-depth interviews, this study employed rigorous methods to ensure the reliability and validity of the research instruments. The inclusion of a diverse sample and the triangulation of data through participant checks further strengthened the credibility of the study's findings.

Data Analysis

To analyze the survey data, logistic regression models were constructed. The dependent variable in these models was the response to the survey question, "Would you like to move to another country for permanent residence?", categorized as a binary variable with Yes or No responses. Several predictor variables were included in the models to account for various social, economic, and demographic factors that may influence the graduates' decision to move abroad. These predictor variables encompassed age, gender, family status, region of residence, language proficiency, educational attainment, graduation status, income level, duration of stay in foreign countries, area of professional experience, specialty, and the country where the degree was obtained.

In order to distinguish factors affecting the migratory mood among Kazakh professionals, the current study ran the regression analysis. In logistic regression, several statistical measures were used to assess the significance and magnitude of the relationships between predictor variables and the outcome variable. The following key measures were reported in our logistic regression analysis:

1. Mean Estimate: The mean estimate represents the average change in the log odds of the outcome variable associated with a one-unit change in the predictor variable. It indicates the direction and strength of the relationship between the predictor and the probability of the outcome occurring.
2. Std Error: The standard error measures the variability or precision of the mean estimate. A smaller standard error indicates a more precise estimate. It is typically used to calculate t-values and p-values.
3. T-value: The t-value is calculated by dividing the mean estimate by its standard error. It provides information about the statistical significance of the relationship between the predictor and the outcome variable. A higher absolute t-value suggests stronger evidence for a significant relationship.
4. Probability: In logistic regression, the probability refers to the predicted probability of the outcome variable occurring. It is calculated using the logistic function, which transforms the log odds into a probability ranging from 0 to 1. This probability represents the likelihood of the outcome variable happening given the values of the predictor variables.
5. p-value: The p-value is a measure of the statistical significance of the relationship between the predictor variable and the outcome variable. It indicates the probability of observing the estimated relationship or a more extreme relationship if there were no true association in the population. A p-value less than the predetermined significance level (typically 0.05) suggests a statistically significant relationship.

These measures help to interpret the results of logistic regression analysis and determine the significance and strength of the relationships between predictor variables and the likelihood of the outcome variable occurring. They provide insights into the magnitude and uncertainty of the estimated effects and aid in drawing meaningful conclusions from the analysis.

The qualitative data obtained from the in-depth interviews were analyzed using thematic analysis. The interview transcripts were carefully reviewed, and recurring themes and patterns related to the participants' motivations and experiences were identified. These themes were then coded and organized to provide a comprehensive understanding of the factors driving intellectual migration among Kazakhstani graduates.

To ensure the reliability of analyzing qualitative data, several measures were implemented in this study.

Firstly, a systematic and rigorous approach was followed during the data analysis process. The researcher maintained detailed documentation of the steps taken, including the coding process, theme development, and interpretations. This helped establish a clear audit trail and ensured transparency in the analytical process.

Secondly, multiple researchers were involved in the analysis to enhance the reliability of the findings. The data analysis was conducted independently by two or more researchers who were well-versed in qualitative research methodologies. This approach allowed for intercoder reliability checks and discussions to reach consensus on emerging themes and interpretations. Any discrepancies or disagreements were resolved through thorough discussions and consensus-building among the researchers.

Furthermore, to minimize researcher bias and subjectivity, the researchers engaged in reflexivity exercises. They critically reflected on their own assumptions, biases, and preconceived notions throughout the analysis process. This self-awareness helped mitigate potential bias and ensured that the interpretations remained grounded in the data rather than personal perspectives.

Additionally, member checking was employed as a means of enhancing the reliability of the findings. The preliminary findings and interpretations were shared with participants to seek their feedback and validate the accuracy and authenticity of the data analysis. This process of member checking allowed participants to confirm the interpretations or provide additional insights, thereby increasing the credibility and reliability of the findings.

By implementing these rigorous measures, including systematic documentation, intercoder reliability checks, reflexivity exercises, and member checking, the reliability of analyzing qualitative data was ensured. These measures enhanced the trustworthiness and credibility of the findings, contributing to the overall rigor of the research.

Ethical Considerations

The questionnaire and interview guide were approved by the Research Ethic Committee of the Academy of Public Administration under the President of the Republic of Kazakhstan. Ethical guidelines were strictly followed throughout the research process. Informed consent was obtained from all participants, ensuring their voluntary participation and confidentiality of their responses. The study adhered to ethical principles regarding data protection and anonymity.

By employing both quantitative and qualitative research methods, this study aims to present a comprehensive analysis of the factors influencing the decision-making process of Kazakhstani graduates regarding their choice to stay or move abroad. The combination of survey data and in-depth interviews provides a nuanced understanding of the complexities underlying intellectual migration, thereby contributing to evidence-based policy recommendations for fostering the retention of highly skilled individuals in Kazakhstan.

Literature review

The phenomenon of intellectual migration and the scarcity of highly skilled professionals have garnered significant attention in academic research worldwide. However, there is no universally accepted definition of intellectual migration. Bourdieu (1986) associates intellectual migration with the concept of intellectual capital, emphasizing the privileged position of expertise. Castles (2010) defines intellectual migration as the movement of highly skilled professionals for career-related purposes. Li et al. (2021) defines it as a process where students and highly skilled professionals acquire, upgrade, and utilize intellectual capital to advance their careers or achieve upward social mobility. In this context, mobility refers to the movement of people, information, networks, and capital and their impact on society and individuals (Sheller & Urry, 2006; Creswell, 2006).

Intellectual migrants are temporary migrants who hold student visas or work permits and may become stayers, returnees, or onward migrants upon completion of their studies or exchanges (Erel, 2010; Li et al., 2021). Highly qualified workers are individuals with higher education qualifications working in managerial, professional, or technical occupations (Czaika & Parsons, 2016; Kone & Özden, 2017).

Scholars agree that the migratory behavior of highly qualified specialists is influenced by their career aspirations and the socio-economic and political circumstances of their home and destination countries (Scott, 2007; Gesing & Glass, 2019). The intensity of migration is primarily driven by the economic development rather than educational indicators (Kritz & Gurak, 2018; Mishchuk et al., 2019). Migration aspirations are often influenced by personal characteristics such as perceptions of quality education and future employment prospects (Foster, 2017).

In this sense, Haas (2021) offers an aspiration–capabilities framework to explain human mobility as a function of aspirations and capabilities to migrate within the geographical opportunity

constructs. This theory extends the earlier push and pull theory of migration (Lee, 1966), which explains human mobility through positive and negative dimensions of migration. While negative dimensions (insufficient economic prospects, religious or political discrimination, unsafe environmental conditions, etc.) exist at the country of origin and push people to migrate, positive dimensions (better working and living conditions, political freedom, etc.) seen at the country of destination that attract people with relevant aspirations and capabilities (Lee, 1966).

More specifically, Haas' aspirations–capabilities framework (2021) distinguishes between the instrumental and intrinsic extents of human mobility. According to this theory, migration as an intrinsic part of broader economic, political, cultural, and other changes due to its social characteristics cannot be isolated from external transformations. Instrumental aspirations of migration are often related to utilitarian means, such as a higher income, higher social status, better health care, better education, safety, etc.

In the meantime, the outcomes of migration, including intellectual migration, most often can be challenging for donor countries. Intellectual migration may cause negative consequences for the developing states due to brain drain, which indicates the loss of highly educated individuals (Beaumont et al., 2017). This trend may simultaneously lead to an acceleration of population aging (Janeska and Lozanoska, 2016). While developing states suffer from the brain drain, the recipient countries, most often the developed states, experience the brain gain through the increase in highly skilled professionals (Cavallini et al., 2018).

Yet, scholars suggest that the intellectual migration may reflect brain circulation in the donor countries via technological exchanges initiated by counterpart-professionals from overseas (Subbotin & Aref, 2021; Mishchuk et al., 2019; Schiff, 2017). Moreover, brain circulation and knowledge diffusion have been identified as core benefits of intellectual migration, although the loss of intellectual potential contributes to its negative consequences (Amagoh & Rahman, 2016; Cohen, 2017; Kahn et al., 2019). Studies argue that intellectual migration can be beneficial for both, sending and receiving countries, provided that the policies are in place to leverage the flow of knowledge and skills (Puraite et al., 2017). However, the donor countries may face greater vulnerability as they struggle to reproduce their intellectual potential (Mishchuk et al., 2019).

The research on migration flows related to brain drain, brain gain, and brain return often uses the well-being indicators of countries to understand the drivers of migration (Liminta & Serati, 2016; Kebu et al., 2023). It appears that the predominant reason for migration is economic intentions and

the pursuit of wellbeing (Kebu et al., 2023). Wellbeing indicators are closely linked to the Global Competitiveness Index and offer insights into preventing brain drain or promoting brain gain. Sundac and Stumpf (2016) find a direct correlation between global competitiveness and brain drain, with increased competitiveness leading to a decrease in brain drain and the retention of highly skilled individuals in their home countries (Sundac & Stumpf, 2016). Moreover, higher levels of education and skillsets are associated with increased levels of wellbeing (Garcia et al., 2002; Kebu et al., 2023). Studies also highlight that the gap between well-being and wages positively correlates with brain drain, indicating that low competitiveness of countries contributes to significant brain drain (Schiff, 2017).

The issue of brain drain is particularly acute in developing countries, including Kazakhstan. Currently, over 90,000 Kazakh youth are studying at foreign universities, many of whom are potential emigrants (UNESCO, 2023). Their aspirations for foreign education are driven by the higher quality and status associated with it (Bokayev et al., 2022). Additionally, labor migration contributes to the outflow of intellectual migrants from Kazakhstan, with professionals often moving to Turkey, Russia, Germany, the United States Belarus, and Greece. The establishment of a Free Labor Zone within the Eurasian Economic Union (EAEU) has intensified intellectual migration to the EAEU member states, leading to a threefold increase in the number of intellectual migrants from Kazakhstan in the past decade (Nurtazina, 2014).

Findings

According to the results of the survey, among the countries where Kazakh graduates of foreign universities would like to move are the USA, Great Britain, Canada, and Germany. As the graph below demonstrates, the highly qualified professionals choose more developed Western countries (Figure 1).

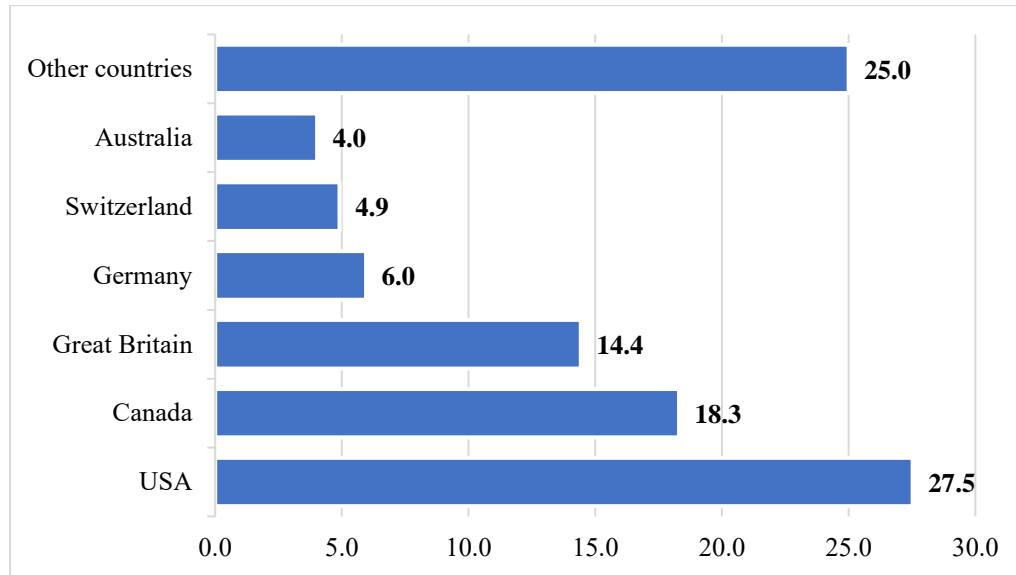


Figure 1. Country to which graduates of foreign universities would you like to move permanently (%).

The results of interviews among the Kazakhs currently living in Kazakhstan also emphasized the above countries:

“Yes, I would like to move to Canada for permanent residence. Because I would like to get new experience, try to work in other systems and live in other systems. Not just to study, but also to work and lead a life.” (Male, 37 years old, graduated from a Canadian University).

“My choosing country is the States, in the prerogative. But, in order to go to the States I should have a Ph.D. diploma already. Until I finish my doctoral school, I will only focus on Europe. Probably in Hungary for now, because I have a doctoral school. But moving is only a matter of time.” (Female, 28 years old, graduated from a European University).

“I chose Europe. If specifying, then this is either Germany or Austria. But Austria is preferable, then Germany.” (Female, 33 years old, graduated from a European University).

“Well, to be honest, I didn’t consider other countries besides the USA.” (Male, 33 years old, graduated from a US university).

Economic factors emerge as the primary motivation for the Kazakhstani youth to seek opportunities overseas. For example, an average monthly income in Kazakhstan stands at \$767 (Take-Profit.Org, 2023), as compared to an average income of \$6,364 in the United States, \$4,074 in the United Kingdom, \$4,449 in Germany, \$5,036 in Australia, \$4,413 in Canada, and \$7,454 in Switzerland (World Data Info, 2023).

Based on our survey results, it is evident that a significant proportion of the study participants identified decent salary (54%), high socioeconomic development in the destination country (52%), and potential for a career growth (38%) as the key factors influencing their migratory inclinations (Figure 2).

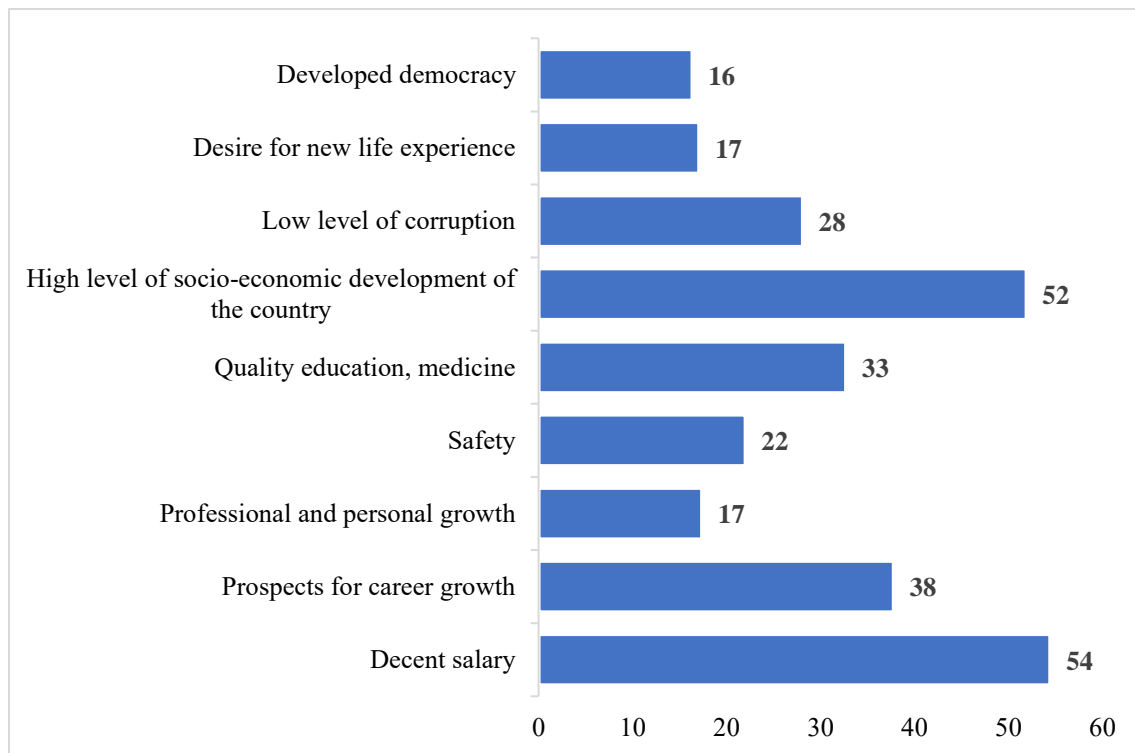


Figure 2. Motives for moving abroad for permanent residence (%).

Results of the interview also highlight high wages abroad and an opportunity to work in their specialty among other reasons.

“In terms of career advancement, it is much easier there. If a person is intelligent, they will do well. Even if someone isn't particularly smart, as long as they are hardworking and fulfill their assigned tasks, their salary will increase, their social status will improve, and they will enjoy more benefits. However, here it's different. You can work incredibly hard, but only the privileged few at the top will truly prosper financially. This has always been the case and likely always will be.” (Male, 30 years old, graduated from a US university).

"Firstly, my field of expertise is very specific - marine engineering. In Kazakhstan, we only have marine equipment in the Caspian Sea. There are probably only 2-3 companies operating in this sector, and at that time, there were no active job offers or recruitment in this field. That's the first reason. The second reason is likely the wages. When you hear or receive a certain amount as a scholarship abroad, you no longer want to settle for less, right? Of course,

there are advantages in Kazakhstan, such as being close to my relatives. However, in my opinion, while you're young and full of energy, it's important to invest that energy in your development and pursue what you're truly passionate about at the moment. Unfortunately, when I finished my studies, such opportunities were not available. But I'm not sure if the situation has changed now." (Female, 33 years old, graduated from a British University).

"...well, the first reason is wages. In Russia, specifically in Moscow, the payment for any medical specialty is much higher compared to Kazakhstan. That's the primary factor. The second important point is that the specialty I underwent retraining for faces certification issues in Kazakhstan. In Russia, the specialty is called X-ray endovascular diagnostics and treatment. In Kazakhstan, in order to work with patients in this field, one needs to complete either a cardiology residency to perform cardiac interventions or an X-ray diagnostics program to work with peripheral arteries. Unfortunately, without certification in these specific specialties, Kazakhstan does not allow clinical practice for specialists. This means that my opportunities to work in my field in Kazakhstan were completely cut off at that time, as pursuing another three-year residency in cardiology is not feasible." (Male, 39 years old, graduated from a Russian University).

Table 1

Logistic regression for moving abroad (DV) and socio-demographic characteristics (IVs)

Coefficients:	Estimate	Std. Error	t value	Pr(> t)		Probability
(Intercept)	0.48055	0.08555	5.617	2.50E-08	***	0.61788
Family_M	-0.0688	0.03105	-2.216	2.69E-02	*	0.48281
Region_Almaty	-0.33723	0.12238	-2.756	0.00596	**	0.41648
Language_Kazakh	-0.03693	0.01309	-2.821	0.00487	**	0.49077
Language_Russian	0.03818	0.0226	1.689	9.15E-02	.	0.50954
Language_English	0.02705	0.0165	1.64	0.10136		0.50676
Language_Turkish	0.02877	0.01171	2.457	1.42E-02	*	0.50719
Language_Japanese	0.0786	0.04395	1.788	7.41E-02	.	0.51964
Region_Pavlodar	-0.18899	0.12469	-1.516	0.12991		0.45289

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

However, among those surveyed, the probability of moving to another country for permanent residence is about 60%. In order to distinguish the factors affecting migratory mood among the Kazakh professionals, the study runs a regression analysis. The first regression model is made up of the socio-demographic characteristics: Age, Gender, Family Status, Region, Language, Education, Graduation, Income, and the Duration of Studying Abroad (Table 1).

The analysis results presented in Table 1 reveal probabilities of individuals wanting to move to another country for permanent residence, while holding all other variables constant at zero. The

overall predicted probability is 0.62, indicating that majority of the respondents expressed desire to relocate. Additionally, residents of Turkestan are predicted to have a higher probability of wanting to move to another country for permanent residence compared to the residents of Almaty, with a difference of 0.2. This suggests that individuals residing in larger cities may perceive more job opportunities in Kazakhstan than those in smaller cities. Furthermore, widowers are predicted to have a higher probability of wanting to move compared to married individuals, with a difference of 0.14.

Table 2

Logistic regression for moving abroad (DV) and country of obtaining degree (IV)

Coefficients:	Estimate	Std. Error	t value	Pr(> t)		Probability
(Intercept)	0.65052	0.0212	30.686	<2e-16	***	0.65713
Degree from Russia	-0.02774	0.01592	-1.742	8.19E-02	.	0.49307
Degree from Australia	-0.08902	0.05414	-1.644	0.10039		0.47776
Degree from UK	-0.0391	0.01282	-3.05	0.00235	**	0.49023
Degree from Hungary	-0.10828	0.04939	-2.192	2.86E-02	*	0.47296
Degree from South Korea	-0.07287	0.02815	-2.589	0.00976	**	0.48179

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

In the second model, an additional independent variable, "country of obtaining degree," is included. The logistic regression results demonstrate the significant influence of the country of study on the decision to leave Kazakhstan, the country of origin. A positive trend is observed among graduates who obtained their degrees from the universities in Great Britain, Hungary, and South Korea, indicating a higher likelihood of wanting to relocate. These findings emphasize that, apart from the competitiveness and economic growth of a country, the professional networks and skills acquired in the host countries play a substantial role in retaining highly skilled migrants.

When all other predicting variables are held at zero in the logistic regression model, the predicted probability of wanting to move to another country for permanent residence increases to 0.66. This underscores the compelling aspiration for individuals to relocate, as indicated by the higher predicted probability of individuals who obtained their degrees in the UK desiring to move compared to those who obtained their degrees in Hungary. The difference between the two groups is 0.02 (Table 2), emphasizing that the country where one pursued their education significantly influences their inclination to permanently relocate.

When examining the influence of the respondents' "Area" and "Specialty" as predictor variables, the study uncovered another important finding (Table 3). By holding all other predicting variables at zero, we were able to estimate that the predicted probability of an individual desiring to relocate to another country for permanent residence stands at 0.66. This indicates that Area and Specialty are strong predictors of migration.

Table 3

Logistic regression for moving abroad (DV) and Area, Specialty (IV)

Coefficients:	Estimate	Std. Error	t value	Pr(> t)		Probability
(Intercept)	0.64964	0.02326	27.929	<2e-16	***	0.65693
Area_Forestry	-0.64964	0.34468	-1.885	5.98E-02	.	0.34307
Area_Trade	0.15212	0.10187	1.493	0.13567		0.53796
Area_Healthcare	-0.08529	0.05896	-1.447	0.14832		0.47869
Area_physical_Culture_and_sport	0.27522	0.17321	1.589	1.12E-01		0.56837
Area_Education	-0.09646	0.0351	-2.748	0.00609	**	0.47590
Area_I_work_abroad	0.26428	0.11975	2.207	2.75E-02	*	0.56569
Specialty_Humanitarian_sciences	-0.09228	0.04557	-2.025	4.31E-02	*	0.47695
Specialty_Social_sciences	-0.07666	0.03536	-2.168	0.03038	*	0.48084

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Moreover, when we maintain all other predictor values at zero, we observe that individuals who work abroad are more likely to have a higher probability of moving to another country for permanent residence compared to those working in the Education sector. This probability difference amounts to 0.09, suggesting a notable variation in migration preferences based on the respondents' employment context.

The results highlight the impact of factors such as professional area and specialty on individuals' likelihood of seeking permanent residency abroad. The higher probability observed among individuals employed outside Kazakhstan indicates that international job opportunities or career advancement prospects outside their current field are influential factors in their migration decision-making process.

These findings contribute valuable insights into the complex dynamics surrounding the migration choices. They emphasize the relevance of specific professional sectors and areas of expertise in shaping the individuals' preferences for international relocation.

Some interviews also validate this point of view:

“The second important point is that the specialty I underwent retraining for faces certification issues in Kazakhstan. In Russia, the specialty is called X-ray endovascular diagnostics and treatment. In Kazakhstan, in order to work with patients in this field, one needs to complete either a cardiology residency to perform cardiac interventions or an X-ray diagnostics program to work with peripheral arteries. Unfortunately, without certification in these specific specialties, Kazakhstan does not allow clinical practice for specialists. This means that my opportunities to work in my field in Kazakhstan were completely cut off at that time, as pursuing another three-year residency in cardiology is not feasible.” (Male, 39 years old, graduated from a Russian University).

The interview excerpt provided, further supports the findings regarding the influence of professional area and specialty on the individuals' migration preferences. The interviewee highlighted the challenges they face in Kazakhstan due to lack of recognition of their specialty--the X-ray endovascular diagnostics and treatment. They explained that in order to practice in this field in Kazakhstan, one would need to complete a residency in either cardiology or X-ray diagnostics, which limits their opportunities to work in their chosen specialty.

This interview excerpt aligns with the quantitative findings that the individuals employed outside of Kazakhstan have a higher probability of desiring permanent residency abroad. The interviewee's situation exemplifies the barriers and limitations they face in pursuing their profession within their home country, ultimately influencing their inclination to seek career opportunities in other countries.

The interviewee's experience sheds the light on the complexities and nuances of migration decisions. It underscores the importance of considering professional circumstances, such as recognition of specialized skills and availability of the career opportunities in the individuals' migration preferences. The findings from both, the quantitative analysis and the interview provide valuable insights into the role that the professional sectors and areas of expertise play in shaping the individuals' decisions to relocate internationally.

These insights highlight the need for the policymakers and the main stakeholders to address the issues related to professional recognition and career prospects within the specific fields. By addressing these concerns, countries can potentially retain skilled professionals and provide an environment conducive to their professional growth and development.

Overall, the combination of quantitative findings and interview excerpts enriches the discussion on the influence of professional area and specialty on migration preferences. It underscores the significance of these factors in shaping the individuals' decisions and emphasizes the need for

attention to be given to these aspects in policies and strategies related to migration and workforce development.

Discussion

International migration, as highlighted by the United Nations, is a complex phenomenon influenced by various factors such as economics, geography, demographics, and others (IOM, 2022). These factors play a significant role in shaping the migration patterns of individuals, including Kazakhstani citizens who have completed their studies abroad (Figure 2).

According to the results of this study, among the key economic factors which push the Kazakhstani professionals to migrate are decent salaries (54%), high level of socio-economic development in the migration destination (52%), prospects for career growth (38%), quality education and healthcare (32%), and low levels of corruption (28%). We can observe the prevalence of pull factors in the country of destination (Lee, 1966) and more instrumental means of migration (Haas, 2021) affecting the migration moods among the study participants.

The findings highlight that the Kazakhstani professionals prefer to migrate to more developed countries due to their economic advantages and attractive career opportunities. It appeared that the predominant reason for the Kazakh professionals' migration is better economic conditions and well-being. This finding similarly confirms that economic competitiveness and well-being indicators of countries of destination have significant impact on the brain drain (Kube et al., 2023; Liminta & Serati, 2016; Schiff, 2017; Sundac & Stumpf, 2016). Likewise, the intellectual migration may have a substantial effect on increasing the competitiveness and economic development of countries of destinations and decreasing them in the countries of origin.

The results of this study also suggest that developed nations have been successful in establishing favorable conditions that attract highly skilled professionals, enabling them to contribute to the local economy (Avellini et al., 2018; Beaumont et al., 2017; de Haas, 2021; Janeska and Lozanoska, 2016;). The ability to offer competitive salaries, along with a conducive environment for socioeconomic advancement, plays a crucial role in motivating individuals to consider migration. This highlights the level of efficiency achieved by developed states in creating enticing conditions that appeal to highly skilled professionals, ultimately benefiting their own economies (Subbotin & Aref, 2021).

Undoubtedly, intrinsic dimensions of migration (de Haas, 2021), such as political, social, and cultural characteristics, constitute another base for distinguishing and selecting countries of destination. Kazakhstanis who complete their studies abroad have more competitive advantages, unlike other fellow citizens (Bokayev & Kaimoldiyev, 2021). Firstly, they know the culture and politics of the hosting country, in which they studied for an average of 2-2.5 years. Secondly, they possess knowledge and skills recognized at an international level since majority of them hold degrees from the world's top universities. Knowledge of English language allows them to communicate with potential employers. Thirdly, studying abroad has expanded their social and professional networking through the opportunity to connect with friends from all over the world daily and receive job offers.

The study essentially revealed that the Kazakhs who have graduated from the universities in Great Britain, Hungary, and South Korea are more likely to move overseas compared to the graduates from other countries. Moreover, the decision to leave the country of origin also varied depending on the fields of study. The likelihood of moving abroad differed across various professions and specialties. Notably, the individuals with work experience in the field of education were less inclined to move overseas compared to those in other fields. This finding can be attributed, to some extent, to educators' desire to contribute to the development of the new generation of Kazakhs, as well as their patriotic sentiments.

According to the analyses, one of the variables affecting the migration decision among the Kazakh graduates is the value of their professional networks and acquired skills. Studying abroad not only enhances the language proficiency, but also improves communication skills through interactions with colleagues from different countries. Such engagement also provides the Kazakhstani graduates with greater opportunities to find permanent employment through their professional networks and skills. This finding suggests that the language and cultural awareness are important factors in the potential migrants' decision in Kazakhstan.

Conclusion

Kazakhstani graduates of foreign universities represent a potential pool of highly skilled migrants. This study underlines the determinants of the graduates' intellectual migration, and it is likely that the Kazakh professionals focus on broader economic opportunity and development potential.

Likewise, the individual characteristics and aspirations are among those factors influencing their migration decision.

The study suggests the importance of state policies providing favorable working and living conditions for highly skilled professionals. The findings also indicate that it is crucial to address all areas of socioeconomic growth, including the indicators of well-being and economic competitiveness as the pull factors, attracting potential groups.

In this sense, the policies that nurture the regional economic development may help retain the highly skilled youth in the country. Therefore, the Kazakh government should adopt effective macroeconomic measures and a proactive intellectual migration policy. In addition, while the Kazakh government tries to recruit the graduates of foreign universities, it should target specific groups and provide the incentives. From the current study it has become evident that the Kazakh youth migrate in order to obtain better career opportunities and wages. In such cases, the government should put an emphasis on these indicators by introducing the incentive policies and simplifying the job transfer processes. Graduates of foreign universities with high levels of productivity and expertise could adapt rapidly to the new working conditions, and, as a result make a significant contribution to the national economic growth.

Limitations of the study

The research article has a few limitations that need to be acknowledged. Firstly, there is a significant gap in knowledge regarding the topic of intellectual migration in the Kazakhstani context. Prior studies have not extensively explored this area, and therefore, further research is required to provide a more comprehensive understanding. Future studies should aim to establish a theoretical framework specifically focused on highly skilled professionals' migration in Kazakhstan, considering the unique socio-economic and cultural factors at play.

Secondly, the dataset used in this study comprises 1,111 graduates, predominantly from Western universities. While these findings offer valuable insights, the sample may not fully represent the entire population of the Kazakh graduates studying abroad. Therefore, caution should be exercised when generalizing results to the broader population.

Additionally, it is important to note that this research is not a longitudinal study, and it lacks appropriate time-series data on intellectual migration and other relevant variables. Longitudinal studies could provide a deeper understanding of the determinants and consequences of intellectual

migration in Kazakhstan over time. By including longitudinal data, researchers would be able to track changes in migration patterns, identify causal relationships, and explore the long-term impacts of intellectual migration on various aspects of the society.

Addressing these limitations through the future research efforts would contribute to a more comprehensive understanding of intellectual migration in the Kazakhstani context. By expanding the sample size, conducting longitudinal studies, and exploring additional variables, researchers can further enhance the validity and generalizability of findings, thereby, deepening our understanding of the main determinants and their implications to the intellectual migration in Kazakhstan.

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