

## ARTICLE

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# Employment of international education graduates: Issues of economy and resistance to change

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## Abstract

The use of international scholarship programmes is part of a long-standing approach to human capital development in many developing and middle-income countries that finance studies at universities abroad and locally. Yet, many scholarship alumni struggle to thrive in their home country and encounter numerous difficulties in their transition to the job market. This paper examines the employment experiences of Kazakhstan's government scholarship alumni in science, technology, engineering and mathematics fields and identifies the challenges they encounter navigating the labour market. Our analysis of 45 interviews demonstrated that although alumni hold a positional advantage in the job market and many succeed, there are also many alumni whose employability and career success are impeded by an intersection of socioeconomic and cultural factors, intergenerational clashes and scholarship programme regulations. The implications for scholarship programmes and government policy goals are discussed.

## Аннотация

Международные стипендиальные программы представляют собой устоявшийся подход к развитию человеческого капитала во многих развивающихся странах и странах со средним уровнем доходов,

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финансирующих обучение специалистов в зарубежных и местных университетах. Однако многие выпускники стипендиальных программ прилагают немалые усилия, чтобы преуспеть в своей стране, и сталкиваются с множеством проблем на рынке труда. В рамках данного исследования изучается опыт трудоустройства выпускников государственных стипендиальных программ Казахстана, обучавшихся по STEM-специальностям, и выявляются сложности, с которыми сталкиваются выпускники на рынке труда. Анализ, проведенный на основании 45 интервью, показывает, что, несмотря на то, что выпускники обладают позиционным преимуществом на рынке труда и многие из них достигают успеха, имеется множество выпускников, трудоустройство и карьерные перспективы которых осложняются переплетением социально-экономических и культурных факторов, конфликтными взаимоотношениями между поколениями и положениями, регулирующими стипендиальные программы. В данной статье также рассматриваются выводы, значимые для стипендиальных программ и целей государственной политики.

## 1 | INTRODUCTION

In an increasingly competitive global economic landscape, emerging countries have invested heavily in developing human capital, including running government sponsored scholarship programmes that enable talented youth to obtain international education domestically or earn from reputable universities in other jurisdictions. Examples include the China Scholarship Council Programme, Brazil's Science without Borders programme, Becas Chile fellowship programme, Saudi Arabia's King Abdullah Scholarships and Kazakhstan's *Bolashak* scholarships.

In Kazakhstan, following the disintegration of the Soviet Union and the subsequent independence of the country, there was an urgent need for 'deep and lasting economic reform' (Organisation for Economic Co-operation and Development [OECD], 2017, p. 19). The nation needed 'a more globally aware and engaged workforce' to be competitive in an internationally connected economy (OECD, 2017, p. 126). In 1993, the government established a scholarship programme for talented Kazakhstani youth pursuing undergraduate and graduate (master's and PhD) degrees at reputable international universities and professionals in short-term internships. Since its inception, the programme, known as *Bolashak*, (Future in Kazakh language) has funded around 14,000 students in the fields of humanities, social science and science, technology, engineering and mathematics (STEM), representing a significant public investment. Since 2011, *Bolashak* has narrowed its focus to higher degrees and internships. The government re-directed some of its investment in undergraduate education to a new, well-resourced,

English-medium autonomous university in the capital of Kazakhstan: Nazarbayev University (NU). NU offers fully funded undergraduate and postgraduate level scholarships. National policymakers believe that NU has contributed to budget savings while providing the same quality of international-standard education experienced by *Bolashak* scholars (Kossenov, 2016).

The core mission of both *Bolashak* and NU is to develop a talented pool of graduates who can contribute to economic and social development of the nation. This is in line with national goals aimed at human capital development for sustainable economic growth. To date, these two initiatives have produced over 15,000 graduates; about 5000 are from NU (Smakova, 2020), and over 10,300 have completed *Bolashak*-funded programmes (Mussapirova, 2019). Both initiatives have been scrutinised and criticised for taking up a large share of the nation's education budget (Bizhanova, 2020; Darimbet, 2020), for their lack of transparency about these expenditures (Darimbet, 2020), for potential brain drain (Temirov, 2019) and for the uneven employment outcomes of their graduates (Dubova, 2020; Mun, 2017; Ramazanov, 2018; Vervekin, 2017). Although significant investments have been made, research on the alumni employment experiences and their contribution to Kazakhstan's development is scarce. Our study fills this gap by examining the employment experiences of *Bolashak* and NU alumni and identifying the challenges they encounter in the job market. We ask (a) What is the employment experience of government scholarship alumni in both programmes and (b) What challenges do alumni encounter in the job market? Our paper contributes to the wider literature on employment of university graduates, particularly international education graduates, and contributes to a better understanding of issues that scholarship programme alumni face in the job market. We also hope that our findings can make a contribution to research discussions and debates in the field and help scholarship administrators and policymakers in similar circumstances improve scholarship programme practices and regulations.

## 2 | THEORETICAL FRAMEWORK

This paper draws on human capital (Becker, 1994) and job market signalling theories (Spence, 1973) as guiding frameworks. The human capital theory states that education enhances an individual's productivity and labour market outcomes due to the knowledge and skills developed through study. It is assumed that greater productivity will result in better job performance and higher incomes. Signalling theory suggests that employers use academic credentials as a screening tool to predict the capabilities and productivity of job candidates. Although the evidence on the relative importance of signalling and human capital is inconclusive (Patrinos & Psacharopoulos, 2020), the common feature of both theories is that educational investment positively correlates with the level of labour market success (Cai, 2012). Many international education programmes have been initiated exactly based on this premise of human capital theory. Like the King Abdullah scholarship in Saudi Arabia and China's National Mobility and Elite Bachelor scholarship, Kazakhstan's *Bolashak* scholarship programme was designed to boost the competence of the labour force (Perna et al., 2015). However, the direct relationship between international education and better employment outcomes remains contested. Research shows that international education produces solid content knowledge (Cai, 2012; Hao et al., 2016; Pham et al., 2019; Wu et al., 2020), advanced soft skills (Cai, 2012; Pham, 2020), English proficiency (Abimbola et al., 2016; Wiers-Jenssen, 2007; Wu et al., 2020) and awareness of international standards (Hao et al., 2016; Perna et al., 2015) and makes graduates more attractive to employers, increasing the odds of securing employment (Hao et al., 2016; Pham, 2020; Pham et al., 2019; Wiers-Jenssen, 2007; Wu et al., 2020). However, research also demonstrates that there is no direct link between international education and better employment outcomes. Although international education may have a 'signalling effect' and provide graduates with a relative advantage over others, there are other factors that impact and impede international graduates' employment.

### 3 | FACTORS INFLUENCING INTERNATIONAL EDUCATION GRADUATES' EMPLOYMENT

The employment trajectory of international education graduates is influenced by a range of economic, social and cultural factors (Amazan et al., 2016; Hao & Welch, 2012; Hao et al., 2016; Nachatar Singh, 2020). Economic factors such as limited jobs (Abimbola et al., 2016; Amazan et al., 2016), saturated fields caused by an overly competitive domestic labour market (Abimbola et al., 2016; Amazan et al., 2016; Hao & Welch, 2012; Nachatar Singh, 2020) and high salary expectations against those offered in the market (Hao & Welch, 2012; Hao et al., 2016; Perna et al., 2015) make it challenging for the graduates to obtain post-graduation employment.

Sociocultural factors also have a significant impact, and local cultural expectations place tremendous pressure on international education graduates. Research on Chinese graduates showed that families expected them to smoothly transition from university life to a workplace (Gill, 2010), whereas employers expected them to be considerably superior to their local counterparts (Hao & Welch, 2012) making reintegration into the domestic cultural environment difficult (Gill, 2010; Hao & Welch, 2012; Hao et al., 2016; Nachatar Singh, 2020; Pham et al., 2019). By embracing an opportunity to enhance their multicultural awareness, the graduates might loosen the bonds that had tied them to their own culture. Hence, the deeper intercultural understanding gained through international education is an advantage when the graduates need to navigate between home and international contexts at the workplace (Gill, 2010). Conversely, perceived lack of understating of the local context makes graduates less attractive to domestic employers (Gill, 2010; Hao & Welch, 2012; Hao et al., 2016; Nachatar Singh, 2020; Pham et al., 2019). Traditional, often inflexible, cultures in workplaces in China, Kazakhstan and Uganda, and co-workers' unfriendly attitudes towards graduates with international diplomas prevented graduates from applying their knowledge and skills effectively (Amazan et al., 2016; Gill, 2010; Perna et al., 2015), and colleagues' resistance and resentment were also found to be a major challenge (Amazan et al., 2016; Pham, 2020). Such resistance limits the graduates' productivity as it discourages them from promoting new ideas and bringing positive change to their organisations (Amazan et al., 2016).

Another social factor limiting graduates' domestic employment opportunities is the lack of social networks (Hao & Welch, 2012; Hao et al., 2016; Nachatar Singh, 2020). Recent studies suggest that an international diploma itself is no longer sufficient to secure employment (Amazan et al., 2016; Nachatar Singh, 2020; Pham et al., 2019). Rather, it is social relations with others that help international education graduates to land a job (Nachatar Singh, 2020; Pham, 2020; Pham et al., 2019), and good relationships with colleagues and supervisors are important for their career progression (Pham, 2020).

An additional challenge faced by international education graduates is a gap between knowledge and skills acquired at university and those required by industry (Amazan et al., 2016; Jumabayeva, 2016; Nachatar Singh, 2020; Perna et al., 2015; Pham et al., 2019). Many graduates with international education certificates are found to be overqualified for their positions (Amazan et al., 2016; Cai, 2012), work in fields outside of their degrees (Amazan et al., 2016; Nachatar Singh, 2020) or have a job that limits opportunities to use their knowledge and skills fully and effectively (Perna et al., 2015; Pham, 2020; Pham et al., 2019). Reports from media and international organisations indicate that some workplace cultures, in particular bureaucracy, nepotism and intergenerational conflicts in Kazakhstan, hinder the transition of international education graduates to employment (Exclusive, 2018; Ivanov, 2018; Kurganskaya, 2016; OECD, 2017; Trotsenko, 2018). These factors and challenges highlight that international education does not guarantee successful employment and questions the assumptions of human capital and signalling theories. Similarly, the massification of higher education and slow job growth in the oil-dependent economy of Kazakhstan has led to a situation where the number of graduates has increased five times more than the number of available jobs (Jonbekova, 2020; Zakon.kz, 2020). The oversupply of university graduates has resulted in more than half of university graduates being unemployed (Atameken, 2020), even though there have been reported shortages of skilled and adequately trained workers in primary and processing industries and in the service sector. Thus, the current state of the labour market in Kazakhstan raises further questions about human

capital and signalling theories and about the dominant rhetoric of policymakers about human capital development and more specifically about the employment of international education graduates.

## 4 | METHODOLOGY

Data for this study were gathered through individual qualitative semi-structured online interviews with 45 government scholarship alumni in STEM fields. The participants were all graduates from programmes in the STEM fields ranging from chemistry and biology to engineering, nanotechnology, IT, computer science, mining and space technology. Interviews were conducted between March and April 2020. In light of the COVID pandemic, interviews were conducted online via Skype and WhatsApp.

Participants included 13 NU and 32 *Bolashak* alumni who were selected based on a purposeful maximum variation sample (Creswell, 2014). The five criteria for the selection of participants were as follows: (a) alumni who received full government scholarship through the *Bolashak* programme and NU; (b) alumni who held a full-time job; (c) alumni who resided in Kazakhstan; (d) alumni who studied at a master's degree level and (e) alumni who had been in the job market for three years. Given that we were interested in the early career trajectory of the government scholarship alumni, we selected participants who had recently graduated. Therefore, we selected our sample from 2015 to 2017 NU and *Bolashak* cohort. In total, this included 30 alumni from NU and 249 *Bolashak* alumni in STEM fields. We oversampled the NU graduates to capture a reasonable range of responses but conscious that this is still a relatively small number of respondents have been cautious in drawing conclusions.

Invitation letters were sent to all 30 NU alumni to participate in our study through the university career centre. We selected *Bolashak* participants from the available database according to the above-mentioned criteria, and individual invitation letters were sent to around 60 participants via email.

The rationale for looking at these two sub-samples was because of their similarities. Both require substantial financial investments from the government, and they have a common aim of preparing a talented pool of individuals. Both provide fully funded scholarships that enable students to obtain quality higher education. Finally, both explicitly state that graduates are expected to become change agents and contribute to the cultural and socio-economic development of the country.

Participants were asked questions around four themes: (a) experience of the transition process from university to job market; (b) duration of time it took to secure a job; (c) factors that facilitated secure employment and (d) factors that impeded finding a job.

The data were analysed through an inductive and deductive content and thematic analysis approach (Fereday & Muir-Cochrane, 2006). Interview data were transcribed verbatim and coded in NVivo. Three members of the team coded the data and initially developed 30 themes. The coding process was guided by themes derived from literature, with new codes developed in the process of data analysis and interpretation. The codes were then developed into themes that guided the analysis of the data. Data were analysed by individual cases first followed by a cross-case analysis comparing the two groups to identify similarities and differences.

## 5 | FINDINGS

### 5.1 | Benefits of international education for employment

Our findings show that international education provided graduates with many benefits including a valuable credential, better subject knowledge, transferable skills, intercultural competences and greater self-confidence. These benefits assisted graduates in their transition to the job market and helped some alumni to get promoted and negotiate a better salary.

Possessing a diploma from a prestigious university was perceived to be highly valued by employers. *Bolashak* alumni claimed that the reputational value of their diploma provided credibility, increased their chances of getting employed and 'opened doors to better employment opportunities'. In some industries, the international diploma was crucial in obtaining a job, particularly at the time of the 2015/16 financial crisis. International education provided graduates with a positional advantage over others in the job market.

In the oil and gas sector, it is very important to possess a diploma from an overseas university. Tengizchevroil, for instance, searches for graduates from foreign universities. If there is a choice between alumni of Kazakh British Technical University [local university] and alumni with a diploma from overseas, employers will choose the latter. They are even interested in graduates from the specific university, for instance, Colorado School of Mines. (*Bolashak* 22, Reservoir Evaluation and Management, Almaty)

Our findings indicated that in some sectors, particularly in the engineering and oil and gas sectors, employers preferred graduates from specific countries or universities. Seven out of ten alumni in our study pursued their master's degree in the United Kingdom or the United States. Most of them believed that it was the reputation of their diploma that helped them to find a job despite the industry facing hard times due to the sharp fall in oil prices between 2015 and 2017. The fact that employers in Kazakhstan are dissatisfied with the skills and work preparedness of graduates from local universities (Abdullayeva, 2019; Vykhodchenko, 2015) explains to some extent why the international diploma provided a competitive advantage.

The reputation of an 'international education' from a university in Kazakhstan, namely NU, was also valued by employers. The findings show that employers differentiated NU graduates from other local university graduates and believed that they had better knowledge and skills.

NU diploma helped me find my current job since NU graduates enjoy preferential treatment. My organisation comes to Astana with the purpose of recruiting only NU graduates. (NU 5, Electrical and Electronic Engineering, Atyrau)

Our findings suggest that in addition to the value of international education, a master's degree credential also played an important role within the precarious labour market. Most participants believed that having a master's degree improved their employability over individuals who had only an undergraduate degree. Participants strongly emphasised that a graduate degree is crucial for getting a job in Kazakhstan and in getting promoted and negotiating a good salary. Some *Bolashak* graduates who returned to their previous workplace were immediately promoted to a more senior position. They noted that without a master's degree, particularly from a reputable university abroad, promotion would not be available, and it was clear that graduates who pursued both undergraduate and graduate degrees at international universities were more valued by their employers for their subject knowledge and skills.

In sum, our findings indicate that although international education received abroad and at home are both valued by employers and help a graduate's employability, it seems that graduates with international education received overseas enjoy greater preferential treatment in the job market.

## 5.2 | It is not just prestige: value of skills and knowledge matter for employment

We found that the skills and knowledge obtained as part of their graduate degree had an integral role in securing employment and progressing in a job for some alumni. *Bolashak* alumni reported that studying at reputable international universities abroad provided them with an in-depth knowledge of their field of study, improved their soft skills and enhanced their self-confidence. One of the major advantages of overseas international education was

access to resources, including laboratories, databases, libraries, state-of-the-art software and technologies that are not available at most universities in Kazakhstan. Two participants emphasised that well-equipped laboratories at their US universities deepened their subject knowledge, which in turn enhanced employability. The majority of *Bolashak* alumni noted that the key benefit of studying abroad was the opportunity to specialise. Some emphasised their appreciation of 'learning their specialization in practice rather than only in theory like it is at many Kazakhstani universities'.

First of all, when studying abroad you get to choose which courses to take. You don't study IT in general but gain deeper knowledge in one specific area of IT. You choose what you want to specialize in. We were taught the skills which are currently in demand. The ones that are valued. Our teachers had worked in the industry and could share their experiences. So, when I returned home, I was ready to start working straight away. (*Bolashak* 24, Information Technology, Nur-Sultan)

Transferable skills were the second factor most frequently mentioned by *Bolashak* alumni that improved their employability. Alumni cited improvements in skills like intercultural communication, analytical and critical thinking, teamwork, flexibility and managing change (including overcoming resistance to change), time management, effective search and use of information, ability to adapt the global best practices to the local context and finding effective solutions to complicated problems. In addition, many alumni noted that they learnt 'how to think outside the box' and be more self-confident.

First of all, I developed self-confidence. When you have earned your master's degree in the UK, you think that you are capable of doing something. And when everyone says that there is a crisis and no jobs, you stop being afraid. (*Bolashak* 20, Computer Science, Uralsk)

Probably, if I had not studied abroad, I wouldn't have had so much faith in myself and I wouldn't have left my comfort zone. I had a comfortable salary and working conditions near my home. However, after the studies, I wanted to move on, and gave it a go and changed my job. I don't know if I would have taken a risk if I hadn't studied abroad. And even if I took the risk, I'm not sure if my employers would have hired me in this position. (*Bolashak* 20, Computer Science, Uralsk)

Some *Bolashak* alumni believed that their transferable skills made them more attractive to employers. They stated that such skills were particularly important during the financial crisis, when the economy of Kazakhstan was volatile, and employers may have needed employees who can better adjust to a changing and uncertain work environment.

International experience abroad also helped *Bolashak* alumni to develop their intercultural competencies helping them better understand and work with people from different cultural backgrounds as well as enhancing their English language skills. They felt that intercultural competencies made them more attractive to employers, particularly international companies. Intercultural competencies are one area where *Bolashak* were differentiated from NU alumni. Although NU alumni also obtained an 'international education' and were taught by international faculty, almost all of the student body at NU are Kazakhstani citizens. Studying at NU did not expose them to an internationally diverse group of peers learning and living alongside them. Nevertheless, NU alumni also saw that their knowledge and skills were valued by employers.

I work for a foreign company, which has been cooperating with NU for a long time. In particular, the company has been offering internship opportunities to NU students and they already know what the NU graduates can bring to the table. (NU 10, Mechanical Engineering, Nur-Sultan)

Many NU alumni stated that as part of their programme they also developed 'strong research skills' and the 'ability to learn quickly', skills valued by employers.

In contrast to *Bolashak* alumni frequent referencing of intercultural competence, NU graduates mentioned command of English language, which they believed helped them find a job. Our findings suggest that this may be because NU alumni were often applying for posts with international organisations where the ability to speak English was one of the key requirements. Indeed, our sample shows that the majority of both *Bolashak* and NU alumni seek jobs within international and private organisations. This may be connected to the challenges that graduates apparently face in the civil service and public sector institutions, which we discuss next.

### 5.3 | The challenges of employment

Both *Bolashak* and NU alumni secured their first job within six months of graduation, and many appeared successful in their career. Both groups encountered barriers in their transition to employment that stemmed from wider economic circumstances, the local labour market and the cultural context. Challenges included (a) volatility of the economy and labour market, (b) skills mismatches and underutilisation and (c) intergenerational clashes and resistance to change. These factors appeared to delay the career advancement of the alumni, causing some to consider leaving the country. Overall, their employment experiences vary by geographical location, field of study, type of organisation and gender. Alumni working for international companies appeared to be most satisfied with their trajectory to employment. Dissatisfaction was most often voiced by alumni who worked in the public sector or civil service. This comes in part from the *Bolashak* programme's strict regulations requiring alumni to work in a particular sector or institution for up to five years after graduation (depending on the region), which limits alumni choices. In contrast, NU did not have such regulations, and its alumni, therefore, had greater flexibility concerning the sector and type of job they wished to pursue.

#### 5.3.1 | Volatile economy and labour market

The volatility of Kazakhstan's economy and its dependency on the oil and gas sector was the main challenge for the employment of alumni. A marked drop in oil prices led to a rapid fall in the GDP annual growth rate from 4.3% in 2014 to 1.2% in 2015 (Preimanis & Shanshiashvili, 2017), which caused a significant devaluation of the national currency and reduced employment opportunities.

When I graduated, the situation in the oil and gas industry was not good in terms of both employment opportunities and salaries. Many of my peers were out of work for six months. There were no job vacancies. And I was one of the many people who couldn't find a job. Competition in the Kazakhstani labour market was way too fierce. (*Bolashak* 5, Petroleum Engineering, Atyrau)

Because of the moratorium on hiring in some oil and gas companies (Pavlenko, 2016), some graduates were left unemployed for more than a year.

Many of my acquaintances were unemployed for a year or two because it was a period of crisis. Oil prices fell and companies stopped hiring new employees. Many people experienced difficulties. (*Bolashak* 22, Reservoir Evaluation and Management, Almaty)



Low salaries were the second most significant issue for both groups, leading many of them to change jobs several times, particularly NU graduates who were not constrained by regulations. Several participants claimed that in many public sector institutions, salaries are below the stipend they received as scholarship students.

The salary was ridiculously small, and it was so insufficient that you could not even rent a room.  
(*Bolashak* 2, Computer Science, Nur-Sultan)

Transition from learning into work appeared to be harder for alumni who moved to Nur-Sultan or Almaty, two of the larger cities in the nation. One key factor was housing. As graduates moved to the larger, higher paying cities looking for work they usually needed to rent accommodation which is expensive, and some alumni were forced to earn additional money elsewhere.

I found a job at a university at 50,000 tenge with a condition that they will increase my salary to 150,000 after two months. I also earned here and there and made around 120,000. I came from the region without any support here [Nur-Sultan]. I paid 50,000 for rent. I worked like that for a year and then found a job with a 200,000 tenge salary. (*Bolashak* 24, Information Technology, Nur-Sultan)

Both *Bolashak* and NU alumni believed that low salaries had an adverse effect on their efficiency at work and were one of the key reasons for corruption and bribery in Kazakhstan.

How can one be effective when he constantly thinks about salary and issues to cover basic expenses? In such cases people are forced to take and give bribes, get involved in corrupt practices and sometimes even fraud. And this is because they have to survive somehow. This is a serious issue that needs to be addressed. (NU 10, Mechanical Engineering, Nur-Sultan).

In sectors like oil and gas, graduates encountered challenges because of the oversupply of graduates in their field.

Many *Bolashak* scholarship recipients choose a degree in the field of oil and gas and then upon return cannot find a job. This is because we now have an oversupply of graduates in this field without the sector expanding. (*Bolashak* 8, Petroleum Engineering, West Kazakhstan)

Although both groups of alumni had a clear positional advantage in the job market over other graduates, the fierce competition for jobs, oversupply in some fields and limited opportunities made the transition to employment more challenging, particularly when graduates lacked or did not have sufficient work experience.

Employers told me, 'Oh, you have a great education, but you don't have work experience'... even though I was a fresh graduate who was eager to work hard, no one wished to hire me because of the lack of work experience. (*Bolashak* 6, Control Systems, Almaty)

Our findings indicated that although the government of Kazakhstan is making significant investments in education and human capital development through scholarship programmes, the economy of Kazakhstan has not grown enough to fully absorb graduates. This contrasts with comments from employers and policymakers about the lack of skilled graduates. Our data suggest that there is a lack of opportunity rather than a lack of qualified graduates.

### 5.3.2 | Skills mismatches

Although the majority of *Bolashak* and NU alumni had a job related to their field of study, many experienced skills mismatches stemming from limited opportunities or underdeveloped industries in some fields, and from under-resourced facilities and laboratories in specific fields.

A major issue, particularly for *Bolashak* alumni was that the fields they studied were either underdeveloped in Kazakhstan or non-existent. This led them to work in jobs outside their field to earn money until they found something closer to their area of specialisation.

I came to work at Eurasian National University because there were no other options. And finally, after four years I managed to find a job closer to my specialisation. (*Bolashak* 29, Space Technology, Nur-Sultan)

In areas like nanotechnology for which there were no enterprises operating in Kazakhstan, the only employment choice was teaching at a university.

I have a unique specialisation [Nanoelectronics and Nanotechnology], particularly unique and rare in Kazakhstan. There are limited research or industry opportunities in my field. Therefore, I faced more difficulties than other *Bolashak* alumni. When I left for my study, there were talks of EXPO and nanotechnology and plans for establishing various factories. However, by the time I returned, these factories were already closed. And my only choice was to pursue a career in the research side of nanotechnology. (*Bolashak* 30, Nanoelectronics and Nanotechnology, Nur-Sultan)

Similar challenges were faced by NU alumni whose fields were underdeveloped. Poor financing and the slow development of some sectors were cited as reasons for skills mismatches.

We have only two centres that are working more or less effectively in the field of biology. These are Nazarbayev University and the National Centre for Biotechnology. Other institutions are underdeveloped. And two institutions are not enough to develop science in Kazakhstan. We need at least 10 centres similar to those two. We are not ready to be competitive in the global market or to produce something. Science is underfinanced. That's the root cause of the problem. (NU 1, Biology, Almaty)

Five *Bolashak* alumni noted that a lack of resources and poor facilities constrained how they could use their knowledge. Some noted that they used only their theoretical knowledge in teaching because of a lack of necessary equipment and research grants. For others, their skills were not relevant to the needs of their institution forcing them to teach a different subject.

My specialisation mainly focused on how the reactor works. However, we don't have such a course here. We can teach just the fundamentals of nuclear physics, but other courses at this university do not coincide with what I have studied. The difference is that the students here are educated to become theoretical physicists, not engineers. (*Bolashak* 15, Mechanical Engineering, Nur-Sultan)

*Bolashak* programme regulations appeared to add additional constraints. The regulations stipulate that alumni must work in a particular industry related to their field, usually the field where they worked when they applied for the scholarship. For example, someone working for the government would, with the consent of their supervisor, apply for a scholarship under the 'Civil Servant' (Госслужащий) category, and if successful, they would be granted academic

leave. When they obtained their master's degree, they returned to their previous job and continued working in their field. Other alumni received a scholarship under the 'University Graduate' category where they signed a trilateral agreement between them, a domestic university where they obtained their bachelor's degree and the *Bolashak* programme. Under this agreement, recipients are obliged to return to their local alma mater and teach subjects related to their area of specialisation after completing their studies abroad. More than half of the *Bolashak* participants in the study (18 out of 32) were among those who either returned to the previous workplace or started working as faculty at a Kazakhstani university.

The participants highlighted that *Bolashak* regulations obliging the graduates to work in a specific area is a major barrier to their career development.

My major is Engineering Geology. However, my engineering skills are not particularly needed at work. The civil service requires me to be more of a lawyer. Since I haven't had the opportunity to work in the industry, I could not use all the knowledge I acquired. However, I could not change my workplace because of the *Bolashak* programme regulations. And here I don't feel that my career advances. Everything is being done on paper, but in reality, nothing changes. I think that the restriction obliging one to work in a certain place, e.g., public service, is a very bad practice. (*Bolashak* 12, Engineering Geology, Nur-Sultan)

Our findings suggest that because of the programme regulations, *Bolashak* graduates were experiencing greater skills mismatches than NU graduates, delaying the alumni career progression and limiting their contribution to the economic development of the nation.

For the few female participants, particularly those who were married, the transition to the job market was even more challenging, and it was harder to pursue a career in a desired sector or position. This might be because women in Kazakhstan are the main caregivers for children (Kuzhabekova & Almukhambetova, 2019; Kuzhabekova et al., 2017), and because of that, they often compromise their career.

I had a baby. Audit companies were eager to hire me, but their work entails business trips. So, I couldn't work there. I chose a company that ensured stability. We are a young family. We don't have our own apartment. So, I chose a job with a salary enough for accommodation and food and one that allowed me to come home to feed my children, which was a priority. (*Bolashak* 19, Networked Systems, Nur-Sultan)

In sum, although graduates of both scholarship programmes are in high demand, skills mismatches between the prioritised fields of study and local labour market capacities are limiting employment satisfaction for both programmes' alumni. These challenges coupled with *Bolashak* programme regulations constraining job choices and family commitments of female graduates constrain in their career development.

### 5.3.3 | Intergenerational clash and resistance to change

A clash between the Soviet and post-Soviet generations was perceived as one of the major barriers in the transition to the job market and advancing in the workplace. Many of our participants said their ideas were often perceived as 'unrealistic' by their elder colleagues who were educated, and entered working life, during the Soviet era. Alumni working in the civil service and public sector often encountered a very hierarchical environment where it seemed that most decisions were made by one person who held a post by virtue of seniority rather than expertise. Several of our participants referred to older employers or colleagues who were rigid in their beliefs and resistant to any changes.

Working in the civil service is stressful; one source of stress is the population, the other one is your colleagues. Many people in the civil service do not wish to change anything. In most instances, these are elderly people with well-established views and beliefs. So, when a young person comes and offers to introduce innovations, they often have negative attitudes towards such initiatives. Because of their resistance to change, we always had some disagreements and internal show-downs. (*Bolashak* 23, Architecture, Planning and Landscape, Nur-Sultan)

One participant reported that his suggestions were not accepted or taken seriously because he was young. To some extent such an attitude is a manifestation of a prevailing cultural norm that where children must respect their elders. In the workplace this can lead to the situations where younger people are expected to obey and unquestioningly implement the decisions of others. Yet, our findings suggested that often the difficulties in the workplace were due to differences in the mentality and expectations between the two generations. In the Soviet era, people there had an explicit ideology of collectivism and a commitment to building communism under a planned economy, with individuals being ready to sacrifice their time and energy just for the idea itself. The post-Soviet generation participated in and shaped by a market economy with its harsh competition and wished to be treated and paid for their advanced knowledge and skills irrespective of their age. Such example was vivid in the experience of a graduate in negotiating a salary.

They [Soviet generation] think that we are still in the 90s or the USSR where people worked for an idea. When you work you have to afford at least the basic expenses like rent and food...My employer told me that he can't pay me more because it would be difficult to justify it to the head of the organisation who is an elder person and who would not understand why as a young person, I am paid a high salary. For me, this is total nonsense because if I have relevant skills and [am] contributing to the profit of the company why should I be evaluated by age... I often hear from policymakers that 'youth wants it all at the same time'. This is not true. We just want to be evaluated based on our skills. (NU 10, Mechanical Engineering, Nur-Sultan)

The 'resistance to change' of others in their workplace has left some graduates disappointed and demotivated.

There is a certain category of people at work who, being in a position of power, don't want any changes. They want to maintain the status quo. Hence, you sometimes don't even try to advance any ideas, because it's pointless. (*Bolashak* 11, Water Resources Management, Nur-Sultan)

The accounts of our participants indicated that sociocultural factors including a culture of seniority can mitigate alumni's initiatives to drive changes and limit their contribution. Indeed, some alumni claim that until they reach a senior position, it would be almost impossible to influence any changes in their workplace.

## 6 | POLICY IMPLICATIONS: WHAT SHOULD CHANGE?

This paper examined the employment experiences of graduates from two Kazakhstan's government scholarship alumni programmes in STEM fields. Our analysis of 45 interviews demonstrates that although alumni hold a positional advantage in the job market, and many succeed, the employability and career success of alumni are impeded by an intersection of socioeconomic and cultural factors, intergenerational clashes and scholarship programme regulations. The positional advantage (Holmes, 2013) of *Bolashak* alumni who had an immersion experience studying abroad seemed to be greater than the advantage secured by their counterparts who studied at an international university in Kazakhstan. The *Bolashak* graduates seemed to have a greater reputational advantage in the job market, benefiting from the stronger 'signalling effect' (Ehrmantraut et al., 2020) of their international diploma.

Our participants' accounts suggest that international diplomas from abroad have higher value than one from an international university at home. This finding was expected because of some of the unique fields of studies pursued by *Bolashak* graduates, which were not available in Kazakhstan. It was also somewhat surprising, considering the generally similar capabilities, the transferable skills, reported by both alumni. To some extent, the higher value placed on international diplomas from abroad, may be ascribed to a deeper problem within the post-Soviet society, where some employers are operating based on 'blind obedience' to the West, perceiving everything that comes from the West being better than anything produced at home.

We argue that educational qualifications alone are not sufficient to successfully navigate and progress in the local labour market. Our participants' accounts reveal that economic, social and cultural factors are influential. As reported in other studies (Amazan et al., 2016; Campbell, 2017; Guo et al., 2013; Perna et al., 2015), our findings show that the traditional, often bureaucratic, inflexible and centralised, culture of workplaces shapes graduates' employment experience in how they apply their knowledge and skills and how they advance their careers.

The relatively narrow base of Kazakhstan's economy has limited opportunities for some graduates, as has price volatility in the oil and gas sector. Both have constrained the number and range of jobs for graduates particularly those with highly specialised skills or fields. This study and some previous studies suggest that there is a skills mismatch (Abeuova & Muratbekova-Touron, 2019; Franken et al., 2016; Perna et al., 2015; Pham, 2020) with graduates developing capabilities that are ahead of the local market or dependent on facilities and equipment that are not yet available in the country. We show here that due to the underdevelopment of some sectors in Kazakhstan (space technology, nanoelectronics and nanotechnology), alumni with international education from abroad (*Bolashak*) in these areas had few opportunities and felt a greater skills mismatch. One policy response is to constrain scholarship holders' choices of fields of study to known areas of skill shortage or to tie them to planned industrial developments. This might be an efficient use of public resources or a reversion to a command-driven human resource model. The limitations of a more regulated approach are illustrated by the difficulties encountered by *Bolashak* alumni who have been compelled to return to a specific workplace or sector after four or more years away (Perna et al., 2015). Indeed, our findings suggest that the regulatory structure, which ties a scholarship holder to a specific workplace or sector, maybe counter-productive and constrains individual freedoms and thwarts initiative and entrepreneurship. These observations while grounded in the recent public policies of Kazakhstan are relevant to other post-Soviet states and to nations moving from a planned or restricted economy to a more market-oriented economy and which are seeking to diversify the productive sectors. Tight regulations on where alumni work can impede their transition from learning to earning roles and frustrate both alumni and their colleagues in the enterprise and reduce employability overall.

Our results showed that alumni who studied abroad had a slight reputational advantage over those who studied at the recently established international university. The longer-term benefits of investing in local infrastructure like NU over the more immediate returns from sponsoring studies abroad are still to be examined in more detail and with more cases over a longer period. This work will gain impetus from the COVID-19 pandemic, which has constrained international travel and increased demand and competition for international education places 'at home'. The pandemic may lead nations to reappraise the relative size of investments in these two modes of human capital development in favour of local infrastructure. In the interim, we see that employability and the transition from study to work in a society and an economy that is transforming are important issues worthy of more study and reflection for the likely benefit of the nation and the individuals.

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## CONFLICT OF INTEREST

No potential competing interest was reported by the authors.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy and confidentiality issues and ethical restrictions.

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