

BRATISLAVA INTERNATIONAL SCHOOL OF LIBERAL ARTS

**ATTRACTING HIGH-SKILLED MIGRATION TO FOSTER ECONOMIC
TRANSFORMATION: A CASE STUDY OF SLOVAKIA**

BACHELOR THESIS

Bratislava, 2024

Sofia Kohútová

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Declaration of Originality

I hereby declare that this bachelor's thesis is my own work and has not been published in part or in a whole elsewhere. All used literature and other sources are attributed and cited in References.

Bratislava, January 1, 2024

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Signature:

A handwritten signature in black ink, appearing to be 'Kohútová', written in a cursive style.

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Kohútová: Attracting high-skilled migration to foster economic transformation

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Abstract

The performance of the Slovak economy, when compared to other developed European countries, is currently unfavorable. Inadequate and slow adoption of technologies, institutional and procedural obstacles hindering entrepreneurial ventures, extreme waves of brain drain, low investments in science and research, bureaucratic rigidity, and various other challenges are negatively impacting the economy. To bolster it, Slovakia needs to focus on the so-called knowledge economy, requiring a substantial amount of human capital for this transformation. Migration of highly qualified individuals can contribute to acquiring the needed talent. This work evaluates the potential to attract highly skilled workers from abroad using Solimano's concept of Talent Mobility. Following qualitative and quantitative analysis, it became evident that Slovakia is competitively positioned in terms of salaries, particularly when compared to other countries in Eastern, Central, and Southern Europe. However, one of the significant drawbacks is lack of innovation in the business environment, and substantial barriers to entering the market with a new business venture. While Slovakia boasts a high number of educated individuals,, it lacks in the quantity of innovative companies. The immigration process stays lengthy and complicated even though the importance of change has been highlighted in multiple policies and strategic documents. All these factors contribute to assessing Slovakia as an unattractive destination for a highly qualified workforce.

Keywords: foreign talent, startups, high-skilled migrants, knowledge economy, policy, attraction of talent, businesses, determinants

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Abstrakt

Výkonnosť slovenskej ekonomiky je v porovnaní s inými vyspelými krajinami Európy v zlom stave. Nedostatočne rýchla aplikácia technológií, inštitucionálne a procesné prekážky, ktoré sťažujú možnosť založiť si podnikanie, extrémne vlny brain drainu, nízke investície do vedy a výskumu, byrokratická rigidita aj mnoho ďalších problémov negatívne ovplyvňuje ekonomiku. Na jej podporu sa Slovensko musí sústrediť na tzv. knowledge economy, na túto transformáciu potrebujeme veľké množstvo vzdelaného a skúseného ľudského kapitálu. Migrácia vysokokvalifikovaných ľudí, môže prispieť k získaniu potrebného talentu. Táto práca hodnotí potenciál prilákať vysokokvalifikovaných pracovníkov zo zahraničia, s pomocou Solimanového konceptu Talentovej Mobility. Po kvalitatívnej a kvantitatívnej analýze sa ukázalo, že Slovensko je platovo konkurencie schopné iným krajinám najmä východnej, strednej a južnej Európy. Naopak jedným z najväčších nedostatkov je neflexibilita, neinovatívnosť biznisového prostredia ako aj veľké prekážky pri vstupe na trh s vlastným podnikom. Slovensko má vysoké množstvo vzdelaných ľudí, či už rovesníkov alebo aj profesionálov, no chýba mu väčšie množstvo inovatívnych podnikov. Zároveň aj napriek tomu, že mnoho strategických dokumentov a politík vyzdvihuje dôležitosť úprav a zmien migračného procesu, ich implementácia je buď veľmi pomalá alebo neexistujúca a tak proces zostáva zdĺhavý a komplikovaný. Všetky tieto faktory by hodnotia Slovensko ako neatraktívnu destináciu pre vysoko kvalifikovanú pracovnú silu.

Kľúčové slová: zahraničný talent, vysokokvalifikovaní migranti, znalostná ekonomika, politiky, priťahovanie talentu, biznisy, determinanty

Table of content

Declaration of Originality	3
Acknowledgements	3
Abstract	5
Abstrakt	6
Introduction:	1
Chapter 1: Background information	3
Current State of the Slovak Economy	3
Slovak Immigration in Numbers	4
High-skilled Immigrants: Key Ingredient in the Innovative Businesses	7
Chapter 2: Theoretical framework	10
Theories of migration	10
Solimano's concept of Talent Mobility	12
Methodology	15
Analysis	23
International Differences in Earnings and Development Gaps	23
Non-pecuniary determinants	28
Agglomeration and concentration effects	40
Immigration Policy	42
High-skilled Migration in Slovakia: A Failure Story?	49
Conclusion	52
Reference List	54

Introduction:

The Slovak economy has faced persistent underperformance over the years, lagging behind not only Western and Northern European nations but also its V4 regional neighbors. This trajectory is characterized by suboptimal decisions, such as overreliance on the automotive industry, substantial regional disparities, insufficient investments in research and development (R&D), and a rigid bureaucratic process among many others. To align with the fast-paced global landscape and enhance competitiveness, Slovakia must pivot towards fostering innovative ideas and businesses, particularly in the knowledge economy sector. Achieving such a transformative change necessitates qualified talent, and addressing the demand for skilled employees within the business field, CEOs, and founders could involve attracting foreign professionals. Many economically successful countries such as Estonia, Netherlands or Canada, have harnessed the potential of high-skilled immigrant labor to invigorate their domestic economies and entrepreneurial environments. However, Slovakia has yet to fully capitalize on this opportunity through tangible policy changes.

The paper aims to shed light on the concept of foreign talent in Slovakia and address the research question: "How does Slovakia perform in attracting high-skilled migration in 2024?" To answer this question, Solimano's (2008) framework of talent mobility was selected as the guiding principle. This framework identifies the most crucial determinants of high-skilled migrants which will be used to assess Slovakia's case. This framework integrates key premises from various migration theories, including the Neoclassical view, Human Capital Theory, Network Theory, Migration Systems Theory, and the Push and Pull concept, providing a comprehensive tool for evaluating migration as a complex process within a country.

The methodology encompasses two primary analyses: qualitative and quantitative concept analysis. Quantitative part focuses on examination of government documents, reports and policies, in the form of desk research or literature review, supplemented by interviews conducted with relevant experts from the field . The

quantitative part of the analysis will focus on statistics and data collection, especially comparing economic indicators, as they are important in Solimano's concept. For the purpose of the thesis special attention in the analysis will be focused on four out of the seven determinants. To be more specific International differences in earnings and development gaps, Non-pecuniary motivation, Agglomeration and concentration effects and Policy regimes and immigration policies. To add rigorousness to evaluating Slovakia's approach to the high-skilled migration, we have employed a matrix with set indicators to each of the determinants.

The paper unfolds in four main chapters. The first chapter contextualizes the current state of Slovakia when it comes to economy and high-skilled migration, clarifying the interrelation of the economy, innovation, business, and high-skilled migration. The second part delves into defining the theories employed in the paper, including Solimano's concept of talent mobility. The third chapter aligns the methodology with the research question and theories. Lastly, the fourth chapter provides a detailed exploration of the analysis outcomes, amalgamating theories and selected methods.

Chapter 1: Background information

Current State of the Slovak Economy

Before delving into the intricacies of the high-skilled migration concept, it is essential to elucidate the rationale behind focusing on this subject. Two pivotal factors underscore its importance: economic and demographic considerations. Slovakia is following the trend of other developed countries with decline of its population (European Commission, 2023). Adding to that, the prevailing state of the Slovak economy is less than optimal and there are potential vulnerabilities and threats, which need to be taken into account. Notably, the country's economic growth rate has persistently lagged below the European average of approximately 4.3% (Ministry of Finance, 2023), raising concerns about the economic system's stability. Slovakia also exhibits lower per capita income and (European Innovation Scoreboard, 2023). Another pressing concern is the elevated level of youth unemployment, which poses a significant menace to overall economic well-being (Eurostat, 2023). Furthermore, the considerable reliance on the automotive industry has attracted significant attention. While the influx of foreign direct investment and subsequent job creation within this sector are commendable, the concentration of economic activity in a singular industry renders the system vulnerable to external shocks. This vulnerability is exacerbated by the increasing automation trends in the automotive field, which could lead to a rise in unemployment (Klein, Høj & Machlica, 2021). Coupled with the pronounced regional disparities, slow rate of creating and applying technologies and innovation the Slovak economy is poised to grapple with a plethora of challenges (Chrancokova, Weibl & Dokupilova, 2020). Additionally, Slovakia has been experiencing one of the most significant rates of brain drain, particularly among students pursuing education abroad. The enrollment of Slovak students at foreign universities has reached 19%, marking the second-highest in Europe after Luxembourg, in stark contrast to the 2% OECD average (OECD: Higher education in Slovak Republic, 2024). This results in a substantial loss of educated human capital, impeding economic growth.

To remain competitive on the global stage, Slovakia must redirect its focus and channel greater energy into promising sectors while diversifying its economic pursuits. Notably, innovation should emerge as the nucleus of economic activities, acting as a catalyst for growth. The prioritization of the knowledge economy, based on harnessing human capital, scientific advancements, technologies and applied research for societal and economic development, has emerged as a paramount concern for developed nations in their quest for economic advancement (Hayes, 2021). Knowledge economies, as outlined by the World Bank, rest upon four pivotal pillars: firstly, well-structured institutional frameworks that incentivize entrepreneurial activities and the practical application of scientific knowledge; secondly, access to skilled and educated labor; thirdly, availability of cutting-edge technologies; and finally, a dynamic innovation ecosystem that encompasses academia, the private sector, and civil society (Chen & Dahlman, 2006).

Governments, in their pursuit of nurturing knowledge economies, direct their efforts towards bolstering educational systems, cultivating robust innovation networks, facilitating the integration of innovative practices within the business landscape, and allocating significant resources to research and development, among other strategies. A directional shift in this regard is imperative for the Slovak economy, which lags behind countries that have adopted innovation and the knowledge economy as central pillars.

Slovak Immigration in Numbers

The foreigners have been historically working in Slovakia for a short-term period, in professions, which have the largest labor shortages (Petráš, 2018). Most of the foreigners coming to work in Slovakia are around 30 years old but the majority of the migrants usually leave in the first 2 years, while most of the remaining migrants leave between fourth and fifth year of their stay (IOM, 2021). This means that to fill in the gaps in the job market and help the economy, Slovakia would need to heavily invest not only in attracting foreign talent but also in keeping it in the country to have the largest returns on these investments.

Lack of qualified workforce is a long-term problem, with which Slovakia as well as other EU countries are struggling. Currently, 75% of employers cannot find qualified workers and Rumiz, president of the Association of personnel agencies of Slovakia said that in 2030, “it is expected that up to 90 percent of our businesses will not be able to find a suitable workforce, which poses a major risk to our entire economy” (TASR, 2023b). Slovakia has also missed the opportunity with issuing EU Blue Cards, which could attract the foreign talent more easily. Between 2012-2016, Slovakia issued only 32 EU Blue cards, while in 2016, Czech Republic and Poland issued 39 and 42 Blue Cards respectively per million of employed persons (Ministry of Labour, Social Affairs and Family, 2018).

When we look at the statistical data on migration, we can see progress in the right direction. In comparison to the years 2019/2020, the legal migration towards Slovakia increased three-fold in 2022 (Ministry of Defence 2020; 2022). Last year, 222,525 migrants received temporary permits, which is almost 2.5-times more than in 2020. This was caused predominantly by the war in Ukraine, which caused a displacement of many Ukrainians looking for shelter in the neighboring country. Nevertheless, in the last 4 years, Ukrainians have always been holding the most permits out of all third-country nationals living in Slovakia.

Tab n.1: Number of valid temporary residence permits issued for the third country nationals

Purpose for temporary stay	2019	2020	2021	2022
Employment	26,196	24,216	22,526	22,690
Entrepreneurship	11,856	16,401	31,164	41,080
Family reunion	8,965	9,354	10,728	12,302

Studies	6,910	7,773	8,989	10,309
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Source: Ministry of Defence 2020 and 2022.

When we look at the purpose of the permits for third-country nationals, an interesting picture emerges. While in 2019/2020, the main purpose of permit-holders staying in Slovakia was employment, in 2021 and 2022, the purpose was business activity/entrepreneurship or opening their own businesses (Tab no.1). The employment stayed almost the same compared to the previous years - around 22,000 (Ministry of Defence 2020; 2022). The entrepreneurship among migrants coming to Slovakia has risen 2.5-3.5-times to the size from 3 years ago, which is also a surprising result.

This is surprising mainly because migrants, who want to open their business in Slovakia, need a temporary residence permit, which is another bureaucratic hurdle that e.g. the Czech Republic and Hungary abolished (Dugovič, 2017). In 2018, the amendment of the bill n.5/2004 shortened the process of granting temporary residence permits to 20 days, however, this was permitted only for selected professions (Ministry of Labour, Social Affairs and Family, 2018). On top of that, foreigners need to meet other conditions, such as drawing up founding documents, register their business in the commercial register and at the tax office, as well as declare that they are not tax residents (Removčíková, 2022).

According to Kurota from Slovak Invest (Dugovič, 2017), there are three main reasons for migrants to open business in Slovakia:

1. IT professionals who can work from anywhere but do not want to stay in Ukraine or Russia;
2. Entrepreneurs who brought their business to Slovakia - they often sell various goods like furniture, oil, gas, food products and other
3. Migrants who had to leave their country and opened businesses, like cafes and restaurants, which differ from their previous profession.

When it comes to the high-skilled foreign labor, the situation in Slovakia is even more dire. Sramkova from the Institute of financial policy says that many regions of Slovakia do not have resources of qualified labor and therefore, municipalities should find out what individual positions need to be filled by foreign workforce (Koreň, 2018). This is the option of 'Occupation lists', in which the country specifies which professions it needs to fill in with foreign labor force and ease up the immigration process for the migrants with that occupation. Sramkova suggests that the universities should be the main players in attracting foreign talent to study in specific fields, which are the most desired (Koreň, 2018). However, the Slovak educational system is not able to keep domestic talent so this approach would require many reforms and increased investments in research and development, which will take years, maybe even decades. Attracting foreign talent to a country can be attracted differently, it involves enhancing diverse conditions and presenting enticing opportunities. This aspect must be approached with seriousness, as it can serve as a significant catalyst for economic growth.

High-skilled Immigrants: Key Ingredient in the Innovative Businesses

Human capital serves as the bedrock for cultivating innovative ideas within any pioneering business venture. From the ideation phase to implementation, the triumph of innovative enterprises heavily hinges on the acumen of the skilled human capital, whether it is CEO or their teams. A proficient workforce, showcasing diverse expertise across various domains, coupled with effective leadership, instills distinct perspectives, problem-solving proclivity, technological prowess, and both soft and hard skills essential in the dynamic and challenging realm of innovation. One way to acquire adept employees and compatible founders is through education. This entails fostering an educational ecosystem that advocates and nurtures entrepreneurship while offering the requisite skill set (Bacigalupo et al., 2016). Schools therefore have to provide the requisite technological competencies but also high-quality, advanced fields of study. Furthermore, it entails incorporating elements of informal education, project-based learning, and experiential learning within the educational system (Corbett, 2005; Bandera, 2018; Lackeus, 2020). This strategic approach mirrors the

trajectory of countries such as Estonia, Finland or Denmark renowned for their excellence in both education, innovation and economy.

Another route, through which countries can obtain a skilled workforce is from abroad. Foreign talent can provide substantial momentum to the knowledge economy and innovative enterprises. Over the past few decades, many developed nations have recognized high-skilled immigrant labor as a pivotal driver for long-term economic and national prosperity (Chatterjee, 2015). Numerous countries concentrate their efforts on attracting international students and highly skilled professionals. International students are particularly attractive, since they possess local diplomas and the requisite knowledge, along with foundational linguistic skills and cultural acumen (Shachar, 2006: 169). However, instances arise where the domestic educational system may not comprehensively cater to all necessary professions or competencies, making skilled immigrant labor a valuable resource, enriching specialized expertise (Kerr et al., 2016).

It is imperative to address the terms "highly-skilled migrants," also referred to as "top specialists" or "foreign talent." This term lacks a uniform definition, exhibiting variations from one country to another primarily based on respective legislation. Parameters might encompass education levels, specific qualifications, job types, remuneration levels, or years of experience. Although three key institutions—the ILO's International Standard Classification of Occupations, UNESCO's International Standard Classification of Education, and the European Union Council Directive 2009/50/EC—have attempted definitions, the term's precise delineation largely depends on individual countries, with some lacking a well-defined interpretation. However, generally speaking, inclusion under the umbrella of "highly-skilled migrant" mandates a requisite level of professional experience and education. In Slovakia, to be classified as a highly qualified worker, one must possess a university or college diploma. The minimum requirement is a bachelor's degree, while master's degree or PhD are also welcomed. The employment contract must be concluded for at least one year, with a stipulation that the salary should be a minimum of 1.5 times the

average monthly salary (EU Immigration Portal, 2023). This definition will be taken into account throughout the entire research process.

Embracing a foreign high-skilled workforce yields numerous advantages for both society and businesses. The integration of diverse backgrounds among foreign founders and employees nurtures the emergence of novel ideas, introduces fresh perspectives, and injects a creative and innovative dimension into the business cycle (Kerr & Kerr, 2018). These individuals often conceive intriguing business models and innovative product or service concepts inspired by their native environments. Immigrant entrepreneurs, in particular, bring intrinsic connections and pathways to their countries of origin, enhancing their potential for collaborations, partnerships, and targeting niche audiences (Chatterjee, 2015). Entrepreneurs frequently maintain ties with their home countries through formal business channels (Kugler & Rapoport, 2007). Research indicates that immigrants possess attributes that make them promising founders, showcasing inherent entrepreneurial qualities, higher risk-taking propensities, and adaptability (Singer, 2021). This premise is supported even in the case of Slovakia with its rising numbers of high-skilled migrants, who in their reasons for relocation stated establishing a company. A notable example is Estonia, where over 18% of founders are migrants, and many of the initial unicorn enterprises that fueled the ecosystem were established by immigrants (ImmigrantFounders, 2023). In conclusion, the presence of highly-skilled immigrant workers and employees holds significant potential for a country's economy.

Chapter 2: Theoretical framework

Theories of migration

There has been a resurgence of interest in migration by both policymakers and scholars, particularly since the 1960s and 1970s when the political and societal context of it became more significant. The causes, consequences, and developmental impacts of migration gained significance as underdeveloped and developing countries experienced massive emigration of human capital, usually with the pathway going one way, to the developed economies (Solimano, 2008). During this period, two main streams of thought emerged: "nationalists" like Don Patikin and "internationalists" such as Harry Johnson (Adams, 1968). Internationalists viewed emigration as a natural outcome of better economic prospects in receiving countries, providing gains for both migrants and the global economy. Nationalists questioned the concept of "world welfare," emphasizing asymmetric gains between sending and receiving countries. Despite the extensive research on the topic of migration, there is no complex and definitive framework, which would explain it (Lee, 1966; Massey et al., 1998; Zelinsky, 1971). The complexity of migration is influenced by individual experiences of each migrant as well as the micro and macroeconomic conditions. There have however been scholarly and academic debates, which expressed their own point of view on the reasons behind migrating.

The neoclassical perspective posits economic factors as the primary drivers of migration. The theory emphasizes economic motivations, with individuals moving from regions with lower income to those with higher income, often translating into rural-urban or international migration (Castles & Miller, 2003). The Harris-Todaro model refines this perspective, considering not only prevailing income disparities but also the "expected" income differentials and the promise of work, which the more developed areas offer. (Todaro, 1969:138).

Human capital theory expands the focus beyond economic factors, acknowledging

non-monetary incentives. It introduces additional layers to the decision-making process, considering factors like quality of life, education opportunities, and cultural environment (Sjaastad, 1962). Scholars argue that these non-monetary motivators are equally essential as the economic drivers.

The historical-structural paradigm, rooted in Marxist political economy, views migration as an outcome of capitalist accumulation disruptions and dislocations. It perceives migration as a manifestation of political and economic inequalities between developed and underdeveloped countries (Massey et al., 1998:36). However, it has faced criticism for its deterministic nature.

The New Economics of Labour Migration Theory reconceptualizes migrants as a collective entity, commonly families, aiming to maximize gains and minimize risks through collective effort (Massey, 2015).

The push and pull model developed by Lee (1966) is widely accepted, stating that final destinations and native countries of migrants have advantages and disadvantages or in other words, factors which either pull the migrants to the receiving country or push it out of the home country (Reniers 1999:681). These two are usually functioning oppositely each other. If we take wages as a determining factor of migration, then population growth in rural areas with less work opportunities which drives down wages is considered as a push factor, while the booming demand in the towns works as a pull factor (Skeldon 1997:20; Schwartz and Notini 1994). It has not been completely understood and determined, which one works first or which holds more power in determining the situation.

Network theory and migration systems theory offer a social perspective on migration. Network theory examines interpersonal relationships and their influence on migratory trajectories. The assistance of relatives or community can provide significant help before, during and after the process of migration. Therefore, the formation of an established migrant community at one particular destination will

increase the likelihood of subsequent migration to that particular place (Appleyard 1992). Previously described as “chain migration”, network theory highlights the role of social networks in shaping migration as a collective phenomenon (Massey et al., 1993:448). Migration systems theory takes a broader approach, examining the societal context and reciprocal effects of migration on society (Bakewell, 2014). While migration network theory emphasizes the role of interpersonal relationships in influencing migration patterns, migration systems theory extends its gaze to encompass the multifaceted impacts of migration on the larger social fabric.

Solimano's concept of Talent Mobility

Some scholars underscore specific theories, highlighting one motivational factor over others. Choi (1995) concurs with the significance of a reasonable salary for migrants, as presented by Mahroum (2000). However, Choi asserts that salary alone is not the sole determining factor; instead, a transnational approach and network theory should be accorded greater importance. Others endeavor to merge multiple or all migration theory and their associated concepts into a more cohesive and intricate framework. One such scholar is Solimano (2008), whose concept of Talent Mobility focused specifically on high-skilled migrants. The framework synthesizes the hypotheses of multiple aforementioned theories, creating a comprehensive tool to understand and classify the determinants of high-skilled migration.

According to Solimano's talent mobility framework, the primary determinants of high-skilled migration encompass:

- International differences in earnings and development gaps
- Non-pecuniary motivations
- The demand for capital and talent
- Technology and demand for talent
- Agglomeration and concentration effects
- Linguistic compatibility, networks, and sociocultural affinity
- Policy regimes and immigration policies

In his theoretical framework, Solimano discusses the significance of “International differences in earnings and development gaps”, a concept fundamentally rooted in neoclassical theory. He places considerable importance on the monetary motivations of migrants, observing that migration often occurs to areas or states with higher expected income and favorable economic conditions. Solimano highlights how low taxes or tax incentives for migrants can be advantageous in attracting skilled talent. Additionally, he considers factors such as purchasing parity, economic rights, the state of the private sector, and ease of starting a business as crucial elements influencing migrants' decisions.

Nonetheless, Solimano extends beyond the neoclassical theory by incorporating "non-pecuniary (non-monetary) motivations." These motivations are specific and individual, dependent on the conditions in the field of the particular migrant. They encompass field-specific considerations, such as healthcare conditions for migrant nurses and doctors or R&D and access to funds for scientists.

Another facet integrated into the Talent Mobility framework is the "demand for capital and talent." Countries with higher standards of living and more capital tend to attract more high-skilled workers. The presence of capital not only attracts talent but also creates a high demand for it, making migrants more amenable to relocating to countries with abundant job opportunities, especially in their field.

Solimano's fourth point emphasizes "technology and demand for talent," positing that technologically advanced countries require more skilled workers and are consequently more attractive.

Furthermore, he underscores the importance of agglomeration and concentration effects, which simplified means "talent attracts talent and opportunities attract opportunities." A community of high-quality peers and professionals, a plethora of new ideas, and access to advanced research and development or new products on the market all influence the decisions of highly skilled talent.

While linguistic compatibility, networks, and sociocultural affinity remain important considerations, Solimano contends that they pose fewer challenges for highly educated migrants. These individuals often speak multiple languages, possess broad knowledge, and are sensitive to cultural and societal specifics. Solimano even depicts the case of "elites," highly skilled workers at the top of their fields, who, having studied at international universities, possess international ties, making linguistic and cultural concerns even less significant.

Lastly, Solimano underscores the critical role of policy regimes and immigration policies when considering migration. The entire process and conditions for migration are highly influential in shaping migration decisions. He also emphasized the political and governance factors, drawing on aspects of the human capital theory.

For the purpose of this thesis Solimano's framework will be used as it provides a multidisciplinary and complex understanding of the issue of high-skilled migration. The analysis will conceptualise and analyze these four points of his framework:

- International differences in earnings and development gaps
- Non-pecuniary motivations
- Agglomeration and concentration effects
- Policy regimes and immigration policies

Methodology

High-skilled migration is a theoretically comprehensive concept, thus for its conceptualisation and adaptation to the case of Slovakia, Solimano's (2008) framework of Talent Mobility will be used. It provides a set of seven determinants, which are specifically designed to understand the motivations of highly skilled migrants. Adding to that, it combines ideas from multiple theories of migration, which adds on its complexness and relevance. The analysis will focus on four out of seven points in Solimano's concept, i.e. International differences in earnings and development gaps, Non-pecuniary motivations, Agglomeration and concentration effects, Policy regimes and immigration policies. The demand for capital and talent will not be assessed due to data scarcity. Linguistic compatibility, networks, and sociocultural affinity as Salimano himself noted is not the most essential factor high-skilled migrants evaluate during the process of selection. Since they are educated, well traveled and probably obtain international connections, it is easier for them to integrate to a new country. Adding to that, these concepts will be partly mentioned and dealt with in the fourth part focusing on Policy regimes and Immigration policies. Similarly, technology and demand for talent will be partially included in the Non-pecuniary factors, as it is connected. For this analysis it is not necessary to delve into the details of all seven determinants.

A mixed method of quantitative and qualitative analysis and the 4 determinants of Solimano's concept will be used, to answer the question "How does Slovakia perform in attracting high-skilled migration in 2024?" The intent is to evaluate Slovakia and its appeal as a receiving country for a foreign talent compared to other European countries as well as point out the areas for improvement. This implies that all data covered within the analysis will be focusing on Europe, to make the comparison as relevant as possible. For the purpose of evaluation of the state a matrix with preset indicators for each determinant was created.

The qualitative analysis will consist of examination of government documents, reports and policies, in the form of desk research or literature review. The goal of this

method is to gather as much relevant information as possible, understand the topic thoroughly, generate hypotheses and identify any research gaps, which this research aims to address. This method offers several advantages, such as its cost-effectiveness, time efficiency, and accessibility, but it also has its limitations, since it relies on the quality and relevance of existing data, which might be outdated, biased, or incomplete. (Owa, 2023). To address this limitation, we have critically evaluated the sources analyzed to ensure their credibility and applicability to the research objectives.

However, sole reliance on desk research proves inadequate in yielding a comprehensive understanding. Consequently, a series of semi-structured interviews were conducted, engaging seven individuals entrenched in the Slovak business domain, public sector as well as high-skilled migrants. These interviews were undertaken with the aim of garnering their expert perspectives and insights pertaining to the contemporary landscape in Slovakia, while discerning predominant challenges and avenues for enhancement. The reason for conducting these interviews arises from the recurrent assertion within reports and literature that the depth of information exchange and collaboration on this matter between the private and public sectors is insufficient. As a result, soliciting insights from those directly immersed in these circumstances becomes imperative.

To ensure the interviews' pertinence, a diverse array of interviewees was purposively selected. Amongst the cohort from the business community were CEOs of enterprises, chosen to illuminate the complexities stemming from procedural intricacies. Likewise, inclusion of investors was contemplated, given their experience with hiring foreign talent to invigorate startups within their portfolio. In addition, discerning perspectives from highly skilled migrants was deemed invaluable, affording an understanding of their motivations and the determinants underpinning their decisions.

The quantitative part of the analysis will focus on statistics and data collection, especially comparing economic indicators, as they are important in Solimano's

concept. To ensure the relevance of the data, reputable sources such as OECD, Eurostat and Glassdoor among others will be used. For the analysis, the focus will be on entrepreneurs and managers as key drivers of economic transformation and growth. However, considering the evolving job market since Solimano's concept in 2008, the term "manager" will be broadened to include employees within businesses. This expansion encompasses various roles vital for a business, including project managers, sales managers, data analysts, and engineers involved in technological teams as product managers or strategy advisors. The research will encompass companies of diverse types, ranging from startups and small to medium-sized enterprises to corporations, international organizations, and social enterprises—essentially any market actor capable of contributing to innovation or already engaged in the creative process.

Both qualitative and quantitative analyses will be employed to assess Slovakia based on a matrix scale with predefined conditions. Each category (determinant) will be scored on multiple conditions, all carrying equal weight. The overall score for each determinant will be based on the sum of individual subcategories.

The scaling system:

- 1: bad/insufficient conditions,
- 2: medium/good conditions
- 3: very good conditions

	International differences in earnings and	Non-pecuniary motivations	Agglomeration effect	Immigration Policy
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	development gaps i.e. monetary indicators			
1	Unfavourable economic conditions: low net income median	Significant systematic obstacles in business creation and non-flexible/non-innovative business environment	Low numbers of educated individuals and low opportunities for employment in innovative companies	No mention of the need for high-skilled migration in policy documents
2	Favourable economic conditions: medium net income median, medium	Some obstacles in business creation and business environment on its way to innovation	Moderate number of educated individuals and some employment opportunities in innovative companies	Needs for high-skilled migration mentioned in policy documents, however, lacking in implementation
3	Highly favourable economic conditions: high net income median	Almost no systematic obstacles in business establishing, productive and innovative business environment	A large number of educated people and a plethora of opportunities in innovative companies (innovation giants)	Need for high-skilled migration explicitly stated in the policy documents, which is reflected in also policy implementation

Explanation of the criteria in all four determinant of talent mobility defined by Solimano

1. International differences in earnings and development gaps

1.1. Unfavourable economic conditions

Countries included in this category will be in the lowest 33.3% of net income median of full-time salary for business positions which ranges from 18,000- 34, 999 Euros for project managers, 20,000 Euros- 31,999 Euros for data analysts, 18,000 -47,999 Euros for sales managers and 15,000-26,999 Euros for engineers

1.2. Favourable economic conditions

Countries included in this category will be in the middle 33.3% of net income median of full-time salary for business positions which ranges from 35, 000 - 44,999 Euros for project managers, 32,000 - 39,999 Euros for data analysts, 48, 000 - 66, 999 Euros for sales managers, 27 000 - 42, 999 Euros for engineers

1.3. Highly favourable economic conditions

Countries included in this category will be in the top 33.3% of net income median of full-time salary for business and managerial positions, falling among the top earners with the salaries ranging from 45, 000 - 103, 000 for project managers, 40, 000-88, 000 Euros for data analysts, 67, 000 - 172, 000 for sales managers and 43, 000 - 73, 000 Euros for engineers

2. Non-pecuniary motivators

2.1. Significant systematic obstacles in business creation and non-flexible, non-innovative business environment

Countries included in this category will have unfavourable and very challenging conditions for business establishment based

on the Doing Business Index. They will perform below expectations in the Global Innovation Index for their income category or will fall into the category “mostly unfree” or “repressed” in the Economic Freedom Index

- 2.2. Some obstacles in business creation and business environment on its way to innovation and

Countries included in this category will have moderately challenging conditions for establishing a business based on the Doing Business Index. They will perform as expected or better compared to their income group based on the Global Innovation Index and will fall into the category “moderately free” in the Economic Freedom Index

- 2.3. Almost no systematic obstacles in business establishing, productive and innovative business environment

It is very easy to establish business based on the Doing Business Index in these countries. They are also among global leaders in innovations based on the Global Innovation Index and fall into the category “most free” and “free” in the Economic Freedom Index

3. Agglomeration and concentration effects

- 3.1. Low numbers of educated individuals and low opportunities for employment in innovative companies

Countries falling into this category will exhibit less than 51% (below the OECD average) of their businesses in the market deemed innovative according to the Eurostat comparison.

Additionally, the population with tertiary education will be less than 47% (below OECD average).

3.2. Moderate educated individuals and employment opportunities in innovative companies

Countries falling into this category will possess business ventures in the market considered innovative, ranging from 52% to 58% (comparable to the OECD average) based on the Eurostat comparison. Additionally, the population with tertiary education will fall between 48% and 60%.

3.3. A large number of educated people and job opportunities in innovative companies

Countries falling into this category will boast business ventures in the market considered innovative, ranging from 59% to above 70% (higher than the OECD average) based on the Eurostat comparison. Additionally, the population with tertiary education will be above 60%.

4. Immigration Policy

4.1. No mention of the need for high-skilled migration in policy documents

Countries deeming no need for high-skilled migration.

4.2. Needs for high-skilled migration mentioned in policy documents, however,
lacking in implementation

Countries with an interest in high-skilled migration, plight of policies, studies and documents but unsuccessful implementation.

4.3. Need for high-skilled migration explicitly stated in the policy documents,

which is reflected in also policy implementation

Countries with smooth policy implementation within the area of high-skilled migration ensuring laws, policies and criterias attractive for migrants

Analysis

International Differences in Earnings and Development Gaps

Based on both Solimano (2008) and neoclassical theory, economic considerations play a crucial role in shaping the decision-making process of highly skilled migrants. Based on the rational cost-benefit analysis the actors tend to choose regions and countries with better economic prospects, especially higher wages. However, they tend to look at other factors shaping the economic situation in the country, such as taxes, cost of living for employees, money parity of companies and the quality of business environment, investments, loan rates, etc. This chapter focuses on collecting data across these areas.

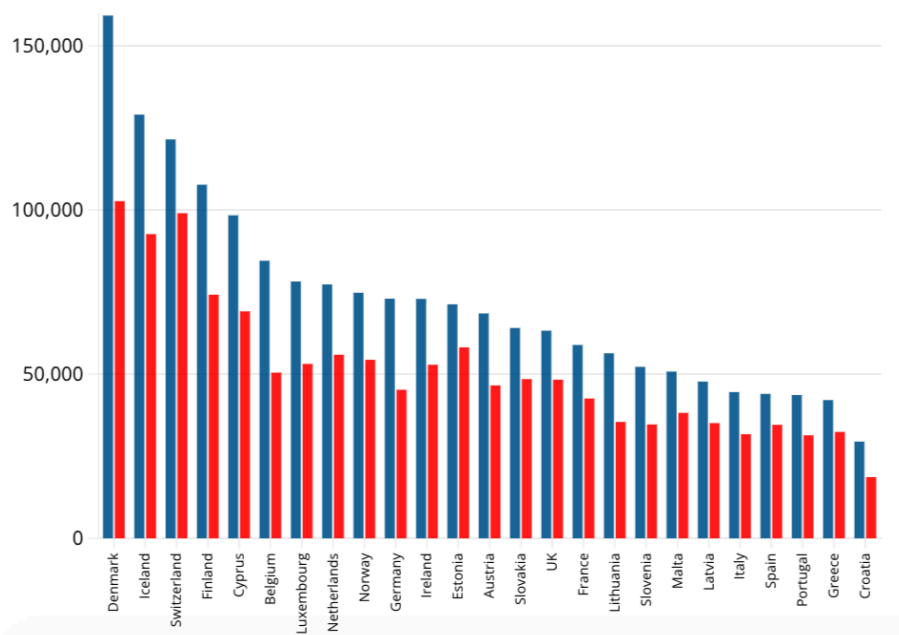
Higher income and more employment opportunities in general serve as a pull factor of the receiving country (Passaris,1989). Apart from research and theory, this premise is supported by data as well. In 2021 more than 30% of all migrants who relocated to Europe did so for beneficial financial prospects and economic conditions (Katanich, 2023). This means that if a country wants to attract global professionals, the vacant jobs have to be compensated competitively compared to other European countries. This applies to the whole business spectrum, but especially to the professions with increasing demand and lack of domestic talent to cover it either because of lack of skills or lack of numbers.

Following the methodology outlined, Slovakia's assessment centered on the monetary attractiveness of salaries. Using data from the international job search platform Glassdoor, median net yearly salaries were compared for various professions, including project managers, data analysts, sales managers, engineers, and top management. These professions were selected to encompass different facets of the business field, acknowledging their distinct responsibilities, skill sets, and educational backgrounds, yet recognizing their crucial roles in a functioning of a company. Engineers, in particular, stand out as a unique category, often transitioning to roles such as product manager or CEOs due to their entrepreneurial and problem-solving mindset. Many of them establish their own successful ventures later

on in their career (Mohammed, 2018). The choice of countries was influenced by data availability on the job platform Glassdoor. The assessment covered both gross and net salaries. While gross wage is a key economic indicator influencing migrants' decisions, an exclusive focus on it may not offer a comprehensive analysis. Personal income tax, a crucial determinant of the net salary received by migrants, plays a significant role in shaping migration decisions. The comparative analysis of countries would lack completeness without a thorough examination of this economic indicator, especially considering the substantial variations in tax burdens among countries. Notably, countries with higher incomes often face considerably higher personal income taxes, as observed in Germany and Denmark. In Slovakia, multiple tax rates apply: income up to 176.8 times the subsistence level, equivalent to EUR 41,445.46 for 2023, is taxed at a rate of 19%, while the portion exceeding this threshold incurs a 25% tax rate, which are one of the lowest tax rates among the surveyed countries (PwC Worldwide Tax Summaries, 2023).

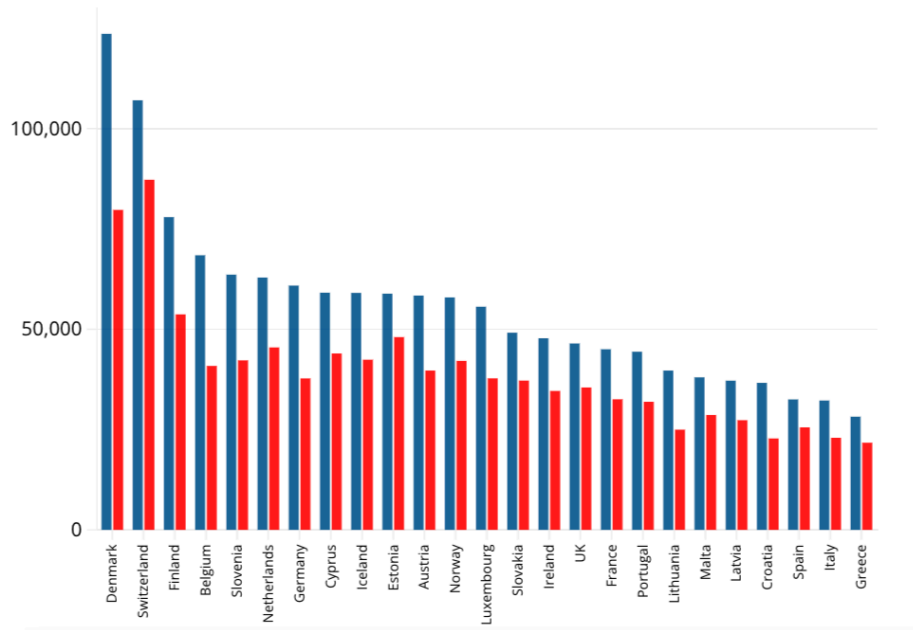
Caveat being that the wage range for professions differ based on responsibilities, scale of the company, seniority level and other individual indicators, thus the median is the best possible way of evaluation.

Tab no. 2: Median Yearly Salary for Project Managers in EUR (Gross vs net salary)



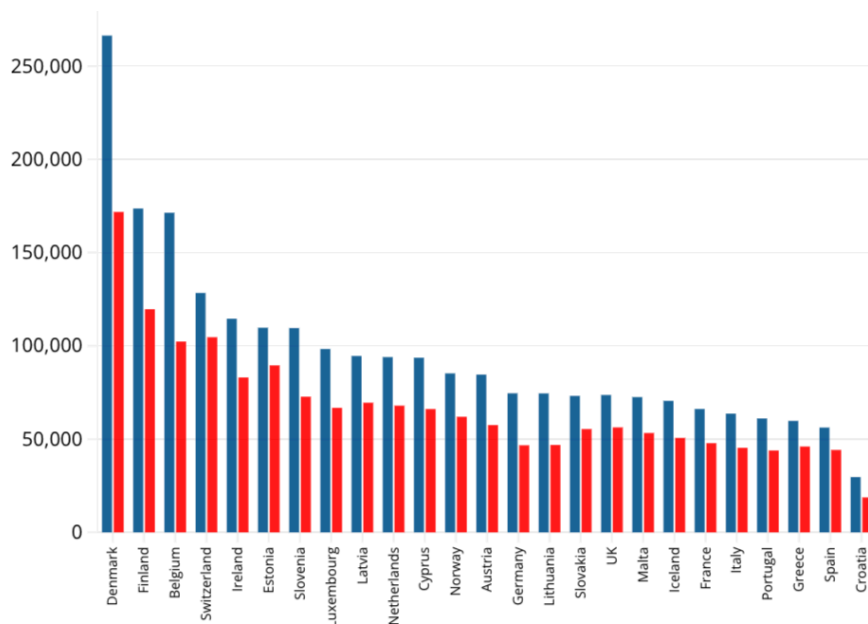
Source: Glassdoor 2023, Euronews 2023

Tab no. 3: Median Yearly Salary for Data Analysts in EUR (Gross vs net salary)



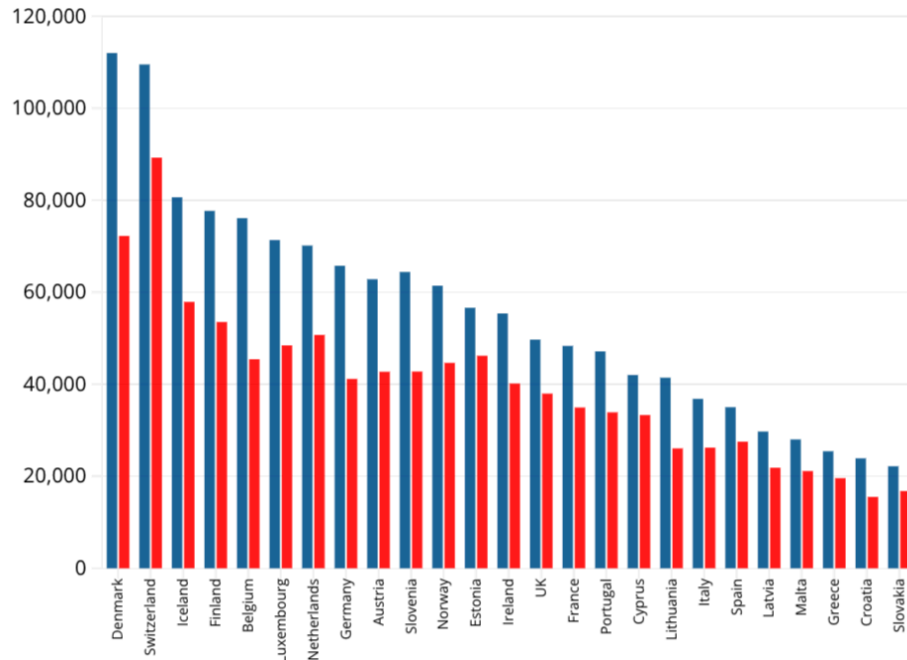
Source: Glassdoor 2023, Euronews 2023

Tab no. 4: Median Yearly Salary for Sales manager in EUR (Gross vs net salary)



Source: Glassdoor 2023, Euronews 2023

Tab no. 5: Median Yearly Salary for engineers in EUR (Gross vs net salary)



Source: Glassdoor 2023, Euronews 2023

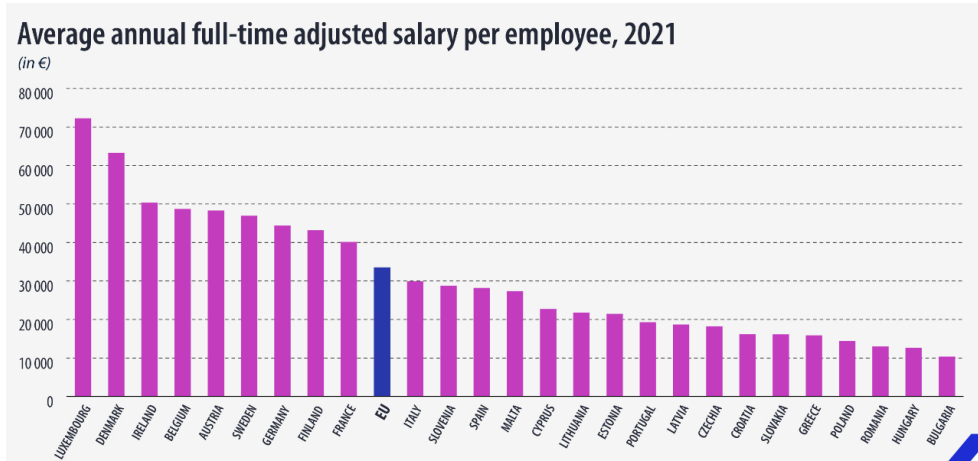
Slovakia ranks 14th among 25 European countries in net salary for project managers, standing at 48,508 Euros. This is comparable to the UK (48,326 Euros) and Austria (46,582 Euros). Denmark tops the chart with a median of 102,717 Euros, outperforming other countries by a substantial margin, including Switzerland, Finland, Cyprus, Belgium, and the Netherlands, which pay their project managers significantly higher salaries on average. In the category of data analysts, Slovakia again secures the 14th position out of 25 countries, with a median salary of 37,190 Euros. This is comparable to Luxembourg, where the average earnings for this role are 37,755 Euros. While Greece, Portugal, and Spain offer around 30,000 Euros for this position, Denmark, Finland, and Switzerland provide significantly higher wages. For sales managers, Slovakia ranks 11th out of 23 countries, with a net salary of 55,367 Euros, the highest-paid position. The leading countries in this category remain the same, although the order changes. Engineers in Slovakia receive the second-lowest salary at 16,778 Euros, while most other countries offer more

competitive compensation for this role. Although technical positions are extremely sought after and there is a high demand for employees with such skills, those are also the most poorly compensated.

It is crucial to highlight the significance of entrepreneurs, the Schumpeterian tradition, plays a vital role in economic growth and innovation. While entrepreneur salaries vary and are often tied to business success, which is highly dependent on the skills of the founder, the state can contribute to fostering a nurturing business environment, a topic explored further in the second section of the analysis, focusing on non-pecuniary motivators.

Migration is frequently a collective decision, as indicated by the Networks and New Economics of Labour Migration theory. It involves entire families or, at the very least, couples. Therefore, the salary range of high-skilled migrants may not be the sole determining factor. A respondent in an interview affirmed this notion, stating, "I emigrated with my spouse, who is not in finance like I am, and she does not have a high-profile job. It was important for me to consider her salary and economic conditions as well. It was crucial that her salary would at least stay the same or would ideally improve. Once we checked this aspect, the decision to move was obvious" (Mateja Horvath, 2023). In 2021 Eurostat gathered data from national databases and accounts as well as a labour source survey and created a range of countries comparing average annual wage for full time employees. The European average scored at 34,000 Euros, with Luxembourg, on the top, reaching 72,200 Euros. Compared to both of these, Slovakia was rated considerably lower, with 17,500 Euros, which definitely leaves a place for improvement.

Tab. no 6: Average annual full-time adjusted salary per employee



Source: Eurostat, 2021

Based on the conditions stated in the methodology according to these data Slovakia rates in the middle categories for project management, data analysts and sales managers roles compared to the selected countries. When it comes to data analysts and project managers it ranked 14th place, which means the higher part of the middle category, sales management jobs ranked 11th, which is closer to the lower category however still maintaining its position among the middle 33%. In the case of engineers, since Slovakia placed second to the last, it is obviously among the worst paid.

Non-pecuniary determinants

Similar to many others, Solimano (2008) emphasized the significance of non-pecuniary, or non-financial, motivators within the realm of highly skilled labour. Beyond monetary compensation and the enhancement of migrants' economic well-being, individuals in this category scrutinize the work environment and its potential implications. Within his theoretical framework, Solimano highlighted the specificity and individuality inherent in each migrant's circumstances. For those in specialized roles, such as doctors or nurses, a thorough assessment of the healthcare system in the host country is essential, encompassing an examination of infrastructure, innovation capacities, and prevailing working conditions. However, given the subjective nature of these factors, conducting a precise evaluation becomes challenging, as migrants attribute varying degrees of importance to them.

Nevertheless, a premise suggests that environments with superior conditions tend to be more attractive to international talent. Consequently, in the evaluation of the business environment, considerations extend to the robustness and innovativeness of the business sector, ease of conducting business operations, economic freedoms, productivity, and various other factors. To ensure that the evaluation of the business environment is as objective and as precise as possible, in the analysis, we will focus on global indices such as Starting a Business Index by The World Bank, Index of Economic Freedom, Global Innovation Index and OECD Productivity Database.

The ease of starting a business is an essential component of the quality of business environment. Entrepreneurship, serving as the foundation for innovation, emerges as the primary driver of economic development (Schumpeter, 1934). Immigrants exhibit attributes that position them as promising founders; research indicates they are inherently more entrepreneurial (Singer, 2021). Notably, Estonia, the USA, Netherlands are only a couple of examples of countries how high-skilled migration can catalyze the whole ecosystem (ImmigrantFounders, 2023). Therefore, attracting entrepreneurs or supporting migrants in creating businesses is a crucial role of the state. Easy and quick processes without a rigid bureaucracy can be a huge attracting factor.

According to the World Bank's Doing Business Review in 2020, Slovakia ranked 45th out of 190 countries worldwide in terms of ease of doing business. However, concerning the process of starting a business, Slovakia's score significantly dropped to 118th place. Sole proprietorship is relatively easy to establish, through a fully automated process, usually taking only a couple of days, potentially even one day. Conversely, forming a Limited Liability Company (LLC) involves a more complex and intricate process, including seven different procedures such as notarized articles of association, a trading licence, registration for income tax, VAT registration, social and health insurance registration (Starting Business Index, 2020). For migrants, these conditions are particularly exclusionary, because they preclude that the person setting up the business already lived in a country for some time since they have to have social and health insurance. The time required for this can range from 2 weeks

Kohútová: Attracting high-skilled migration to foster economic transformation

to 21.5 days, depending on various factors, excluding the research period for gathering information. This is an extremely long and complex process compared to other countries. The cost of establishing a business is around 200 euros, varying based on whether one employs an agency for assistance.

Another critical condition is the paid-in minimum capital requirement, which stands at 2,500 euros. The cost is comparable to that of many other countries, while the minimum capital requirement is also around the average. However, the procedures, particularly those involving official authorities, are more challenging for foreigners. This difficulty was highlighted by interviewees who noted the necessity of someone fluent in Slovak when dealing with official documents due to the limited English proficiency at registration offices (Csonga, 2023).

For migrants from non-EU countries, there are even stricter rules, requiring the CEO, or the company representative, to have European citizenship. The founder then has two options: either employ someone with Slovak citizenship or gain it themselves. If a high-skilled migrant from a non-EU country aims to gain citizenship for business purposes, they must submit an entrepreneurial proposal, along with contracts for a future or proposed contract/partnerships, agreement for a future lease, agreement for a future supply contract, agreement for a future customer contract, price lists, certificates, attestations, proof of education, and other documents before initiating the business registration process, further prolonging the process (Ministry of Economy of the Slovak Republic, 2023). All of these documents have to be submitted alongside a business proposal and the request still can be denied, it is fully in the authority of the ministry. This process is not straightforward and can be nearly impossible for an entrepreneur relocating to Slovakia without an existing network. Although the process is supposed to be doable online, the webpage lacks necessary information in English.

The complexity extends beyond business establishment. If a company seeks a construction permit, the on-paper timeline is 300 days, and a minimum of 14

procedures are required. In many European and non-European countries, the process is seamless. For instance, New Zealand, which ranked as the easiest place to create a business, requires only one online procedure—applying for registration with the Companies Office, with no need for business plan approval. The data collected include contact information, starting date, number of employees and contractors, and IRD and GST numbers for administration purposes. Furthermore, there is no minimum capital requirement (World Bank, 2020). Similarly, in Estonia, registering a company takes about 15 minutes and can be accomplished online using the government's official website (Multiplier, 2023). Thirty-two European countries have ranked higher than Slovakia in terms of starting a business, indicating that the process could be more efficiently designed offering more favourable conditions for entrepreneurs, which might help in the attractiveness of Slovakia.

Country	Overall business environment ranking	Starting a business ranking
Denmark	4	45
Georgia	7	2
United Kingdom	8	18
Norway	9	25
Sweden	10	39
Lithuania	11	34
North Macedonia	17	78
Estonia	18	14
Latvia	19	26
Finland	20	31
Ireland	24	23
Iceland	26	64
Spain	30	97
France	32	37

Turkey	33	77
Switzerland	36	81
Slovenia	37	41
Portugal	39	63
Netherlands	42	24
Serbia	44	73
Slovak Republic	45	118
Belgium	46	48
Montenegro	50	101
Croatia	51	114
Hungary	52	87
Cyprus	54	50
Romania	55	91
Italy	58	98
Bulgaria	61	113
Luxembourg	72	76
Greece	79	11
Albania	82	53
Malta	88	86

Source: Doing Business Report 2020

Adding to that, before embarking on establishing a business in the Slovak market, entrepreneurs carefully evaluate the overall business environment. The vitality of this environment significantly influences the presence of well-established, innovative, and successful companies. This assessment is not only crucial for entrepreneurs but also holds paramount importance for highly skilled migrants who, instead of launching their own ventures, seek employment opportunities. As highlighted in the theoretical framework and the introduction to the analysis, migrants prioritize economically advantageous employment prospects and aspire to secure positions

within reputable and well-functioning companies. Consequently, it becomes imperative to create intriguing economic opportunities, and this responsibility extends beyond entrepreneurs, it requires an active involvement of the state. This section of the analysis delves into procedural, legal, and economic indicators that evaluate the business conditions in Slovakia. Utilizing objective indexes, this part aims to assess and compare these conditions with those of other European countries, maintaining an unbiased perspective.

One of the indices used to measure the development of the economic environment is the Index of Economic Freedom. The principles of economic freedom are closely linked to the well-being of societies, environmental sustainability, increased per capita wealth, human development, democracy, and the eradication of poverty (Index of Economic Freedom, 2023). Rule of law (Ownership rights, governmental integrity, and judicial efficiency), Government Size (Government expenditure, tax load, fiscal well-being), Regulatory Efficiency (Entrepreneurial autonomy, labor liberty, monetary independence) and Open markets (freedom of trade and investment, financial freedom) are among the qualitative and quantitative factors, which are being measured in the Index. The result of the Index of Economic freedom classified Slovakia in 2023 among "moderately free" countries with a recorded decline of 0.7 points compared to the previous year. Although Slovakia is not in the top category alongside countries such as Switzerland, Netherlands, Estonia with the top scores its conditions are still above regional and world averages, scoring positively in all subcategories signalling that rule of law and economic conditions are well-functioning.

Innovation and the adaptability of the business sector play a pivotal role in driving economic change, fostering competitiveness, and facilitating the establishment of businesses. This key aspect significantly contributes to Slovakia's appeal and serves as a potential factor influencing high-skilled migration. This phenomenon applies not only to local founders but also to foreign entrepreneurs. A flourishing Slovak

company, equipped with capital and capabilities, can attract high-skilled migrants, while a favorable business environment can draw in foreign founders.

Traditionally, the measure of innovation has relied on Research and Development (R&D) expenditures. In this category, Slovakia has been underperforming for years, allocating one of the lowest amounts within the European countries, only 0.8-0.9% of GDP to Research and Development, which is even below the OECD countries' average of 2.71% (Eurostat: R&D expenditures, 2022). This highlights a critical underfunding in this pivotal sector. Despite the importance of R&D in recent times, the evaluation of innovation has evolved to embrace a more comprehensive perspective. The richness of innovation in society goes beyond traditional R&D metrics, collaboration among research facilities or publishing of research papers. Innovation as it stands currently has taken on a broader definition, covering social innovation, business model innovation, and technological innovation, with none solely reliant on research alone (GII Conceptual framework, 2017).

In response to this evolution, the Global Innovation Index (GII) assesses a country's business environment innovativeness based on a wider variety of metrics. The GII averages between the Innovation Input sub-index and the Innovation Output sub-index. Innovation Input sub-index simply put, covers all aspects which might help with creation of innovation activities. It includes:

1. Institutional functions: includes the ability to formulate and implement policies supporting private sector development, measures enhancing entrepreneurial activities, and the quality of public and civic services.
2. Human Capital and Research: measures the state of education through expenditures into the sector, levels of education via results in PISA testing, student-teacher ratio, university rankings, and graduates in technological fields. It also includes R&D expenditures..

3. Infrastructure: assesses ICT access, e-governance, electricity outputs, and ecological sustainability...
4. Market Sophistication: evaluates investments, trade rules, competition on the market, market scales and ease of obtaining credit...
5. Business Sophistication: incorporates knowledge workers and knowledge absorption and innovation linkages such as clusters and research collaborations..

Innovation Inputs aim to stimulate innovative activities within an economy, and the subsequent Innovation Output measures how these inputs transform into actual innovation. Innovation Output encompasses:

1. Knowledge creation: this includes patents, scientific and technical articles, utility models..
2. Knowledge impact: measures growth rate of PPP\$ GDP/worker, new businesses/th pop., computer software spending, ISO 9001 quality certificates..
3. Knowledge diffusion: incorporates intellectual property, high-tech exports..
4. Creative outputs - includes intangible assets- such as trademarks, industrial origins, business model creation.. and creative goods and services which incorporate cultural & creative services exp., creative goods exports, national feature films...

Given the complexity and scope of the analysis, and its global application, the Global Innovation Index becomes essential for evaluating and comparing the innovativeness of the Slovak business field. Slovakia has been ranked in the 2023 Global Innovation Index at 45th place among the 132 economies featured in the evaluation. The results of the analysis put it on the 29th place among 39 economies in Europe. Generally, the result of the Index is that Slovakia is underperforming for its level of development and as a high-income economy. Simply put, Slovakia underperforms in

all the pillars (categories) when compared regionally and also when compared to high-income countries around the world. There are significant weaknesses which are tempering the development of the economy.

Weaknesses		
Institutions	Policies for doing business	Ease of starting business
		Ease of resolving insolvency
		Bureaucracy in business sector
	Entrepreneurship policies and business culture	
Business sophistication	Knowledge absorption	FDI net inflows, % GDP
	Innovation linkages	University-industry R&D collaboration
Market sophistication	Investment	VC received, value, % GDP
	Investment	VC recipients, deals/bn PPP\$ GDP
Creative outputs	Intangible asset intensity	Trademarks, industrial designs and ICT business and organizational models
		Unicorn valuation, % GDP
Human capital and research	Tertiary enrolment	Percentage of absolvents
	R&D	Gross expenditure on R&D, %

		GDP .
Infrastructure	Information and communication technologies (ICTs)	E-participation

Source: Global Innovation Index 2023

One of the significant weaknesses in Slovakia's business sector pertains to the institutional framework and policies governing the establishment of businesses and the overall business environment. This inadequacy is highlighted in the Global Innovation Index, which utilizes institutional effectiveness as a metric. The Global Innovation Index specifically identifies the ease of starting a business as a major challenge, reinforcing earlier observations indicating that the process is not only time-consuming, taking more than two weeks, but also among the most expensive in European countries. Moreover, the complexity of the process adds to its difficulty. The ease of resolving insolvency in Slovakia also falls below the OECD average for high-income countries, with a recovery rate statistically measured at 46.1 cents on the dollar compared to the OECD average of 70.2 cents on the dollar. The resolution timeframe is notably extended, spanning four years, and the associated costs are nearly twice as high as the OECD average (GII, 2020). Furthermore, the bureaucratic burden on Slovak businesses is substantial. Companies need to contend with approximately 20 corporate tax payments, consuming around 200 hours of business time for resolution. Among these, VAT poses the most significant challenge within the corporate tax regime, with 12 payments annually requiring an average of 103 hours to process. To provide a clearer picture, enforcing contracts involves navigating through 32 procedures, taking approximately 545 days to complete (TMF Group, 2021).

Investments in Slovakia are notably among the lowest in Europe. Foreign Direct Investment (FDI) in Slovakia experienced a decline equivalent to 1.6% of the country's nominal GDP in June 2023, compared to a 1.3% decline in the previous

quarter (CEIC Data, 2023). Additionally, Venture Capital (VC) received a value equal to 0.00007% of GDP in 2022, marking a decrease of 0.00013 percentage points from the previous year (GII, 2023). The total capital raised amounted to 35.7 euros (Statista, 2023). VC funding serves as a crucial metric due to the substantial economic impact of startups, often referred to as the "engine of economic growth" (Yeh, 2023). As a result of their experimental nature and the development of innovative business concepts, startups contribute to technological advancements, improvements in research, and novel approaches to innovation (Bravo-Biosca et al., 2013). The relationship between startups and Research & Development (R&D) is symbiotic: startups frequently incorporate findings from external sources and their internal teams to enhance their technologies and methodologies, influencing the overall research and development landscape (Hovhannisyán, 2022). Startups also have significant spillover effects across sectors, impacting both other startups and broader business ventures (Ghio et al., 2015), indirectly boosting productivity (Foster, Haltiwanger & Krizan, 2001). While the employment rate within startups may not be disproportionately high, they actively contribute to job creation within their related industries (Fetch, 2016). Notably, unicorns (highly valued startups) have direct positive impacts on the domestic economy through taxes, employment opportunities, and acting as catalysts for knowledge sharing and increased funding, propelling other startups and innovative ventures (Yusuf, 2023).

The underperformance of the VC segment was also underscored in interviews with VC investors. According to Michal Csonga (2023), "Central Europe is one of the most attractive regions for investors globally; however, Slovakia does not have the reputation of a startup country nor the track record of successful projects. We are falling behind the Czech Republic and Poland quite rapidly." Slavomír Tuleya from ZAKA Capital, one of the major VC funds operating in Slovakia and Czech republic, emphasized the importance of private capital, stating that "we have huge access to European money, but those come with strict rules, often hindering the business model. Not to mention, sometimes they are invested purely because they have to be,

and the quality of startups is not considered. Private money requires the biggest possible returns and thus demands quality."

Research, exploration are crucial for any type of progress. Supportive environment, where cooperation and knowledge sharing can be achieved is necessary to not only come up with new ideas, but also implement them. A "cluster" refers to the concentration of organizations within a state that are actively engaged in innovation. Innovative activity entails a practical focus on the continuous improvement of competitive advantages through various types of innovations, including technological, organizational, and marketing innovations (Arzhakov and Silnov, 2016). Creation of innovative clusters has been on the agenda of states as one of the main priorities as it connects and engages educational, scientific community and companies in collaborative efforts and is integrated into a unified innovation cluster. Slovakia, the university-industry cooperation is almost non-existent (Bušíková, 2015). There are certain innovation clusters, especially in Bratislava and Košice. IT VALLEY Košice is an example of a regional project which can connect universities, NGOs and private sector (IT VALLEY Košice, 2023). Bratislava on the other hand has The Spot, one of the biggest coworking spaces in Central Europe offering opportunities for startupists, entrepreneurs, students and international community to take part (The Spot, 2023). There are other clusters such as Industry Innovation Cluster, PEEK, Energy Cluster of Prešov region, Cluster of regional development, Bioeconomy cluster etc. (Únia klastrov Slovenska, 2023). Their activities however lack strategic mindset, initiative and governmental support. As an interviewee mentioned "I worked in an innovative sphere my whole life, starting in the nonprofit sector creating hackathons, moving to one of the best startups in Slovakia, even working in a government office and I have never heard of the majority of them. Whatever they are doing, it is not loud enough" (Karabelli, 2023).

The number of patents given out to Slovakia is also one of the lowest within European countries, this applies for patents, trademarks, industrial designs (Intellectual property statistical country profile, 2022). Alongside that, the population

with university degrees is also lagging behind, not to mention that in 2023 Slovakia is only starting to test projects concerning E-participation on a couple of cities and municipalities (European Commission: E-participation, 2023). Even though Slovakia is also performing extremely well in a couple of metrics, such as environmental performance, high-tech manufacturing or creative goods exports, the weaknesses outweigh the strengths, that is why Slovakia scores below its expectations in the Global Innovation Index.

Agglomeration and concentration effects

In essence, foreign talent is often drawn to places where other highly skilled individuals thrive. This collaborative environment, where new ideas and innovations take root, becomes a magnet for business and technical experts, engineers, and scientists. The allure extends beyond just better pay; it includes the opportunity to work alongside well-qualified peers and foster innovation. Knowledge workers, in particular, gravitate towards locations rich in resources for research, technology development, and promising career prospects in prominent and innovative companies (Solimano, 2008). Estonia, known as the "country of startups," automatically signals to founders and skilled workers that its startup scene is flourishing.

Country "branding" in this sense plays a pivotal role in this attraction. Slovakia initiated the "Good Idea Slovakia" campaign in 2016, aiming to portray the nation as a hub of ideas as well as say that Slovakia is a good idea across various domains like tourism, investment, culture, and sports and many more (Ministry of Foreign Affairs, 2023). The campaign faced criticism for being vague and lacking memorability, however the biggest problem is that since then, there hasn't been a comparable strategic effort to this one campaign. Claudia Alner, an entrepreneur whose parents emigrated to Slovakia, emphasizes the need for a more systematic approach: "The problem with Slovakia is that we don't showcase what we have. We need to actively participate in conferences, network, leverage international media if we want to show Slovakia in a new light. Our government should adopt a more organized approach, similar to initiatives by the Czech government. They took hundreds of people from

their business community to Taiwan for knowledge sharing sessions, hackathons and to announce the country's new vision to focus on the chip industry. Even if we had something to show, nobody would know about it."

Another factor in the attractiveness of a location is the availability of qualified workers and peers. The educational landscape in Slovakia has seen remarkable growth over the last 20 years. In 2022, 39% of graduates held a master's degree, slightly below the OECD average, but experiencing steady growth (OECD, 2022[24]). Slovak students do not have the tendency take gap years in their education and majority of them take up the bachelor's right after high-school and almost 90% of them continue to masters degree right after finishing bachelors, this way majority of them actually finish this stage of education as well (Lukáč and Hall, 2019[28]). This trajectory suggests that Slovak students do not view bachelor's degrees as standalone educational pathways, creating a highly educated population (OECD, 2020). The most popular degree has been Business, administration and law, closely followed by Education and social sciences, but closely followed by Engineering and manufacturing. The latter is the most popular among the international students. Despite the high demand on the market for information and communication technologies the field does not attract students (OECD, 2021). However, the high numbers in business degrees and engineering are promising especially for foreign talent focusing on the innovative sector.

Attracting highly skilled migrants also involves providing appealing work opportunities, especially in innovative companies. However, Eurostat (2022) data reveals that Slovakia lags behind in this aspect, ranking 7th out of 27 European countries, with only 36% of companies considered innovative—below the European average. Employment in innovative enterprises is also limited, impacting startups and SMEs. Slovakia has a higher number of non-innovators with the potential to innovate than actual active innovators, the challenge therefore is not just showcasing innovative potential but also actively fostering a supportive environment for such businesses to thrive (European Innovation Scoreboard, 2023).

Tab no. 7: Slovak innovation breakdown

Innovation profiles		
In-house product innovators with market novelties	8.9	12.2
In-house product innovators without market novelties	5.3	12.8
In-house business process innovators	14.5	16.5
Innovators that do not develop innovations themselves	2.8	6.5
Innovation active non-innovators	5.1	4.1
Non-innovators with potential to innovate	36.5	17.2
Non-innovators without disposition to innovate	27.0	30.7

Source: European Innovation Scoreboard, 2023

Despite witnessing a consistent rise in both the count of innovative enterprises and the educated population holding university degrees, Slovakia lags behind the majority of European countries in this category, not to mention falling short of the OECD average as well. The country has been experiencing problems with slower implementation of innovation and new technologies, finding new business models, research and development all of these decrease the growth of the market hence the opportunities as well.

Immigration Policy

If we look specifically at the immigration policy, here are some key points about Slovakia's policy for employing migrants (IOM, 2023):

- EU Blue Card: Slovakia, being a member of the European Union (EU), participates in the EU Blue Card program. The EU Blue Card is designed to facilitate the immigration of highly skilled non-EU citizens to work and live in EU member states, including Slovakia. To obtain an EU Blue Card, applicants must meet certain criteria, such as having a higher education degree or at

least five years of professional experience, along with a job offer or a binding job contract with a minimum salary threshold.

- Temporary residence permit specifically granted for employment, based on available job positions.
- Authorized employment permit combined with a temporary residence permit, both obtained for the purpose of employment.
- Work permit combined with a temporary residence permit aimed at family reunification, within the initial 9-month period subsequent to the issuance of the residence permit.
- Work permit combined with a temporary transit status if the individual, who has already been granted residency within a European Union state, applies within the first 12 months following the issuance of their residence permit.
- Someone who meets criteria, which exempt them from needing to obtain either a confirmation of available job positions or an employment permit.

There are only a few policy documents on migration in Slovakia approved by the government in the last 15 years, which outline the position of the Slovak government towards migration and the future policy goals in this policy area. The first document called “Migration policy in the Slovak Republic, with the vision towards 2020” was approved by the government resolution n. 574 in August 2011 (Ministry of Defence, 2011). The document sets the tone of the policy on its second page with the quote: “As migration will objectively affect our future, we must influence the migration”. It considers migration to be a natural historical phenomenon, which carries positive as well as negative effects, but nevertheless, it urges avoiding politicization of migration. This policy document should be a guiding star for the governmental position in regards to broader areas of migration, as well as a stronger focus on harmonization of migration policies of Slovakia with the other EU countries.

The migration policy aims to “to create appropriate conditions, especially in the area of legal migration, taking into account the priorities, needs and abilities of accepting migrants, including their integration into society (...), to participate in building a

global partnership with the countries of origin and transit in order to strengthen synergy between migration and development, thus contributing to the improvement of the quality of life of the inhabitants of the Slovak Republic” (Ministry of Defence, 2011).

The policy stipulates the importance of legal migration due to the overall aging population in Slovakia, which has effects on the economy and the social security system. It calls for actively-seeking and flexibly-accepting economic migration, responding to the current and future economic and labor market needs of the country, with a particular focus on high-skilled migrants and scientists. The Slovak Republic aims to adopt a set of policies to create better conditions for accepting and employing foreign talent, in accordance with the policy proposal Minerva 2.0 from 2011 focused on transforming the Slovak economy into an economy based on knowledge and innovation (Ministry of Finance, 2011). Already 12 years ago, the government was well aware of Slovakia's low positions in the global rankings of investments in education, science and research, which have been historically the lowest out of Visegrad 4 countries, and one of the lowest among the OECD countries. One of the ways they planned to transform the Slovak economy was also through attracting foreign talent. The policy states a preference towards accepting migrants with 1) qualifications and competences required to cover the demand for shortage professions on the national labor market, and 2) migrants arriving primarily from culturally close countries (Ministry of Defence, 2011).

The policy also recommends areas, which need further development, to increase effective implementation of Slovak migration policy. The ones related to the high-skilled migration refer to:

- a) streamlining the process of issuing visas and residence permits through improving the coordination of activities between embassies and relevant departments of the foreign police
- b) creation of the "Slovak card" (a modification of the "blue card of the European Union"), which sets conditions for qualified and highly qualified

immigrants, as well as the introduction of a points system, which will give preference to specific categories of immigrants depending on the needs of the economy and labor market,

- c) carrying out regular analyzes of the national economy needs and the economic contribution of individual groups of migrants, as a basis for accepting and attracting foreign talent,
- d) create more flexible forms for the entry and stay of migrants who wish to study and engage in an economic activity,
- e) creating a legal framework enabling migrants to enter the labor market for seasonal work, temporary and circular migration, forms of short-term employment, etc.,
- f) supporting the reception and employment of migrants from third countries, with an emphasis on the reception and employment of highly qualified employees, scientific workers and other qualified migrants,
- g) defining the rights and responsibilities of migrants, including their access to fair wages, social security benefits, health care and suitable housing
- h) redefining the issue of recognition of education and qualifications and preventing the phenomenon of so-called "brain waste" (wasting or underappreciation of education, qualifications, expertise and skills)
- i) creation of information and consultation centers for migrants, in their countries of origin, to improve their access to information on entry and residence, living and working conditions (Ministry of Defence, 2011).

The “Integration Policy of the Slovak Republic” was adopted by governmental resolution n.45 in 2014 (Ministry of Labour, Social Affairs and Family, 2014). Similarly to the Migration Policy from 2011, it sets tasks for the respective ministries to develop the policy goals into specific action plans. The goals of this policy is to primarily create a framework and vision for other stakeholders to take into account and further develop, while safeguarding the principles of equity, fairness and human rights. It supports the bottom-up approach from the respective actors to create plans

addressing the needs of their target group. It also recommends using EU funding for new projects focused on integration.

The Migration Policy from 2011 and Integration Policy was adopted in a completely different socio-economic setting, which resulted in unnecessary policy overlaps with no clear implementation timeline. This uncoordinated policy response was supposed to be solved by the new framing document called “Strategy of Work Mobility for Foreigners until 2020, with the vision towards 2030” (Ministry of Labor, Social Affairs and Family, 2018). It came after the pressure from businesses to attract more foreign labor from third countries to fill in the labor shortage on the market (Inštitút zamestnanosti, 2018). The strategy’s goals were to “a) ensure a sustainable economic growth and improving the quality of life of citizens, as well as foreigners living in Slovakia; b) respond to new technologies and changes in the labor market; c) respond to changes in demographic development and with it related impacts on the social system and pension insurance; d) fight against illegal work, different working conditions as the citizens of the Slovak Republic have from employers, how also labor abuse; e) support the integration of foreigners at the local level” (Ministry of Labor, Social Affairs and Family, 2018).

The most recent policy called “Migration policy in the Slovak Republic, with the vision towards 2025” was approved by the government resolution n. 496 in September 2021 (Ministry of Defence, 2021). It is a continuation of the previous policy document from 2011, with a stronger emphasis on the role of Slovakia in the EU and in the global world, as well as clearer focus on intersectionality of migration with other policies, such as security, development, population and employment policies, and ongoing need of respective institutions to coordinate their responses. Similarly, as the policy document from 2011, it highlights the necessity of Slovakia to choose migrants depending on their skills, and competences as well as Slovak labor market and economy needs, and foreign policy interests, so that the migration benefits the country and its citizens, and does not cause additional security risks (Ministry of Defence, 2021).

The policy document becomes more vague in terms of real policy action, when compared to its predecessor from 2011. It does not mention any specific areas of legal and labor migration, which need further development, such as ‘Slovak card’, streamlining visa and residence permit issuance, ensuring that the rights of migrants are respected etc. It only emphasizes the need to actively seek and attract foreign talent but it does not clarify how it plans to do so. This reserved position could be a result of the overall political climate around migration post-2015, when the so-called ‘refugee crisis’ started in the EU, which initiated further political, legal and social restriction for migration flows. The events after 2015 filled with hate and disinformation about migration were directly addressed in the document, calling for a coordinated communication on migration among public institutions, non-state and international actors and the public.

The policy stipulates that legal economic migration is “determined by the so-called megatrends such as geopolitical factors, changes in the labor market, population development, especially the aging of the population, changes in education systems, technological changes, digitization and the transition to a climate-neutral economy.” These megatrends are further developed in the “Strategy of Work Mobility for Foreigners”, aiming at streamlining, and increasing the overall effectiveness of the system, which regulates the entry and stay of third country nationals for the purposes of employment and business, especially in professions with an identified labor shortage (Ministry of Labour, Social Affairs and Family, 2018).

The main priorities of the Slovak Republic in the area of managed economic migration are:

- a. ensure that the arrival of foreigners for work responds to the absorption capacities and needs of the Slovak Republic;
- b. strengthen security of managed economic migration, such as detecting forgeries of legal documents, cooperate with authorities at national and international level to detect violations of law and illegal employment;

- c. to connect information systems and strengthen cooperation among the institutions involved;
- d. ensure that information is accessible for foreigners in world languages through the information portal;
- e. streamline and digitize the process of obtaining residence permits (Ministry of Defence, 2021).

The policies adopted on the subnational levels are almost non-existent, which is only strengthened by the lack of financial and institutional interest to develop a stronger policy on integration of foreigners (IOM, 2021). The only exception is the region of Bratislava (Inštitút priestorového plánovania, 2021) and Kosice (Didyková, 2015), which define efforts on the integration of foreigners to the society, protection from legal, labor exploitation from the side of employers as well as relocation agencies. This is quite understandable because those regions have the most foreigners living in their areas. However, the researchers from IOM (2021) highlight the need for a coordinated response between local and national actors to attract and keep foreign labor force in Slovakia.

To summarize, the migration and integration policy sphere lacks respective policy documents, updated regularly, to respond to the current and future needs. These framework documents outline mainly a policy vision, connecting the current policy and implementation gaps with required action from respective authorities. The main challenge with this approach is, however, that it shifts the responsibilities to other ministries and stakeholders, who might have different interests and policy goals. The overall policy sphere is fragmented since the management of migration and their employment is a shared responsibility among several ministries, such as the Ministry of Defence, the Ministry of Labor, Social Affairs and Family, and the Ministry of Economy. Ministries, who have drafted the policy documents, have even identified this as a shortcoming of previous policy documents but without much success in repairing the implementation gaps of the policies they are proposing. The implementation is probably the biggest challenge in the migration policy but the lack

of interest to devote time and political efforts to streamlining the process of entry, stay and employment of foreign talent is understandable when we put it in a larger context of restricted political and public climate towards any newcomers, especially after the ‘refugee crisis’ of 2015, when the whole issue politicized.

Despite expressing the need for highly skilled migrants, Slovakia still fails to implement the majority of the policies that would facilitate the process before, during, and after migration.

High-skilled Migration in Slovakia: A Failure Story?

Tab no. 8: Summary of the analysis

International Differences in Earnings and Development Gaps	Net salary for project manager	2	2
	Net salary data analyst	2	
	Net salary for sales manager	2	
	Net salary for engineers	1	
Non-pecuniary motivators	Starting a Business Index	1	1
	Global Innovation Index	1	
	Economic Freedom Index	2	
Agglomeration and concentration effects	Number of people with university degree	1	1
	Number of innovative companies	1	
Immigration Policy	Implementation of policies	2	2

When it comes to salaries in the business and innovation sector, Slovakia has performed quite well, particularly in comparison to countries in Eastern and Southern Europe. It proves to be competitive in 3 out of 4 surveyed positions, ranking in the middle 33% among the studied countries. This is especially attractive for individuals coming from European areas with lower wages or from other places outside Europe where earnings are also lower. However, it's crucial to note that the average salary, an important consideration for family members relocating with high-skilled migrants, is lower than the OECD average, unless the family members are also high-skilled migrants. Overall, Slovakia demonstrates competitiveness with certain countries in terms of wages, securing the 2nd place, indicating favorable economic conditions for high-skilled migrants.

When evaluating the overall business environment, Slovakia lags behind. Establishing a business is extremely challenging, with numerous procedural and institutional problems. The innovative space of the economy falls short of meeting the expectations of a high-income country, with low investments in venture capital, research and development, limited sector cooperation, slow technology adoption, and a low number of patents. Despite performing relatively well in the Economic Freedom Index, indicating moderate freedom in rule of law, regulatory efficiency, open markets, and government size, it doesn't compensate for the rigid, inflexible, and non-innovative entrepreneurial framework and the overall economic sector. Consequently, Slovakia falls into the 1st category, representing the worst overall performance.

Regarding the agglomeration and cluster of highly educated people, Slovakia is on an upward trajectory with the number of university-educated individuals increasing. However, it currently performs below the OECD average and ranks among the lowest European states. Coupled with the low number of innovative companies, Slovakia finds itself in the most unfavorable category with an overall score of 1.

Lastly, despite acknowledging the need for high-skilled migration to boost the economy and address demographic challenges, Slovakia's implementation of improvement ideas in policies is lacking. This results in unfavorable migration processes and policies, placing Slovakia in the middle position in the grading system. While there are positives in Slovakia's position based on the analysis, there are ample opportunities for improvement. Slovakia can be competitive with other countries, especially those performing poorly in each determinant, but it cannot compete with countries performing better in the majority or all determinants such as Denmark, Netherlands or Scandinavian countries which render untouchable at this moment. Significant changes especially within the business sector itself have to be implemented. The process of creating a business has to be smoother, faster, available to be done online, so the country can provide incentives which might attract individuals looking to establish a company. Accompanying it with an overall healthier

environment centered around innovation and technologies, which might be reached through higher investments put into R&D or cooperation in innovation clusters.

Adding to that, VC investment and boost of the startup environment is absolutely crucial. Applying all of these changes will create more innovative companies, which will lead to rise of demand on the side of the businesses sector and that goes hand in hand with higher interest from the high-skilled migrants. Moreover, the policies and changes necessary to improve the setup for foreign talent have to be implemented, to rival the most pro-high skilled migrant economies.

Conclusion

The exploration undertaken has underscored the potential significance of high-skilled migration as a transformative lever to enhance a nation's economic landscape and propel it towards a more innovative trajectory. Numerous countries have strategically embraced the attraction of foreign talent to fortify their long-term prospects, a strategy that has yielded remarkable success. As it was previously established, it is evident that migrants are influenced by a range of factors. One of the strongest ones are better economic conditions and prospects for migrants as well as their families, other factors also play a role such as established networks in the receiving country, non-pecuniary motivators and many others. Although there is not a comprehensive theory which would group all of them together, authors created complex frameworks to understand and explain the tendencies of migrants. Solimano (2008) came up with the concept of Talent Mobility, which described 7 determinants of migration for high-skilled migrants. Since it was focusing specifically on the highly skilled foreign talent and it merged multiple theories of migration it was chosen as an analytical concept as it provides a good framework.

Using qualitative and quantitative methods, Slovakia was scored on 4 out of the 7 determinants of Soliman's concept to answer the question "How does Slovakia perform in attracting high-skilled migration in 2023?" As discernible from the analysis, Slovakia confronts not only institutional challenges tied to functioning of the business environment but also faces issues around non-pecuniary motivators as well as number of skilled population already within the country and number of innovative companies or interesting job opportunities. Adding to that, the lack of action when it comes to immigration policy measures could also be considered alarming. The only determinant in which Slovakia is able to be competitive even with European countries are wage conditions for business and innovation roles. However, as the migration theories prove the monetary considerations are not the only important aspect high-skilled migrant has to take into account. There are other determinants

Kohútová: Attracting high-skilled migration to foster economic transformation

and in most of them Slovakia is not performing optimally, which leaves a huge space for improvement.

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