UNIVERSITY OF TARTU

Faculty of Social Sciences

School of Economics and Business Administration

Nodar Iremashvili

Russian Invasion of Ukraine:
Catalyst or Challenge for Georgia's IT Sector through Russian Migration?

Master’s thesis

Supervisor: Timur Kogabayev

Tartu 2024

I have written this master's thesis independently. All viewpoints of other authors, literary sources, and data from elsewhere used for writing this paper have been referenced.

16.01.2024

Nodar Iremashvili

Abstract

This thesis explores the profound impact of the Russian invasion of Ukraine on Georgia's Information Technology (IT) sector, primarily through the lens of Russian IT professional migration. It investigates whether this unprecedented migration catalyzes growth and innovation or presents challenges in the industry. The study utilizes quantitative and qualitative data from a comprehensive survey and in-depth interviews.

The survey, targeting IT professionals and stakeholders within Georgia, examines critical aspects such as changes in job opportunities, competition dynamics, salary and compensation trends, and the emergence of new businesses. Factor analysis, cluster analysis, logistic regression, and hypothesis testing methodologies provide a multifaceted understanding of the impacts.

Key findings indicate that the migration has not significantly influenced the Georgian IT sector. Notably, it has not affected market competition, job creation, and expansion, but evidenced by the establishment of new IT businesses. Contrary to potential concerns, salary levels and compensation structures have primarily remained stable, suggesting a resilient sector.

However, the research identifies limitations, including potential response bias and the cross-sectional nature of the survey, and delimits its scope to specific impacts within the IT sector in Georgia.

Russian IT migration, driven by the Ukraine conflict, emerges more as a catalyst than a challenge for Georgia's IT sector. This thesis provides valuable insights for policymakers and industry stakeholders, highlighting the need for sustainable integration strategies and ongoing adaptation to leverage the full potential of this migration wave. Future research directions are proposed to build upon these findings and further explore the long-term implications of this significant demographic and professional shift.

Keywords: Skilled Migration; IT Professionals; Russia-Georgia Migration; Post-2022 Migration Trends; Labor Mobility in IT Sector; Economic Impact of Migration, Brain Drain and Brain Gain.

CERCS S196 Social economics

Table of Content

Introduction

The Russian invasion of Ukraine in early 2022 marked a significant geopolitical event with far-reaching global implications. Among the various ripple effects, one notable consequence has been the migration of Russian IT professionals, mainly to neighboring countries, including Georgia. This migration presents potential opportunities and challenges for Georgia's Information Technology (IT) sector, a critical component of the nation's economy and a burgeoning hub for technological innovation.

The influx of Russian IT professionals into Georgia, propelled by the geopolitical turmoil, has created a unique scenario requiring thorough exploration. This thesis investigates the dual nature of this migration: as a possible catalyst for growth, innovation, and market expansion in Georgia's IT sector and as a challenge that could potentially lead to increased market competition, changes in salary structures, and job displacement. Understanding the impact of this migration is crucial for policymakers, industry stakeholders, and the broader economic landscape of Georgia.

The study aims to analyze the impact of the Russian IT professional migration on various facets of Georgia's IT sector. This includes examining changes in job opportunities, market competition dynamics, salary and compensation trends, and the emergence of new IT businesses. The research is geographically focused on Georgia and temporally situated in the immediate aftermath of the Russian invasion of Ukraine, providing a snapshot of the short-term effects of this migration.

Objectives of the study:

1. To explore competition dynamics in the IT Sector and the influence of the influx of Russian IT professionals on the level of competition within Georgia's IT sector.
2. To find out salary and compensation trends and the impact of the migration of Russian IT professionals on salary levels and compensation structures.
3. To examine job creation and market expansion affected by the Russian IT migration in Georgia's IT sector.

1. Literature review

1.1. An overview

The phenomenon of skilled migration, particularly in the IT sector, has become increasingly significant in the global economy. This introduction provides an overview of the trends in skilled migration globally and regionally, highlighting the shifts in the landscape of international labor mobility, focusing on IT professionals (Kerr et al., 2017).

The global landscape of skilled migration is characterized by a growing demand for high-skilled labor, especially in the IT, healthcare, and engineering sectors. The World Bank and the International Labour Organization have documented this trend, noting that countries with advanced economies often face skill shortages in these sectors, increasing the recruitment of skilled professionals from abroad (Hanson et al., 2018).

Globalization and technological advancements have facilitated this movement, making it easier for professionals to migrate to work (Morales, 2018). The rise of remote working and digital nomadism, especially post-COVID-19, has further blurred geographical boundaries in the IT sector.

Regionally, the dynamics of skilled migration vary (Edo, 2019). For example, the free labor movement in the European Union allows for easier skilled worker migration among member states. However, non-EU Eastern European countries, including Russia, experience different migration patterns due to various political and economic contexts (Doran et al., 2022).

The Asia-Pacific region, particularly India and China, has been a significant source of skilled IT professionals migrating to Western countries like the United States and the UK. This migration is driven by the burgeoning IT sectors in these countries and the opportunities for career advancement abroad (Rosenzweig, n.d.).

The IT sector has explicitly seen a notable increase in skilled migration. The demand for IT skills in software development, data analytics, and cybersecurity has grown globally. Consequently, countries with vital IT sectors, like the United States and Canada, have become prime destinations for IT professionals seeking better job opportunities and living conditions.

In Eastern Europe, the IT sector has also been growing, but political and economic instability, like in the case of Russia and Ukraine, can influence migration patterns. Skilled IT professionals from these regions often seek stability and growth opportunities in more politically stable countries.

Geopolitical events can significantly influence migration trends. Conflicts, economic sanctions, and political upheavals can lead to a surge in migration as professionals seek stability and security for their careers and families. The recent events in Ukraine and the subsequent migration of Russian IT professionals are a testament to this.

1.2. Russian invasion of Ukraine

The Russian invasion of Ukraine, which began on February 24, 2022, marks a tragic escalation in a conflict that has deeply affected the lives of millions. This invasion, initiated by Russian President Vladimir Putin, quickly transformed into a prolonged and devastating war, impacting both nations profoundly. (Ozili, 2022)

In the early stages, Russian forces launched attacks from multiple directions, aiming to promptly subdue key Ukrainian cities, including the capital, Kyiv. However, the resilience and staunch resistance of the Ukrainian forces thwarted many of these initial objectives. This fierce defense highlighted the conflict's strategic and military aspects and the Ukrainian people's deep-seated resolve to defend their homeland.

As the war progressed, the focus shifted to the eastern and southern regions of Ukraine, especially the Donbas area, which has been a hotspot of conflict since 2014 following Russia's annexation of Crimea. This region has witnessed some of the most intense fighting, leading to significant destruction and loss of life (Cecire, n.d.).

Facing challenges in its military campaign, Russia announced a partial mobilization in September 2022, the first such action since World War II. This move aimed to bolster Russian forces in Ukraine by conscripting additional troops. The announcement of mobilization sparked widespread protests within Russia. It led many Russians to leave the country, reflecting internal dissent and the war Field's broader social and human impact (Stepanenko et al., 2022).

Throughout 2022 and into 2023, the conflict has continued with varying degrees of intensity. Ukrainian and Russian forces have engaged in extensive military operations, including ground offensives, artillery duels, and air strikes. These actions have not only had strategic implications but have also brought immense suffering to civilians. The war has caused countless casualties, extensive displacement of people, and widespread destruction across Ukraine, painting a sad picture of the human cost of conflict.

Internationally, the war has drawn significant reactions. Western countries have imposed general sanctions against Russia and provided Ukraine substantial military and financial support to Ukraine. These international responses underscore the global implications of the conflict, which extend far beyond the borders of the warring nations.

As of late 2023, the situation remains fluid and uncertain. Political, Ukraine military, and humanitarian developments in Ukraine continue to unfold, affecting countless lives and shaping the geopolitical landscape. The war in Ukraine is not just a series of strategic maneuvers and political decisions; it's a human tragedy, a stark reminder of the costs of conflict in the modern world. For the latest updates and detailed information, it's advisable to refer to recent news reports from reliable sources such as Al Jazeera, Reuters, and other reputable news outlets.

1.3. Georgian-Russian relations

The relationship between Georgia and Russia has been marked by significant historical and recent conflicts, profoundly affecting the dynamics between the two nations.

Historically, Georgian-Russian relations date back hundreds of years and have been influenced by religious and historical ties. These relations have seen various phases, including formal alliances and conflicts. The Treaty of Georgievsk in 1783 was a notable event, establishing a collaboration between the Kingdom of Eastern Georgia and the Russian Empire. However, this relationship has only sometimes been stable, with instances of conflict and domination.

In recent history, the tensions have been more pronounced. The most notable current conflict occurred in 2008, often called the Russo-Georgian War. This conflict was rooted in long-standing issues relating to the separatist regions of South Ossetia and Abkhazia. Georgia's aspirations to align more closely with the West, including potential membership in NATO and the European Union. The war was a significant event, marking a reassertion of Russian military might in the region. The conflict had profound implications for Georgia, leading to Russian forces temporarily occupying parts of its territory and recognition of South Ossetia and Abkhazia's independence by Russia (Atilgan & Feyerabend, 2015).

The killing of Georgian citizen Tamaz Ginturi by Russian-controlled occupation forces in November 2023 has been another point of contention (*The Killing of Tamaz Ginturi, a Georgian Citizen, by Russia's Occupying Forces in Georgia | EP Resolutions | Documents | DSCA | Delegations | European Parliament*, n.d.). This incident occurred in Kirbali, adjacent to the

occupied Tskhinvali region. It was condemned internationally, including by the United States mission to the Organisation for Security and Cooperation in Europe. It served as a stark reminder of the impact of Russia's continued occupation of Georgian territories and the ongoing tensions between the two countries.

These events highlight the complex and often strained nature of Georgian-Russian relations, influenced by historical alliances, conflicts, geopolitical aspirations, and recent incidents of violence and occupation.

1.4. Migration patterns to Georgia - Post-invasion period

The migration patterns to Georgia following the Russian invasion of Ukraine in February 2022 are multifaceted and deeply rooted in the conflict's complex political, social, and humanitarian landscapes shaped by the competition.

Following Russia's announcement of partial military mobilization in September 2022, there was a significant departure of Russians to neighboring countries (admin, 2023), with Georgia being a primary destination. The urgency and scale of this migration were driven by fears of conscription and the desire to escape the conflict. Reports indicate that Georgia's Interior Ministry registered over 68,000 Russians entering the country in just one week. This sudden influx led to a considerable strain on resources and infrastructure at the border and within Georgia. Hundreds of thousands of Russians immigrated to Georgia, and the actual number still needs to be clarified. (Tourism or migration?[ტურიზმი თუ მიგრაცია?], n.d.).

The primary crossing at Verkhny Lars-Zemo Larsi witnessed long queues of cars stretching for kilometers. People faced long waits, sometimes over 24 hours, with limited access to necessities like food and water. This situation created a humanitarian concern at the border, highlighting the desperation of those fleeing.

The influx of Russians significantly affected the local economy in Georgia. There was a notable spike in flight prices and a substantial increase in rental costs in Tbilisi, which had broader social implications, such as students being forced to drop out due to the high cost of living. These economic shifts reflect migration's immediate and tangible impact on host communities (The immigration of the Russian citizens to Georgia, and the challenges of the internal security [რუსეთის მოქალაქეების შემოდინება საქართველოში და საზოგადოებრივი უსაფრთხოების გამოწვევები], n.d.).

The migration highlighted the historical and ongoing geopolitical tensions between Georgia and Russia. The presence of many Russians in Georgia was met with mixed reactions from the local population. While Georgia is known for its hospitality, the historical context of relations with Russia adds a layer of complexity to the public and governmental response to this influx.

Beyond the geopolitical and economic impacts, this migration trend underscores a significant humanitarian aspect. The individuals fleeing to Georgia avoided military service and sought refuge from a more substantial conflict that has affected millions. Their experiences at the border, their challenges, and the uncertainties of their future in a new country highlight the human cost of the conflict.

The long-term implications of this migration wave are yet to be fully understood. It raises questions about integration, societal change, and the potential for future political and social dynamics (M. C. Regets, 2007) in Georgia. The situation also reflects a broader pattern of displacement and migration caused by the conflict in Ukraine, impacting the region at large.

1.5. Georgia's IT sector - Pre-invasion

Before the Russian invasion of Ukraine in 2022, Georgia's IT sector presented an intriguing case study of a burgeoning industry within a transitional economy. This sector's growth, primarily self-driven and less reliant on government intervention, highlights its potential and challenges (Gurbanov, 2021).

Although not a government priority, Georgia's IT sector played a significant role in its economic landscape. Unlike the major economic drivers like oil and gas exports, the IT sector evolved primarily based on market demands. This growth trajectory reflected the industry's adaptability and resilience, with companies and professionals navigating a path with minimal state support.

A wide range of salaries marked the employment landscape within the IT sector. Tech Behemoths said salaries varied from 1278 to 6250 Lari per month, equivalent to approximately EUR 450 to EUR 2200. This disparity indicated the industry's diverse skill sets and roles, from entry-level positions to specialized functions. (Beridze, 2017)

A significant challenge for Georgia's IT sector was the need for targeted government support and policies. This situation contrasted with neighboring countries like Armenia, where the

IT industry benefited from substantial state backing. The limited direct intervention from the Georgian government posed challenges in resource acquisition, networking, and gaining international exposure.

Regionally, Georgia's IT industry was perceived as less advanced than Armenia's more established sector. This regional comparison underscored Georgia's potential as an emerging IT service and product market, particularly for startups and IT entrepreneurs seeking new opportunities.

Despite the general lack of focused support, the Georgian government did initiate projects like high-tech parks, aiming to create a conducive environment for technological growth. These efforts signaled a recognition of the sector's importance. However, their impact in significantly bolstering the industry was still in progress (*SOME ASPECTS OF THE GEORGIAN ECONOMY AT THE CONTEMPORARY STAGE | ZUBIASHVILI | Ecoforum Journal*, n.d.).

Before the 2022 invasion, the future trajectory of Georgia's IT sector was laden with both opportunities and uncertainties. The industry was at a crossroads, poised for growth and innovation, facing challenges related to its development model and regional competitiveness.

Before the Russian invasion of Ukraine, Georgia's IT sector represented a dynamic and evolving industry. Its growth, driven by market forces and characterized by self-reliance, presented a unique blend of opportunities and challenges. The sector's future, while promising, was contingent upon navigating these challenges and capitalizing on its potential within the regional and global IT landscape.

1.6. The influence of migration on IT sectors - a historical context

The history of the Information Technology (IT) sector is deeply intertwined with migration patterns. Migrants have played a pivotal role in shaping IT industries globally, bringing diverse skills, perspectives, and innovations (M. Regets, 2003). This article delves into seven notable examples of migration significantly influencing IT sectors across various regions and eras (Joly, 2000).

Silicon Valley USA:

The influence of immigrants on Silicon Valley's tech sector is profound and well-documented. Research indicates that immigrants founded many engineering and technology

companies in the U.S.(Hanson et al., 2018). Specifically, between 1995 and 2005, about 34 percent of these companies had immigrant founders, and this number rises to an impressive 52 percent when looking at startups in Silicon Valley. Moreover, immigrants have played crucial roles in managing or founding 55 percent of Silicon Valley startups valued above $1 billion. It showcases the vital contribution of immigrants to innovation and the development of critical technologies in the U.S. tech sector (Saxenian et al., 2002). Immigrants are also notably present in academic research, particularly in AI-related fields such as computer science and electrical engineering. The impact of immigration on U.S. technological advancement is further highlighted by findings from the National Bureau of Economic Research, which attributes between 30 to 50 percent of aggregate growth in U.S. output from 1990 to 2010 to increases in scientists, technology professionals, engineers, and mathematicians driven by H-1B visas.

Bangalore, India

The IT boom in Bangalore, India, often called the "Silicon Valley of India," has been significantly influenced by the Indian diaspora, particularly those returning from countries like the USA. Individuals like Radha Basu, who pursued graduate studies in the US before returning to India, played a pivotal role in establishing foreign subsidiaries and software development centers in Bangalore. These expatriates used their cultural and linguistic backgrounds to facilitate the development of Indian software facilities for large US companies. Their expertise helped bridge the gap between US firms and India's skilled yet cost-effective labor force (Chacko, 2007). This connection was crucial in making Bangalore a thriving hub for technology and innovation. The city has attracted significant global players in the tech sector, such as Amazon, Samsung, Google, and Infosys, drawn by the combination of low labor costs and a highly qualified workforce. Expatriates often find opportunities in management, quality assurance, and translation roles. However, working in Bangalore can come with challenges, including adjusting to the business culture, which may differ from what expats are used to. The work environment in many Indian companies, particularly in startups, has been noted for its fast pace and pressure, requiring a balance between work and personal life.

Israel

The influence of immigration from the former Soviet Union on Israel's tech sector, particularly in its transformation into a "Startup Nation," is a compelling story of how skilled migration can significantly impact a country's economic and technological landscape.

In the 1990s, Israel received almost one million immigrants from the former Soviet Union, accounting for nearly 19% of its established population. This wave of immigration was distinctive for its large, high-skilled cohort, which played a crucial role in quickly integrating these individuals into the domestic labor market. The Soviet-Jew immigration raised productivity and underpinned Israel's technological prowess. The exodus of Soviet Jews to Israel during this period was unique due to the large number of highly educated and skilled individuals it brought, reshaping the entire economic landscape of Israel (*Israeli Infotech Migrants in Silicon Valley | RSF: The Russell Sage Foundation Journal of the Social Sciences*, n.d.). This change was particularly evident in the information technology sector, which saw a surge in innovation and development.

The robust assimilation of these immigrants into Israel's economic and electoral systems triggered significant income distribution changes and transformed the country's political balance. The integration of these skilled immigrants had far-reaching economic and social consequences, influencing the labor market, international trade, economic growth, and even Israel's political and social structures.

The story of Israel's immigration and its impact on the country's IT sector provides valuable lessons on globalization and the potential benefits of skilled migration. It highlights how the movement of high-skilled individuals can contribute positively to the fiscal system of the receiving country and reshape various aspects of its society, including culture, politics, and economics.

Canada

Canada's tech sector has seen significant growth in recent years, primarily attributed to its strategic immigration policies. The government of Canada has actively embraced a role in attracting global tech talent, which is crucial for filling in-demand jobs and driving future economic growth. One of the critical strategies includes promoting Canada as a destination for digital nomads and allowing individuals to work remotely for foreign employers while residing in Canada. This initiative is expected to attract talent that may eventually transition to working with Canadian companies (She & Wotherspoon, 2013).

Another significant move is the creation of a streamlined work permit for H-1B specialty occupation visa holders from the US. This policy allows these highly skilled workers to relocate to Canada and contribute to the growth and prosperity of North America's high-tech sector.

Improvements to existing programs catering to high-skilled tech occupations have also been made. These include enhancements to the Global Skills Strategy and the Start-up Visa Program. The Global Skills Strategy, launched in 2017, is designed to provide Canadian employers with quick access to highly skilled talent from around the world, while the Start-up Visa Program offers a path to permanent residence for foreign entrepreneurs with the support of Canadian venture capital funds, angel investor organizations, or business incubators.

The impact of these policies is evident in the numbers. Over the past year, Canada has attracted more than 32,000 tech workers, boosting the sector significantly. This influx of tech talent has been crucial in addressing labor shortages and promoting innovation in Canada's thriving tech sector.

UK

The United Kingdom's tech sector has seen significant growth, partly due to its ability to attract skilled migrants, especially in cities like London. This influx of talent has been essential in driving innovation and filling in-demand roles within the sector (Green & Hogarth, 2017).

The Migration Observatory at the University of Oxford provides an overview of the labor market situation of migrants in the UK, highlighting the substantial role foreign-born individuals play in various sectors, including technology. In particular, skilled migrants bring diverse ideas and innovation to the tech ecosystem, an industry defined by its continual push of boundaries.

RSM UK notes the parallel between the UK and Silicon Valley in nurturing foreign talent. A National Foundation for American Policy report found that over 55% of US $1 billion start-ups had at least one immigrant founder, demonstrating the importance of skilled migration in fostering a vibrant tech ecosystem. In the UK, almost 54,000 international workers applied to work in the technology sector in 2022, with many migrants coming from Asia, notably India (Green & Hogarth, 2017).

Lawyer Monthly explores the UK's immigration options for the tech sector, emphasizing the resilience and growth of the UK tech industry despite global challenges. The Skilled Worker sponsorship, following Brexit, has become a popular route for tech companies to source skilled

staff. The Global Talent visa and Innovator Founder visa are other options that offer pathways for tech professionals and entrepreneurs to work and settle in the UK.

These insights underscore the critical role of skilled migration in shaping and sustaining the UK's tech sector, ensuring its position as a leading technology hub in Europe. The strategic use of immigration policies to attract global talent has been critical to filling skill gaps and promoting innovation within the UK's tech industry.

2. Methodology

2.1. Research design

A mixed-methods approach, combining quantitative and qualitative research methods, is used in this study. This approach allows for a robust analysis of statistical data from surveys (quantitative) and deeper insights from interviews. It enables a comprehensive understanding of the measurable effects and the nuanced personal experiences and perceptions related to the research questions.

The primary quantitative data will come from the survey, with responses from Georgia IT professionals on the impact of Russian migration.

Statistical analysis methods, such as descriptive statistics and cluster analysis, will be used to identify data trends, patterns, and relationships. This will help understand the broad impact on job market dynamics and salary levels.

In-depth interviews with a selection of survey respondents in the Georgian IT sector will identify and analyze patterns and themes within the qualitative data. This will provide deeper insights into Russian IT migration's operational and cultural impacts.

The privacy and anonymity of all participants are granted, especially considering the topic's sensitive nature. I obtained informed consent from all participants, clearly explaining the purpose of the research and how the data will be used.

2.2. Data collection methods

To effectively assess the impact of Russian IT migration on Georgia's IT sector, the study employs a structured survey as its primary data collection method. The survey is designed to gather quantitative data from diverse participants within the IT sector. Here's an outline of the data collection methods:

The survey questionnaire is developed to capture critical aspects of the IT sector's dynamics post-migration. This includes questions on job opportunities, market competition, salary trends, establishment of new businesses, and individual experiences and perceptions. A mix of closed-ended (e.g., Likert scale, multiple-choice) questions are used to gather quantitative insights. A semi-structured interview guide with open-ended questions is used to collect qualitative data.

The in-depth interview questions are developed to capture insights within survey questions and to encourage participants to share their experiences and perceptions.

Before full deployment, the survey is pilot-tested with a small group to ensure clarity, relevance, and effectiveness in gathering the intended information.

2.3. Data Target population and sampling

The target population includes IT professionals (local), HR managers, company executives, and other stakeholders in Georgia's IT sector. A stratified random sampling technique ensures representation across different roles, company sizes, and regions within Georgia's IT sector. Efforts are made to include participants from both urban and rural areas.

The survey is distributed through various channels, including professional networks, social media platforms, IT community forums, and corporate partnerships. An online survey platform (Google Forms) was used for easy distribution and data collection. Participants are informed about the purpose of the study, and their support is obtained. Anonymity and confidentiality of responses are ensured to encourage honest and open feedback.

The survey was open for responses for a month (October 23 – November 22).

Collected data is compiled and organized systematically for analysis. The data undergoes a cleaning process to address missing values, outliers, or inconsistencies.

3. Findings and Analysis

Received 97 responses in total. All of the responses were valid.

For in-depth interviews, two respondents were chosen:

Respondent #1 – Senior software engineer, working in a Georgian commercial bank, interview duration 43:06 minutes.

Respondent #2 – CEO of the Georgian tech Startup, working for the European Market, interview duration 39:37 minutes.

3.1. Demographic analysis

The detailed statistics on the demographic characteristics of the survey participants are visually represented through the following graphs:

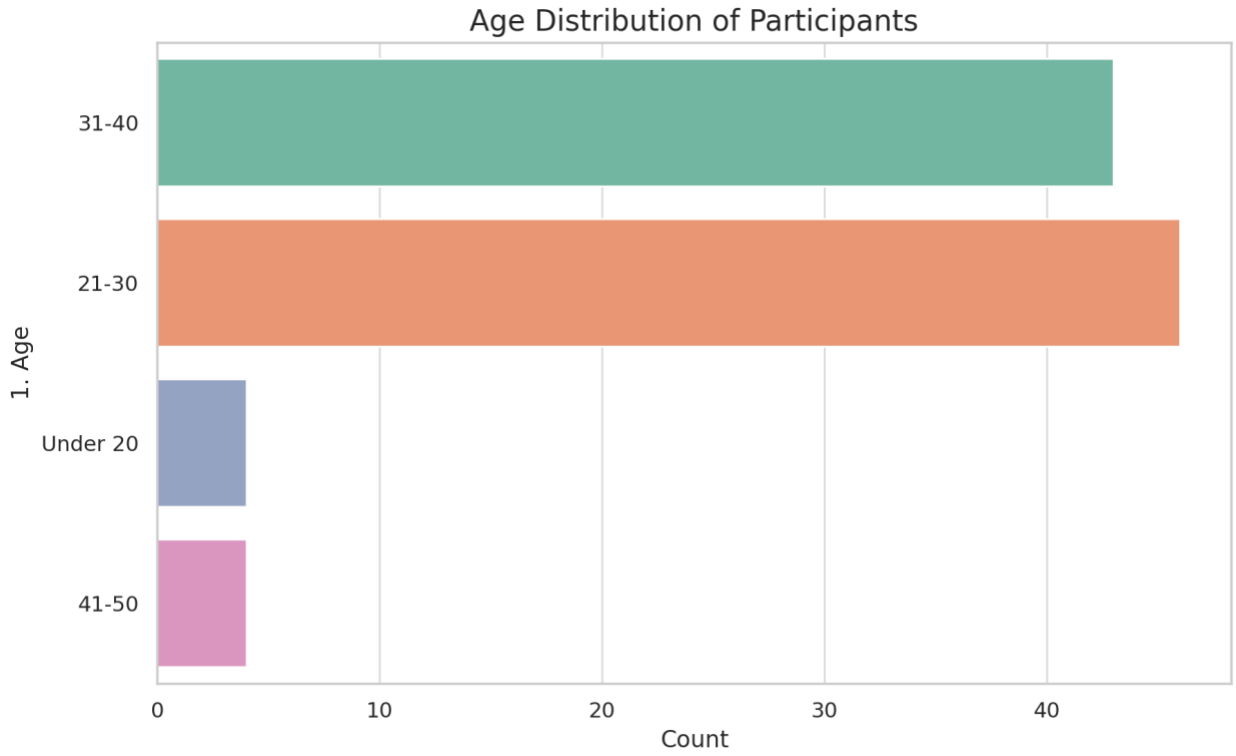

Figure 1: Age Distribution of Participants

*Source: author's calculation

- 21-30 years: 47.42% of the respondents are in this age group, indicating a relatively young demographic.
- 31-40 years: 44.33%, showing a significant presence of mid-career professionals.
- 41-50 years: 4.12%, representing a smaller proportion of more experienced professionals.
- Under 20 years: 4.12%, indicating a slight but notable presence of young professionals or students.

This graph shows the distribution of participants across different age groups. The '21-30' age group is the most represented.

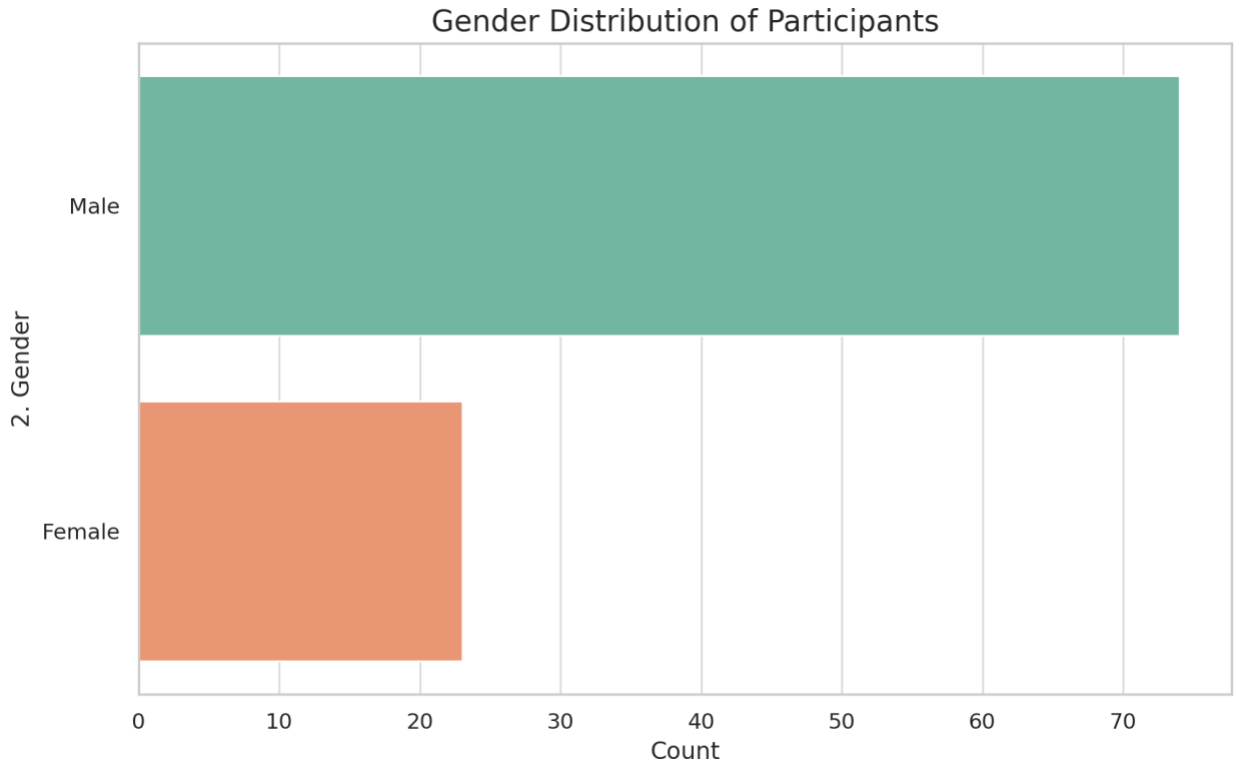

Figure 2: Gender Distribution of Participants

*Source: author's calculation

- Male: 76.29%, showing a male-dominated environment in the IT sector.
- Female: 23.71%, indicating a significant but lesser representation of females in the industry.

The gender distribution graph highlights the male dominance in the participant pool, with a much higher number of male participants than females.

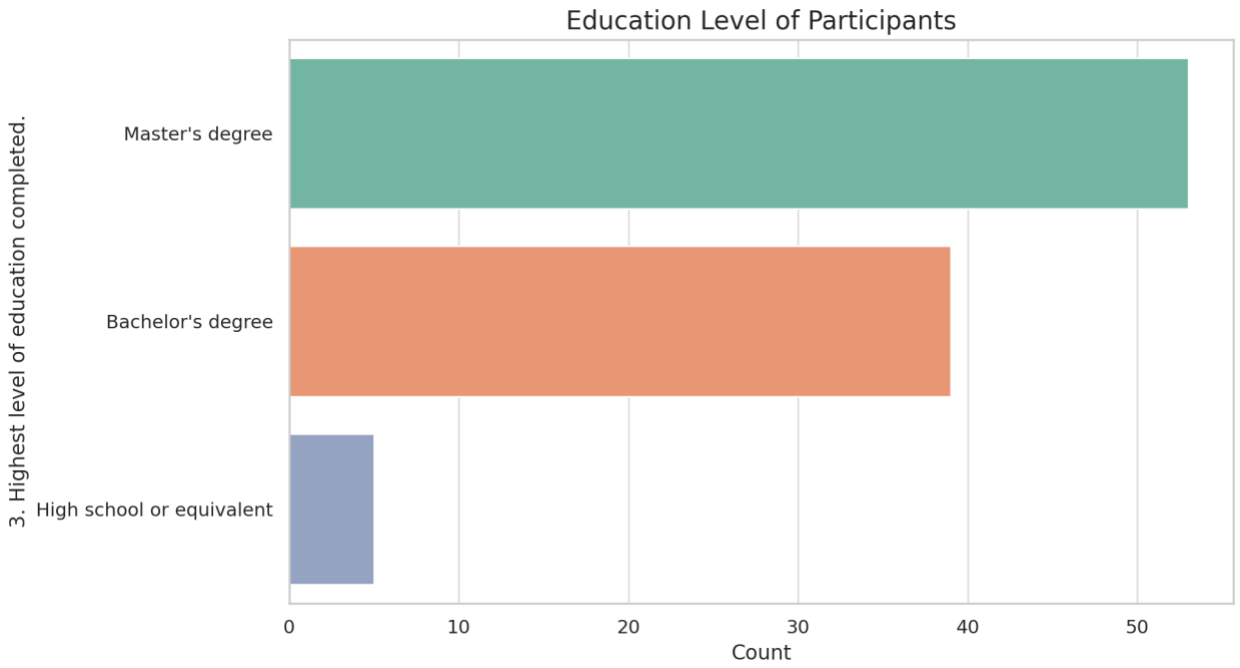

Figure 3: Education Level of Participants

* Source: author's calculation

- Master's degree: 54.64% of respondents have a Master's degree, showing a highly educated workforce.
- Bachelor's degree: 40.21%, indicating a large proportion with undergraduate education.
- High school or equivalent: 5.15%, representing those with high school education participating in the IT sector.

The education level graph indicates that most participants have a 'Master's degree,' followed by those with 'Bachelor's degrees' and a smaller number with High school or equivalent education.

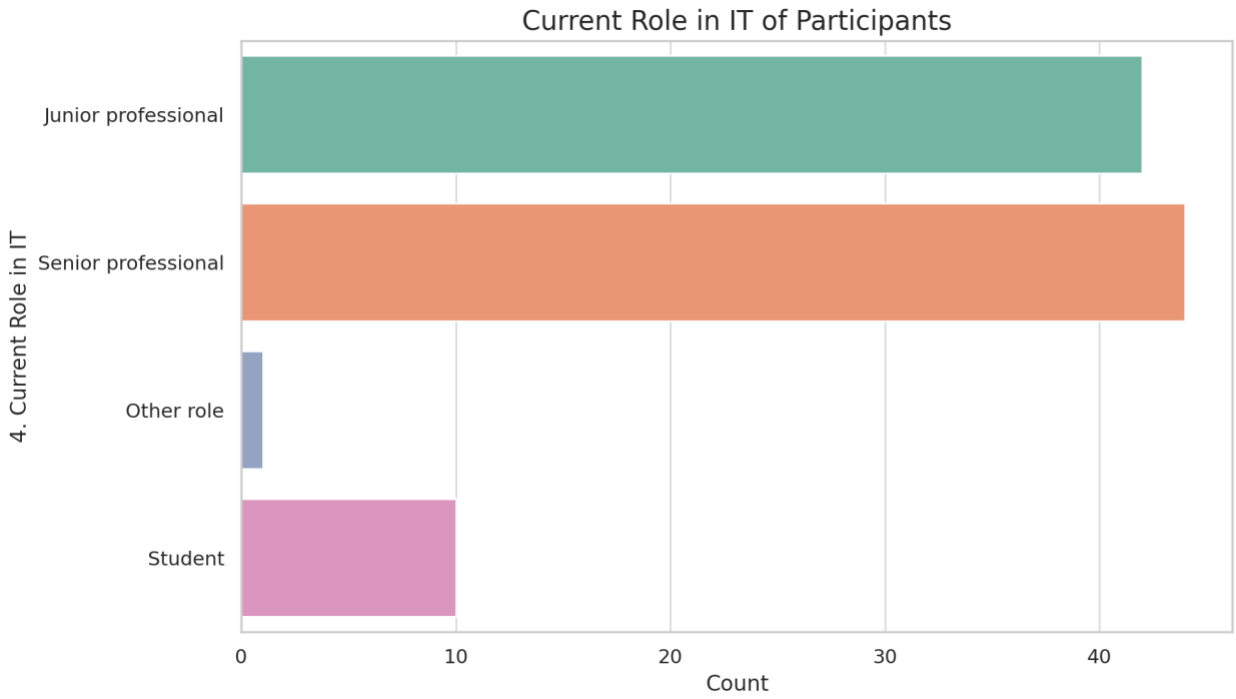

Figure 4: Current Role in IT of Participants

* Source: author's calculation

- Junior professional: 43.30%, showing many respondents in early career stages.
- Senior professional: 45.36%, indicating a similar proportion in more advanced career stages.
- Student: 10.31%, representing the involvement of students in the IT sector.
- Other role: 1.03%, which may include other roles not explicitly categorized.

This chart illustrates the distribution of participants based on their current role in IT, with 'Senior professionals' being the largest group, followed by 'Junior professionals, 'Managers,' and 'Executives.'

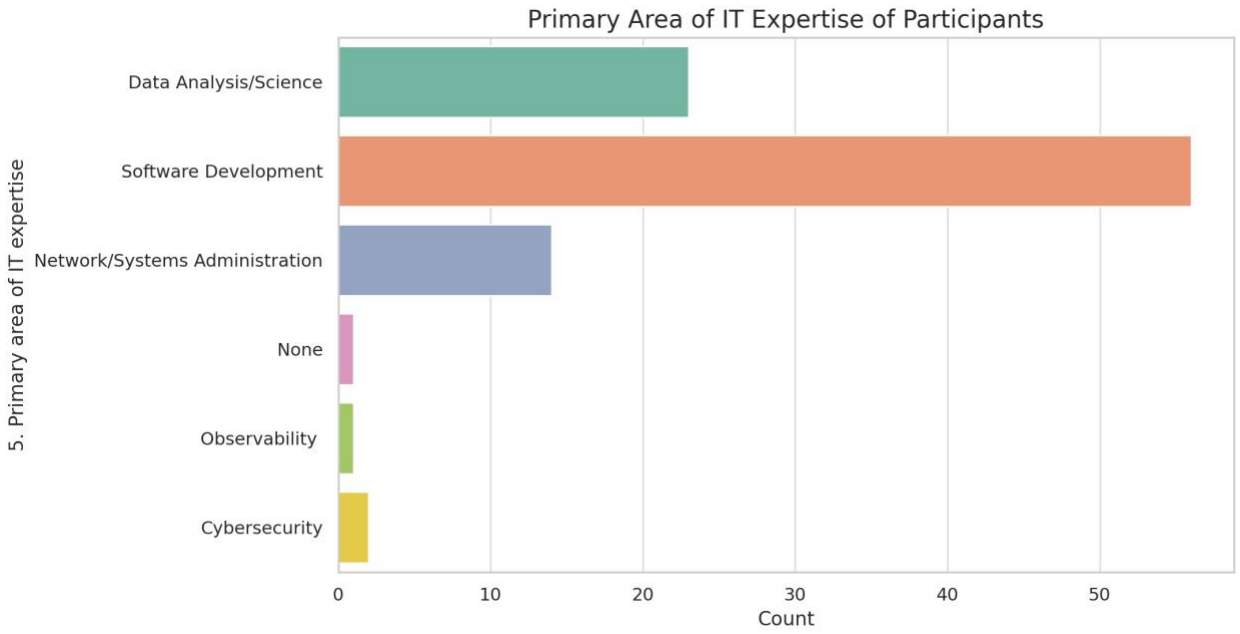

Figure 5: Primary Area of IT Expertise of Participants

* Source: author's calculation

- Software Development: 57.73%, the most common area of expertise, strongly focusing on software-related roles.
- Data Analysis/Science: 23.71%, significantly focusing on data-centric roles.
- Network/Systems Administration: 14.43%, showing the presence of professionals in infrastructure and network management.
- Cybersecurity: 2.06%, a smaller but essential area of specialization.
- None and Observability: Both at 1.03%, indicating niche or emerging areas of expertise or respondents at the beginning of their IT career.

The graph showcasing IT expertise reveals 'Software Development' as the predominant field, with other areas like 'Data Analysis/Science,' 'IT Management,' 'Network/System Administration,' etc., also represented.

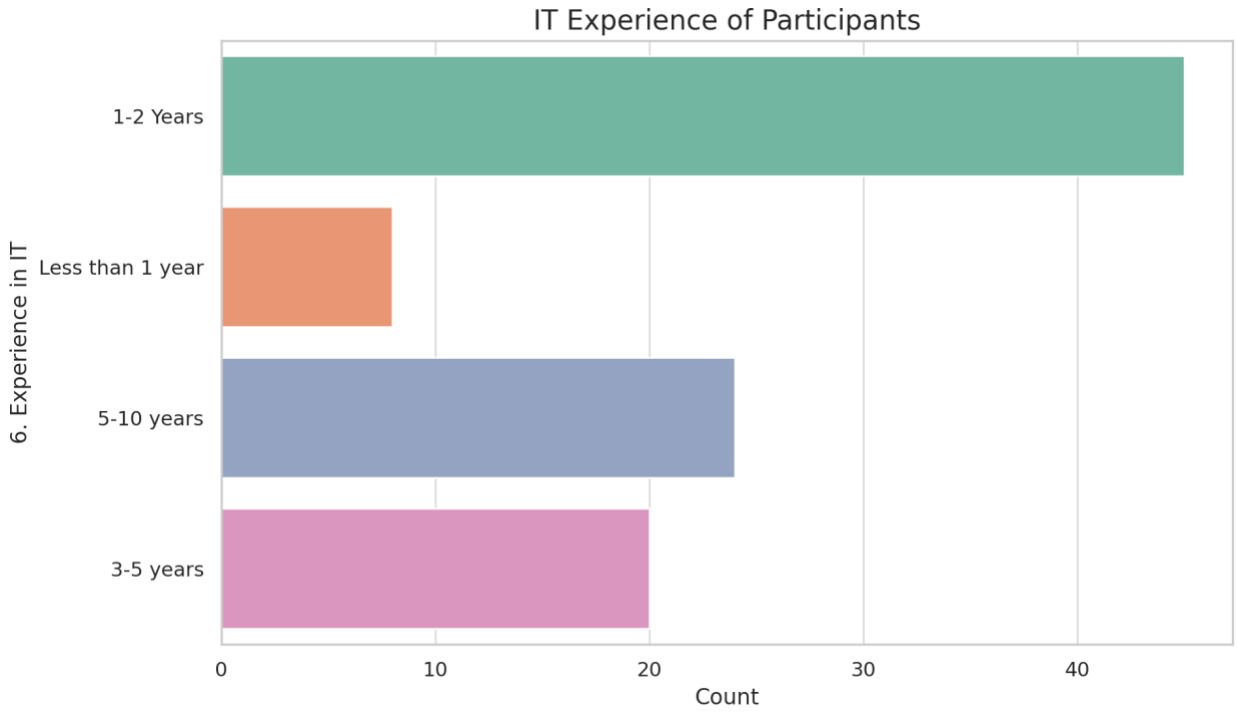

Figure 6: IT Experience of Participants

* Source: author's calculation

- 1-2 Years: 46.39%, showing many respondents are relatively new to the IT field.
- 3-5 years: 20.62%, indicating many mid-level experienced professionals.
- 5-10 years: 24.74% represent seasoned professionals with substantial experience.
- Less than one year: 8.25%, indicating newcomers to the IT sector.

The graph shows the experience levels in IT, with '1-2 Years' being the most common, indicating a relatively young workforce in terms of experience.

3.2. Descriptive analysis

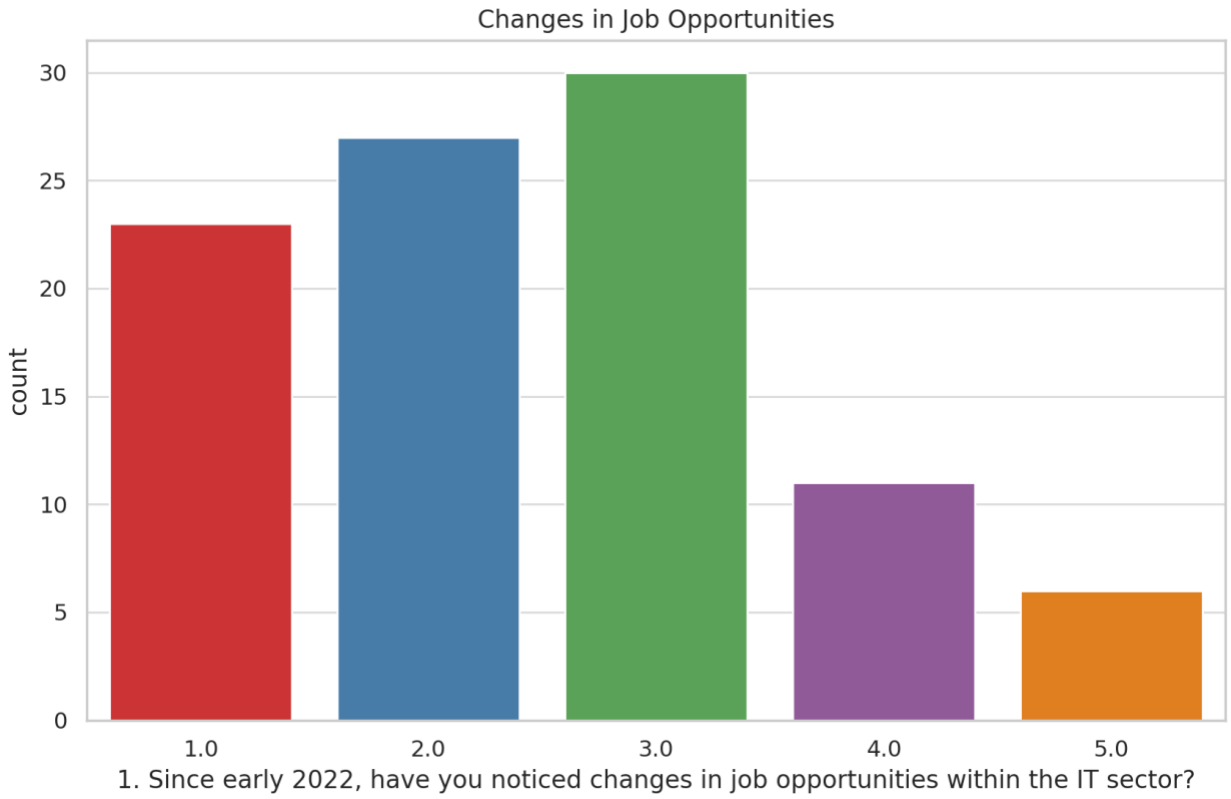

Figure 7: Changes in job opportunities

* Source: author's calculation

The graph is the Likert scale graph, where 1 means a 'Significant decrease' and 5 indicates a 'Significant increase'.

Responses varied, with 23.71% rating it as unfavorable (1), 27.84% slightly negative (2), 30.93% neutral (3), 11.34% somewhat positive (4), and 6.19% positive impact (5). The majority of responses were neutral or slightly negative.

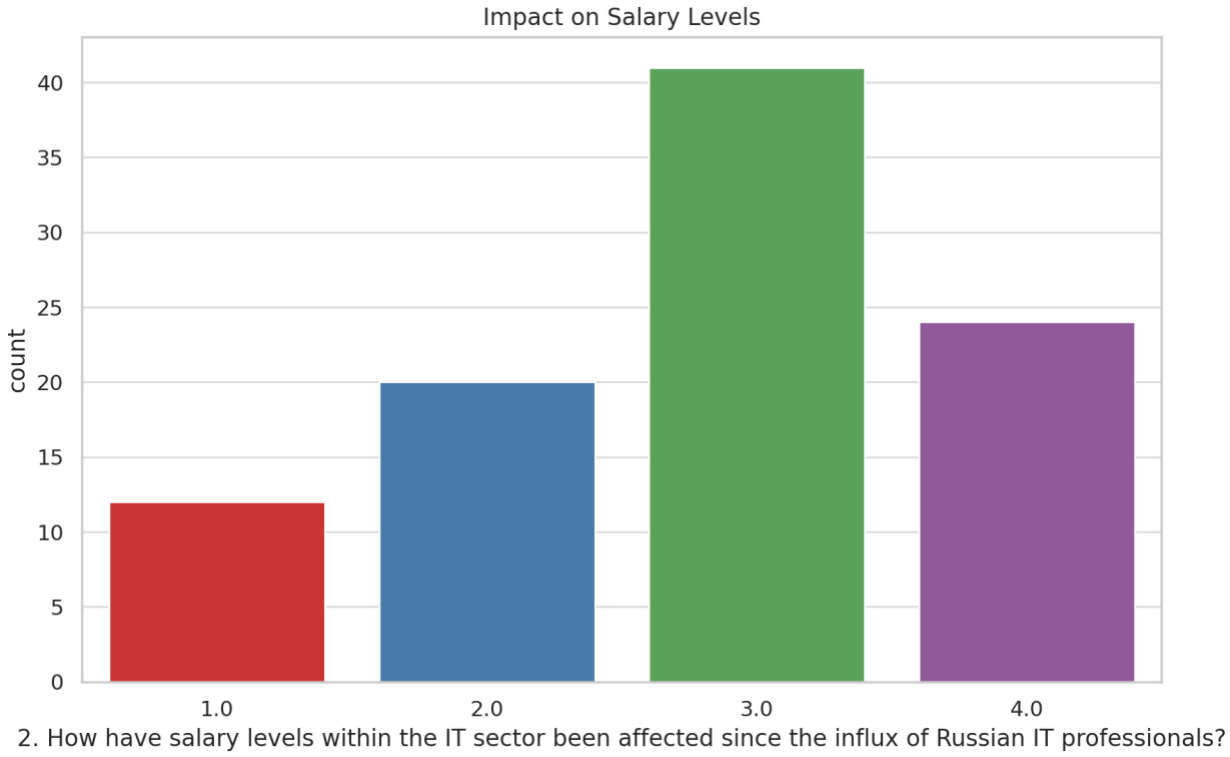

Figure 8: Impact on salary levels

* Source: author's calculation

The graph is the Likert scale graph, where 1 means a 'Significant decrease' and 5 indicates a 'Significant increase'.

12.37% perceived a negative impact (1), 20.62% slightly negative (2), a notable 42.27% neutral (3), and 24.74% saw it as positive (4). There were no responses for the most favorable option (5). The prevailing sentiment was neutral.

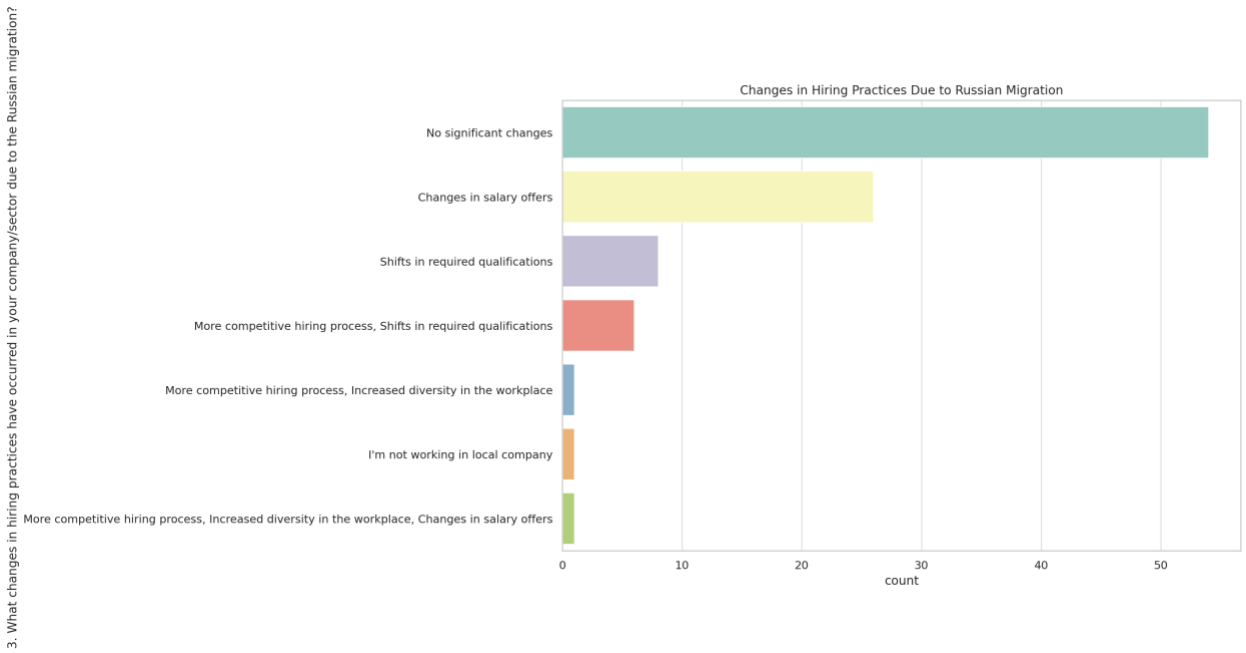

Figure 9: Changes in hiring practices

* Source: author's calculation

The graph shows what changes in hiring practices have occurred in the company/sector due to Russian migration.

The majority, 55.67%, observed no significant changes. Other notable responses included 26.80% noticing changes in salary offers and 6.19% perceiving shifts in required qualifications.

Figure 10: Emergence of Professional Development Opportunities due to Russian IT migration

* Source: author's calculation

The graph is the Likert scale graph, where 1 means a 'Significant decrease' and 5 indicates a 'Significant increase'.

25.77% rated the emergence of opportunities negatively (1), 15.46% slightly negative (2), 43.30% neutral (3), and 15.46% slightly positive (4). The trend indicates a neutral to somewhat negative perception.

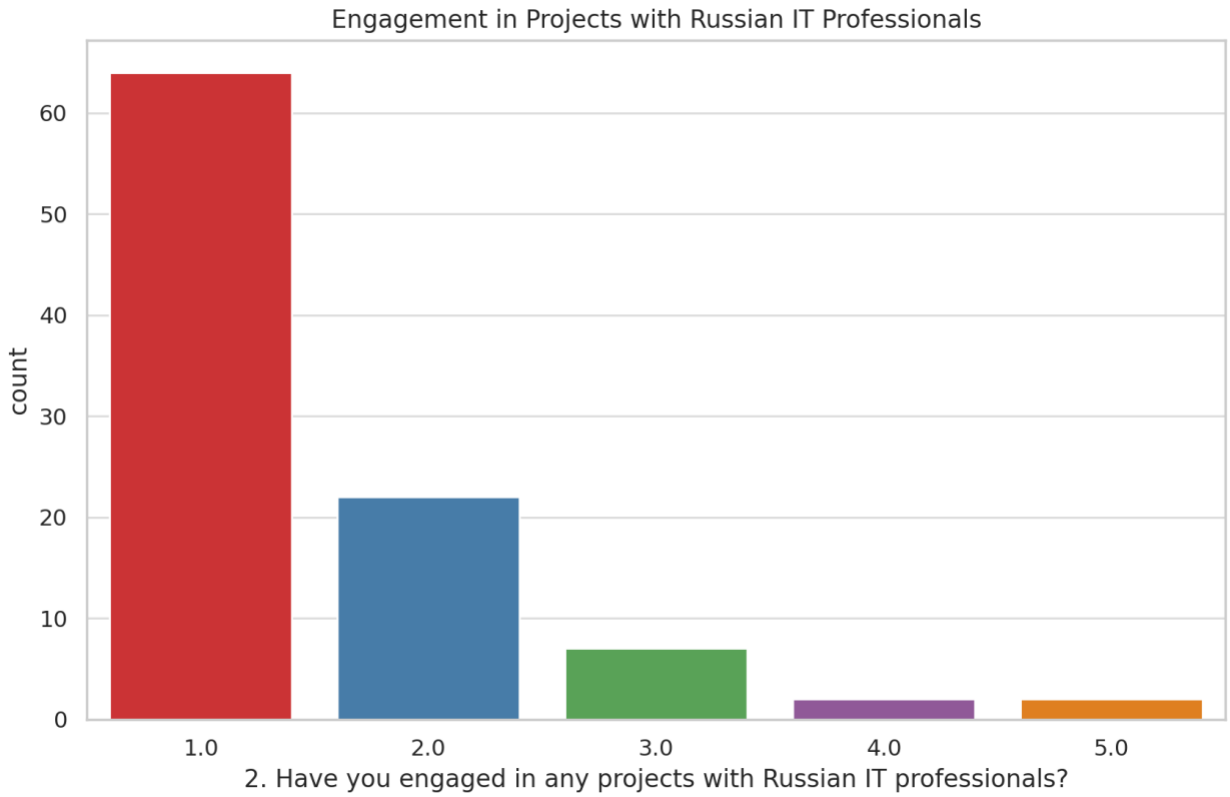

Figure 11: Engagement in Projects with Russian IT professionals

* Source: author's calculation

The graph is the Likert scale graph, where one means a 'Never' and 5 indicates a 'Frequently.' A majority, 65.98%, rated their engagement as Never (1), followed by 22.68% rarely (2), 7.22% neutral (3), and only 4.12% indicating frequent experiences (4 and 5 combined). This suggests a predominantly negative experience.

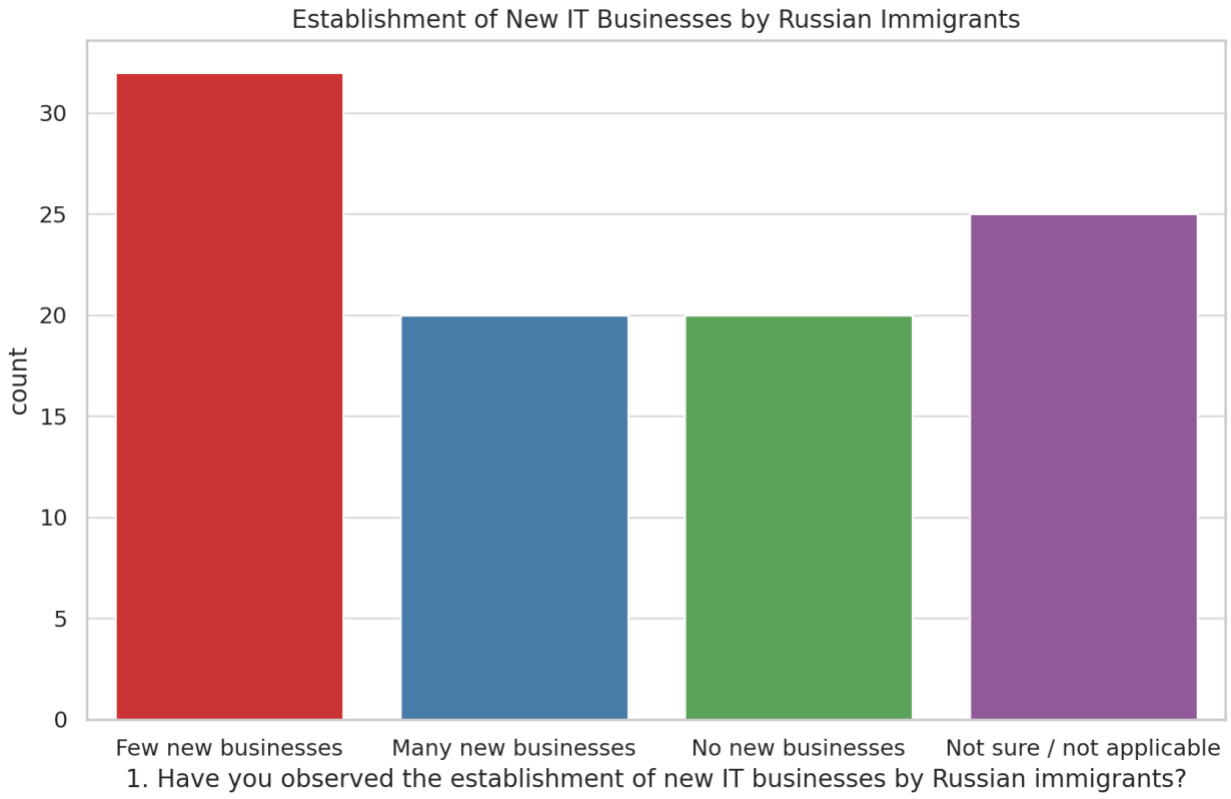

Figure 12: Establishment of new IT businesses by Russian immigrants

* Source: author's calculation

The graph shows the observation of new businesses by Russian IT migrants.

Responses varied, with 32.99% observing few new businesses, 20.62% many new businesses, another 20.62% seeing no new companies, and 25.77% unsure or not applicable.

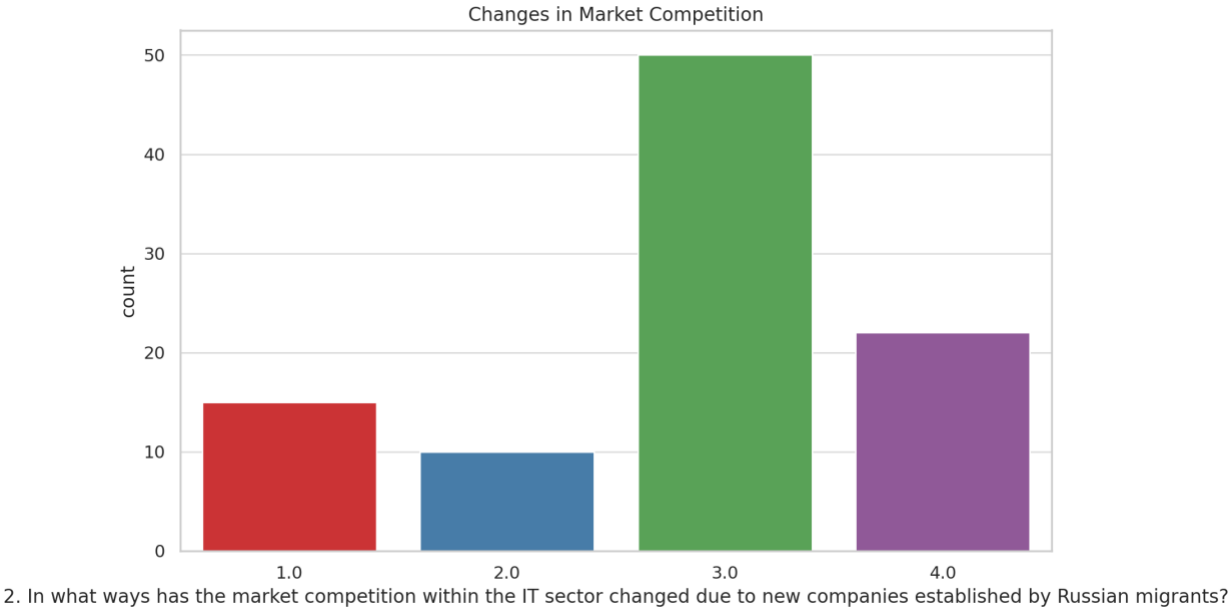

Figure 13: Changes in market competition

* Source: author's calculation

The graph is the Likert scale graph, where 1 means a 'Significant decrease' and 5 indicates a 'Significant increase'.

The responses showed 15.46% perceiving a negative impact (1), 10.31% slightly negative (2), a majority 51.55% neutral (3), and 22.68% somewhat positive (4). The prevailing sentiment was neutral.

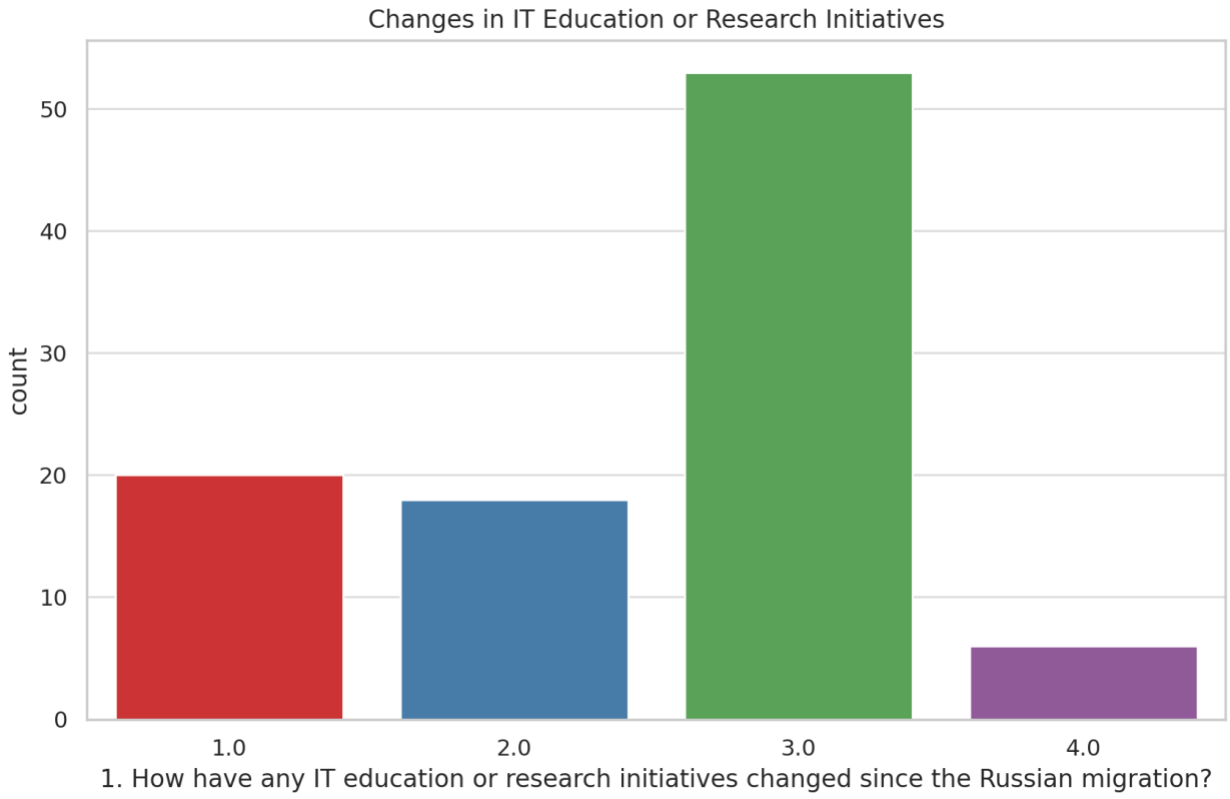

Figure 14: Changes in IT education and Research initiatives

* Source: author's calculation

The graph is the Likert scale graph, where 1 means a 'Decreased quality/diversity of courses' and 5 indicates an 'Increased quality/diversity of courses.'

20.62% saw negative changes (1), 18.56% were slightly negative (2), a notable 54.64% were neutral (3), and 6.19% were slightly positive (4). This indicates a neutral to somewhat negative perception.

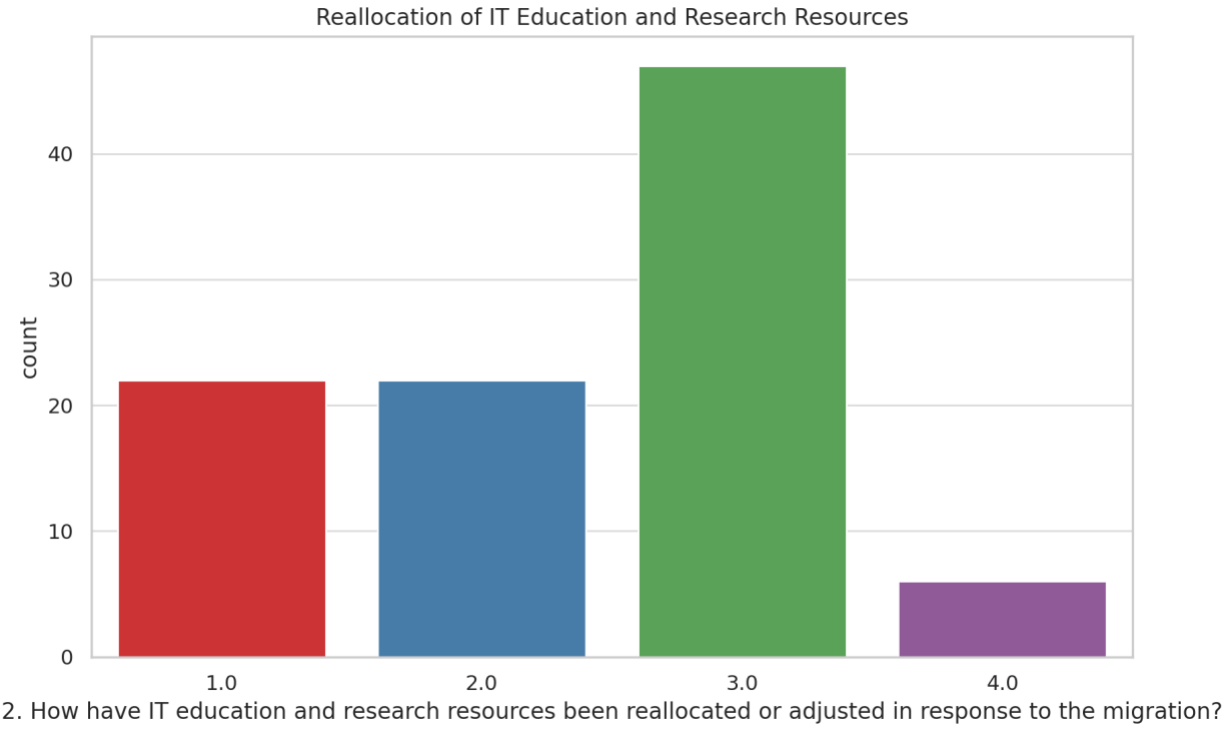

Figure 15: Reallocation of IT education and research resources

* Source: author's calculation

The graph is the Likert scale graph, where 1 means a 'Significant decrease' and 5 indicates a 'Significant increase'.

22.68% perceived this negatively (1), another 22.68% slightly negative (2), 48.45% neutral (3), and 6.19% somewhat positive (4). The trend leans towards a neutral to slightly negative perception.

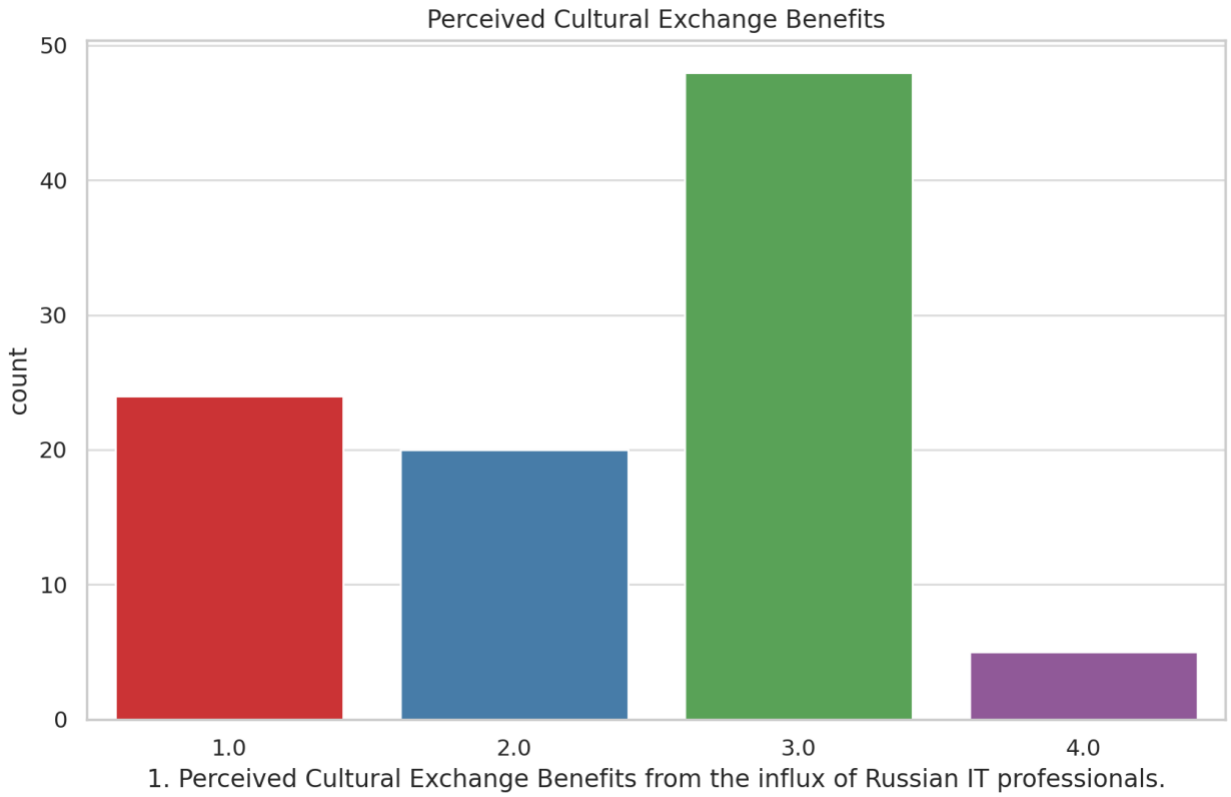

Figure 16: Perceived Cultural Exchange Benefits

* Source: author's calculation

The graph is the Likert scale graph, where 1 means 'Greatly challenging' and 5 indicates 'Greatly beneficial''.

24.74% rated negatively (1), 20.62% slightly negative (2), 49.48% neutral (3), and 5.15% slightly positive (4). This suggests a neutral to somewhat negative perception of cultural exchange benefits.

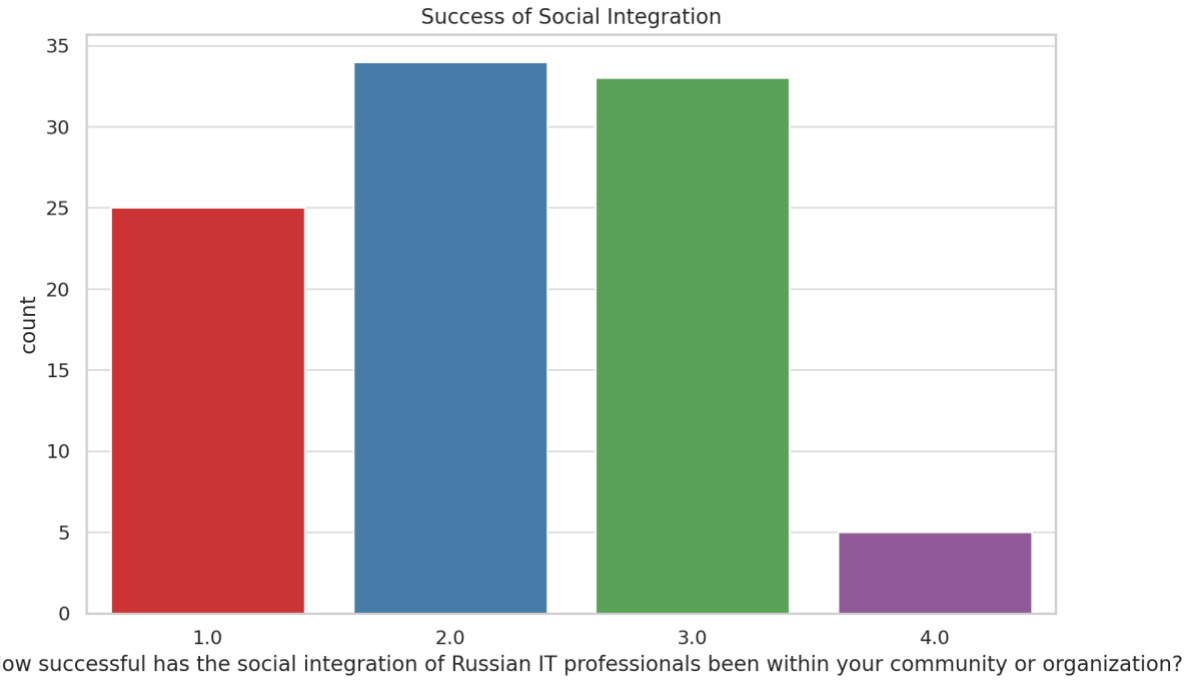

Figure 17: Success of Social Integration

* Source: author's calculation

The graph is the Likert scale graph, where one means a 'Highly unsuccessful' and 5 indicates a 'Highly successful'.

25.77% rated social integration as unfavorable (1), 35.05% slightly negative (2), 34.02% neutral (3), and 5.15% somewhat positive (4). This indicates a trend toward negative to neutral perceptions.

Figure 18: Future expectations of the Georgian IT sector

* Source: author's calculation

The graph is the Likert scale graph, where 1 means a 'Very negative' and 5 indicates a 'Very positive'.

Responses included 24.74% Very negative (1), 26.80% slightly negative (2), 22.68% neutral (3), 22.68% somewhat positive (4), and 3.09% Very positive (5). The responses are distributed relatively evenly across the spectrum except 'Very positive.'

3.3. Results

This study aims to explore competition dynamics in the IT Sector and the influence of the influx of Russian IT professionals on the level of competition, find out the impact on salary levels and compensation structures, and examine job creation and market expansion affected by the Russian IT migration in Georgia's IT sector in a sample of 97 respondents from Georgian IT sector.

*'The Georgian IT sector is growing fast. Many incubation programs are launched by government and international donor organizations, which helps tech startups succeed.'**

* Source: interview with respondents

Based on the survey results, Figure 7 and Figure 13 returned controversial results regarding the changes in competition. While job opportunities are decreasing for most respondents (51.55%), market competition remains the same despite the growth of the Georgian IT sector.

Changes in Job Opportunities	**Results**
Mean	2.48
Median	2
Standard Error	0.117

Table 1: Changes in Job Opportunities

*Source: Author's calculation

The average rating for the changes in job opportunities is approximately 2.48. This value suggests that, on average, the perception leans towards a slightly negative impact on job opportunities since early 2022.

The median rating is 2.0, which aligns with the observation that the central tendency of the responses is slightly negative. As a robust measure against outliers, the median indicates that half of the respondents rated the impact on job opportunities as slightly negative or worse.

The standard error of the mean is approximately 0.117. This standard error reflects the precision of the sample mean and indicates that the mean is a consistent estimate of the population mean within the scope of the survey.

Changes in Market Competition Due to New Companies by Russian Migrants	**Results**
Mean	2.81
Median	3
Standard Error	0.98

Table 2: Changes in Market Competition Due to New Companies by Russian Migrants

*Source: Author's calculation

The average rating for the changes in market competition is approximately 2.81. This value suggests that, on average, the perception leans towards a neutral to the slightly negative impact of Russian IT migration on market competition.

The median rating is 3.0, which further supports the observation that the central tendency of the responses is neutral. The median, less affected by extreme values, indicates that half of the respondents rated the impact as neutral or higher.

The standard error of the mean is approximately 0.098. This relatively low standard error indicates a high level of precision in the mean estimate of the sample, suggesting that the sample mean is a reliable estimate of the true population mean. These insights suggest that the influx of Russian IT professionals has had a negligible impact on the level of competition within Georgia's IT sector. However, the data does not point to a drastic change but rather a moderate shift in the competitive dynamics.

*'Tech startups are growing fast, so demand for professional employees is growing. However, we usually work on short-term projects and prefer hiring freelancers from different platforms.'**

*Source: interview with respondents

Hence, Cluster analysis and cross-tabulation were conducted.

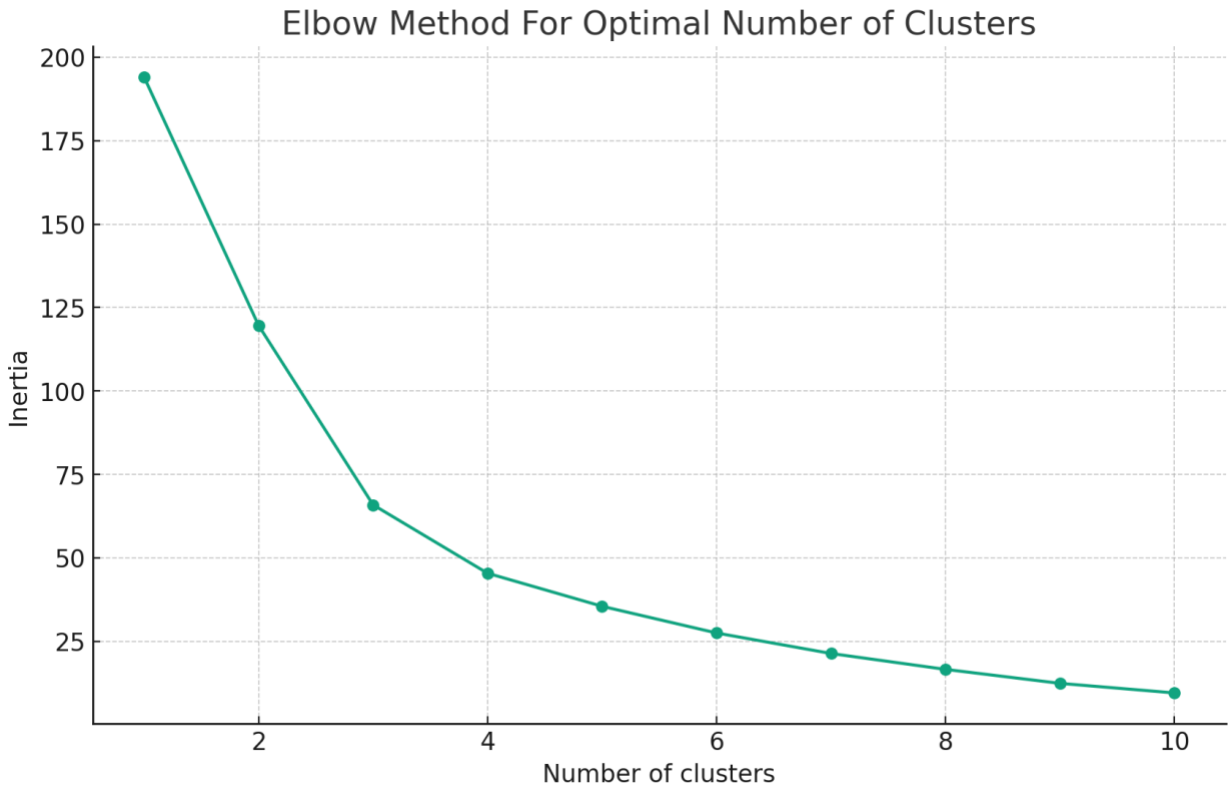

Figure 19: RQ1 cluster analysis

* Source: author's calculation

Based on the Elbow Method graph for the cluster data, this dataset's optimal number of groups might be 2 or 3.

I used 3 clusters, which focus on changes in job opportunities and market competition within the IT sector since the influx of Russian IT professionals, to provide the following insights based on the mean values of each variable within each cluster.

	Cluster 0	**Cluster 1**	**Cluster 2**
Changes in Job Opportunities	1.5	3.51	1.64
Changes in Market Competition	1.13	3.04	3.28

Table 3: RQ1 Cluster means

*Source: Author's calculation

- Cluster 0 represents a group that perceives both job opportunities and market competition to have significant negative changes since the Russian IT migration. This cluster might indicate areas or segments within the IT sector where the impact of migration has been high.

*'There are some small companies in the Georgian IT industry, which are oriented on the local market, primarily offering digital marketing services, and I can say they are the most damaged companies from the Russian migration. Russian freelancers are doing the same job much cheaper. In addition, our parent's Generation speaks Russian, and some of the Directors of these types of companies prefer to have communication with them.'**

*Source: interview with respondents

- Cluster 1 consists of respondents who perceive small positive changes in job opportunities and market competition, suggesting a small impact of migration on the IT sector.\

*'For the majority of the sector, Russian skilled migration had no effect; it might have a slight positive effect because when the young generation sees how the IT sector is developing when they see all the benefits of it, and for some patriotic reasons, when they need to win in the competition with Russian professionals, it will help the growth of the industry. And some Russian companies will hire locals also to improve the brand identity.'**

*Source: interview with respondents

- Cluster 2 includes respondents who perceive noticeable negative changes in job opportunities but slightly positive changes in market competition, indicating a scenario where the competition dynamics have been less affected than job opportunities.

*'Due to the increased number of Russian IT companies, the competition within the industry has grown, but they usually hire ethnical Russians and Belorussians. Unfortunately, some of the small Georgian IT companies can not compete with them, and they leave the market, which causes a reduction of job opportunities.'**

*Source: interview with respondents

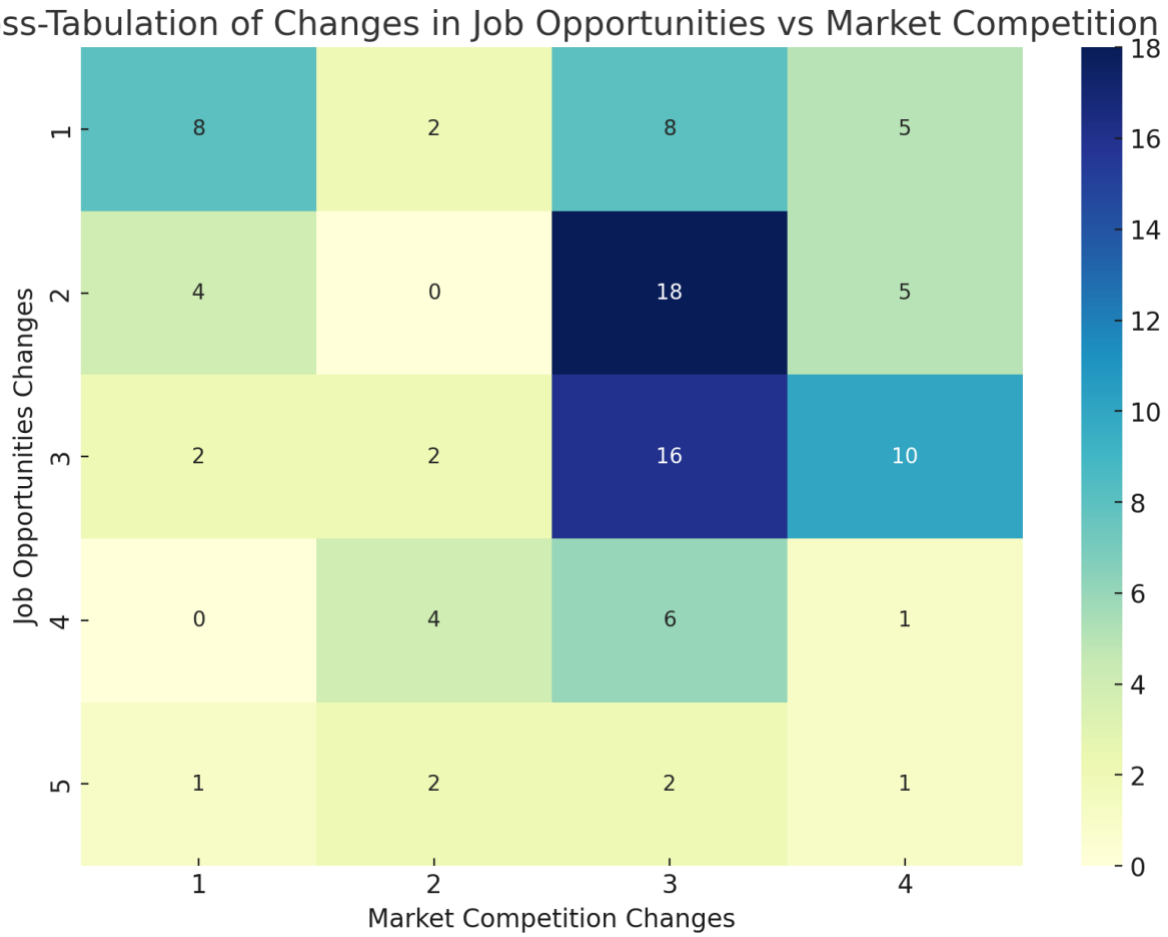

Figure 20: Cross-tabulation

* Source: author's calculation

Cross-tabulating the two variables provides an insightful view of how job opportunities correlate with perceived changes in market competition within Georgia's IT sector since the influx of Russian IT professionals.

The most significant number of responses (18) falls in the category where respondents noticed moderate negative changes in job opportunities (rated as 2) and perceived no changes in market competition (rated as 3). Another significant response pattern is where respondents perceived no changes in job opportunities and market competition (rated as 3).

There are varied perceptions across different categories, indicating various experiences and observations among respondents. Respondents who noticed the drastic negative changes in job opportunities (rated as 1) also reported varied levels of change in market competition, with a slightly higher number perceiving none to increase changes in competition (ratings 3 and 4).

The frequency distribution of responses to the question about how salary levels within the IT sector have been affected since the influx of Russian IT professionals is as follows:

- Significant Decrease (Rating 1): 12 responses
- Decrease (Rating 2): 20 responses
- No Change (Rating 3): 41 responses
- Increase (Rating 4): 24 responses
- Significant increase (Rating 5): 0 responses

According to the survey data, the impact of migration on salaries is more complex. A substantial 42.27% of respondents indicated a neutral effect (Figure 8), which could imply several scenarios. This neutrality might result from the sector's robust compensation structures, which are resilient enough to absorb the influx without immediate adjustments. Alternatively, it might reflect a period of market adjustment, where the full impact on salaries has yet to materialize.

The data also reveals divergent perceptions: 24.74% of respondents saw a positive impact on salary levels. This could be due to the infusion of high-skilled Russian IT professionals, increasing demand for specialized skills, and growing salaries for specific roles. Such a trend indicates companies are willing to pay more to attract and retain top talent in a more competitive environment.

Conversely, 32.99% of respondents perceived a negative to a slightly negative impact on salary levels. This sentiment could reflect concerns about downward pressure on wages due to an increased supply of IT professionals in the market. It also suggests apprehensions about the devaluation of local expertise, with companies potentially opting for lower-cost options among the new entrants.

'From the beginning, we have not received any applications from Russian skilled professionals, but over time, their applications are increasing, and surprisingly, their wage demand is a bit lower than, for example, Georgian applicants.' If this trend remains the same, I doubt more and more companies will hire Russian migrants. It can increase the knowledge level at some point, but we have to consider Georgian-Russian relationships.'

*Source: interview with respondents

The survey data provides varied insights into this phenomenon. Regarding job opportunities, a substantial proportion of respondents (51.55%) perceived the impact as neutral or slightly negative. This perspective could be attributed to several factors, including the time it takes for the market to adjust to the influx, the specific roles and skills of Russian professionals, and the overall pace and nature of growth in the IT sector.

Regarding market expansion, the establishment of new IT businesses by Russian immigrants, as observed by 20.62% of respondents (Figure 12), signals market growth and diversification. However, a similar percentage (20.62%) did not notice any new business establishments and 32.99% observed only a few new ventures. This indicates that while there is some market expansion, it may need to be expanded in scope or unevenly distributed across the sector.

The establishment of new businesses by Russian immigrants could lead to innovation, the introduction of new services or products, and potentially new job opportunities. However, these developments might be concentrated in specific IT market niches or segments, leading to an uneven impact on job creation. Furthermore, the competition brought about by new businesses might challenge existing local enterprises, potentially leading to market consolidation or shifts in the sector's dynamics.

*'There are several newly established Russian IT companies, but they usually hire Russian candidates. Furthermore, we work for the European market, while they still work primarily for Russian and Belorussian markets, so they are not our competitors.**

*Source: interview with respondents

4. Discussion and Conclusion

In discussing the findings from the analysis of the impact of Russian IT migration on Georgia's IT sector, we can consider the results.

The analysis indicated no change in job opportunities and market competition in the IT sector since the influx of Russian IT professionals. The cluster analyses did not highlight that changes in market competition and job opportunities are critical dimensions influenced by migration.

These results suggest that the influx of Russian IT professionals has not altered the competitive landscape of Georgia's IT sector. While it has potentially led to increased competition, it has also possibly opened new avenues and roles within the industry. The varying perceptions captured in different clusters could reflect regional differences or variations across various segments within the IT sector.

The impact of Russian IT migration on the competition dynamics in Georgia's IT sector is multi-dimensional, with a blend of neutrality, positive enrichment, and challenges. The industry is absorbing and adapting to this influx, with potential long-term implications for its competitive landscape. For a thorough understanding, continuous monitoring and further studies are recommended to assess the long-term impacts on the sector's competitiveness and innovation.

The findings imply that salary levels and compensation structures in the IT sector have remained relatively stable despite the influx of IT professionals. This could indicate a robust IT sector in Georgia that can absorb the influx without significantly negative impacts on salary structures.

While some see it as a driving force for higher salaries for specialized skills, others are concerned about potential downward pressures on wages. This dichotomy underscores the need to carefully assess the evolving market dynamics and develop strategic responses to ensure that the sector remains competitive and fair in terms of compensation.

The impact of Russian IT migration on job creation and market expansion in Georgia's IT sector is characterized by mixed perceptions. While there are indications of market expansion through new business establishments, the direct impact on job creation appears more nuanced, with a significant portion of respondents perceiving a neutral or slightly negative effect. This suggests that while the sector is experiencing growth and diversification, the benefits of job creation might be more gradual and varied across different market segments. Continuous monitoring and adaptive strategies will be crucial for leveraging the potential benefits of this migration trend while addressing its challenges.

In conclusion, the comprehensive analysis of the impact of Russian IT migration on Georgia's IT sector provides valuable insights into various aspects of the sector's dynamics, including competition, salary and compensation trends, and job creation and market expansion.

The influx of Russian IT professionals into Georgia's IT sector has had multifaceted impacts: it has heightened competition, but not at the cost of salary stability. Furthermore, it has spurred market expansion, as evidenced by the establishment of new businesses and changes in market dynamics. These results could be interpreted as signs of a healthy and adaptable IT sector in Georgia, capable of integrating an influx of foreign talent while maintaining stability in compensation and fostering growth and innovation. In addition, it can be interpreted as the establishment of new companies by Russian migrants, leading to hiring more Russian skilled migrants, so it did not affect the local market much. Also, they might be working for foreign companies, not being in competition with local IT professionals and companies.

Broader Implications:

The findings indicate a resilient and adaptable IT sector in Georgia, capable of integrating a significant influx of foreign professionals while maintaining market stability and fostering growth. These dynamics suggest a positive outlook for the sector, with the potential for continued innovation, expansion, and development.

Recommendations for Future Actions:

- Sustainable Integration: Focus on sustainable integration strategies for the incoming workforce, ensuring benefits for both the new and existing professionals in the sector.

- Policy Development: Policymakers should consider strategies to support the growing sector, such as facilitating business development, encouraging innovation, and ensuring fair competition.
- Ongoing Monitoring and Research: Continuous monitoring and research are recommended to track this migration's long-term impacts and inform policy and business decisions.

Limitations and gaps of the research

The research on the impact of Russian IT migration on Georgia's IT sector, while providing valuable insights, has certain limitations and gaps that should be acknowledged for a more comprehensive understanding of the situation. Recognizing these limitations can help interpret the findings appropriately and guide future research efforts.

Limitations:

- The data is primarily survey-based, which might be subject to response biases.
- The scope of the data might cover only some aspects of the IT sector comprehensively, particularly informal or smaller segments.
- The research is cross-sectional, capturing a snapshot in time. This design limits the ability to infer causality and understand long-term impacts.
- The number and type of variables included in the analysis, such as demographic factors or specific industry segments, were limited. Additional variables could provide deeper insights.
- Specific statistical methods, like logistic regression, have assumptions (e.g., linearity) that might not fully align with the nature of the data.
- The findings are specific to the Georgian IT sector and the context of Russian IT migration. They may not be generalizable to other industries or types of migration.

Gaps in Research:

- The research needs qualitative insights to explain the reasons behind specific trends and provide a more nuanced understanding of individual experiences.
- Long-term data tracking changes over time would be valuable to assess the sustained impact of the migration.

- The research primarily focuses on direct sectoral impacts, leaving gaps in understanding broader economic and social implications, such as impacts on local communities or innovation ecosystems.
- Comparisons with regions or sectors experiencing similar migration trends could offer additional context and insights.
- An analysis of how policy and regulatory environments have adapted or need to adapt in response to the migration needs to be included.

Moving Forward:

- Future research should address these limitations and gaps, incorporating longitudinal data, qualitative analyses, broader economic considerations, and comparative frameworks. This would provide a more holistic understanding of the migration's impact and support more informed policy and business decision-making in the sector.

References

1. admin. (2023, May 29). Russian migration to Armenia and Georgia in 2022: Enclave Economy and Local Employment. *Caucasus Edition*. https://caucasusedition.net/russian-migration-to-armenia-and-georgia-in-2022-enclave-economy-and-local-employment/
2. Atilgan, C., & Feyerabend, F. C. (2015). *Georgian-Russian Relations: Between Necessity and Ambivalence* (SECURITY POLICY AND CRISIS MANAGEMENT, pp. 35–53). Konrad Adenauer Stiftung. https://www.jstor.org/stable/resrep10117.6
3. Beridze, T. (2017). Information Technology Audit in Georgia. *European Scientific Journal, ESJ*, *13*(25), 72. https://doi.org/10.19044/esj.2017.v13n25p72
4. Cecire, M. (n.d.). *The Russian Invasion of Ukraine*.
5. Chacko, E. (2007). From brain drain to brain gain: Reverse migration to Bangalore and Hyderabad, India's globalizing high tech cities. *GeoJournal*, *68*(2), 131–140. https://doi.org/10.1007/s10708-007-9078-8
6. Doran, K., Gelber, A., & Isen, A. (2022). The Effects of High-Skilled Immigration Policy on Firms: Evidence from Visa Lotteries. *Journal of Political Economy*, *130*(10), 2501–2533. https://doi.org/10.1086/720467
7. Edo, A. (2019). The Impact of Immigration on the Labor Market. *Journal of Economic Surveys*, *33*(3), 922–948. https://doi.org/10.1111/joes.12300
8. Green, A., & Hogarth, T. (2017). Attracting the best talent in the context of migration policy changes: The case of the UK. *Journal of Ethnic and Migration Studies*, *43*(16), 2806–2824. https://doi.org/10.1080/1369183X.2017.1314609
9. Gurbanov, G. (2021). ANALYSIS OF THE CAPITAL STRUCTURE FORMATION: THE CASE OF GEORGIAN IT COMPANIES. *Globalization and Business*, *6*(11), Article 11. https://doi.org/10.35945/gb.2021.11.023

10. Hanson, G. H., Kerr, W. R., & Turner, S. (2018). *High-Skilled Migration to the United States and Its Economic Consequences*. https://doi.org/10.7208/chicago/9780226525662.001.0001
11. *Israeli Infotech Migrants in Silicon Valley | RSF: The Russell Sage Foundation Journal of the Social Sciences*. (n.d.). Retrieved December 7, 2023, from https://www.rsfjournal.org/content/4/1/130.short
12. Joly, D. (2000). Some Structural Effects of Migration on Receiving and Sending Countries. *International Migration, 38*(5), 25–40. https://doi.org/10.1111/1468-2435.00126
13. Kerr, S. P., Kerr, W., Özden, Ç., & Parsons, C. (2017). High-Skilled Migration and Agglomeration. *Annual Review of Economics*, *9*(1), 201–234. https://doi.org/10.1146/annurev-economics-063016-103705
14. Kvale, S., & Brinkmann, S. (2009). *InterViews: Learning the Craft of Qualitative Research Interviewing*. SAGE.
15. Morales, N. (2018). High-Skill Migration, Multinational Companies and the Location of Economic Activity. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3336003
16. Ozili, P. K. (2022). *Global Economic Consequence of Russian Invasion of Ukraine* (SSRN Scholarly Paper 4064770). https://doi.org/10.2139/ssrn.4064770
17. Patton, M. Q. (2002). *Qualitative Research & Evaluation Methods*. SAGE.
18. Regets, M. (2003). *Impact of Skilled Migration on Receiving Countries*.
19. Regets, M. C. (2007). *Research issues in the international migration of highly skilled workers: A perspective with data from the United States* (Vols. 07–203). National Center for Science and Engineering Statistics at the National Science Foundation.

20. Rosenzweig, M. R. (n.d.). *CONSEQUENCES OF MIGRATION FOR DEVELOPING COUNTRIES*.
21. Rubin, H. J., & Rubin, I. S. (2011). *Qualitative Interviewing: The Art of Hearing Data*. SAGE.
22. Saxenian, A., Motoyama, Y., & Quan, X. (2002). *Local and Global Networks of Immigrant Professionals in Silicon Valley*. Public Policy Instit. of CA.
23. Seidman, I. (2006). *Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences*. Teachers College Press.
24. She, Q., & Wotherspoon, T. (2013). International student mobility and highly skilled migration: A comparative study of Canada, the United States, and the United Kingdom. *SpringerPlus*, *2*(1), 132. https://doi.org/10.1186/2193-1801-2-132
25. *SOME ASPECTS OF THE GEORGIAN ECONOMY AT THE CONTEMPORARY STAGE | ZUBIASHVILI | Ecoforum Journal*. (n.d.). Retrieved December 7, 2023, from http://www.ecoforumjournal.ro/index.php/eco/article/view/392
26. Stepanenko, K., Kagan, F. W., & Babcock-Lumish, B. (2022). *Explainer on Russian Conscription, Reserve, and Mobilization*.
27. *The killing of Tamaz Ginturi, a Georgian citizen, by Russia's occupying forces in Georgia | EP resolutions | Documents | DSCA | Delegations | European Parliament*. (n.d.). Retrieved December 7, 2023, from https://www.europarl.europa.eu/delegations/en/the-killing-of-tamaz-ginturi-a-georgian-/product-details/20231127DPU38001
28. Weiss, R. S. (1995). *Learning From Strangers: The Art and Method of Qualitative Interview Studies*. Simon and Schuster.

29. რუსეთის მოქალაქეების შემოდინება საქართველოში და საზოგადოებრივი უსაფრთხოების გამოწვევები. (n.d.). Https://Idfi.Ge/Ge. Retrieved December 7, 2023, from https://idfi.ge:443/ge/the_influx_of_russian_citizens_to_georgia_and_emerging_concerns_in_public_safety
30. *ტურიზმი თუ მიგრაცია? (რუსეთის მოქალაქეების საქართველოში დარჩენის მაჩვენებელი - 2022 მარტი-ივნისი)*. (n.d.). Https://Idfi.Ge/Ge. Retrieved December 7, 2023, from https://idfi.ge:443/ge/tourism_or_migration_rate_of_stay_of_russian_citizens_in_georgia

List of Figures

List of Tables

Appendix A

Survey Questions

Demographic

1. Age

( ) Under 20 (Marked as 1 during data cleaning)

( ) 21-30 (Marked as 2 during data cleaning)

( ) 31-40 (Marked as 3 during data cleaning)

( ) 41-50 (Marked as 4 during data cleaning)

( ) Over 50 (Marked as 5 during data cleaning)

2. Gender

( ) Male (Marked as 1 during data cleaning)

( ) Female (Marked as 0 during data cleaning)

3. Highest level of education completed.

( ) High school or equivalent (Marked as 1 during data cleaning)

( ) Bachelor's degree (Marked as 2 during data cleaning)

( ) Master's degree (Marked as 3 during data cleaning)

( ) Doctorate or higher (Marked as 4 during data cleaning)

( ) Other…

4. Current Role in IT

( ) Student (Marked as 1 during data cleaning)

( ) Junior professional (Marked as 2 during data cleaning)

( ) Senior Professional (Marked as 3 during data cleaning)

( ) Manager/Executive (Marked as 4 during data cleaning)

( ) Educator / Trainer

( ) Other…

5. Primary area of IT expertise

( ) Software Development

( ) Network/Systems Administration

( ) Cybersecurity

( ) Data Analysis/Science

( ) IT Education

( ) Other…

6. Experience in IT

( ) Less than one year (Marked as 1 during data cleaning)

( ) 1-2 Years (Marked as 2 during data cleaning)

( ) 3-5 years (Marked as 3 during data cleaning)

( ) 5-10 years (Marked as 4 during data cleaning)

( ) More than ten years (Marked as 5 during data cleaning)

( ) Other…

Employment Impact

1. Since early 2022, have you noticed changes in job opportunities within the IT sector?

(Likert Scale)

Significant decrease 1 2 3 4 5 Significant increase

2. How have salary levels within the IT sector been affected since the influx of Russian IT professionals?

(Likert Scale)

Significant decrease 1 2 3 4 5 Significant increase

3. What changes in hiring practices have occurred in your company/sector due to the Russian migration?

( ) The more competitive hiring process

( ) Shifts in required qualifications

( ) Increased diversity in the workplace

( ) Changes in salary offers

( ) No significant changes

( ) Other…

Professional Development and Skills Exchange

1. How did professional development opportunities emerge due to Russian IT migration?

(Likert Scale)

Significant decrease 1 2 3 4 5 Significant increase

2. Have you engaged in any projects with Russian IT professionals?

(Likert Scale)

Never 1 2 3 4 5 Frequently

Business and Market Dynamics

1. Have you observed the establishment of new IT businesses by Russian immigrants?

( ) Many new businesses (Marked as 2 during data cleaning)

( ) Few new businesses (Marked as 1 during data cleaning)

( ) No new businesses (Marked as 0 during data cleaning)

( ) Not sure / not applicable (Marked as 0 during data cleaning)

2. In what ways has the market competition within the IT sector changed due to new companies established by Russian migrants?

(Likert Scale)

Significant decrease 1 2 3 4 5 Significant increase

Education and Research Impact

1. How have IT education or research initiatives changed since the Russian migration?

(Likert Scale)

Decreased quality/diversity of courses 1 2 3 4 5 Improved quality/diversity of courses

2. How have IT education and research resources been reallocated or adjusted in response to the migration?

(Likert Scale)

Significant decrease 1 2 3 4 5 Significant increase

Cultural and Social Integration

1. Perceived Cultural Exchange Benefits from the influx of Russian IT professionals.

(Likert Scale)

Greatly challenging 1 2 3 4 5 Greatly beneficial

2. How successful has the social integration of Russian IT professionals been within your community or organization?

(Likert Scale)

Highly successful 1 2 3 4 5 Highly unsuccessful

Policies and Future Projections

1. Have any policies been implemented to address the influx?

( ) Yes (Marked as 1 during data cleaning)

( ) No (Marked as 0 during data cleaning)

( ) Not sure / not applicable (Marked as 0 during data cleaning)

( ) Other…

2. If yes, how effective have they been?

(Likert Scale)

Highly Ineffective 1 2 3 4 5 Highly effective

3. What are your expectations for the future of the Georgian IT sector, considering current migration trends?

(Likert Scale)

Very negative 1 2 3 4 5 Very positive

Appendix B

In-depth interview questions:

Background Questions:

- What has been your career trajectory within Georgia's IT sector? (Rubin & Rubin, 2011)
- How would you describe the competitive environment in the Georgian IT sector before the influx of Russian IT professionals? (Patton, 2002)
- Could you describe how salary and compensation are typically structured in your sector or organization? (Patton, 2002)
- Have you noticed any shifts in these structures over the past few years, particularly about industry trends or economic changes? (Rubin & Rubin, 2011)
- How would you characterize the growth and development of Georgia's IT sector in recent years? (Patton, 2002)
- What challenges and opportunities have been most significant in this period? (Rubin & Rubin, 2011)

Specific Questions:

- Since the arrival of Russian IT professionals, what changes have you observed in terms of job availability, application numbers, or hiring practices? (Seidman, 2006)
- Can you share specific instances where you felt the impact of competition level change, personally or within your organization? (Kvale & Brinkmann, 2009)
- How do you perceive the current balance between competition and collaboration in the IT sector compared to before? (Weiss, 1995)
- What impacts, if any, have you observed on salary levels and compensation following the migration of Russian IT professionals? (Kvale & Brinkmann, 2009)
- How do these changes manifest across different roles, and what do you think drives these differences? (Weiss, 1995)
- What are the long-term implications of these salary and compensation trends for the Georgian IT sector? (Seidman, 2006)
- In what ways has the Russian IT migration influenced job creation and market expansion within your area of the IT sector? (Kvale & Brinkmann, 2009)

- Have you observed the emergence of new sectors or niches in the IT industry post-migration? Could you provide examples? (Weiss, 1995)
- What role do you foresee for government or industry bodies in shaping the future of this expanded market? (Seidman, 2006)

Resümee

Venemaa invasioon Ukrainasse:

katalüsaator või väljakutse Gruusia IT-sektorile Venemaa migratsiooni kaudu?

Nodar Iremashvili

See lõputöö uurib Venemaa sissetungi Ukrainasse sügavat mõju Gruusia infotehnoloogia (IT) sektorile, eelkõige läbi Venemaa IT-professionaalide migratsiooni. Selles uuritakse, kas see enneolematu ränne katalüüsib majanduskasvu ja innovatsiooni või tekitab selles valdkonnas probleeme. Uuringus kasutatakse põhjaliku küsitluse ja süvaintervjuude kvantitatiivseid ja kvalitatiivseid andmeid.

Gruusia IT-spetsialistidele ja sidusrühmadele suunatud küsitlus uurib kriitilisi aspekte, nagu muutused töövõimalustes, konkurentsi dünaamika, palga- ja tasutrendid ning uute ettevõtete teke. Faktoranalüüsi, klastrianalüüsi, logistilise regressiooni ja hüpoteeside testimise metoodikad annavad mõjudest mitmekülgse arusaama.

Peamised leiud näitavad, et migratsioon ei ole Gruusia IT-sektorit oluliselt mõjutanud. Eelkõige ei ole see mõjutanud turu konkurentsi, töökohtade loomist ega laienemist, kuid seda tõendab uute IT-ettevõtete asutamine. Vastupidiselt võimalikele muredele on palgatasemed ja tasustamisstruktuurid jäänud peamiselt stabiilseks, mis viitab vastupidavale sektorile.

Siiski tuvastab uurimus piiranguid, sealhulgas võimalikku vastuste kallutatust ja uuringu läbilõikelist olemust, ning piiritleb selle ulatuse konkreetsete mõjudega Gruusia IT-sektoris.

Venemaa IT-migratsioon, mis on ajendatud Ukraina konfliktist, on Gruusia IT-sektori jaoks pigem katalüsaator kui väljakutse. See lõputöö annab poliitikakujundajatele ja tööstuse sidusrühmadele väärtuslikku teavet, rõhutades vajadust jätkusuutlike integratsioonistrateegiate ja jätkuva kohanemise järele, et kasutada ära selle rändelaine täielikku potentsiaali. Nendele leidudele tuginemiseks ja selle olulise demograafilise ja professionaalse nihke pikaajaliste tagajärgede edasiseks uurimiseks pakutakse välja tulevased uurimissuunad.

Non-exclusive licence to reproduce thesis and make thesis public

Nodar Iremashvili

herewith grant the University of Tartu a free permit (non-exclusive licence) to

reproduce, for the purpose of preservation, including for adding to the DSpace digital archives until the expiry of the term of copyright, my thesis

Russian Invasion of Ukraine: Catalyst or Challenge for Georgia's IT Sector through Russian Migration?

supervised by

Timur Kogabayev

2. I grant the University of Tartu a permit to make the work specified in point 1 available to the public via the web environment of the University of Tartu, including via the DSpace digital archives, under the Creative Commons licence CC BY NC ND 4.0, which allows, by giving appropriate credit to the author, to reproduce, distribute the work and communicate it to the public, and prohibits the creation of derivative works and any commercial use of the work until the expiry of the term of copyright.

3. I am aware of the fact that the author retains the rights specified in points 1 and 2.

4. I certify that granting the non-exclusive licence does not infringe other persons' intellectual property rights or rights arising from the personal data protection legislation.

Nodar Iremashvili

16/01/2024