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MIGRATION OF HIGHLY SKILLED WORKERS AS A DRIVER OF DIGITAL ECONOMY DEVELOPMENT

Abstract

The migration of highly skilled workers and its impact on productivity, competitiveness, and innovative development is becoming an increasingly relevant area of scientific research in the context of rapid digitalization of the economy. In this regard, the article aims to explore the relationship between the migration of highly skilled workers and digital economy development (using the example of EU countries). The study was conducted using correlation analysis and parametric data analysis methods, based on EU countries' statistics on the migration of highly skilled workers, macroeconomic digitalization indicators, and the adoption of digital technologies at the business level. The results confirm that highly skilled migrants positively affect aggregate indicators of economic digitalization: correlation coefficients with the Global Digitalization Index and the DiGiX Digital Index are 0.735 and 0.692, respectively, and are statistically significant. At the company level, a significant influence of highly skilled migrants on the use of specific digital technologies in EU companies was confirmed. In particular, there is a strong correlation between the "Foreign Highly Skilled Personnel" indicator from the IMD World Talent Ranking 2024 and digital intensity indicators (level of application of key business-related digital technologies), as well as business activity in using big data analytics technologies: the correlation coefficients are 0.770 and 0.689, respectively, and are statistically significant. The proposed approach to analyzing the relationship between highly skilled worker migration and the digital development outcomes of companies and host countries can be used to develop and adjust knowledge and human resource productivity management strategies at both the micro- and macroeconomic levels.

Keywords migration, highly skilled migrants, digital economy, digital development, information technology, technological progress, innovation, EU

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INTRODUCTION

The development of the digital economy has become an integral characteristic of countries striving to take leading positions in future technological shifts. By leveraging digital technologies such as cloud computing, big data, data analytics, artificial intelligence, blockchain, etc., countries and their economic entities enhance competitiveness, implement innovative business models, transform business ecosystems, and reshape traditional relationships in the use of production factors (You et al., 2024). At the same time, the effective functioning of the digital economy requires highly skilled specialists who can adapt to dynamic technological changes and implement innovative solutions, as technological progress is impossible without appropriate human capital. The shortage of highly skilled professionals in the field of digital technologies has become one of the major obstacles to further digital economic development (Zou & Deng, 2022).

As a result of rapid efforts toward global digital transformation, the soaring demand for digital skills has led to a worldwide talent shortage capable of working with digital technologies (Karaboga et al., 2021). In 2014, the global talent shortage was 36%, while in 2024, it reached 75% (ManpowerGroup, 2024). In some European Union countries, these figures exceeded the global average in 2024. Employers report that the most difficult-to-find skill set in today's labor market is in the "IT & Data" domain, topping the list of the top five most in-demand technical skills. This is driven by the integration of digital technologies across all economic sectors, which increases the relevance of employees' digital skills for their effective application. An updated report by Korn Ferry (2025) reveals that by 2030, over 85 million jobs may go unfilled due to a lack of qualified workers available to fill them. In the context of this talent shortage, the issue of attracting and retaining highly skilled workers with the necessary digital competencies requires special attention (Jooss et al., 2023; Stofkova et al., 2022). Therefore, studying the impact of highly skilled worker migration on the development of the digital economy is a critical and timely scientific task. In an era of rapid technological advancement and global talent scarcity, when countries aim to integrate innovative technologies to enhance their competitiveness, talent migration becomes a key factor that shapes their ability to adapt to emerging technological challenges.

1. LITERATURE REVIEW AND HYPOTHESES

In the era of rapid technological progress, digital development is a crucial factor in the resilience and economic growth of countries worldwide (Jiao & Sun, 2021; Shukla et al., 2023; Ahmed & Elfaki, 2024; Kusairi et al., 2023; Trung & Long, 2025). The digital economy and related technologies also play a key role in enhancing the competitiveness of nations (Kiseľáková et al., 2024; Schinello, 2025). Understanding the factors that significantly influence digital transformation is essential for developing effective mechanisms at various levels of governance to fully harness the potential of digital technologies. Research shows that the migration of highly skilled workers is one of the drivers of digital development (Wachs, 2023; Zou & Deng, 2022; McAuliffe et al., 2021; Yarovenko et al., 2024). At the same time, the implementation of digital technologies significantly shapes migration patterns, with robotics and digitalization acting as pull factors (Barišić et al., 2024; Khalid & Urbański, 2021; Mursalov et al., 2023). The war in Ukraine and resulting mass migration, including highly skilled professionals, have significantly influenced current migration patterns, refugee settlement in host countries, and demographic and economic changes in both Ukraine and the receiving states. The loss of qualified labor presents a serious challenge for donor countries, undermining resilience, especially in terms of labor markets and higher education systems (Kichurchak et al., 2024), while also negatively affecting long-term economic and demographic prospects. Although digital economy development cannot fully offset these losses, the successful integration of migrants into host countries addresses not only social challenges and safety concerns but also strengthens the economic potential and resilience of these countries (Mishchuk et al., 2024).

Scholars have identified and analyzed mechanisms that determine the response of labor markets to digital transformation, including inefficient labor distribution and mismatches between technological requirements and employee skills. This mismatch is reflected in workers' behavior regarding automation risk: highly skilled professionals are more likely to use the Internet to develop their skills, while less qualified workers show a lower degree of adaptation to technological changes (Yang et al., 2023). In the context of global talent shortage, the migration of highly skilled professionals facilitates knowledge transfer, encourages the diffusion of advanced technologies, stimulates innovation, and enhances a country's overall resilience (Mishchuk et al., 2024). Higher concentrations of skilled immigrants have a positive effect on new business creation (Deller et al., 2023). In many countries, highly skilled migrants act as catalysts for startup creation, entrepreneurship, scientific research, and technological breakthroughs that positively influence economic growth (Ewers et al., 2022). Around 6% of startups relocate abroad, accounting for 17% of total startup-generated value (Weik et al., 2024). Moreover, immigrants are not only more likely than natives to own businesses,

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but their enterprises tend to exhibit greater innovation and performance outcomes (Azoulay et al., 2022). Companies founded by immigrants are more likely to develop entirely new products, improve existing ones, apply new processes, and engage in basic and applied research and development. These efforts are reflected in significantly higher levels of patenting and labor productivity (Lee et al., 2024). Data from 70 countries suggest that business internationalization is important for immigrant entrepreneurs in developing innovative products or services and building business networks (Fernandez, 2024). Thus, it is vital to foster effective collaboration between immigrant entrepreneurs and universities, research institutions, and business associations to support innovation in their enterprises (Bolzani & Scandura, 2024).

The digital economy greatly stimulates high-quality economic development by improving human capital (Guo et al., 2023). Empirical research on the impact of the digital economy on labor distribution shows that the more advanced a region's digital economy, the more capable it is of attracting and integrating immigrants (Chen & Xu, 2024; Zhai & Luo, 2025; Zhang et al., 2024). Research into the mechanisms of this influence has shown that the attractiveness of the digital economy for migrants is primarily determined by the creation of entrepreneurial opportunities and the increased use of professional skills (Yu et al., 2024; Tomoiagă & Silaghi, 2023). The digital economy also attracts highly skilled migrants due to extensive opportunities for remote work and career advancement in high-tech sectors (Litania & Marsan, 2023; Petroff, 2022). It also offers competitive working conditions, flexible employment formats, and access to the global talent market (Charles et al., 2022). Moreover, the digital economy supports migrants' intentions to settle by increasing household income (Ren et al., 2023). The economic analysis model developed by Huaping and Binhua, which includes two economic components and two types of skilled talent, attempts to explain changes in the structure in the structure of skilled talent during the development of the digital economy. It shows that the digital economy promotes the advancement of highly skilled talent, leading to a gradual increase in their share (Huaping & Binhua, 2022). The flow of digital talent stimulates the co-agglomeration of the digital economy, industry, and manufacturing, enhancing innovation in digital technologies, encouraging the dissemination and flow of digital knowledge, boosting entrepreneurial activity in urban digital economy enterprises, and modernizing industrial structure (Li et al., 2024).

There is ample empirical evidence that highly skilled migrants play an important role in both technological progress and economic development (Butticè & Useche, 2024; Kozlovskyi et al., 2024; Samoliuk et al., 2024). Migrants and diasporas, especially highly skilled individuals, significantly influence innovation and research activities in host countries (Sinoi, 2021; Andersson, 2019). Increased innovation productivity is positively associated with the growing number of highly skilled migrants. At the same time, a two-way causal relationship has been identified between innovation and high-skilled migration: the rise in the number of highly skilled migrants positively affects innovation productivity (Labrianidis et al., 2023). Highly skilled immigrants with PhD degrees make a substantial impact on the development of the innovation economy by independently introducing innovations, enhancing local and international collaboration, and stimulating local innovation (Wigger, 2022). This not only raises the level of innovation development but also improves the quality of innovations (Glennon, 2024). Through the use of cutting-edge technologies and digital platforms, highly skilled migrants not only adapt to labor market demands but also shape new models of employment, entrepreneurship, and remote collaboration. By generating new knowledge and creativity, they contribute to building a knowledge economy and sustainable digital development (Afzal & Kalra, 2024).

In this context, it is important to explore how exactly the migration of highly skilled workers influences the development of the digital economy and what mechanisms of interaction between these processes are observed in the modern world. This study applies the OECD approach to understanding highly skilled migrants, which considers such migrants as part of the category of intellectual migrants, alongside students, startup founders, and entrepreneurs (OECD, 2023; Samoliuk et al., 2024). Of particular interest is the analysis of this phenomenon within the European Union, where digitalization and intellectual migration are important elements of eco-

nomic development, and thus existing patterns and mechanisms may be adaptable to other countries.

Therefore, the aim of this study is to investigate the links between the migration of highly skilled workers and the development of the digital economy, using the European Union countries as a case study.

Achieving this aim involves testing the following hypotheses:

H1: The migration of highly skilled workers has a significant impact on the development of the digital economy in EU countries (based on macroeconomic indicators of digital economy development).

H2: The migration of highly skilled workers is closely related to indicators of digital business transformation in the EU, specifically:

H2.1: digital intensity (the penetration of digital technologies in business processes);

H2.2: use of cloud computing services;

H2.3: use of big data in business analytics;

H2.4: use of artificial intelligence for business purposes.

2. METHODOLOGY

The study of the impact of highly skilled worker migration on the development of the digital economy was conducted using correlation analysis. The identification of relationships was based on the calculation of Pearson's pairwise correlation coefficient in Microsoft Excel using the built-in CORREL function. To verify the statistical significance of the calculated Pearson correlation coefficients, Student's t-test was applied:

$$t = r\sqrt{\frac{n-2}{1-r^2}}, \quad (1)$$

where r is the meaning of the Pearson pairwise correlation coefficient; n represents the total number of observations.

The interpretation of the correlation coefficient was conducted using Chaddock's scale, as presented in Turan (2020).

In testing *H1,* the independent variable (X) was the indicator "Foreign Highly Skilled Personnel" from the IMD World Talent Ranking 2024 – an average response to the question "Does your country's business environment attract highly skilled foreign workers?" (scored from 0 to 10, where 0 means not attractive at all, and 10 means highly attractive) (IMD, 2024).

Two indicators were used as dependent variables:

- the Global Digitalization Index (GDI) (Huawei, 2025) (Y_1);
- the Digital Index (DiGiX: A Multidimensional Index of Digitization) (BBVA, 2024) (Y_2).

These indices were selected because they provide a comprehensive macroeconomic assessment of the digital economy's development and are comparable at the global level. Specifically, GDI 2024 measures the maturity of a country's ICT industry, quantifies the value of each country's ICT sector and its impact on the national economy, helping policymakers make better-informed decisions regarding the digital economy. GDI evaluates digitalization progress across 77 countries, using 42 indicators across four key dimensions (Table 1).

DiGiX 2024 assesses digital performance and progress in the levels of digitalization across 98 economies worldwide. The 24 indicators included in the index are grouped into six parameters, representing three core dimensions: supply conditions (infrastructure and costs), demand conditions (users, government, businesses), and institutional environment (regulation) (Table 2).

To test *H2,* the relationship was examined between the "Foreign Highly Skilled Personnel" indicators from the IMD World Talent Ranking 2024 (X) and the indicators of business digital transformation, designated as $Y_{1.1}$-$Y_{1.4}$ for testing hypotheses *H-2.1 H2.4,* respectively (Table 3).

Thus, to test hypotheses, data were used from relevant reports for the year 2024, including:

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Table 1. Dimensions of the Global Digitization Index 2024

Source: Compiled from Huawei (2025).

Dimension	Description
Universal connectivity	Everything that ensures seamless communication and data exchange around the world. Expanding and improving communication infrastructure is vital for bridging the digital divide and ensuring that everyone, regardless of economic status, can participate in the digital economy
Digital foundation	The deployment of advanced technologies such as AI, IoT, and edge computing, which drives efficiency, innovation, and adaptability. This infrastructure forms the basis for smart cities, digital enterprises, and innovative solutions, creating a more intelligent and responsive global system
Green energy	As digital technologies become more widespread, their energy demands must be met sustainably. Transitioning to green energy is crucial not only for mitigating climate change but also for ensuring that digital transformation contributes to achieving global sustainable development goals
Policy and ecosystem	A robust regulatory framework and a collaborative ecosystem that fosters innovation while protecting public interests are essential for accelerating digitalization and ensuring the equitable distribution of its benefits

Table 2. Dimensions of the Digital Index 2024

Source: Compiled from BBVA (2024).

Dimension	Indicators
Infrastructure	Population covered by the 5G network Download speed for mobile users Upload speed for mobile users
Government Adoption	E-Participation index
User adoption	Number of active mobile-broadband subscriptions per 100 inhabitants Fixed (wired-)broadband subscriptions per 100 inhabitants Individuals using the internet Mobile ownership
Business usage	Aggregated top-level domains (TLDs) per capita and general TLDs per capita Received GitHub Commit Push messages (per million people aged 15–69)
Affordability	Data-only mobile-broadband basket (2 GB) Fixed-broadband basket (5 GB) High-usage data and voice basket (% of GNI per capita) Low-usage data and voice basket (% of GNI per capita) Device affordability
Regulation	Phishing incidents Control of corruption Government effectiveness Political stability and absence of violence/terrorism Regulatory quality Rule of law Voice and accountability

Table 3. EU business digital transformation indicators

Source: Compiled from EU (2024b).

Indicator	description	Unit of measurement	Symbol
SMEs with at least a basic level of digital intensity	The digital intensity score is based on the number of 12 selected technologies used by enterprises. A basic level requires the use of at least 4 technologies	% of SMEs	$y_{1.1}$
Cloud	Enterprises purchasing intermediate or advanced cloud computing services	% of enterprises	$y_{1.2}$
Data Analytics	Enterprises analyzing big data from any data source	% of enterprises	$y_{1.3}$
Artificial Intelligence	Enterprises using any AI technologies	% of enterprises	$y_{1.4}$

- the "Foreign Highly Skilled Personnel" indicator (IMD, 2024);
- the Global Digitalization Index (GDI) (Huawei, 2025);
- Multidimensional Index of Digitization DiGiX (BBVA, 2024);
- and the business digital transformation indicators from the EU report (EC, 2024b).

The sample was composed of EU countries, as the EU is among the global leaders in the implementation of digital technologies and the development of policies aimed at promoting the digital economy. Initiatives such as the Digital Europe Programme

(DIGITAL) contribute to funding innovation, infrastructure development, and the enhancement of digital literacy. The Digital Europe Programme supports industry, small and medium-sized enterprises (SMEs), and public administrations in their digital transformation through a strengthened network of European Digital Innovation Hubs (EDIH) (EC, 2024a). The EU's high level of development in cloud computing, artificial intelligence, blockchain, and innovative startups makes it an attractive region for highly skilled migrants, enabling the exploration of the impact of migration on digital transformation.

3. RESULTS

To test *H1*, a correlation analysis was conducted, and the results are presented in Table 4.

Table 4. The relationship between the IMD World Talent Ranking "Foreign Highly Skilled Personnel" indicator, GDI, and DiGiX in 2024

Countries	X	y_1	y_2
Austria	5.45	57.3	0.81
Belgium	6.04	60.5	0.77
Bulgaria	3.23	46.5	0.64
Croatia	3.04	46.7	0.69
Cyprus	6	*	0.71
Czech Republic	5.16	49.1	0.74
Denmark	7.3	71.8	0.91
Estonia	5.65	54.1	0.83
Finland	4.38	73	0.89
France	6.13	62.2	0.78
Germany	5.33	63.4	0.83
Greece	3.48	49.9	0.7
Hungary	3.47	48.9	0.65
Ireland	7.75	68.1	0.77
Italy	3.81	50.2	0.68
Latvia	4.26	*	0.71
Lithuania	5.07	48.7	0.75
Luxembourg	7.2	58	0.83
Malta	*	*	0.74
The Netherlands	7.62	69.7	0.89
Poland	4.81	47.8	0.67
Portugal	5.57	54.4	0.76
Romania	4.96	49	0.6
Slovakia	2.58	43.7	0.64
Slovenia	3.1	48.1	0.7
Spain	6.09	54.3	0.74
Sweden	6.62	74.5	0.87
Mean	5.16	56.25	0.75
Minimum value	2.58	43.7	0.6
Maximum value	7.75	74.5	0.91
Standard deviation	1.49	9.49	0.08
Coefficient of variation	0.289	0.169	0.112
Coefficient correlation with X		0.735	0.692
Calculated value of Student's t-test		5.089	4.702
Critical value of Student's t-test		2.07	2.06
Statistical significance level: α=0.05		+	+

Note: * data are not available.

The calculated values of the correlation coefficients demonstrate that highly skilled migrants play an important role in digitalization processes, contributing to their acceleration and development on a global scale – the relationships with both dependent variables are significant. The impact is particularly notable on the Global Digitalization Index, where the correlation coefficient between X and y_1 is 0,735 and statistically significant. This is primarily because the calculation of this index includes indicators that more directly relate to the implementation of digital technologies in business activities. Highly skilled migrants bring with them technical knowledge and practical experience gained in various parts of the world. They promote the adoption of innovative technologies such as artificial intelligence, big data, blockchain, and automation, which form the foundation of the digital economy.

Thus, hypothesis 1 is confirmed for both dependent variables, supporting the positive influence of skilled migrants on the macroeconomic outcomes of digitalization.

To test *H2*, a correlation analysis was carried out following the methodology described above, using data aggregated at the enterprise level across EU countries. The actual values of X and $y_{1.1}$ – $y_{1.4}$, their numerical characteristics, and the calculated correlation coefficients are presented in Table 5.

Table 5. Relationship between the IMD World Talent Rankings' "Foreign Highly Skilled Personnel" indicator and the EU Business Digital Transformation Indicators in 2024

Countries	X	$y_{1.1}$	$y_{1.2}$	$y_{1.3}$	$y_{1.4}$
Austria	5.45	*	*	*	*
Belgium	6.04	89.2	82.7	58.7	20
Bulgaria	3.23	*	*	*	*
Croatia	3.04	66.7	65.3	26.7	17.3
Cyprus	6	80.9	64.4	14.4	10.7
Czech Republic	5.16	78.9	60	17.5	9.8
Denmark	7.3	100	95.5	64.1	32.8

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Table 5 (cont.). Relationship between the IMD World Talent Rankings' "Foreign Highly Skilled Personnel" indicator and the EU Business Digital Transformation Indicators in 2024

Countries	X	$y_{1.1}$	$y_{1.2}$	$y_{1.3}$	$y_{1.4}$
Estonia	5.65	*	*	*	*
Finland	4.38	*	*	*	*
France	6.13	74.8	39.1	34.3	14.3
Germany	5.33	90	*	*	*
Greece	3.48	56.5	25.6	20.8	8.4
Hungary	3.47	63.3	41.3	15.3	10
Ireland	7.75	95.6	66.7	40	24
Italy	3.81	83.3	72	13.3	10.7
Latvia	4.26	63.9	41.3	25.3	17.3
Lithuania	5.07	75.6	56	22.7	16
Luxembourg	7.2	80.2	47.5	83.4	54.2
Malta	*	88.4	95.6	56.9	25.1
The Netherlands	7.62	89.4	92.9	41.5	25.7
Poland	4.81	75.9	70.5	28.3	5.7
Portugal	5.57	*	*	*	*
Romania	4.96	*	*	*	*
Slovakia	2.58	68.9	45.3	13.3	12
Slovenia	3.1	60	60	32	44
Spain	6.09	68.3	43.7	45.9	14.1
Sweden	6.62	98.8	100	48	20.5
Mean	5.16	78.50	63.27	35.12	19.63
Minimum value	2.58	56.5	25.6	13.3	5.7
Maximum value	7.75	100	100	83.4	54.2
Standard deviation	1.49	12.84	21.56	19.49	12.27
Coefficient of variation	0.289	0.164	0.341	0.555	0.625
Coefficient correlation with X		0.770	0.490	0.689	0.365
Calculated value of Student's t-test		5.121	2.316	3.920	1.616
Critical value of Student's t-test		2.101	2.11	2.11	2.11
Statistical significance level: α=0.05		+	+	+	-

Note: * data are not available.

The results of the calculation presented in Table 5 indicate a strong correlation between the migration of highly skilled workers and the level of digital intensity – the correlation coefficient is 0.770 and is statistically significant. Migrants with high levels of qualification, particularly in the fields of information technology, engineering, and scientific research, bring innovative knowledge, technologies, and work methods. Their experience in digital technologies development demonstrates that highly skilled immigrant scientists and engineers are inclined to introduce innovations through products and patents, thereby influencing the pace of technology adoption (Karren, 2024). This stimulates enterprises to implement modern digital solutions, automate processes, and adapt to global standards.

Regarding the impact of highly skilled migration on the level of use of specific digital technologies in EU companies, a moderate correlation has been identified between X and $y_{1.3}$ – the correlation coefficient is 0.689 and is statistically significant. Highly skilled professionals in the field of data analytics occupy positions that require profound knowledge of mathematics, statistics, programming, database management, machine learning algorithms, and business analytics: Data Scientist, Data Engineer, Machine Learning Engineer, Business Intelligence (BI) Analyst, Statistician, Data Analyst, Big Data Engineer, AI Research Scientist, Data Architect, among others. Attracting and retaining such employees enables companies to increase forecasting accuracy, use all types of resources more efficiently, and make effective management decisions.

4. DISCUSSION

Despite the negative consequences of migration for the development of countries that lose skilled workers, as is particularly true for Ukraine due to the war, migration is a key driver of development for receiving countries. The results obtained confirm the important positive impact of intellectual migrants on the innovative – and particularly digital – development of the economy. At the macroeconomic level, countries' progress in digitalizing economic relations and supporting the development of digital infrastructure is largely the result of talent-attraction policies, aligning with the findings of Huaping and Binhua (2022), Ren et al. (2023), and Sinoi (2021). At the same time, positive changes in employment, with the growing importance of intellectual labor and digital technologies (and consequently, rising income and professional development opportunities), enhance the attractiveness of countries with expanding digital economies for highly skilled workers (Barišić et al., 2024; Khalid & Urbański, 2021; Oliinyk et al., 2022; Yu et al., 2024). In this context, the correlation values confirmed in this study (ranging from 0.692 to o.735) demonstrate a general positive impact of highly skilled migrants on digital develop-

ment, and thus underscore the importance of supporting the immigration of talented professionals, if the goal of national economic policy is to ensure innovation-driven development through digitalization.

In formulating and testing *H2*, it was considered that macroeconomic outcomes, although with some lag, are shaped by changes in the microenvironment of businesses. Therefore, the assumption of a positive impact from the influx of highly skilled migrant workers on business transformation indicators was based on the premise that the most significant relationships would be observed at the business level. However, empirical analysis confirmed only two of the four partial hypotheses (*H2.1* and *H2.3*), which is consistent with other researchers' findings regarding positive changes in business digitalization, particularly through the active involvement of migrants in tasks requiring digital skills and the use of big data. Similar results have been reported by Afzal and Kalra (2024), Ewers et al. (2022), Tomoiagă and Silaghi (2023), and Yang et al. (2023). At the same time, the moderate correlation between migration and digital business development in terms of the use of cloud technologies and artificial intelligence was a somewhat unexpected outcome of the study, given the rapid growth of these digital capabilities. One possible explanation is that cloud services and AI are areas of focus not only for businesses. Their widespread adoption has become such a prominent trend across various sectors that migration-related changes are no longer a key driver of transformation in these fields. For instance, according to a study conducted by the Digital Education Council in 2024, 86% of students already use AI in their studies (Digital Education Council, 2024). Education is just one of many sectors where AI is applied, but this example illustrates how rapidly these technologies are penetrating diverse domains. Therefore, the moderate impact of migrants on the spread of cloud services and AI in business can be attributed to the overall high pace of technology adoption, where migration does not stand out as a significant factor, unlike the clearly confirmed relationships in other hypotheses (*H2.1* and *H2.3*). This involves strong links between the increase in highly skilled migrant labor and outcomes such as faster adoption of digital technologies by enterprises and the application of specialized knowledge in data analytics, which requires longer professional training.

Ongoing studies on the changing impact of migrants, especially intellectual migrants, on labor markets, business performance, and macroeconomic outcomes in receiving countries can help provide insights into what migration policies should be applied, depending on the economic development strategies of the host countries.

CONCLUSION

The aim of this study is to identify the links between the migration of highly skilled workers and the development of the digital economy. Based on analysis of EU countries, this study confirms that highly skilled migrants are key drivers of digitalization, both at the macroeconomic level and within companies. By fully confirming *H1*, it can be stated that migrants have a positive impact on the overall development of technologies and the digital environment, which are crucial for economic growth. In terms of the business microenvironment, the influence of skilled migrant workers is particularly important in driving positive changes in the frequency of digital technology use and data analytics processes. The results of this study, supported by other empirical research in this field, confirm that migration of high-quality human capital is accompanied by the spread of best practices in digital environments, supporting the development of fully digital activities as well as those that integrate digital technologies into various business processes to different extents. Understanding these relationships is now reflected in the fact that countries focused on innovative development and sustainable productivity are pursuing active policies to attract and retain talent, including migrants. The results obtained allow us to confirm that such policies are effective in enabling digital transformation in both business and the economy overall. Therefore, the interdependence between migration and digital development should be a continuous subject of monitoring within knowledge and productivity management systems.

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