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Migration process: Impact on sustainable development of the national economy

Denys V. Pudryk¹, Cand. Ec. Sc.

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Abstract. *Purpose of the research.* The paper aims to analyse the relationship between migration and the sustainable development of the countries, identifying the tendencies evolutions of the migration theory in the context of three dimensions: content, geographical and historical. *Methodology.* The description of tendencies of the evolution of the theory of management of migration processes was done with bibliometric analysis tools. For this purpose, the author generated the meta-data of scientific publications on the researched issues from Scopus. The results of the bibliometric analysis were visualised using VOSviewer. To determine the relationship between migration and sustainable development of the country, a nonparametric measure of Spearman's correlation was calculated using the EViews. *Results.* According to bibliometric analysis, the main directions of scientific research on migration issues are determined. The development of the theory of management of migration processes by geographical and temporal dimensions is described. The following scientific clusters could be highlighted: the most significant cluster (red) – focuses on the general aspects of the migration; green cluster – focuses on the demography and cultural as core factors that influenced migration; blue cluster – focuses on the impact of migration policy and governance efficiency on the migration; yellow cluster – linking among gender factor, economic and social development, and migration. It was determined that the latest publications focus on the study of relationships among migration processes and the effectiveness of sustainable development goals. *Practical meaning.* The author empirically proved the existence of a correlation between migration and sustainable development of the country. *Prospects for further research.* The results justified the necessity to test the hypothesis of long-term causal links between migration and indicators of sustainable development of the country.

Keywords: emigrants, immigrants, economic growth, migration, sustainable development.

JEL Classification: F22, O15, R23, Q01.

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¹ The Customer Service in Odesa, Ukraine; e-mail: pudrykdenys.n@gmail.com.

Міграційні процеси: вплив на сталий розвиток національної економіки**Денис Валерійович Пудрик¹**, к. е. н.

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Анотація. Мета дослідження. Стаття присвячена визначенню взаємозв'язку між обсягами міграції та сталим розвитком країни, а також опису тенденцій еволюції теорії управління міграційними процесами у розрізі трьох вимірів: змістовному, географічному та часовому. *Методологія.* Опис тенденцій еволюції теорії управління міграційними процесами здійснено з використанням інструментарію бібліометричного аналізу. Для цього згенеровано вибірку мета-даних наукових публікацій з досліджуваної проблематики з наукометричної бази даних Scopus. Результати бібліометричного аналізу візуалізовано з використанням VOSviewer. Для визначення взаємозв'язку між обсягами міграції та сталим розвитком країни розраховано непараметричну міру кореляції Спірмена з використанням інструментарію Eviews. *Результати.* За результатами бібліометричного аналізу визначено основні напрями наукових досліджень з міграційної проблематики. Описано розвиток теорії управління міграційними процесами за змістовним, географічним та часовим вимірами. У статті виокремлено наступні наукові кластери: найбільший кластер (червоний) – сфокусований на вивченні загальних аспектів міграції); зелений кластер – зосереджений на дослідженні демографічних та культурних факторів, що впливають на міграційні процеси в країні; блакитний кластер – сфокусований на визначенні взаємозв'язку між міграційною політикою та ефективністю державного управління; жовтий кластер – оцінювання впливу гендерного фактору, рівня економічного та соціального розвитку країни на міграційні процеси. Визначено, що останні публікації фокусуються на дослідженні питань взаємозалежності міграційними процесами та ефективністю досягнення задекларованих цілей сталого розвитку країни. *Практичне значення.* Автором емпірично обґрунтовано наявність кореляційного зв'язку між обсягами міграції та сталим розвитком країни. *Перспективи подальших досліджень.* Результати дослідження підтверджують необхідність перевірки гіпотези про наявність довгострокових причинно-наслідкових зв'язків між обсягами міграції та індикаторами сталого розвитку країни.

Ключові слова: емігранти, іммігранти, економічне зростання, міграція, сталий розвиток.

Кількість джерел: 13; *кількість таблиць:* 3; *кількість рисунків:* 5; *кількість формул:* 0.

1. Introduction.

Human and intellectual capital are the catalysator of the country's sustainable development. In this case, the developed countries develop attractive conditions for highly skilled professionals. In less developed countries, the outflow of workers is the issues which the brain drains. As a consequence, it limits of country's sustainable development. Considering the Agenda of sustainable development goals (SDGs) 2030 for Ukraine, the following goals are in priorities:

Goal 1: No poverty.

Goal 3: Good health and well being.

Goal 4: Quality education.

Goal 8: Decent work and economic growth.

Goal 9: Industry, innovation, and infrastructure.

Goal 11: Sustainable cities and community.

Noting, all SDGs mentioned above relate close to the migration process in Ukraine. Despite the most European countries (where the migration process enriches the total number of the population and leads to its rejuvenation) in Ukraine, the long-term decline of the birth rate is enforced by the outflow of the young

¹ Одеська митниця; e-mail: pudrykdenys.n@gmail.com.

generation. In this case, for Ukraine, it is actually to provide equal conditions for workforces, guarantee equal access to medical services, develop the workplaces and adequate salary. It allows restricting the brain drains and accumulate the human and intellectual capital to enforce the country's sustainable development.

2. Literature review.

The scientific community has a robust background in the analysis of the migration process, causes and consequences. Thus, using the regression analysis, the paper (Brown and

Longbrake, 1970) analysed the intermigration process in the USA and identified the critical incentive indicators for migration. J. Hudson (1970) analysed the linking between economic growth and migration compare to the metropolis and non-metropolitan cities. Using the modification of the Lotka-Volterra model, J. Hudson (1970) confirmed that strict economic growth and migration process could not allow a stable country's development. The findings confirmed that the numbers of papers on migration increased from 2007 (Figure 1).

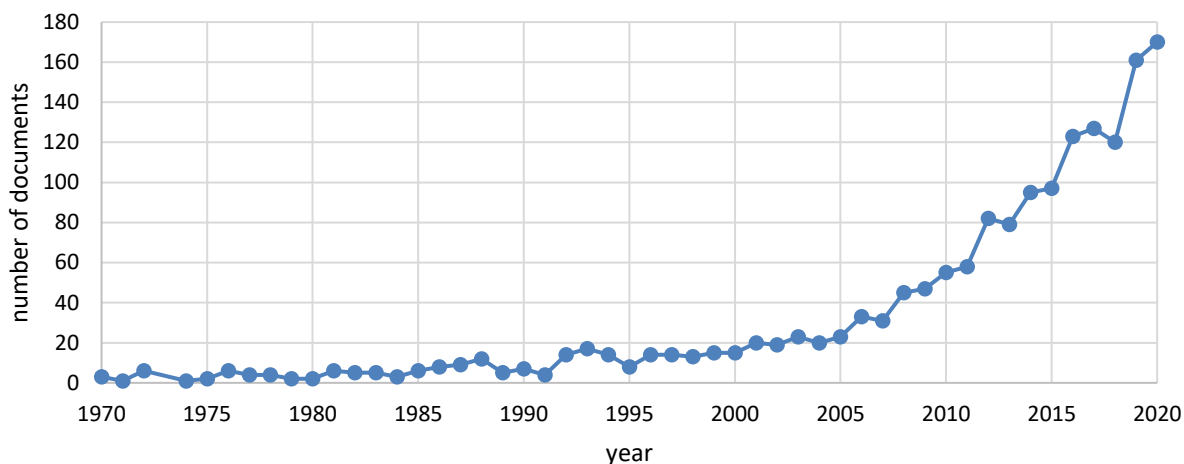


Fig. 1. The publication dynamic on migration issues in the Scientific Journal which indexing by Scopus

Source: Author's development.

Considering the findings, the most cited paper (500 citations) was published by J. Taylor (1999). J. Taylor proved that migration stimulates money transfers, which positively affect the country's economic growth. D. Massey, L. Goldring and J. Durand (1994) proved that any social and economic disparities provoked migration in the country. In the investigation, they analysed 19 Mexican communities. C. Fan (2002) confirmed that the countries with transitional economies should develop attractive conditions for labour forces (300 citations). Top-10 cited papers presented in Table 1.

The findings confirmed that the scientists analysed the migration from different points of view. Mainly, the scientists analysed the social and economic conditions as a core indicator that influenced migration. On the other side,

high-rate migration is the biggest issue for countries with transitional economies.

3. Methodology.

The bibliometric analysis was used for identifying the core scientific clusters on the migration investigation. The bibliometric analyses of the 16,330 papers from databases Scopus were selected on the Business and Economics subject areas. VOSviewer was used for the visualising of the bibliometric analyses.

The mathematical and statistical methods were used for checking the relationships between the SDG Index, the crude rate of net migration plus adjustment, GDP. The object of investigation Ukraine and Visegrad countries. The date for analysis was generated from the Sustainable Development Report, World Development Indicators.

Table 1. The most cited papers on migration issues in the Scientific Journal which indexing by Scopus

Authors	Title	Journal	Hypothesis
J. Taylor (1999)	The new economics of labour migration and the role of remittances in the migration process	International Migration	linking among migration stimulate and money transfers
D. Massey, L. Goldring and J. Durand (1994)	Continuities in transnational migration: An analysis of nineteen Mexican communities	American Journal of Sociology	social and economic changes lead to increasing migration
C. Fan (2002)	The elite, the natives, and the outsiders: Migration and labour market segmentation in urban China	Annals of the Association of American Geographers	The work conditions influence migration
S. Kanaiaupuni (2000)	Reframing the migration question: An analysis of men, women, and gender in Mexico	Social Forces	The gender difference influence migration
Y. P. Wang, Y. Wang, J. Wu (2009)	Urbanisation and informal development in china: Urban villages in Shenzhen	International Journal of Urban and Regional Research	Linking among migration and informal village development
S. Haug (2008)	Migration networks and migration decision-making	Journal of Ethnic and Migration Studies	Relationship between sociological and economic aspects of migration
A. Gallagher (2001)	Human rights and the new UN protocols on trafficking and migrant smuggling: A preliminary analysis	Human Rights Quarterly	Normative regulation influenced migration
A. Stockdale (2006)	Migration: Pre-requisite for rural economic regeneration?	Journal of Rural Studies	Migration has a positive effect on human capital in the country
J. Chen (2011)	Internal Migration and Health: Re-Examining the Healthy Migrant Phenomenon in China	Social Science and Medicine	Linking among self-rated physical health, psychological distress, and migration experience, controlling for sociodemographic characteristics
K. Roberts (1997)	China's "tidal wave" of migrant labour: What can we learn from undocumented Mexican migration to the United States?	International Migration Review	Linking among the migration process, the economic and social position of migrants

Source: Author's development.

4. Research objectives.

The paper aims to identify the core directions of the impact of the migration process on the sustainable development of the national economy.

5. Results and discussions.

Considering the analysis results (Figure 2), the scientists from the USA have been started to analyse the migration before 2010. It

justified that fact the USA was the first countries which felt issues with migration. Besides, in Ukraine, the analysis of the issues of migration was activated after the 2017 year. It could be explained by the deepening of economic and political instability in the country and open beaneries for free movement between the EU and Ukraine.

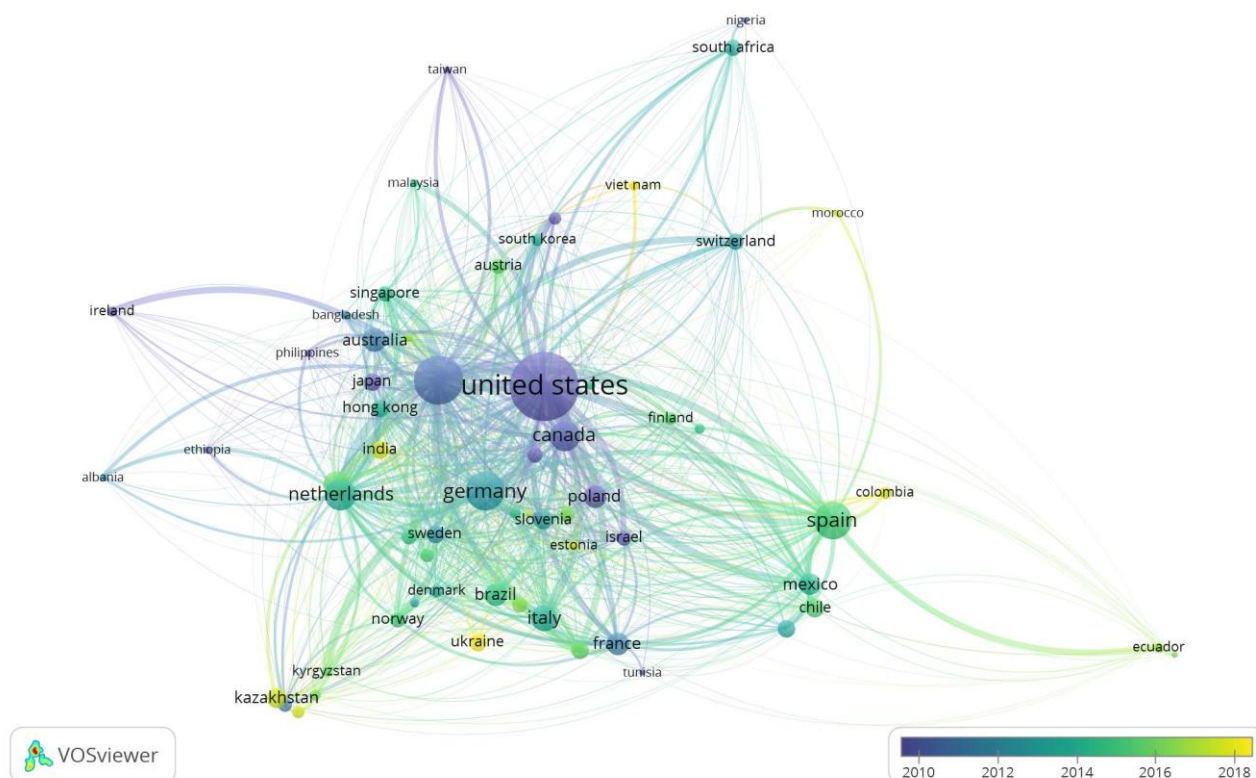


Fig. 2. The findings of bibliometric analysis of the publications which focused on migration (based on Scopus data)

Source: Author's development using the VOSviewer.

The findings of bibliometric analysis allow identifying the core directions of the migration investigation (Figure 3). Thus, the following scientific clusters could be highlighted: the most significant cluster (red) – focuses on the general aspects of the migration (contains 106 items); green cluster – focuses on the demography and culture as core factors which influenced migration (contains 41 items); blue cluster – focuses on the impact of migration policy and governance efficiency on the migration process (contains 37 items); yellow cluster – linking among gender factor, economic and social development, and migration.

The overlay visualisation of the bibliometric analysis confirmed that firstly (1990–2000), the scientists analysed the demography and culture as the determinants of the migration (green cluster in Figure 3 and navy-blue Figure 4). During 2000–2010 the researchers were analysing the impact of government

efficiency on the migration process. After 2010 the papers focus on cultural, human rights, nationalism education as the dimensions of migration (light green and yellow colour in Figure 4).

Besides, considering the findings after 2015, the scientists have been analysed the relationships between sustainable development and migration process in the country. SDG Index allows comparing the countries on their success on the way of achieving sustainable development goals. During the 2016–2019 years among the Visegrad countries, Czech Republic had the highest values of SDG Index (2019 – 80.7, Figure 5). Considering the official report, Ukraine has the growth dynamic of SDG Index score (in 2016 – 66.39 and 2019 – 72.8). At the same time, Ukraine has the lowest value of the SDG Index among analysed countries.

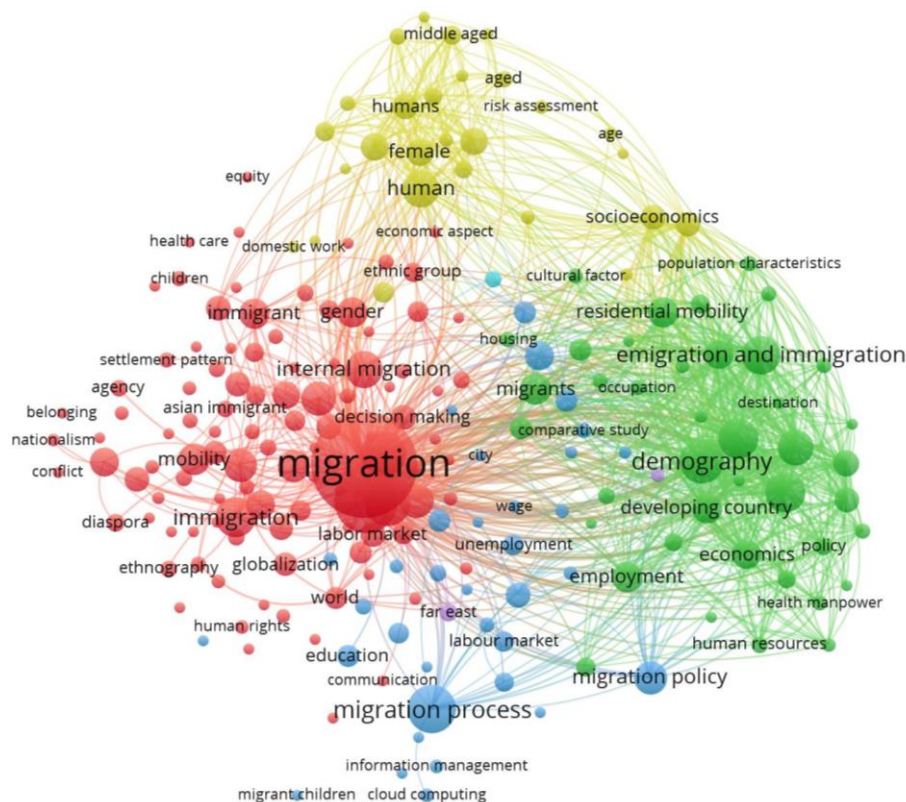


Fig. 3. The findings of bibliometric analysis of the publications which focused on migration (based on Scopus data)

Source: Author's development using the VOSviewer.

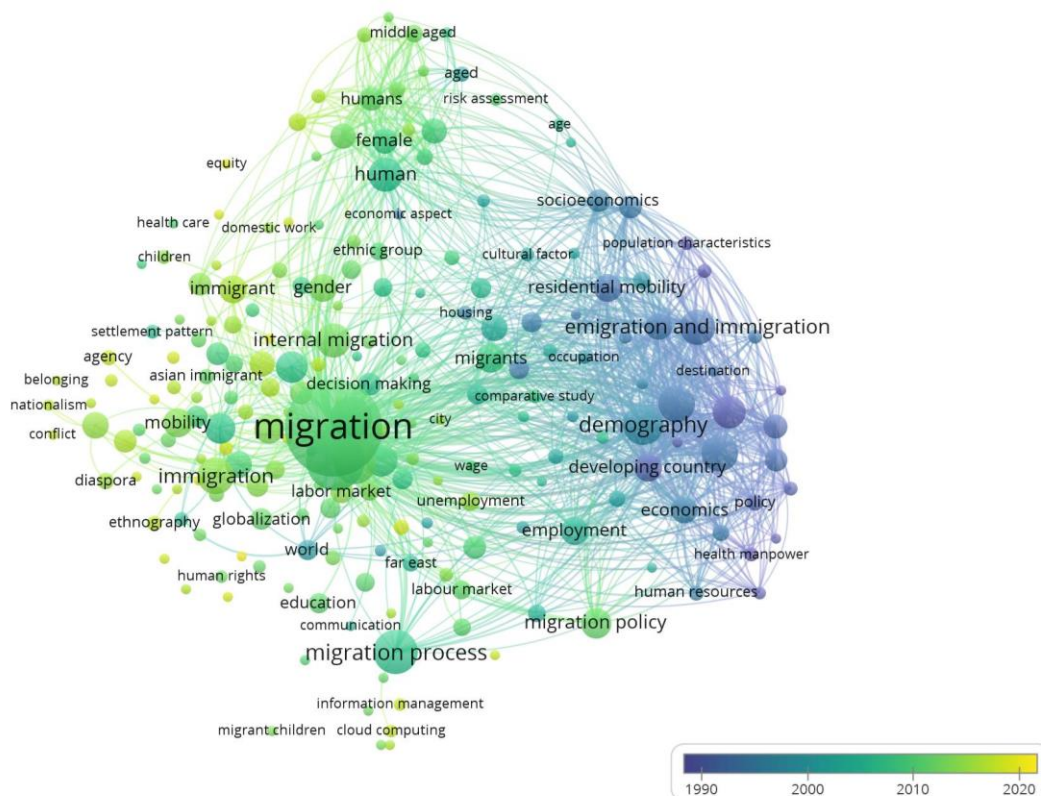


Fig. 4. The overlay visualisation of bibliometric analysis of the publications which focused on migration (based on Scopus data) under the historical dimension

Source: Author's development using the VOSviewer.

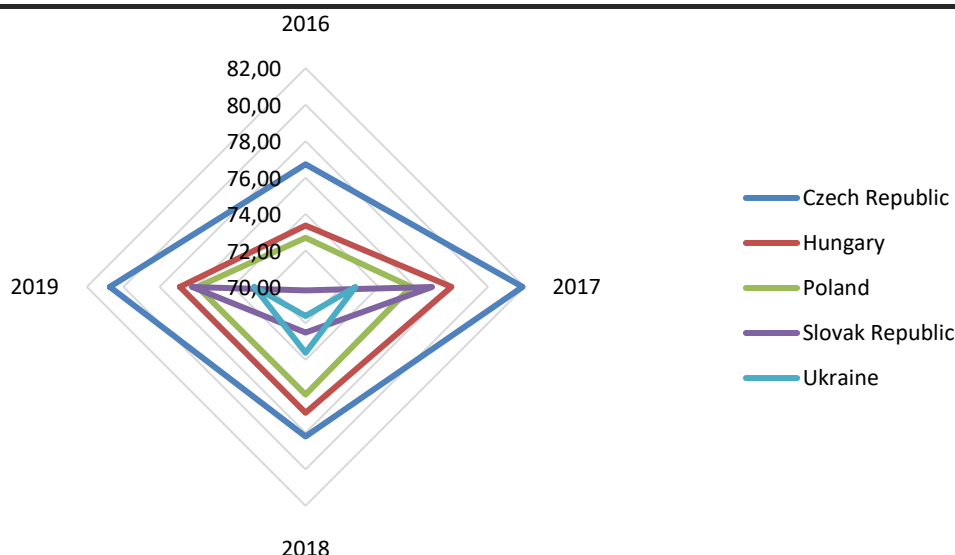


Fig. 5. The dynamic of SDG index (score) among Ukraine and Visegrad countries (2016–2019)

Source: Author’s development based on (Sachs et al., 2019).

The comparison analysis of migration among Ukraine and Visegrad countries showed that Chechia and Hungary have the

highest value crude rate of net migration plus adjustment (Figure 6).

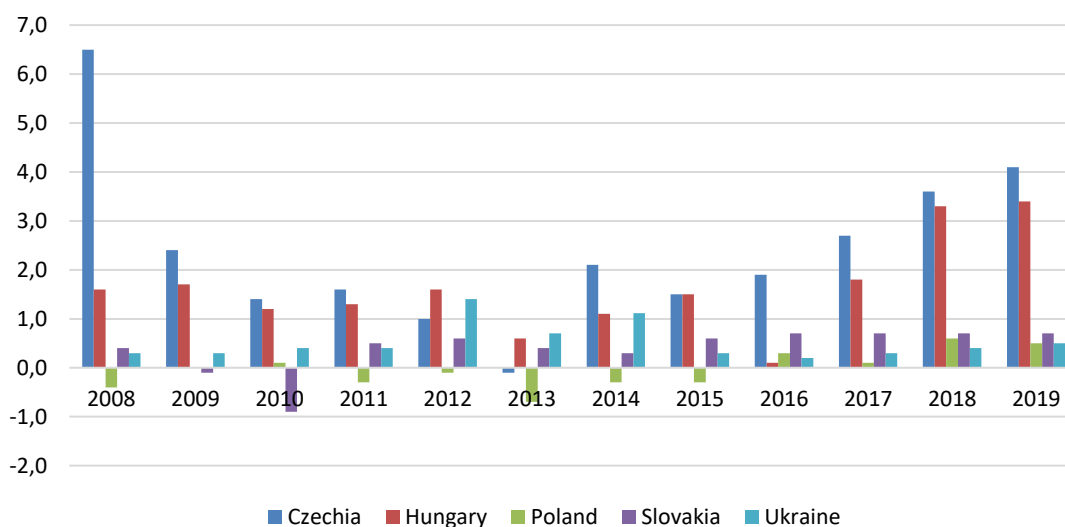


Fig. 6. The dynamic of the crude rate of net migration plus adjustment among Ukraine and Visegrad countries (2008–2019)

Source: Author’s development based on (Sachs et al., 2019).

In addition, Chechia and Poland had the highest value of GDP in the 2018–2019 years

The findings of descriptive statistics showed in Table 2.

The results of nonparametric correlation analysis (Table 3) between GDP, net migration plus adjustment and SDG Index confirmed the high value of correlation among them with probability at 1%.

Table 2. Descriptive statistics of GDP, net migration plus adjustment (MIGR) and SDG Index (SDG)

	GDP	MIGR	SDG
Mean	29,428.67	1.33	75.10
Median	31,371.40	0.70	75.91
Maximum	44,286.95	4.10	81.90
Minimum	11,148.20	0.10	66.39

Source: Author’s calculation.

Table 3. The correlation matrix of GDP, net migration plus adjustment (MIGR) and SDG Index (SDG)

	SDG	MIGR	GDP
SDG	1		
MIGR	0.74 (0.0002)*	1	
GDP	0.75 (0.0001)*	0.77 (0.0001)*	1

* statistical significance at 1%.

Source: Author's calculation.

6. Conclusions.

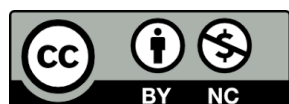
The analysis results showed that the scientists analysed migration from a different

perspective, particularly under the gender, cultural, demography dimensions and efficiency of government policy. Besides, the new direction of the investigation is analysing linking sustainable development and migration in the country.

The results of correlation analysis confirmed that the changing of migration and GDP lead to changing of SDG Index. For further investigation, it is necessary to analyse the long-term casual relationship between migration and sustainable development of the country.

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