



Migrants' Role in Shaping Unemployment Duration and Labour Market Performance in a Sustainable Perspective: Empirical Evidence from Romania

Irina-Maria Grecu^{1*}, Grațiela Georgiana Noja², Mirela Cristea³, Simon Grima⁴, Eleftherios Thalassinos⁵,
Tomasz Dorożyński⁶

¹ Doctoral School of Economics and Business Administration, West University of Timisoara, Timisoara 300115, Romania
² East-European Center for Research in Economics and Business, Faculty of Economics and Business Administration, West University of Timisoara, Timisoara 300115, Romania
³ Faculty of Economics and Business Administration, University of Craiova, Craiova 200585, Romania
⁴ Faculty of Economics, Management and Accountancy, University of Malta, MSD 2080, Malta
⁵ University of Piraeus and Affiliate Professor Ph.D. University of Malta, MSD 2080, Malta
⁶ Faculty of Economics and Sociology, University of Lodz, Lodz 90-255, Poland

Corresponding Author Email: irina.grecu96@e-uvt.ro

Copyright: ©2024 The authors. This article is published by IETA and is licensed under the CC BY 4.0 license (<http://creativecommons.org/licenses/by/4.0/>).

<https://doi.org/10.18280/ijstdp.190808>

ABSTRACT

Received: 10 June 2024
Revised: 20 July 2024
Accepted: 5 August 2024
Available online: 29 August 2024

Keywords:

international migration, unemployment, skills, economic growth, structural equation modelling

This study examines the key characteristics of Romanian migration in recent years, from the onset of the COVID-19 pandemic to the post-pandemic era. It explores the impact of migration on unemployment duration and investigates the shaping and deterring factors of the emigration decision, with spillover effects on labour market performance. The study includes a systematic and bibliometric analysis of the scientific literature on pandemic and post-pandemic labour migration, focusing on works published between 2019 and 2024. Additionally, it features a detailed analysis through structural equation modelling of data collected by the Romanian Employment Agency (ANOFM) from January 2018 to September 2023 (12,475 observations). The findings highlight that educational background, ethnicity and age shape the emigration decision and unemployment exit due to migration for Romanian migrants staying abroad for a short time, usually less than three months, while studies and experience and the unemployment benefits/ indemnity are predominant in the emigration decision and unemployment exit for medium and long-term Romanian migrants (over three months). We highlight the skills and qualifications needed in the future globalised digital economy to increase job opportunities for migrants and facilitate their labour market insertion. Finally, the study underscores the pandemic's impact on the labour market, jobs in the European Union and Romania, and changes in international migration patterns to and from Romania.

1. INTRODUCTION

International migration is an important research topic worldwide, especially in finding stable long-term work. The high interest in this human movement is due to its scale. In 2019, there were over 272 million migrants, with 82 million from Europe. They made up 3.5% of the world's population and 74% of the total international population [1]. Most migrants were of working age, between 20 and 64, and lived worldwide, with a significant presence in Europe. According to UN data, Romania had 462.6 thousand migrants in 2019 before the COVID-19 pandemic [1]. In 2020, the COVID-19 pandemic led to a significant decrease in permanent migration inflows compared to the previous year due to border closures and movement restrictions. However, by 2021, the number of migrants had increased to 281 million and continues to rise. Furthermore, the 2022 invasion of Ukraine by Russia led to one of the most significant displacement crises since World War II. By the end of 2022, approximately 5.7 million

Ukrainians had been compelled to flee their country. The European labour market, including Romania, has been significantly impacted by these developments. The mismatch between available job offers in the Romanian market and the demand for jobs prompted many Romanians to leave the country, searching for new prospects, opportunities, and better employment. They found these opportunities in other European labour markets, leading to a pattern of reverse migration among Romanians.

The spread of the COVID-19 pandemic and the increasingly significant use of technology in work activities, translated into digitalisation, highlight numerous challenges in the European and domestic labour market. There have also been significant changes in labour migration, particularly at the European level. These changes have redefined work options, especially for immigrants and future ones. They have brought attention to new skills and abilities that employees will need in the future. Governments, companies, and entrepreneurs must consider these aspects in advance to adapt and adhere to them.

The global impact of the pandemic has raised significant concerns regarding the skills disparity between recent graduates and the skills required by employers. Two things can happen here: the graduate does not possess specific skills, or the employer does not believe that the graduate has the necessary skills [2].

The labour market has acquired new valences, being oriented on activities in the digital sphere, on the use of technology and high-performance machines instead of the physical workforce, and on the training and capitalisation of those employees with certain qualities and particularities, to the detriment of many others, for whom such a market will become less attractive in the future [3].

Given the decreasing number of young people in European countries, a reduction in intra-European migration is expected. However, problems related to housing, access to the labour market and economic growth must be considered in any situation [4].

This research study delves into the intricate details of Romanian migration patterns in recent years, examining the period from the onset of the COVID-19 pandemic to the present times. The study seeks to unravel the nuanced impact of migration on unemployment duration and to comprehensively explore the multifaceted factors shaping the decision to emigrate, with consequential effects on labour market performance. The research endeavour is based on a detailed examination of data gathered by the Romanian Employment Agency (ANOFM) from January 2018 to September 2023, comprising a substantial sample of 12,475 observations. Structural equation modelling (SEM) is employed next to capture the shaping and deterring factors of unemployment duration and unemployment exit of Romanian migrants due to emigration in the short, medium and long run. The significant findings underscore the influential roles of educational background, ethnicity, and age in determining the emigration decision and unemployment duration for Romanian migrants staying abroad for a short period, typically less than three months. Conversely, the study also underscores the prominence of educational attainment, work experience, and the impact of unemployment benefits in shaping the emigration decision and unemployment duration for medium and long-term Romanian migrants (those staying abroad for over three months).

The remainder of the paper is structured as follows: Section 2 presents the theoretical underpinnings of Romanian migration and labour market inferences, focusing on a systematic and bibliometric analysis of the relevant scientific literature published between 2019 and 2024. Section 3 provides details about the data and indicators used in the empirical analysis and the methodological credentials centred on structural equation modelling (SEM). Section 4 presents the results of the SEM models for the entire sample and specific sub-samples of analysis, along with a discussion of the implications of these findings. The paper concludes with policy recommendations, research limitations and future research directions.

2. BRIEF LITERATURE REVIEW

In Romania, unemployment is presented as an element that negatively affects the country's economic development. It is described as an imbalance in the labour market between the demand and supply of labour at the national level [5].

Unemployment is one of the major socio-political problems in the country, having numerous negative consequences, both nationally and for individual citizens.

At the national level, the fact that a part of the workforce is not involved in remunerated work activities negatively influences the dynamics of the size of the Gross Domestic Product (GDP), in the sense that the training and qualification actions of the unemployed have required significant expenditures, both on the part of the individual and the part of society and the authorities, expenses that will not be able to be indirectly recovered in the situation that they are installed for more and more individuals who record long-term unemployment.

The labour force in a declared form of unemployment cannot contribute to the growth of the country's GDP, so the society is forced to bear unemployment costs because of the monthly contributions directed to the unemployment fund by economic agents and employees.

Long-term unemployment, especially among young people, can lead to crime and violence, increasing citizens' insecurity and crime and having a profoundly negative impact on society as a whole. At the level of the individual and family or household, unemployment has a negative impact on income and well-being. This is a serious current problem at the national level and beyond and can affect any individual [6].

To prevent the bankruptcy and disappearance of some market economic agents, the Romanian authorities offered support to employees during the pandemic, bearing part of the expenses related to granting technical unemployment instead of employers. The pandemic has increasingly accentuated national employment issues, changing the perspective on future areas of interest that will be accessible, as well as on skills and qualifications that future employees must demonstrate to increase their employability in the labour market [6].

In the pandemic and post-pandemic period, the changes in the labour market and employees have propagated either positively or negatively, both economically and socially. One of the most noteworthy social impacts of the COVID-19 pandemic is the rapid escalation in the incidence of depression among individuals who have experienced job loss. This is further compounded by the challenges individuals face in adapting to remote work, the resultant social isolation, and the pervasive fear of contracting the virus and mortality [7]. Although the restrictions imposed were meant to protect the population as much as possible, employees see these measures as actions that only isolate them, keep them away from a natural, active social life, and deprive them of freedom, especially of access to treatments of any kind that are necessary for them [8].

The study acknowledges the importance of the digital labour market for Romania as a relatively new and underutilized segment in the country. This highlights the unpreparedness of Romanian workers, including immigrants, to adapt to the emerging trends and demands in this domain [9]. The Digital Single Labour Market is meant to ensure the free movement of persons, especially jobseekers, as well as the free movement of products, services and capital, a market that can be accessed directly by both natural and legal persons without any sign of interruption and which ensures the performance of activities in the online environment under the conditions of fair competition, high level of security of personal data, regardless of a person's nationality or residence [10].

Although advanced technologies and the digital labour market will represent a danger for some categories of employees, they will make people's lives easier, minimise physical efforts and accelerate the transition to a predominantly digital economy and labour market [11]. Teleworking, as the legal paid activity carried out from home or any other space chosen by the provider, the employee, is known without the obligation of physical presence at the office, in an institution or inside a company. Teleworking ensures flexibility and creates a pleasant environment for the employee, in which he can carry out the work activity without being interrupted, embarrassed, disturbed by colleagues or other factors that can be more or less avoided. The restrictions imposed by the authorities during the pandemic to prevent the spread of the virus and to ensure the best possible health for employees have greatly encouraged teleworking [9].

When addressing the labour market, it's essential to take into account the makeup and organization of the workforce within a country. It's crucial to differentiate between the native citizens actively participating in the labour market and the immigrants who have already integrated or are in the process of integrating into the workforce [12, 13]. Governments are urged to actively engage immigrants in labour market activities to bolster and sustain the country's economy, particularly in the context of the pandemic and in the future.

In Romania, immigrants predominantly gravitate towards major urban centres. Unlike in many Western or Southern European countries, immigrants do not constitute a highly visible and acknowledged social group in the host society's daily social reality and life. However, in Romania's bustling urban hubs, particularly in the immigration region encompassing Bucharest and neighbouring counties, foreign workers are increasingly integrating into the local economy [14].

The advent of technology is regarded as a decisive factor contributing to rising unemployment rates, both in Romania and Western countries. The automation of certain processes is leading to the elimination of some jobs and the creation of new ones. Bucharest, Timisoara, and Cluj-Napoca are the primary economic centres in Romania, boasting the highest density of employment opportunities. The IT sector and communication-related roles are particularly abundant. Employers typically seek candidates with a minimum of one year of experience in the field and those willing to work full-time. As a result of the prevalence of industrial robots, jobs involving repetitive tasks have dwindled. Furthermore, employers are increasingly seeking candidates with higher education qualifications.

The immigration of highly skilled individuals stimulates development and innovation in the receiving countries. Skilled migrants bring forth substantial reservoirs of advanced knowledge and enhanced skills, attributed to a combination of migration policies, such as temporary visa programs, and their deliberate self-selection fostering superior technical and engineering acumen. As skilled immigrants embed specific expertise gained through education, their direct impact on innovative activities within the receiving countries is anticipated to be favourable.

The existing body of literature predominantly examines the influence exerted by skilled migrants on the innovative performance of the respective country, region, or province of settlement. Nevertheless, a geographical approach is inadequate in discerning between the contributions of immigrants engaged directly in innovation or operating within innovative sectors and those employed in non-innovative

sectors within the same geographic region [15]. Hence, adopting an industrial perspective is imperative to effectively segregate potential confounding variables and ascertain the genuine contribution of immigrants to innovation [16].

Other unforeseen events can also determine the decision to return to the country of origin, the COVID-19 pandemic being a conclusive example [17, 18]. The suspension of the economic activities they were carrying out, the loss of jobs, as well as the increasingly severe restrictions, determined most of the Romanians who went to work abroad to return to the country, either to wait for the improvement of the situation at European or global level regarding the spread of the disease, to resume their work activities in the host countries or to look for new jobs in the country and be closer to family and relatives in case the disease continues its worrying course [18].

In order to deepen the understanding of the inferences between international labour migration and unemployment, particularly when referring to the Romanian labour market, we performed a bibliometric analysis using data extracted from 233 Web of Science-indexed articles processed with the VOSviewer software. To select the 233 articles, we tailored our search to specific keywords like ‘international migration’, ‘emigration’, ‘unemployment’, ‘labour market’, ‘Romania’, and ‘European Union (EU)’. Afterwards, we focused only on articles published during 2019-2023 to capture the pre-pandemic and post-pandemic years. Finally, we targeted highly-cited and open access scientific articles published in the Economics and International Economics field.

The co-occurrence maps resulting from data processing with VOSviewer are presented in Figures 1-3 below.

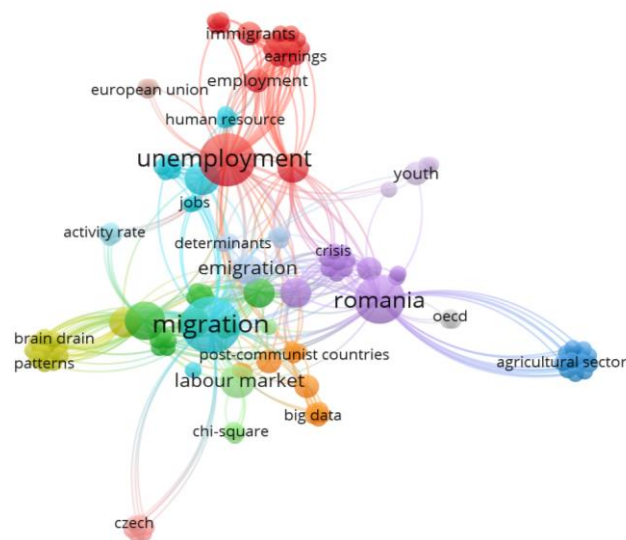


Figure 1. Co-occurrence map of main keywords/ concepts found in the relevant literature on international migration and labour market inferences, with a keen focus on Romania
Source: Authors' research in VOSviewer

When analysing the first co-occurrence map in Figure 1, we note that most of the scientific articles on the interlinkages between international migration and the labour market refer mainly to the immigration impacts on employment / unemployment and earnings in host economies while also addressing the migration effects on the size and structure of the labour force (human resource) and job opportunities, particularly for youth.

On the other hand, when examining the impacts of emigration on countries of origin, studies tend to focus on the

determinants of migration decisions, brain drain patterns, and remittances, particularly in post-communist countries. Authors have also addressed the latest impacts of digitalization and big data on the labour market and job queries in their published works on similar topics.

These concluding remarks, resulting from the preliminary bibliometric analysis, highlight that international migration continues to be a topical subject in research endeavours, mainly due to its notable effects on the labour market and economic development of both migrant sending and receiving economies.

Coming closer to the pandemic period, we note from Figure 2 that in 2020, most scientific articles analysed in our sample have addressed the emigration process and the brain drain phenomenon, while recent studies published in 2022 and 2023 provide more advanced econometric modelling procedures, particularly cluster analysis to assess the tailored migration impacts on specific sectors, like agriculture or mining, without disregarding big data and the digital transformation impacts on the labour market and migration flows.

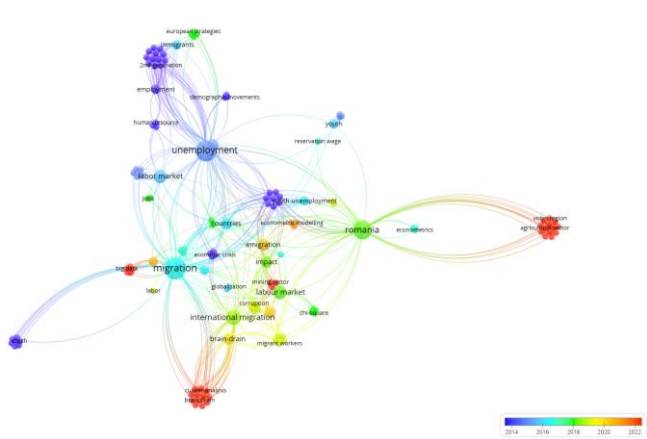


Figure 2. Co-occurrence map of main keywords and links associated with the scientific articles published in the COVID-19 pandemic context
Source: Authors' research in VOSviewer

Finally, the bibliometric analysis concluded on the main concepts associated with international labour migration and labour market outcomes, as represented by Figure 3.

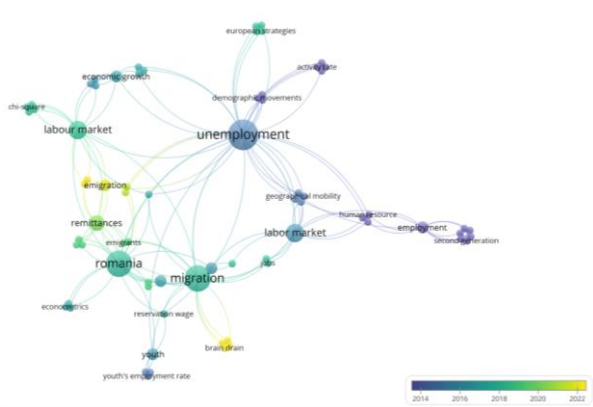


Figure 3. Main concepts revealed by the bibliometric analysis for keywords appearing more than 5 times in all analysed articles
Source: Authors' research in VOSviewer

The literature about migration to and from Romania, shown in Figure 3, is of particular interest to Romanian writers, as well as to economists and researchers from other EU member states. These countries are hosts to Romanians who have gone abroad to find work and are also the countries from which many Romanians have decided to return in recent years, such as Italy, Spain, or Austria. However, Romanian migration is also closely monitored and analyzed in countries such as Switzerland, India, the USA, Canada, and China.

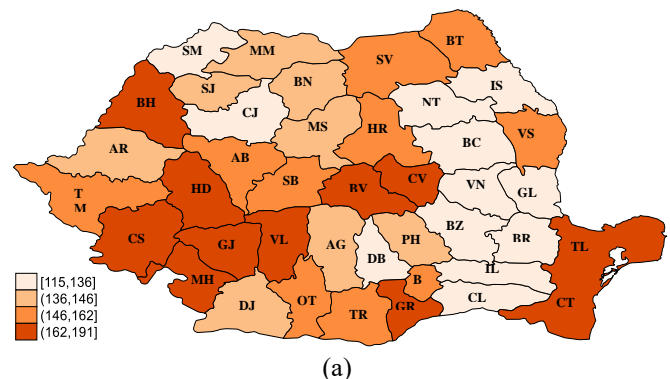
Figure 3 clearly shows that emigration and unemployment are tightly related and extensively analysed by various studies, having notable implications for the Romanian economy, and other EU countries.

The theoretical frameworks that inform the relationship between migration, unemployment, and labour market performance are diverse and multifaceted. Central to this discourse is the push-pull theory of migration, which posits that migration decisions are driven by a combination of factors that "push" individuals away from their home country, such as unemployment or political instability, and factors that "pull" them toward a destination country, such as better job opportunities or higher living standards. Over time, this theory has evolved to account for more complex socio-economic dynamics, particularly in the context of globalization and regional economic integration. Recent global events, notably the COVID-19 pandemic, have further complicated these dynamics by introducing new push and pull factors, such as health security and remote work opportunities, which have reshaped traditional migration patterns. This study builds on these theoretical foundations, exploring how these evolving factors manifest in the specific context of Romanian labour migration and unemployment duration.

3. DATA AND METHODOLOGY

Regarding the situation reported at the Romanian level, data collected by the Romanian National Employment Agency (ANOFM) and processed at the national level were used to obtain and analyse valid and usable data for this study. Of the 12,475 unemployed officially registered in ANOFM, 10,875 people received unemployment benefits between 2018 and 2023, while 1,600 people were not entitled to this state support.

Most people came from rural areas, but this is not a general rule. An almost equal number of migrants from urban and rural areas can be observed in Sibiu or Caras-Severin county (Figure 4). Also, an aspect worth mentioning is the high number of women from countries such as Cluj or Hunedoara who have chosen to work abroad, exceeding the number of men who migrated from Romania to find a job outside the country.



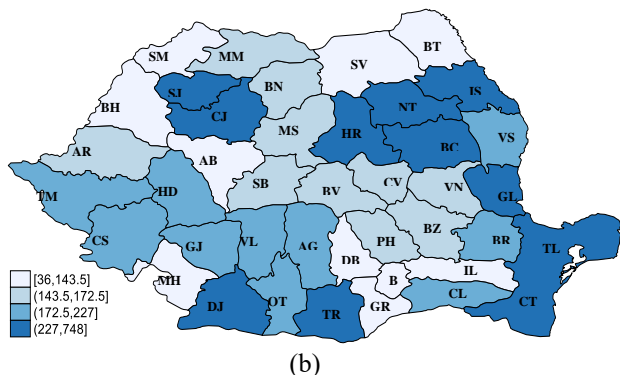


Figure 4. Unemployment duration by county (unemployment exit is due to emigration), Romania, 2018-2023: a) emigration under three months; b) emigration over three months

Source: ANOFM data processing, 30 June 2023

Among the people registered were those who had only completed primary school (1,051 people – 8%).

There were also 2,756 graduates of vocational and professional schools (22%). However, most of them have been abolished in Romania in recent years. This interests many Romanian citizens and employers looking for a workforce prepared for certain activities and indicates a widening gap between education, schooling and work. Technological change is also expected to lead to a shift in demand towards

increasing demand for higher competencies, skills, abilities and qualifications, which would be at risk of not being fully met, taking into account the current labour supply and also taking into account the time needed for the Romanian education and training system to adapt to new and future requirements and expectations.

Enrolment rates for all levels of education in the country remain well below the European average. Despite recent improvements, the rate of early school leaving remains very high, generating profoundly adverse effects on participation and adequate integration into the labour market, as well as on poverty and social inclusion.

Table 1 shows the list of the top five countries Romanians chose to return to Romania in recent years, registered in ANOFM upon return. Germany is the country that most Romanians decide to leave every year, and the number of Romanians arriving from Germany is increasing yearly.

The number of Romanian migrants who arrived in Germany in mid-2023 exceeded those who returned the previous year. We note that, in total, 3,059 Romanians were registered on June 30, 2023, and 3,174 Romanians were registered on December 31, 2022.

The empirical analysis was performed on 8 sub-datasets configured based on ANOFM data relying on 2 criteria: emigration duration (period of staying abroad, less than 3 months, over 3 months) and educational background (total, lower-secondary, upper-secondary and tertiary).

Table 1. Number of return migrants registered by ANOFM during 2020-2023

2020		2021		2022		30.06.2023	
Country	N	Country	N	Country	N	Country	N
Germany	1183	Germany	1757	Germany	2289	Germany	2320
Denmark	274	Denmark	357	Denmark	356	Denmark	321
Austria	61	Austria	112	Austria	214	Austria	185
Spain	57	France	66	Spain	66	Spain	38
Italy	34	Spain	62	Switzerland	31	Switzerland	36

Source: Authors compilation of ANOFM (2023) data

Table 2. Descriptive statistics – emigration abroad under three months

Total Sample					
Variable	N	Mean	Std. D.	Min	Max
Age	9744	41.526	12.096	17	71
Unemployment_duration	9744	154.92	133.256	1	2857
Lower secondary education					
Variable	N	Mean	Std. D.	Min	Max
Age	2417	45.265	9.093	17	71
Unemployment_duration	2417	162.019	136.869	1	1571
Upper secondary education					
Variable	N	Mean	Std. D.	Min	Max
Age	6249	40.209	13.065	17	65
Unemployment_duration	6249	152.255	127.202	1	1470
Tertiary education					
Variable	N	Mean	Std. D.	Min	Max
Age	777	39.943	10.325	21	63
Unemployment_duration	777	148.99	159.998	1	2857

Source: Author research in Stata 18

Summary statistics of all datasets used for the econometric processing are presented in Table 2 and Table 3.

Table 3. Descriptive statistics – emigration abroad over three months

Total Sample					
Variable	N	Mean	Std. D.	Min	Max
Age	2731	35.872	12.857	18	67
Unemployment_duration	2731	279.76	457.657	1	3975
Lower secondary education					
Variable	N	Mean	Std. D.	Min	Max
Age	1181	37.995	12.099	15	67
Unemployment_duration	1181	403.366	575.189	1	3975
Upper secondary education					
Variable	N	Mean	Std. D.	Min	Max
Age	1194	33.98	13.684	17	67
Unemployment_duration	1194	171.652	271.01	1	3153
Tertiary education					
Variable	N	Mean	Std. D.	Min	Max
Age	229	34.083	10.214	21	60
Unemployment_duration	229	133.319	136.624	2	1219

Source: Author research in Stata 18

The descriptive statistics support the fact that, as far as the citizens who decided to go abroad for a maximum period of 3

months are concerned, there were many people, about 50%, with secondary or post-secondary education, who decided to leave their country of origin to find a job in another member state of the European Union (EU).

On the other hand, descriptive statistics in Table 3 show that the number of those who mentioned from the beginning, as a reason for leaving the ANOFM records, the departure abroad for more than three months was deficient. This fact shows that there is high uncertainty and continuous insecurity among the people who go abroad to work, which is why they can never be sure of the duration of their work activities on the territory of the host countries. They prefer to take risks but rather consider an accommodation time of 3 months in the host countries.

The distribution of data associated with the main variable of our econometric models, namely unemployment duration, follows the normal distribution, particularly in the logarithmic scale (Figure 5).

The research continued with realising a series of structural equation modelling (SEM) using the econometric package Stata 18. This hypothesis-based method is based on structural

models representing hypotheses regarding causal relationships between some chosen variables [19]. SEM assesses the degree to which a set of observed variables measures latent variables. Latent variables are estimated by observed variables, considering the relationships between variables and the observed variables' errors [20].

Modelling through structural equations allowed us to identify the influence of independent variables on the dependent variable, represented in this case by emigrants registered with ANOFM to obtain an unemployment benefit but went abroad to get a job (*Unemployment_duration / Emigration*). One advantage is that by using SEM, a researcher can evaluate how well the given data fits the model. Using such modelling equations, we can determine the measurement errors and find the best configuration of variables to reduce these errors' impact. Also, SEM allowed us to include multiple indicators regarding the emigrants from Romania during this research, finding the best configuration and design to examine the complex relationships between the variables and conclude regarding the labour force movement process.

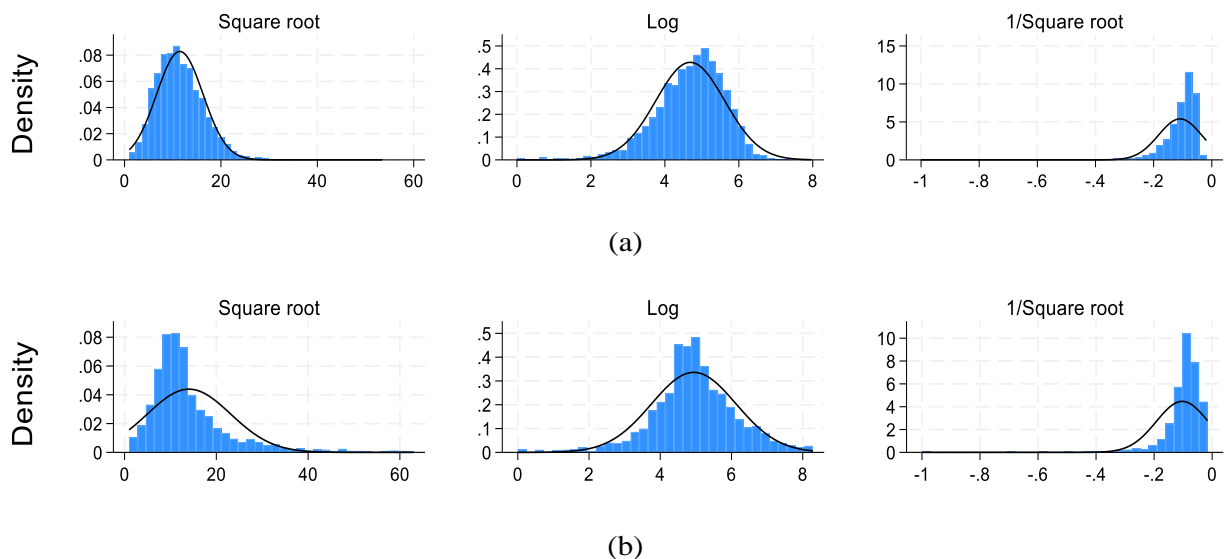


Figure 5. Unemployment duration and exit due to emigration: a) total sample stay abroad under three months; b) total sample stay abroad over three months

Source: Own process of panel data in Stata 18

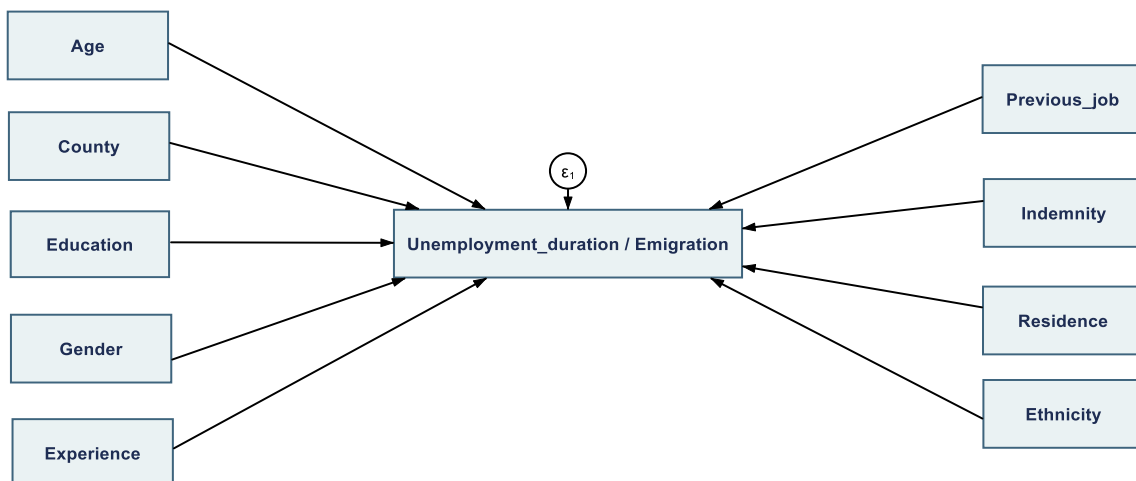


Figure 6. General configuration of the SEM model

Source: Own process in Stata 18

Figure 6 presents the configured SEM model with 'unemployment duration and exit due to emigration' as its dependent variable and nine other influence variables related to it, including education or previous experience.

The decision to employ Structural Equation Modelling (SEM) as the primary analytical method in this study was driven by the need to capture the complex, multi-dimensional relationships between migration, unemployment duration, and various socio-economic factors. SEM offers several advantages over traditional regression methods, particularly in its ability to account for latent variables and measurement errors, which are critical when dealing with socio-economic data. Moreover, SEM allows for the simultaneous analysis of multiple dependent and independent variables, providing a more holistic view of the factors influencing migration decisions. However, it is important to consider the robustness of the SEM results, which depend heavily on the accuracy of the model specification and the underlying assumptions. To ensure the validity of the findings, alternative models and sensitivity analyses were conducted, confirming the stability of the results. Nonetheless, future research could further strengthen these conclusions by applying different modelling techniques, such as dynamic panel data models, to cross-validate the SEM results.

4. RESULTS AND DISCUSSION

We designed eight SEM models starting from the general configuration of our model in Figure 6 that were processed for eight sub-datasets extracted from the full sample of 12,475 observations, namely one sample of Romanian migrants under 3 months stay abroad, one over 3 months, and 6 sub-samples according to the educational level, namely lower-secondary, upper-secondary and tertiary education. All SEM models were processed through the Maximum Likelihood Estimator (MLE). The results obtained are presented in Figures 7-14, Table 4 and Table 5.

Overall, the most significant positive influence is exerted by the age of the migrants and the quality of the allowance. At the same time, education and experience have a negative impact on the latent variable, which leads, in turn, to a reduction in the period of unemployment status registered with ANOFM.

In contrast, the recurrent obtaining of the allowance for a more extended period prolongs the citizens' stay in the country and postpones the decision to work abroad (except for the tertiary education sample).

The results in Figure 8 show that, of all the variables, experience in a certain field is the most significant for people with a low level of education or no education, alongside proof of having a previous job.

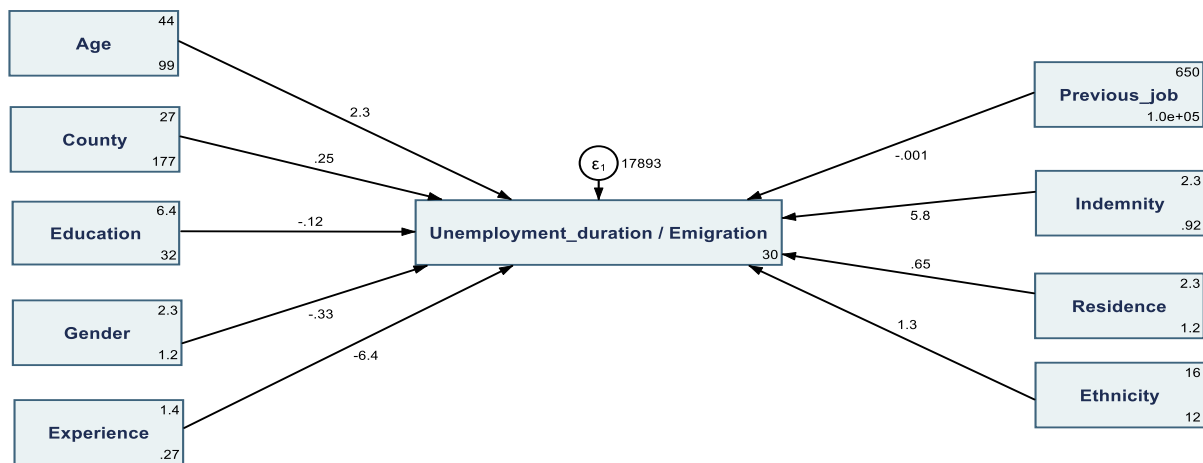


Figure 7. Emigration duration – under three months – total sample
Source: Own process in Stata 18

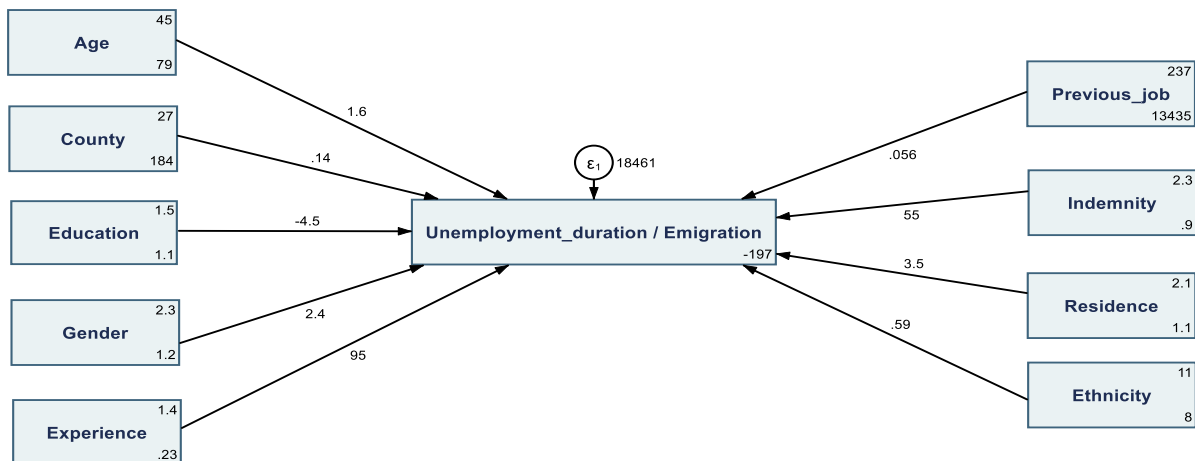


Figure 8. Emigration duration – under three months – sample of migrants with lower secondary education
Source: Own process in Stata 18

According to Figure 9, for migrants with secondary or post-secondary education who emigrate for less than three months, previous experience can be a way out of unemployment, supported by the level of education, gender, or residence.

People with tertiary education who left Romania to work abroad for a maximum of three months were kept in place by their experience in the field they essentially graduated in, as well as by their environment of residence or the county to which they belonged.

In the case of migrants with tertiary education opting for a short period of stay abroad, the results bring some empirical evidence to attest to a migrant selection according to experience and gender. In this particular case, educational background (studies) and age have the most pronounced favourable impact on unemployment duration and exit due to emigration (positive estimated coefficients significant at the 1% threshold) (Figure 10 and Table 4).

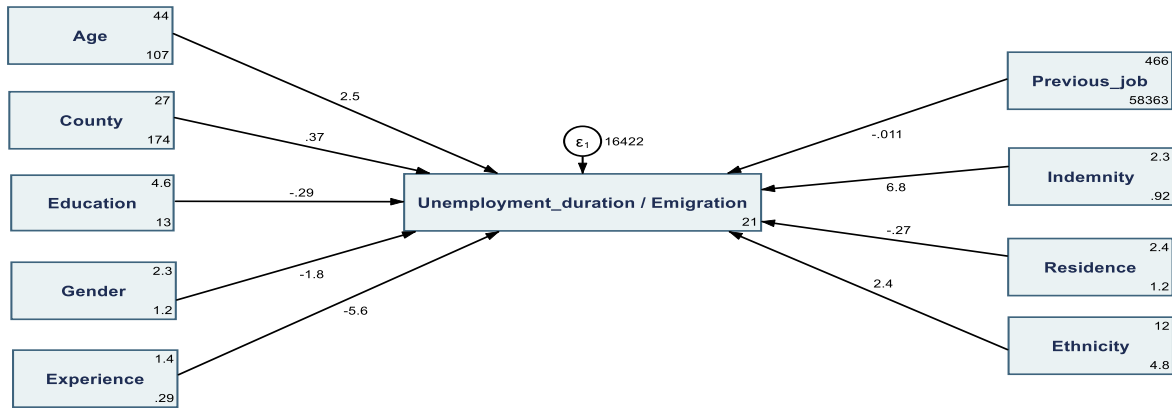


Figure 9. Emigration duration – under three months – sample of migrants with upper secondary education
Source: Own process in Stata 18

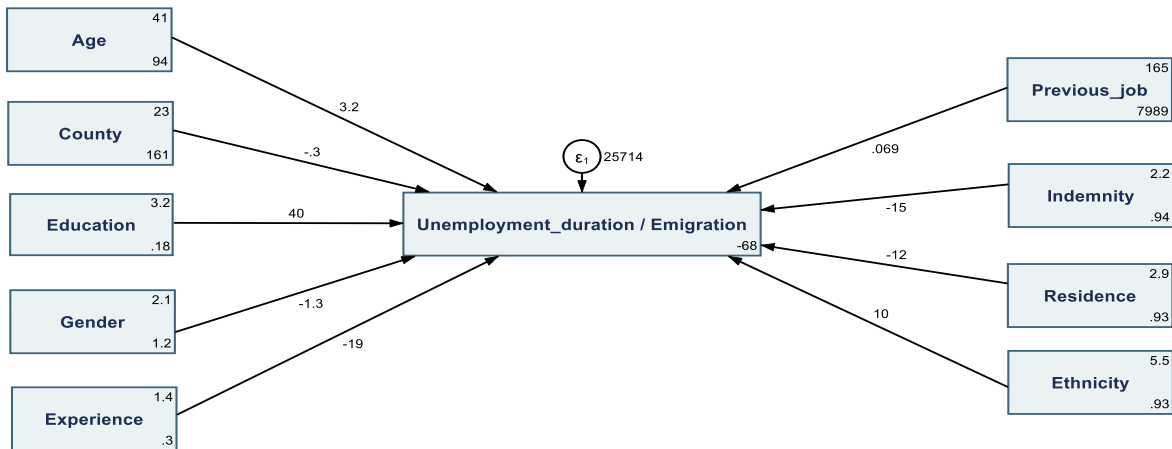


Figure 10. Emigration duration – under three months – sample of migrants with tertiary education
Source: Own process in Stata 18

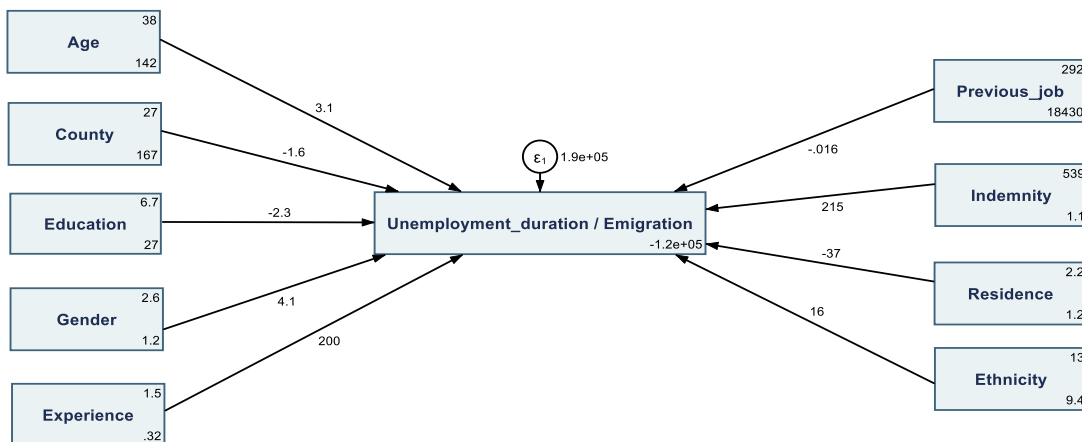


Figure 11. Emigration duration – over three months – total sample
Source: Own process in Stata 18

Table 4. Detailed SEM results – shaping factors of the emigration decision and unemployment exit – stay abroad less than three months

	(1)	(2)	(3)	(4)
	Total Sample Under Three Months	Lower Secondary Education	Upper Secondary Education	Tertiary Education
Education (studies)	-0.121 (0.263)	-4.463 (2.688)	-0.287 (0.502)	39.76** (14.32)
Gender	-0.334 (1.495)	2.397 (2.839)	-1.793 (1.828)	-1.251 (6.360)
Experience	-6.422 (8.798)	95.26 (54.40)	-5.628 (9.266)	-18.86 (29.25)
Previous job	-0.00103 (0.00797)	0.0560 (0.0435)	-0.0112 (0.0128)	0.0693 (0.129)
Indemnity	5.796 (5.436)	54.77* (26.88)	6.796 (6.103)	-15.03 (20.71)
County	0.246* (0.111)	0.141 (0.206)	0.375** (0.135)	-0.299 (0.480)
Residence	0.646 (1.491)	3.456 (2.946)	-0.271 (1.806)	-11.66 (7.354)
Ethnicity	1.326** (0.513)	0.593 (1.326)	2.385* (0.936)	10.01 (7.011)
Age	2.312*** (0.152)	1.641*** (0.324)	2.476*** (0.181)	3.247*** (0.643)
_cons	29.64 (27.26)	-196.8 (139.4)	21.15 (30.61)	-68.30 (110.9)
var(e.Unemployment_ duration)	17893.4*** (277.0)	18461.2*** (533.3)	16421.7*** (320.9)	25714.5*** (1360.0)
N	8348	2397	5236	715

Note: ,, standard errors in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Source: Authors research in Stata 18

Table 4 highlights the factors that have the greatest impact on the number of persons who decide to leave their country of origin for work for a maximum period of 3 months, thus leaving the ANOFM records, including age, ethnicity, and county of residence. In the case of people with lower education, age has the most significant and real influence resulting from econometric processing, an indicator of high impact even in the case of people with secondary and tertiary education.

For people who decided to go abroad for more than three months (Figure 11), the previous experience and the unemployment indemnity granted by the Romanian state had the most significant impact, increasing the period of maintaining the unemployed status with compensation.

Figure 12 shows that unemployment benefits, experience, and ethnicity are the most important factors in maintaining unemployment status for those with lower secondary education who decide to emigrate for more than three months.

People with secondary education, more precisely those with secondary education, remained in the country due to the unemployment benefits they received and the experience they had.

However, the lack of a previous job decreased the possibility of finding a job in the country, which led to the decision to emigrate.

People with higher education who chose to go abroad for more than three months made such a decision after obtaining a meagre allowance considering their needs and qualifications. Also, education is not valued in the country. Still, the request for previous experience in the field of graduation was a reason for leaving the country of origin, to which can be added the gender indicator, which supports the fact that there are still gender differences in specific fields of work, which makes the accessibility on those positions shallow, thus discriminating against people. Generally, women go abroad to find jobs suitable for their training and qualifications.

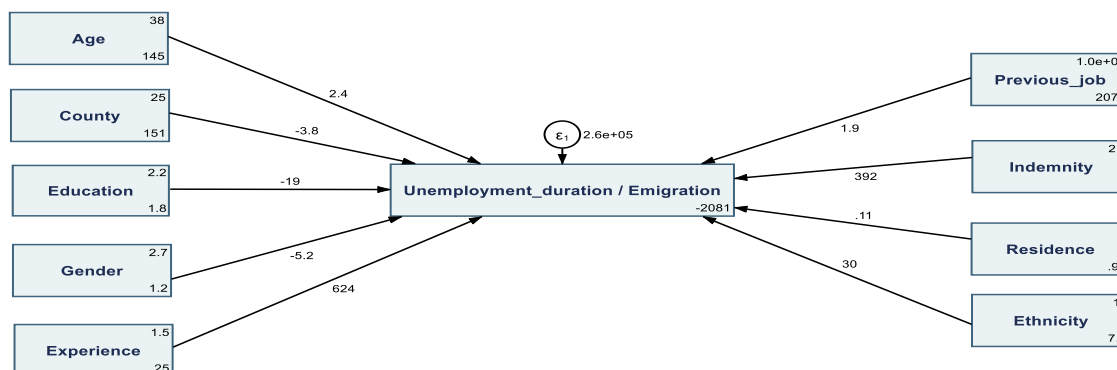


Figure 12. Emigration duration – over three months – lower secondary education

Source: Own process in Stata 18

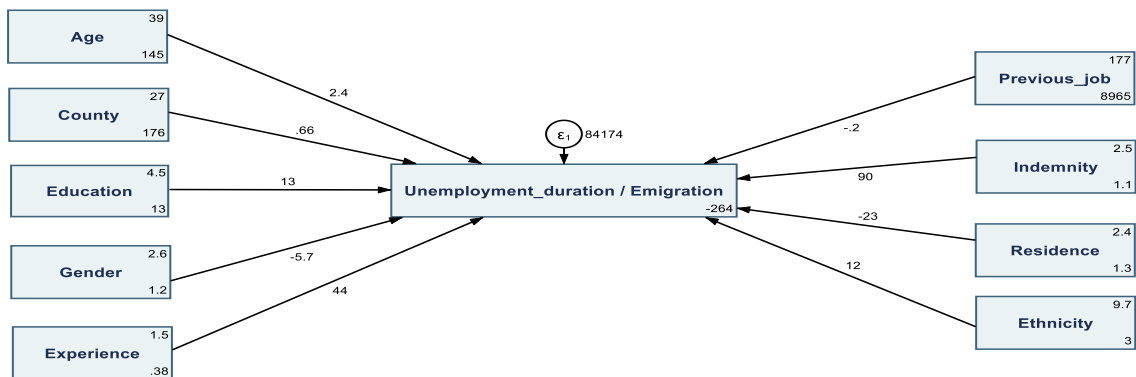


Figure 13. Emigration duration – over three months – upper secondary education
Source: Own process in Stata 18

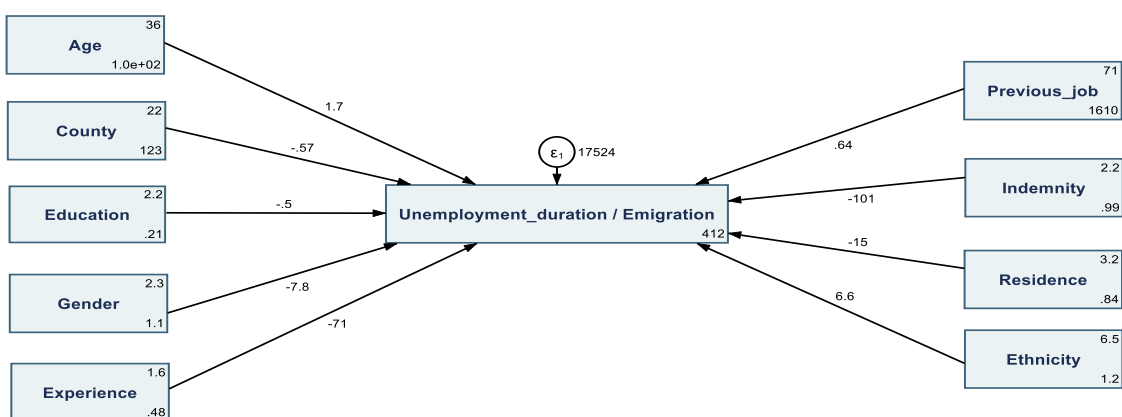


Figure 14. Emigration duration – over three months – tertiary education
Source: Own process in Stata 18

Table 5. Detailed SEM results – shaping factors of the emigration decision and unemployment exit – stay abroad for more than three months

	(1)	(2)	(3)	(4)
	Total sample over three months	Lower secondary education	Upper secondary education	Tertiary education
Education (studies)	-2.327 (1.798)	-19.04 (11.46)	12.87*** (2.823)	-0.499 (21.29)
Gender	4.122 (9.107)	-5.152 (15.47)	-5.748 (9.799)	-7.780 (9.812)
Experience	200.3*** (33.84)	623.6*** (106.1)	44.03 (29.94)	-71.44** (23.77)
Previous job	-0.0164 (0.133)	1.949* (0.807)	-0.199 (0.180)	0.645 (0.396)
Indemnity	215.3*** (19.69)	391.9*** (42.67)	89.56*** (18.37)	-100.8*** (19.40)
County	-1.599* (0.725)	-3.785** (1.233)	0.664 (0.751)	-0.574 (0.888)
Residence	-36.68*** (10.16)	0.109 (19.05)	-23.17* (10.03)	-14.66 (12.52)
Ethnicity	15.51*** (4.162)	29.61*** (8.615)	11.72 (6.738)	6.594 (9.375)
Age	3.141*** (0.802)	2.374 (1.298)	2.441** (0.884)	1.671 (1.074)
_cons	-116114.7*** (10613.3)	-2081.0*** (322.5)	-264.5* (121.7)	412.1** (135.0)
var(e.Unemployment_duration)	188540.5*** (5638.8)	257956.8*** (10669.8)	84174.2*** (4024.3)	17523.8*** (1788.5)
N	2236	1169	875	192

Note: *, standard errors in parentheses, * p < 0.05, ** p < 0.01, *** p < 0.001

Source: Authors research in Stata 18

Table 5 shows that, in the case of those who decided to look for a job outside the host country and try to settle into the environment of the new residence for more than three months, they were influenced to a considerable extent, illustrated by the data obtained, by previous experience at a particular job or in a specific field sought by employers, and the unemployment benefits received. On the other hand, the regions of residence and the origin from the urban or rural area were hostile influencing factors. In the case of people with secondary education, the unemployment benefit was an incentive in deciding to leave the country, and for those with higher education, a barrier with a negative impact on the number of people who chose to leave their country of origin during the analysed period.

In summary, the study's results underscore several key factors influencing Romanian migration patterns and their implications for unemployment:

(i) Short-term migration factors:

- *Educational background, ethnicity, and age:* these factors significantly shape the emigration decisions of Romanian migrants staying abroad for less than three months. Younger individuals with varied educational backgrounds and ethnicities are more likely to engage in short-term migration.

- *Unemployment exit:* for these short-term migrants, the duration of unemployment is typically shorter, suggesting that temporary work abroad serves as a quick solution to unemployment.

(ii) Medium and long-term migration factors:

- *Studies and experience:* for those staying abroad for more than three months, educational qualifications and work experience are crucial determinants. This indicates that individuals with higher education and relevant experience are likelier to seek longer-term employment opportunities abroad.

- *Unemployment benefits:* the quality and duration of unemployment benefits play a significant role in shaping migration flows. Generous and prolonged unemployment benefits tend to delay migration decisions as they provide financial stability, allowing individuals more time to seek local employment before considering emigration.

Based on current research, we entail several recommendations that should be accounted for by policymakers and representatives at the European Union level to improve the labour market performance under the international labour migration impact:

(a) harmonizing labour market policies: to manage labour migration effectively across member states, the European Union should focus on: *(i) standardized qualifications:* develop standardized recognition of qualifications and skills across the EU to facilitate the mobility of workers and reduce barriers to employment; *(ii) EU-wide job platforms:* enhance EU-wide job matching platforms to connect employers with job seekers from different member states, promoting intra-EU mobility; *(iii) regional development funds:* allocate regional development funds to areas disproportionately affected by emigration, supporting economic development and job creation;

(b) strengthening social protection systems: to mitigate the impact of migration on social protection systems, the EU should grant: *(i) portability of benefits:* ensure the portability of social security and pension benefits across member states to provide continuous coverage for mobile workers; *(ii) minimum standards:* establish minimum standards for social protection and unemployment benefits across the EU to reduce disparities and ensure a safety net for all workers, including

migrants.

(c) addressing the digital divide: recognizing the importance of the digital economy, the EU should develop: *(i) digital inclusion initiatives:* invest in digital inclusion initiatives that ensure all citizens have access to high-speed internet and digital tools; *(ii) digital skills training:* support EU-wide digital skills training programs, targeting both current workers and the unemployed to prepare them for future job markets; *(iii) innovation and research funding:* increase funding for innovation and research in digital technologies to keep the EU at the forefront of the global digital economy.

While this study provides valuable insights into the factors influencing migration and unemployment in Romania, it is important to acknowledge its limitations. The use of data from a single country limits the generalizability of the findings to other contexts, particularly those with different socio-economic conditions or migration patterns. Additionally, the focus on the period from 2018 to 2023, although capturing both the pre- and post-pandemic periods, may not fully account for longer-term trends or the lasting impacts of the COVID-19 pandemic. Another potential limitation is the reliance on structural equation modelling (SEM), which, while robust, is contingent on the accuracy of the underlying assumptions. Future studies could address these limitations by incorporating a broader dataset, including multiple countries and extended timeframes, and by employing alternative analytical methods to validate the findings presented here.

5. CONCLUSION

The findings of this study have significant policy implications for both Romanian authorities and the European Union. First, the clear link between unemployment benefits and the duration of unemployment suggests the need for a more nuanced design of social safety nets. Policymakers should consider implementing tiered benefits that decrease over time to encourage faster re-entry into the labour market while still providing sufficient support during initial unemployment periods. Additionally, the study underscores the importance of aligning educational and vocational training programs with the demands of the evolving labour market. Policies that promote digital literacy and skills training, particularly for younger and lower-educated individuals, could help mitigate the skill mismatch that drives migration. At the European level, there is a need for more harmonized migration policies that recognize and facilitate the mobility of skilled labor while also addressing the socio-economic disparities that drive emigration from countries like Romania.

The study aimed to analyse the shaping and deterring factors of unemployment duration and labour market performance due to emigration.

Although the pandemic has significantly affected immigration, it appears that some of those working abroad are planning to move again to earn more.

Romanian emigration has a double effect on the labour market. Significant numbers of immigrants reduce the available labour force and create challenges in filling jobs.

Despite the conclusions made before, the acquisition of digital skills has remained low, presenting great challenges for the future integration of graduates into the labour market and access to well-paid jobs [21]. The relevance of education, vocational training, and higher education in the labour market remains low, harming the employment prospects of graduates

in Romania.

In conclusion, the post-pandemic era presents both challenges and opportunities for managing international labour migration. By adopting targeted policies at both the national and EU levels, Romania and the European Union can effectively address these challenges, leveraging migration to enhance labour market performance and preparing the workforce for the demands of the globalised digital economy. Focusing on education, skills development, social protection, and digital inclusion will create a resilient and competitive labour market that benefits all stakeholders.

The focus of this research on Romanian migrants provides accurate evidence of the factors behind the emigration decision and migration impacts on the labour market yet limits the overall perspective on international migration patterns at the European Union level. Therefore, future research targets a comprehensive analysis performed on an extended dataset that comprises all EU Member States.

6. FURTHER RESEARCH DIRECTIONS

This study opens several avenues for future research. One potential direction is to extend the analysis to other countries within the European Union, particularly those with similar socio-economic profiles to Romania. Such comparative studies could provide a deeper understanding of the factors driving migration across different contexts and inform more cohesive EU-wide migration policies. Additionally, future research could focus on the long-term impacts of migration on labor market performance, exploring whether the trends observed during the post-pandemic period persist as the global economy stabilizes. Another fruitful area of investigation could be the role of emerging technologies and digital platforms in shaping migration decisions, particularly as remote work becomes more prevalent. By addressing these areas, future research could build on the findings of this study and contribute to a more comprehensive understanding of international labour migration.

REFERENCES

- [1] United Nations. Department of Economic and Social Affairs. (2019). International Migration Stock – Wallchart. https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2020/Feb/un_2019_internationalmigration_wallchart.pdf, accessed on Jul. 15, 2024.
- [2] Simionescu, M. (2022). The Insertion of economic cybernetics students on the Romanian labor market in the context of digital economy and COVID-19 pandemic. *Mathematics*, 10(2): 222. <https://doi.org/10.3390/math10020222>
- [3] Catană, Ș., Barbu, A. (2024). A systematic literature review of trends in digital marketing research in Romania. In *Proceedings of the International Conference on Business Excellence*, 18(1): 2240-2247. <https://doi.org/10.2478/picbe-2024-0187>
- [4] Szczepanikova, A., Van Criekinge, T. (2018). European commission, joint research centre. In *the Future of Migration in the European Union – Future Scenarios and Tools to Stimulate Forward-Looking Discussions*. Publications Office. <https://doi.org/10.2760/882041>
- [5] Burlacu, S., Diaconu, A., Balu, E.P., Gole, I. (2021). The economic and social effects of unemployment in Romania. *Review of International Comparative Management*, 22(1): 21-27.
- [6] Vîrtosu, I., Florea, V. (2020). Probleme socio-politice. *Șomajul. Lucrările științifice ale Simpozionului Științific al Tinerilor Cercetători*, Ediția a XVIII-a: 62-65. https://ibn.idsi.md/sites/default/files/imag_file/62-65_26.pdf, accessed on Jul. 15, 2024.
- [7] Nemțeanu, M.S., Dabija, D.C. (2020). The influence of internal marketing and job satisfaction on task performance and counterproductive work behavior in an emerging market during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 18: 3670. <https://doi.org/10.3390/ijerph18073670>
- [8] Topor, A., Solea, R. (2023). *Telework in Romania* (Dissertation). Blekinge Institute of Technology, Department of Industrial Management. <https://urn.kb.se/resolve?urn=urn:nbn:se:bth-24380>, accessed on Jul. 15, 2024.
- [9] Noja, G.G., Pânzaru, C. (2021). Five possible impacts of digitalisation in Romania. *European Review of Applied Sociology*, 14(22): 1-10. <https://doi.org/10.1515/eras-2021-0001>
- [10] Fassio, C., Montobbio, F., Venturini, A. (2019). Skilled migration and innovation in European industries. *Research Policy*, 48(3): 706-718. <https://doi.org/10.1016/j.respol.2018.11.002>
- [11] Schlogl, L., Sumner, A. (2020). Automation and structural transformation in developing countries. In *Disrupted Development and the Future of Inequality in the Age of Automation*. Rethinking International Development series. Palgrave Pivot, Cham. https://doi.org/10.1007/978-3-030-30131-6_5
- [12] Maslakçı, A., Sürücü, L. (2024). Gender effects on depression, anxiety, and stress regarding the fear of COVID-19. *Trends in Psychol.*, 32: 152-164. <https://doi.org/10.1007/s43076-022-00227-x>
- [13] Hardoy, I., Schøne, P. (2010). Incentives to work? The impact of a 'Cash-for-Care' benefit for immigrant and native mothers labour market participation. *Labour Economics*, 17(6): 963-974. <https://doi.org/10.1016/j.labeco.2010.02.008>
- [14] Pripoaie, R., Cretu, C.-M., Turtureanu, A.-G., Sirbu, C.-G., Marinescu, E.Ș., Talaghir, L.-G., Chițu, F., Robu, D.M. (2022). A statistical analysis of the migration process: A case study—Romania. *Sustainability*, 14: 2784. <https://doi.org/10.3390/su14052784>
- [15] Haodong, Q., Irastorza, N., Emilsson, H., Bevelander, P. (2021). Integration policy and refugees' economic performance: Evidence from Sweden's 2010 reform of the introduction programme. *International Migration*, 59(1): 1-17. <https://doi.org/10.1111/imig.12813>
- [16] Rantop and Straton (R&S). (2022). *Telemunca sau munca si de acasă*. 33 de studii de caz. *Legislatie explicata. Modele de documente [Telework or work from home. 33 case studies. Legislation explained. Model documents]*. Bucharest: Rentrop&Straton Publishing House.
- [17] Oltean, O., Găvrus, G. (2018). Economic migration and challenges in an emerging Eastern European destination country: Evidence about immigrant labour market

- integration in Romania. *Social Change Review*, 16(1-2): 35-72. <https://doi.org/10.2478/scr-2018-0005>
- [18] Croitoru, A. (2020). Stimulating return migration to Romania: A multi-method study of returnees' endorsement of entrepreneurship policies. *Journal of Contemporary European Studies*, 29(2): 264-281. <https://doi.org/10.1080/14782804.2020.1824896>
- [19] Delcea, C., Bradea, I.A. (2017). Modelarea Prin Ecuatii Structurale în Economie. Cadru General și Studii de Caz. Editura Universitara. <http://doi.org/10.5682/9786062805609>
- [20] Wang, J., Wang, X. (2012). *Structural Equation Modeling: Applications Using Mplus*. Chichester: John Wiley & Sons. <http://doi.org/10.1002/9781118356258>
- [21] Pirtea, M., Botoc, C., Jurcut, C. (2014). Risk and return analysis: Evidence from emerging markets. *Transformations in Business & Economics*, 13(2B).