EDUCATION, WORKFORCE INTEGRATION, AND SOCIAL INCLUSION: HOW DOES ROMANIA COMPARE WITH THE EUROPEAN UNION?

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Abstract

Education and workforce integration are essential in the 21st century, particularly in discussions of sustainable economic growth and social cohesion. Furthermore, synergy between academic outcomes and labour market demands is crucial for fostering innovation, reducing unemployment, and maintaining competitiveness in the current economic landscape. Proper allocation of resources within the educational system not only enhances skill development but also improves the workforce's ability to adapt rapidly to technological advancements. This paper examines the performance of European Union countries in a single year within this sector, using seven key variables related to education and the workforce. Principal Component Analysis was conducted to reduce dimensionality and identify three main components that summarise the variance observed in the data. The findings reveal considerable differences among EU countries regarding the coordination between education and workforce demands, largely due to inconsistent investment in education. Additionally, based on the three main components identified, cluster analysis was performed, revealing distinct groups of countries with similar outcomes, including high-performing countries with well-integrated education and employment systems, and low-performing countries where poor resource allocation has limited employment adaptability and economic engagement. Overall, the evidence highlights the importance of policies that reduce disparities, promote talent development, and strengthen the link between education and workforce demands, ensuring that future challenges are met with resilience and prosperity.

1. Introduction

In Romania, differences in educational levels and the difficulty of integrating young people into the labour market are strongly associated with a high risk of social exclusion, similar to other EU countries (Eurostat, 2024). The purpose of this paper is to examine Romania's position within the EU in terms of youth unemployment and social exclusion. The study aims to identify groups of countries with similar performance and to formulate suggestions to reduce youth social exclusion and promote a smooth transition from education to the labour market.

To avoid discrepancies between young people and the labour market, and even society, and to achieve employment rate targets, policies must address both demand and supply sides. Public policies and European funding programmes need to focus on the quality of education, as well as the support and guidance of young

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people towards suitable employment. Quantitative targets for higher education graduates on the supply side are insufficient (Vasile & Anghel, 2015).

Redmond and McFadden (2023) show that NEET rates vary across EU countries, with some members, such as Greece, Spain, Italy, and Ireland, being more affected, especially after the 2008 crisis. Although rates have decreased over the past decade, they remain high in some countries, leading to serious economic and social consequences. The article indicates that NEET youth constitute a diverse group facing multiple disadvantages, such as poverty and social exclusion, and argues that reducing these rates could be achieved through publicly funded employment services and accessible childcare.

This paper is structured as follows: the second section provides a brief literature review, followed by the methodology and data description; the fourth section presents the results; and the final section contains the conclusions and main findings. The fourth section is divided into two subsections: the first presents the principal component analysis, and the second describes the clustering method applied after the principal component analysis.

2. Literature review

2.1 Effects on education and employment

Absences in late childhood have a long-term negative impact on educational attainment and labour market participation. According to Dräger et al. (2024), students who miss more school are more likely to have no qualifications, and missing five days at the age of ten increases the likelihood of having no qualifications by 5.7%. These absences also increase the probability of not being employed in adulthood, an effect that remains even after adjusting for other factors, but no significant relationship was found between absences and income level or duration of unemployment.

The study by Brekke (2014) suggests that students who leave school have lower probabilities of employment compared to those who complete upper secondary studies, regardless of ethnicity. Dropping out of school reduces the chances of full-time employment by 7.8% and part-time employment by 3.8%. The impact of dropping out on labour market participation is similar for both native-born and second-generation immigrant youth. Gender and socio-economic status also influence the results, as women are less likely to be in full-time employment, and young people with educated parents tend to remain in education longer.

Brunello and De Paola (2014) argue that policies to reduce early school leaving are justified on both equity and economic efficiency grounds. Education not only improves individual prospects in the labour market but also has positive social effects, such as reducing crime and improving health. Interventions targeting disadvantaged pupils may sometimes lead to lower individual benefits, but overall social returns to education can be much higher than private ones, making public investment worthwhile even when individual gains are modest.

2.2 Causes of early school leaving

Many students are employed to cover living expenses and tuition fees, but increased working hours have a negative effect on their academic performance. When students are dissatisfied with their major and disappointed by higher education, they tend to focus on finding a job instead of continuing their studies. Intense and long-term work is linked to higher early school leaving rates, mainly among students with poor academic performance and financial difficulties (Kocsis & Pusztai, 2020).

The study by Alexa and Baciu (2021) shows that international organisations such as UNESCO and UNICEF support education policies, but Romania continues to have high dropout rates, above the EU average. Between 2010 and 2018, some progress was made, but problems remain, especially regarding enrolment in primary and secondary education. The article identifies several causes of dropout, such as personal and family factors, school-related factors, and national issues, such as limited funding or school programmes that do not match labour market needs.

2.3 Romania's situation and policies

Early dropout issues persist several years later, as indicated by Eurostat statistics on early leavers from education and training. In 2024, 9.3% of young people aged 18 to 24 in the EU had at most lower secondary education and were not in higher education or vocational training (Eurostat, 2025). Furthermore, Eurostat notes that the proportion of early leavers from education and training ranges from 2% in Croatia to 16.8% in Romania (Eurostat, 2025), which is a significant barrier to smooth integration into the labour market.

Additionally, the OECD Reviews of Labour Market and Social Policies: Romania 2025 (OECD, 2025) highlights that Romania has developed measures aimed at improving young people's educational outcomes and skills, such as the National Programme to Reduce School Drop-out, ReCONECT, and an initiative to support NEETs. Although these initiatives have been launched, the report notes (OECD, 2025) that labour force participation remains lower (around 63% in 2023 for Romania) than the 70% average across OECD countries. Based on the above, Romania should not focus solely on launching initiatives but should also monitor transparently and realistically whether the measures taken are implemented and utilised.

3. Methodology

It is essential to understand how education, labour market conditions, and social vulnerability interact to explain differences in youth employment across the European Union. This paper adopts a quantitative approach to analyse the connections and possible similarities between EU countries, and to identify how the education system and social exclusion influence opportunities for young people. Therefore, we consider the following research questions relevant in this context:

RQ1: How are EU countries grouped in terms of education, youth employment, and social vulnerability?

RQ2: What similarities and differences can be observed between Romania and other countries regarding education, labour market integration, and risk of social exclusion?

RQ3: How do efficient economies, such as Germany, Belgium, and the Netherlands, facilitate the alignment between educational outcomes and labour market needs?

This analysis uses data from 2022 for all considered indicators, as this was the most recent year with complete information available for all EU states. Although more recent data exist for some indicators, they are incomplete across countries. The following indicators are collected from Eurostat: early school leaving (ages 18 to 24), and risk of poverty or social exclusion (ages 15 to 24). From the World Bank, we selected the following variables: not in education, employment or training; youth unemployment rate (ages 15 to 24); attainment of at least a Bachelor's degree; and employment rate.

We note that the Graduates indicator is defined as the percentage of tertiary education graduates within the total population. The number of tertiary education graduates and the total population are collected from Eurostat. For this indicator, as data for 2022 were not available for the Netherlands, we used data from 2021.

Principal component analysis (PCA) is used to reduce the dimensionality of the standardised dataset and to identify linear combinations of variables that explain the greatest variance in the data. This method has been employed in research on the alignment between education and labour market outcomes. Al Taweel (2020) used principal component analysis (PCA) as part of their methodology to examine the relationship between higher education outcomes and labour market requirements, demonstrating the method's relevance for analysing educational and employment indicators. PCA is a statistical method that transforms a large set of correlated variables into a smaller set of uncorrelated components, preserving most of the initial information and reducing dimensionality (Wei, 2019).

Based on the PCA results, the k-means algorithm is used to group countries into clusters with similar profiles of education, youth unemployment, and social vulnerability. K-means clustering assigns observations to k clusters by allocating each one to the nearest centroid, aiming to keep the clusters as

compact as possible. The optimal number of clusters is determined using the elbow method, which identifies The point at which adding more clusters does not significantly reduce the within-cluster variance.

The descriptive analysis (Table 1) provides information on central tendencies, measures of variability, and the shape of the data distribution, using indicators such as skewness and kurtosis. In other words, this analysis offers an overview of the data, which will be further elaborated below. The statistical analysis of European workforce integration indicators reveals particular patterns that reflect the interaction between educational outcomes and labour market performance. This section of the descriptive statistics aims to explore the relationships between the variables considered, such as early school leaving, NEET, and graduates.

Table 1. Descriptive statistics

Indicator	Mean	Standard Deviation	Kurtosis	Skewness	Range	Coefficient of Variation
Early School Leaving (ESL)	8.10	3.33	-0.33	0.35	13.50	41.10
Not in Education, Employment or Training (NEET)	9.59	3.28	0.35	0.54	14.26	34.21
Youth Unemployment Rate (YUR)	15.49	6.63	0.03	0.69	25.19	42.82
Attainment at least Bachelor	28.28	7.52	-0.56	0.06	27.05	26.57
Employment Rate (ER)	56.27	5.16	-0.17	-0.67	19.66	9.18
At risk of poverty or social exclusion (AROPE)	23.95	7.20	0.13	0.30	30.60	30.05
Graduates	0.93	0.32	1.79	1.08	1.51	34.11

Source: Generated by the authors using Excel (2025)

The early school leaving rate averages 8.10%, with a coefficient of variation of 41.10%, indicating noticeable differences between countries. The NEET rate is similar on average and shows moderate variability. Its distribution is slightly skewed to the right, meaning that in a few countries, values are higher than the overall mean.

The youth unemployment rate averages 15.49%, but there are considerable differences between countries. The skewness is positive, indicating that although most countries have rates similar to or lower than the average, some have much higher youth unemployment. The skewness coefficient is 0.69, indicating a moderate tilt to the right. The kurtosis coefficient for attainment of at least a Bachelor's degree is negative, suggesting that the distribution is flatter than a normal distribution, with values more dispersed rather than concentrated around the mean.

For the employment rate, the values are concentrated around the mean, with a coefficient of variation of 9.18%, indicating that the employment rate is similar across all countries. Some countries have above-average employment rates, as the distribution is moderately skewed to the left. The kurtosis value is -0.17, showing that the distribution is platykurtic but close to normal, with a few extreme values. The variability for AROPE is moderate, but the mean remains representative, as the coefficient of variation is less than 35%. The asymmetry is positive, meaning that a few countries have higher risks of poverty and social exclusion than others.

For graduates, the standard deviation is 0.32%, indicating moderate differences between countries, while the positive skewness suggests that most values are below the mean, with a few significantly higher values pulling the mean to the right. The kurtosis indicates a leptokurtic distribution, with values concentrated around the mean and heavier tails than a normal distribution.

4. Results

4.1 Principal component analysis (PCA)

In order to reduce dimensionality and identify patterns between the selected educational and labour market indicators, principal component analysis (PCA) was applied before the clustering procedure. In other words, PCA was used to simplify the data while retaining all relevant information that could reveal patterns among the countries included in this analysis.
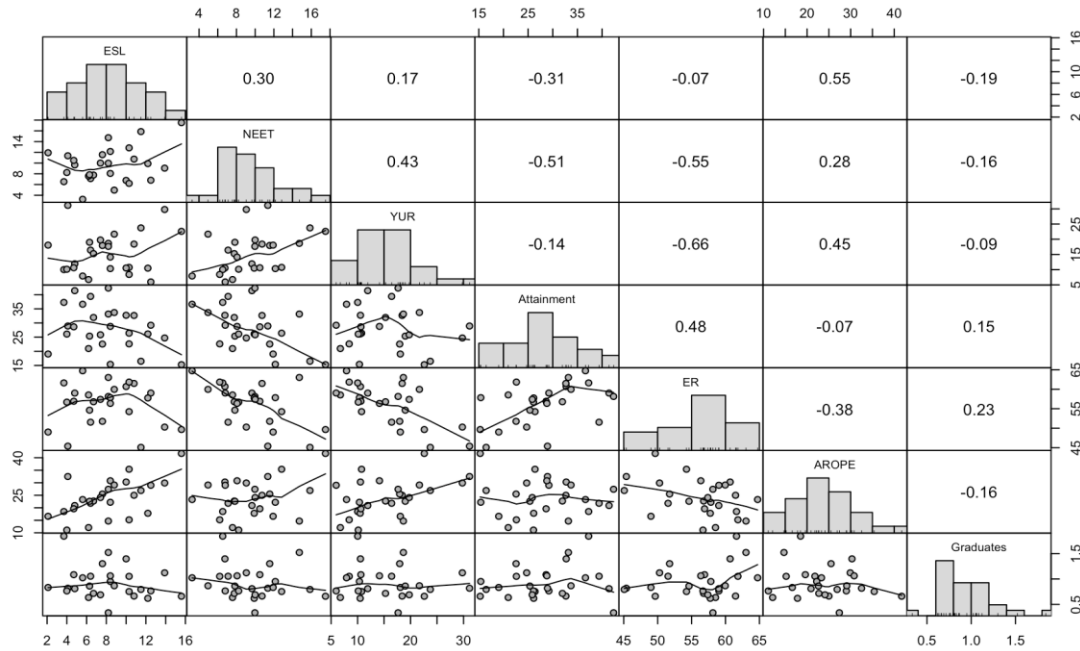
Figure 1. Scatterplot matrix of the initial variables
Source: Generated by the authors in RStudio with the psych package (2025)

Figure 1 was generated using the pairs.panels() function. This function provides an overview of the correlations between the indicators used in the analysis. The diagonal shows the distribution of each variable, the upper triangle displays the Pearson correlation coefficients, while below the diagonal are scatterplots that provide a comparative visual analysis between indicators.

Examining the NEET indicator, it can be observed that it has a moderate negative correlation with both Youth Unemployment and Employment Rate, suggesting that young people not in education or work are often connected to limited labour market outcomes. Higher levels of education are associated with higher employment and a lower risk of poverty and social exclusion, indicating the benefits of education. Early school leaving is positively correlated with AROPE, meaning that school dropout is linked to a higher risk of social exclusion. The study by Günay (2025) shows that NEET rates vary depending on the efficiency of public education spending, with expenditures not aligned with labour market needs potentially associated with higher rates.

Before applying PCA, standardisation was performed to eliminate the effects of variability differences between indicators and to ensure that each variable contributed equally to the formation of principal components. Without standardisation, variables with higher values would have dominated the PCA, causing the analysis to reflect only these variables rather than the overall patterns provided by all variables included in the analysis. After standardisation, the importance of the principal components can be examined, as shown in Table 2.

Table 2. The importance of Principal Components

	PC1	PC2	PC3	PC4	PC5	PC6	PC7
Standard deviation	1.7062	1.0854	1.0311	0.9448	0.67191	0.58599	0.40045
Proportion of Variance	0.4159	0.1683	0.1519	0.1275	0.06449	0.04905	0.02291
Cumulative Proportion	0.4159	0.5842	0.736	0.8635	0.92804	0.97709	1

Source: Generated by the authors in RStudio with prcomp() function (2025)

Table 2 presents the eigenvalues of the principal components, the proportion of variance explained by each component, and the cumulative proportion of variance. The first component retains most of the variance, and the first three components together explain 73.6% of the total variance in the original dataset, which is a good proportion for the analysis and justifies retaining these three components. The last four components retain only a small amount of information, with the fourth principal component contributing less than 13% additional information, and the remaining components each contributing less than 7%.
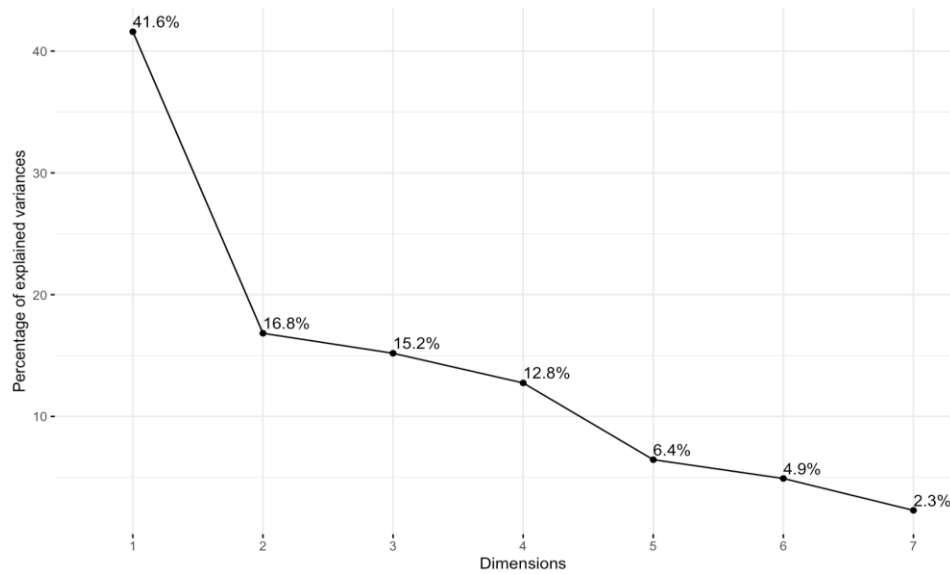

Figure 2. Scree plot of principal component variances
Source: Generated by the authors in RStudio with the factoextra package (2025)

The scree plot in Figure 2 shows how the seven principal components account for the variance distribution in the applied PCA analysis. The data indicate that the first component retains 41.4% of the total variance, while from the fourth component onwards, only a small proportion of information is explained. The cumulative variance of the first three components exceeds 76% of the total variation, indicating that these components retain a significant proportion of the total variability. Additionally, the elbow of the scree plot is located between the third and fourth components. According to the Evrard criterion for determining the number of principal components, the first three indicators are selected. Furthermore, based on Kaiser's criterion, the first three components should be retained, as their eigenvalues are greater than 1.

After identifying the optimal number of principal components, the correlation matrix between the initial indicators and the principal components was computed, as shown in Figure 3, to associate the variables with the main three dimensions. Figure 3 shows that the first principal component is strongly correlated with NEET and ER, suggesting that this dimension captures challenges related to youth workforce integration. The first component is therefore labelled Challenges for Youth Employment. The second principal component shows strong negative correlations with ESL and AROPE, indicating that regions prioritising education have better retention systems, and consequently, the risk of poverty or school dropout is lower. Moreover, this dimension provides insights into the effectiveness of policies that protect young

people from poverty and simultaneously reduce early school dropout. This dimension, best described as Educational Social Integration, highlights the link between educational development and social inclusion. The last principal component has a moderate positive correlation with YUR and attainment, and a weak correlation with graduates, indicating the relationship between education and youth unemployment. Even if young people have a high level of education, in some regions they may still face challenges in securing employment. Therefore, the correlations reflect a potential mismatch between labour market demands and educational outcomes, and this principal component is referred to as Educational Employment Alignment.
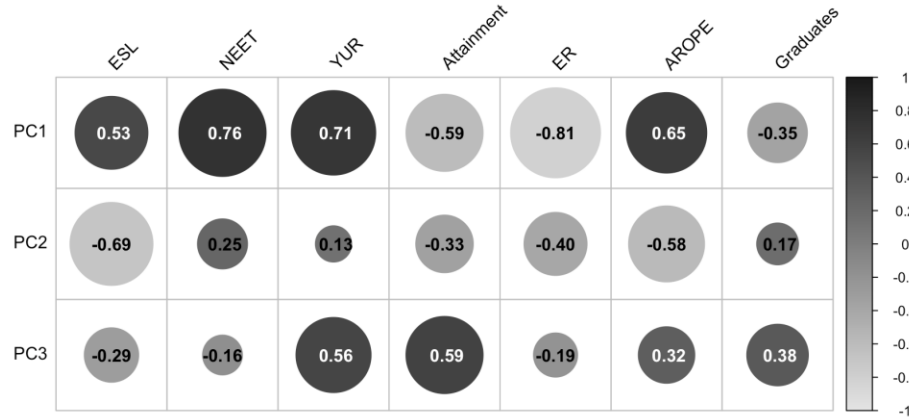
Figure 3. Correlation between principal components and initial indicators
Source: Generated by the authors in RStudio with the corrplot package (2025)

The results in Table 3 are used in order to determine the principal components' scores, using the following formulas:

$$\begin{cases} PC1 = 0.311 \cdot ESL + 0.445 \cdot NEET + \ldots + (-0.208) \cdot Graduates \\ PC2 = -0.632 \cdot ESL + 0.230 \cdot NEET + \ldots + 0.160 \cdot Graduates \\ PC3 = -0.286 \cdot ESL - 0.153 \cdot NEET + \ldots + 0.367 \cdot Graduates. \end{cases} \quad (1)$$

The scores are obtained by projecting the standardised initial indicators onto the principal components.

Table 3. Principal components eigenvectors

	PC1	PC2	PC3
ESL	0.311	-0.632	-0.286
NEET	0.445	0.230	-0.153
YUR	0.417	0.121	0.546
Attainment	-0.348	-0.304	0.576
ER	-0.473	-0.365	-0.188
AROPE	0.379	-0.531	0.308
Graduates	-0.208	0.160	0.367

Source: Generated by the authors in RStudio (2025)

To assess the contribution of each variable, a PCA biplot has been generated. Figure 4 provides context for the first two dimensions, previously defined, based on the correlation matrix from Figure 3. As shown in Figure 4, the first dimension explains 41.6% of the total variation and is the main indicator of the challenges faced by youth in the labour market. The second dimension accounts for 16.2% of the variability and reflects how countries address social problems through education. Examining the proximity within the correlation circle, we observe that most variables are well represented in the two-dimensional space, indicating strong contributions to the principal components. This analysis therefore highlights the contrast between countries

with functional educational-employment systems and those unable to align educational provision with labour market demand.
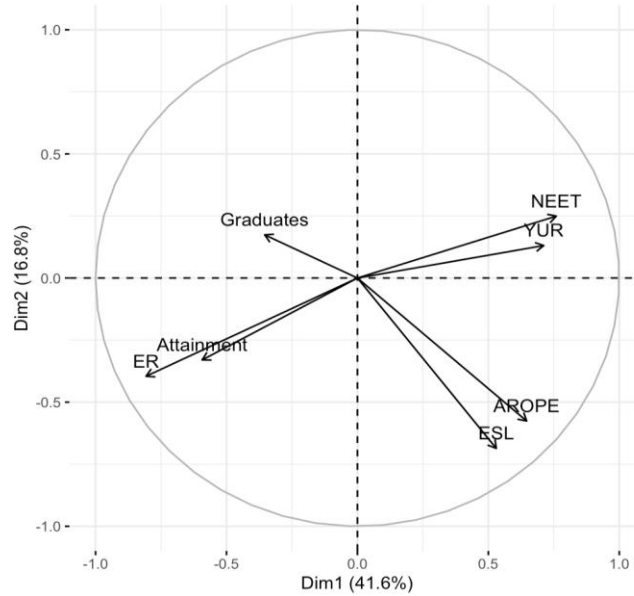
Figure 4. PCA biplot: variable contribution analysis
Source: Generated by the authors in RStudio with the factoextra package (2025)

Table 4 provides information on the confirmatory factor analysis (CFA) conducted to validate the factorial structure previously identified through PCA. Harrington (2009) states that a good model fit should meet the following criteria: SRMR (standardised root mean square residual) values close to 0.08 or below, RMSEA (root mean square error of approximation) values close to 0.06 or below, and CFI (comparative fit index) and TLI (Tucker-Lewis index) values close to 0.95 or greater. In addition, the Chi-square goodness of fit test should not be significant, with p > 0.05, indicating that the proposed dimensional structure accurately represents the relationships among the variables. These results indicate a good overall model fit, confirming the robustness of the PCA findings.

Table 4. Confirmatory factor analysis

| Fit index	χ^2 (df=11, p=0.248)	CFI	TLI	RMSEA	SRMR
Value	13.73	0.942	0.889	0.096	0.077

Source: Generated by the authors in RStudio with the lavaan package (2025)

4.2 Cluster analysis

Based on the results of the PCA, the first three principal components have been selected for further analysis, as they capture a sufficient proportion of the total variance. These components serve as the input variables for the clustering analysis, which aims to group countries with similar profiles. After the groups are formed, the defining characteristics of each cluster will be established.

The results of the Elbow method that has been applied to the first three components in order to establish the optimal number of clusters are illustrated in Figure 5. The Y axis represents the total within sum of squares (WSS), which measures how far each point in a cluster is from its centroid. The X axis represents the number of clusters, which in our case ranges from 1 to 10. The inflection point is the elbow that indicates the optimum number of clusters to be chosen for the analysis. The plot shows a steep decrease from k=1 to k=3, followed by a much slower decrease from k=3, meaning that the plot becomes almost linear, and it suggests that adding more clusters would not bring any advantages. This means that EU countries can be efficiently grouped into three clusters.
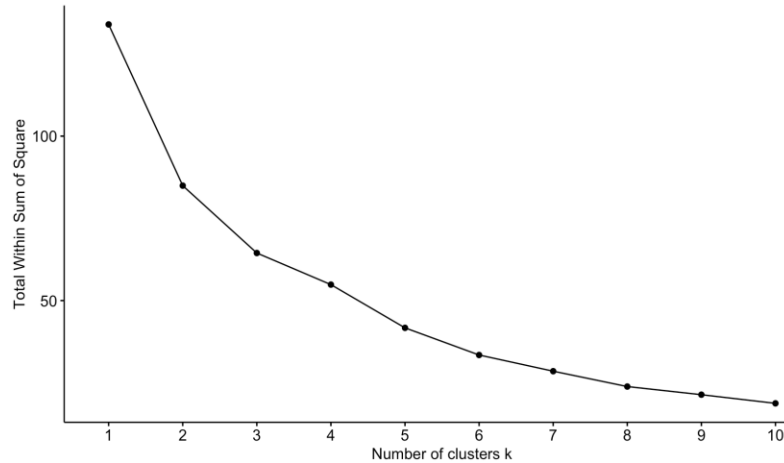
Figure 5. Total within sum of squares plot
Source: Authors' own research using RStudio with factoextra package (2025)

RQ1: How are EU countries grouped in terms of education, youth employment, and social vulnerability?

During the analysed period, the EU countries can be grouped into three clusters based on the relevant indicators considered, such as NEET, youth unemployment, and social vulnerability. The first cluster comprises Belgium, Denmark, Germany, Estonia, Ireland, Latvia, Lithuania, Luxembourg, the Netherlands, Finland, and Sweden. The second cluster consists of Czechia, France, Croatia, Cyprus, Hungary, Malta, Austria, Poland, Portugal, Slovenia, and Slovakia. The third cluster includes Bulgaria, Greece, Spain, Italy, and Romania.
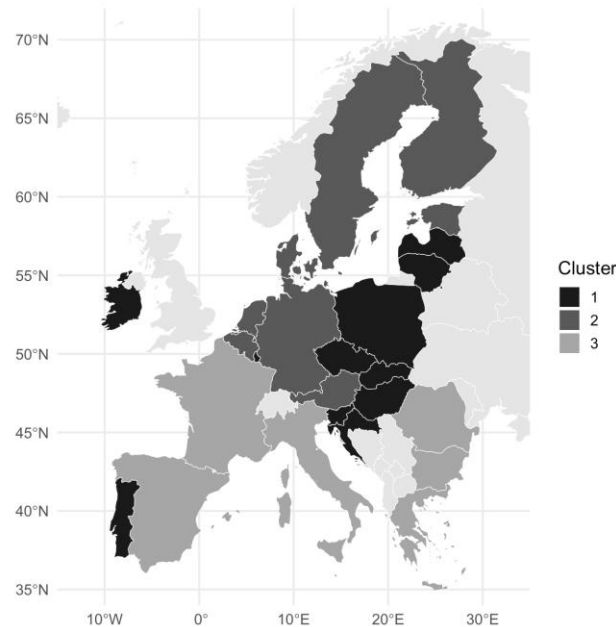
Figure 6. Clustering results based on the first three principal components
Source: Generated by the authors in RStudio with the packages ggplot2, sf, and ggpattern (2025)

Figure 6 illustrates the output of the applied clustering method, in order to group the countries with similar characteristics. For a more comprehensive understanding of the clustering results in Figure 6, the centroids

of the clusters are computed based on the retained principal components and the resulting values are shown in Table 5.

Table 5. Cluster centroids

Cluster	Challenges for Youth Employment (PC1)	Educational Social Integration (PC2)	Educational Employment Alignment (PC3)
1	-0.954	-0.687	0.492
2	-0.318	0.749	-0.646
3	2.800	-0.135	0.339

Source: Authors' own research using R Studio (2025)

RQ2: What similarities and differences can be observed between Romania and other countries regarding education, labour market integration, and risk of social exclusion?

The third cluster comprises Romania, Bulgaria, Greece, Spain, and Italy, and represents the most challenging situation for youth employment among all 27 EU countries. This group faces the greatest difficulties in integrating young people into the labour market. The high centroid value for the first principal component, as shown in Table 5, indicates serious youth employment problems, with many young people neither in education nor training and low employment levels. This suggests that young potential is not fully utilised and that there are structural barriers to the transition from school to work.

The second component score is -0.135, indicating poor social inclusion and education. It is characterised by early school leaving and an increased risk of poverty and social exclusion, suggesting that institutions do not adequately support young people. The score of the third principal component points to a mismatch between education and labour market needs, where tertiary education graduates do not necessarily find employment, thus contributing to youth unemployment.

Romania shares characteristics with southern EU countries, such as incomplete and inefficient labour market institutions, which make it more difficult for young people to find stable jobs and transition smoothly from education to work. In these countries, young people are often excluded from the labour market, and poor coordination between education and social inclusion further complicates the situation for youth. Schools and universities do not always provide the skills that employers require.

Policies should focus on active labour market programmes for youth, improved vocational education with employer involvement, and social protection for vulnerable people. In the European context, cluster 3 highlights that youth employment challenges in Romania are not unique, but part of wider inequalities in the EU. This demonstrates the need for strong policies to improve youth employment and create more opportunities for stable and secure jobs, while providing adequate social support for vulnerable youth.

Eichhorst et al. (2012) noted that although the vocational schooling system exists in most EU countries, in southern European countries it plays only a marginal role (around 4% in Spain at that time), compared to Germany, where vocational education and training (VET) plays a significant role (around 74% in 2012). With this reference, we emphasise that the results obtained are the product of years of sustained effort, and countries currently facing difficulties in this area could learn from the mistakes made by high-performing countries to adjust their educational approaches over time.

Furthermore, supporting our findings, Assmann and Broschinski (2021) found that in some EU countries the main challenges are high unemployment rates and youth discouragement, and that policies must be adapted to each country. Career guidance and active labour market policies are essential for reducing the NEET rate.

RQ3: How do efficient economies, such as Germany, Belgium, and the Netherlands, facilitate the alignment between educational outcomes and labour market needs?

The first cluster includes countries such as Germany, Denmark, Finland, and Belgium, which achieve the best results in youth employment, as indicated by the centroid value for the first principal component. These countries have high employment rates and low NEET rates, enabling young people to find jobs and participate in the workforce.

The centroid value for the second principal component is low, indicating that although these countries have good employability, they still face challenges in retaining young people in education and ensuring social inclusion. Their strong labour markets allow young people to find employment even without completing higher education.

Despite these challenges, these results have been achieved over time. Reports such as Spotlight on Vocational Education and Training: Findings from Education at a Glance 2023, developed by the OECD (OECD, 2023), indicate that holding a vocational upper secondary qualification leads to a higher employment rate compared to a general qualification at the same level. Additionally, the report shows that countries such as Germany, the Netherlands, and Denmark, which are also included in the first cluster in the analysis above, organise vocational programmes with more students per teaching staff and higher expenditure per student than general programmes (OECD, 2023, p. 21). Furthermore, as the OECD report states, Germany has enhanced and updated higher vocational education and training by implementing the amendment of the German Vocational Training Act in 2020 (OECD, 2023, p. 19). The main aim of this amendment was to promote vocational upskilling by adding levels in VET designed to equate vocational qualifications with academic ones and ensure they are recognised internationally (OECD, 2023, p. 19).

The labour market is increasingly difficult to access for some groups of young people, especially those who leave education early and disabled youth. Policies focus on vulnerability and employability instead of addressing the underlying causes, which can reinforce stereotypes about problematic youth (Jørgensen et al., 2019).

A more balanced situation for youth employment exists in the second cluster. These countries maintain lower NEET rates and better employment outcomes for young people compared to the first group of countries. However, their performance does not match that of the top countries, leaving room for improvement in ensuring a smooth transition from school to work.

The centroid of the third component indicates that, despite strong educational performance, these regions face challenges in linking educational outcomes to employment. While young people remain in education and obtain qualifications, there are difficulties in converting these achievements into jobs. This mismatch suggests that educational systems are not fully aligned with labour market demands. Countries such as Czechia, Hungary, Poland, and Slovakia exemplify strong educational systems that nevertheless struggle to integrate youth into the labour market. According to the previously mentioned OECD report, most countries in the second cluster have developed vocational programmes with fewer students per teaching staff and higher expenditure per student than general programmes (OECD, 2023, p. 21). Furthermore, France has sought to make this sector more attractive through the Act for the Freedom to Choose One's Future Career, in place since 2018 (OECD, 2023, p. 20). Based on the results of this analysis, we can affirm that these efforts have not been in vain.

With all this, France and countries with a similar profile, such as Austria, implement public programmes that support both education and employment but still face pressure in aligning labour market needs with educational outcomes. Overall, the second cluster has solid education and social protection systems, but policies should focus on better matching education to employment.

5. Conclusions

This paper shows that Romania is in the cluster facing the greatest challenges regarding youth unemployment, alongside Bulgaria, Greece, Spain, and Italy. High unemployment rates and a large number of young people not in education or training are among the main issues Romania faces, as well as insufficient support for youth entry into the labour market. In contrast to countries in the first cluster, such

as Germany and Belgium, which successfully integrate education, social inclusion, and labour policies, Romania's systems are misaligned. Poland and Czechia, in the second cluster, demonstrate that progress is possible when policies better connect education to employability. Additionally, countries in the first two clusters tend to place particular importance on vocational education and training, while the behaviour of countries in the third cluster may indicate a growing interest in this area in the future. However, as the current analysis covers only one year, longitudinal data are needed to confirm this trend.

In Romania, current policies make it more difficult for young people to enter the workforce after graduation, as they do not promote workforce training, upskilling, or reskilling (OECD, 2025). Moreover, the educational system complicates matters because it does not equip young people with the basic and vocational skills needed to meet workforce demands (OECD, 2025). Young people face difficulties when trying to enter the labour market, and according to the OECD Reviews of Labour Market and Social Policies: Romania 2025, the employment rate of young people in Romania was 19% in 2023. The report also finds that poor coordination between education and social inclusion further complicates the situation for youth and the future of society, especially as the working-age population is shrinking rapidly (OECD, 2025).

Considering the early leavers from education and training rate for Romania (16.8%) reported by Eurostat (2025), as well as the OECD report (2025), policies should focus on modernising the VET system, particularly in rural areas. They should also prioritise the development and acquisition of basic and vocational skills for young people to help them achieve the skills required in the workforce. This analysis suggests that Romania could improve its education policies and strengthen the connection with the labour market by following the example of countries in the first cluster, which have succeeded in increasing youth employment rates. At the same time, Romania should place particular emphasis on investment in the vocational education and training system, given the challenges posed by technological advancement. However, this analysis is based on aggregated data for a single year, which allows for the identification of correlations and patterns but cannot provide causal evidence. Therefore, conclusions regarding the success of policies, such as career guidance, should be supported by future research.

The first group of countries, such as Germany, Denmark, and Finland, shows that high employment rates can be achieved with strong policies in education and social inclusion. Although employment rates are high and NEET rates are reduced, some young people leave school, indicating that the labour market is strong and absorbs youth even without graduation. However, this absorption is due to vocational education, as previously mentioned in the OECD report from 2023.

The countries in the second group have average employment rates and relatively few NEETs. Well-developed educational systems and social support help young people remain in school and avoid social exclusion. However, there is a gap between what young people learn and what is required in the labour market, indicating that their skills and qualifications do not always match employers' needs. Czechia, Hungary, Poland, and Slovakia demonstrate that a good educational system does not always ensure a smooth transition to employment.

Future research could analyse the impact of specific educational policies that help increase youth employment and social inclusion, as well as how these countries develop over time. Furthermore, given the recent interest in vocational education and training, subsequent studies could investigate the progress made by countries in the third cluster in the near future.

Acknowledgments

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