

Influence of education on improving the employment prospects of individuals with disabilities

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Abstract. The occurrence of disparities in income among various social groups is defined by the economic term *social inequalities*. In the subject literature, this term is often used in association with the individuals with disabilities and their uncertain position in the job market or the barriers that they face in the education process. Thus, this paper attempts to fill an existing research gap by answering the research question of how the employment level will change among individuals with disabilities with a specific level of education if the number of individuals with disabilities with higher education changes. The main goal of the conducted study is to analyse the impact of the population size of individuals with disabilities of working age on their employment level in Poland, taking into account differences in the level of education. Particularly, the focus is on the relationships between the level of education and earning potential. To obtain answers to the research question, a national and international literature analysis was conducted, and in the empirical part, a panel regression model was employed. The results of the panel regression analysis indicate a significant impact of the interaction between the population of individuals with disabilities and the level of education on employment in Poland. Education plays a significant role in the employment outcomes of individuals with disabilities, and this dependency is also influenced by the demographic factor of population size. The interpretation of indicators may indicate a significantly higher demand for vocational and technical skills in the labour market, compared to contributing to higher employment rates of individuals with disabilities possessing these specific qualifications.

Keywords: occupational activity, education, individuals with disabilities, human resource management, Poland

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1. INTRODUCTION

Youth with disabilities constitute one of the most marginalized groups in terms of access to education (Walton, 2023). The employed individuals with disabilities are also known to experience professional segregation, thereby limiting their earning potential (Maroto & Pettinicchio, 2014). Recognizing the significance of activating individuals with disabilities in terms of social and economic benefits is crucial for addressing the dual challenges of educational and occupational exclusion. Entering the labor market with skills comparatively weaker than their able-bodied counterparts places individuals with disabilities at a significant disadvantage, resulting in reduced wages (Azevedo, 2020). However, education is the first stage of the societal inclusion process and a pivotal element in facilitating further integration into the labor market (Tamayo et al., 2017). Therefore, a fundamental change in the approach to education should involve abandoning the use of the term “individual with disabilities” and replacing it with the concept of special educational needs. This transition is imperative due to societal shifts concerning disability perception. Historically, individuals with disabilities were delineated by the medical model, often portrayed as wheelchair users, with any deviation from normative functioning pathologized. Presently, the interactive model prevails, conceptualizing disability as divergence and advocating for alterations in societal interactions to mitigate such disparities (Klyszcz, 2007).

The education of individuals with disabilities holds paramount importance for their future vocational attainment and economic prosperity. Given the aging demographics and escalating disability prevalence, fostering vocational engagement and enhancing educational access emerge as formidable challenges for policymakers and social policy practitioners (Stolarska-Szeląg & Jarzabek, 2022).

The issue of accessibility to education is addressed through the implementation of programs to adapt educational institutions to the needs of individuals with disabilities. Attention should also be paid to the wide range of supplementary educational services for this social group, financed by EU funds. Employers, on the other hand, can count on support from the State Fund for the Rehabilitation of Disabled Persons in the form of wage subsidies and subsidies for additional training. As the results of the conducted analysis of foreign literature show, the issue of access to education and employment for individuals with disabilities, in line accordance with their education and skills, is a problem that affects all continents. Therefore, questions arise about the structure and principles of the support offered in obtaining the necessary qualifications and assistance in organizing a career path in such a way that these actions lead to an increase in the vocational activity of individuals with disabilities and their earning potential. In the context of the identified research gap, an attempt was made to answer the following research question: how the employment level will among individuals with disabilities with a certain level of education change if the number of individuals with disabilities with higher education changes?

The main goal of the conducted study is to analyze the impact of the population size of individuals with disabilities of working age on their employment level in Poland, taking into account differences in the level of education. The authors wanted to pay special attention to the relationships between the level of education and earning potential of this social group. The study covered the period from 2013 to the first half of 2020.

2. LITERATURE REVIEW

Individuals with disabilities represent a social group that is in a disadvantaged position on the labour market, as evidenced by the fact that the employment rate of this group is three times lower than that of

able-bodied individuals (Stolarska-Szelag, Jarzabek, 2022). Some authors (Croydon, Nind, 2023) have also demonstrated that these individuals earn less, and the conditions of their employment conditions are not as favorable as those of other workers (Balo, 2023). Maintaining the occupational activity of each individual is crucial to prevent economic and social imbalances. According to Balo (2020), unfavourable working conditions for individuals with disabilities are deeply rooted and persistent. In Poland, persuading employers to employ individuals with disabilities on equal terms with other employees is mainly based on the reimbursement of wages by the National Fund for the Rehabilitation of Disabled Persons (Państwowy Fundusz Rehabilitacji Osób Niepełnosprawnych – PFRON) and a system of fines imposed on employers who do not employ workers with a disability certificate. The industry within which a company operates plays a pivotal role in shaping employment dynamics (Sozańska, 2013). Entrepreneurs make decisions regarding employment guided by the qualifications available and the potential for productive labour (Nicińska-Kurowska et al., 2009), with a primary focus on economic considerations. Entrepreneurial commitment to implementing the principles of social responsibility not only benefits the recipients of socially responsible actions but can also contribute to increased sales and profits for the company (Kiliańska, Pajęcki, 2022). Relying solely on purely economic arguments for employment conditions seems irrational. Among the barriers to employment most often cited by entrepreneurs are inadequate infrastructure in the company, changing regulations on employment and employer responsibilities, and, most importantly from the perspective of the research conducted in this study, inadequate professional qualifications of individual with disabilities (Sozanska, 2013).

Pettinicchio and Maroto (2017) pointed out that individuals with disabilities may face barriers in accessing education, which may negatively affect their earnings compared to the rest of society. The importance of this issue is high, as it is a global concern. As study of higher education curricula in Australia (Poed et al., 2023), found that despite legal obligations to ensure equal rights for students with disabilities compared to their non-disabled peers, they still face barriers in terms of access and engagement from teachers and peers. The goal of educational institutions should be to provide conditions for development, not just survival. Research conducted in Africa (Rolle et al., 2020) confirms the impact of public-private partnerships and disability policies on their education and entrepreneurship. Entrepreneurship plays a crucial role in the integration of these individuals into the economy. Liguori et al. (2019) emphasise the importance of educating individuals with disabilities in entrepreneurship. Education is an effective measure to increase entrepreneurship and open up earning opportunities (Dakung et al., 2019).

The most significant changes in the employment of individuals with disabilities have taken place in Japan, where, until recently, the majority of the population was employed in manual jobs. The reform of the education system and the improved accessibility of universities have contributed to an increase in recruitment to higher education. The number of individuals with disabilities in higher education also increased. A significant improvement in access to the labour market was observed. In addition, it was found that individuals with disabilities, become more aware of their abilities after receiving education. Consequently, securing employment is no longer the sole indicator of their social rehabilitation, which now takes place at the level of job satisfaction. The financial deficit in the social security system and the labour market makes it imperative to introduce and maintain employees with disabilities in the job market from the perspective of the national economy (Mithout, 2021).

In Poland, individuals with disabilities are able to benefit from a number of state-sponsored programmes designed to support higher education. These include the PRFON programme – Active Local Government, Module II, and training support financed by European Union funds. Business owners have the option of benefiting from subsidies for training employees with disabilities if the objective is to change professions, requalify, or enhance qualifications (<https://www.gov.pl/web/gov/skorzystaj-z-dofinansowania-do-organizacji-szkolen-dla-pracownikow-z-niepełnosprawnościa>). Despite the availability

of proposed forms of assistance in employment or wage subsidies for workers, the number of individuals with disabilities who are occupationally active remains unsatisfactory. Consequently, it is imperative to modify existing support mechanism at the educational and employment levels in order to facilitate full participation in society for these individuals. One avenue for improvement in this area may be found in the “Strategy for Persons with Disabilities 2021–2030,” which was adopted by resolution No. 27 of the Council of Ministers on February 16, 2021 (Official Journal of Laws, item 218). This strategy prioritizes “Labor”. The successful implementation of the Strategy’s activities may result in increased occupational activity for individuals with disabilities in the future (Ombudsman, <https://bip.brpo.gov.pl/pl/content/niepelnosprawnosc-male-szansy-odpowiednie-zatrudnienie-rp-mrips-odpowiedz>).

3. METHODOLOGY

The study of disabilities in the education and employment process is an interdisciplinary field of study. On one hand, it emphasizes the impact of disabilities on educational experiences and identifies potential avenues for improvement and better alignment of educational services. Conversely, it provides guidance to entrepreneurs on the utilization of the potential of individuals with disabilities for organizational growth, with a particular focus on the realms of management and quality sciences. The analysis of the potential for individuals with disabilities to participate in the labour market, in conjunction with, the reduction of costs in the social security system, provides the opportunity to situate the subject matter under consideration within the field of economic sciences. The principal objective of the study is to analyze the impact of the population size of individuals with disabilities of working age on their employment level in Poland, taking into account differences in the level of education. Particularly, attention the focus is to the relationships between the level of education and earning potential. The study encompasses the period from 2013 to the first half of 2020.

The choice of time series is dictated by the fact that from Q1 2021 onwards there is a change in definition - the questions on activity in the survey refer to persons aged 15-89, the definition of employed has changed, which ultimately affects the number of employed, unemployed and inactive persons and indicators. Data from 2021 onwards are not comparable with previous series.

The research question is as follows: how the employment level will among individuals with disabilities with a specified level of education change if the number of individuals with higher education and disabilities changes.

Furthermore, a research hypothesis is proposed: There is a correlation between the level of education among individuals with disabilities and their employment rate, which is further influenced by the population's size.

The study utilized secondary data analysis, drawing on existing data from the report Survey of Economic Activity of the Population (Badanie Aktywności Ekonomicznej Ludności – BAEL). This quarterly survey employs a representative method, conducting partial surveys on a random sample, thereby allowing for the results to be generalised to the general population. BAEL follows a continuous observation method, covering 1/13 of households each week in a quarter (Stolarska-Szeląg, Jarząbek, 2022).

The survey encompasses a cohort of individuals with disabilities as defined in the Act of August 27, 1997, on vocational and social rehabilitation and employment of persons with disabilities (Journal of Laws of 2016, item 2046, as amended) (2016), who possess a disability certificate or an equivalent certificate. The formation of groups was also informed by the LFS classification rules.

The analysis included a review of the results of the Basic Education Assistance for Learning Disability (BAEL) program, which pertained to individuals of working age who have disabilities, with a focus on their level of education. The study encompasses a number of categories, including:

- the number of individuals with disabilities of working age is comprised of both disabled men aged 18-64 and disabled women aged 18-59, differentiated based on their educational level, classified into five categories:
 - higher education,
 - post-secondary and vocational secondary education,
 - general secondary education,
 - basic vocational education,
 - middle school, incomplete primary and incomplete primary;
- the employment rate of individuals with disabilities of working age (calculated as the percentage of employed individuals in a given education category compared to the overall population within that category) (CSO, 2023).

4. STATISTICAL ANALYSIS

The statistical analyses were conducted using the R programme (version 4.3.1; R Core Team, 2023). The characteristics of the distributions of numerical variables were subjected to a comprehensive examination through the reporting of descriptive statistics. These statistics included measures of central tendency (mean, median), measures of position (quartiles), as well as measures of asymmetry (skewness) and distribution shape (kurtosis). The stationarity of time series was based on the augmented Dickey-Fuller test (Said, Dickey, 1984). The cointegration of the population parameter of individuals with disabilities of working age in Poland and the employment rate was tested using the Johansen procedure for vector autoregressive models (Johansen, 1988, 1989, 1991), (Osterwald-Lenum, 1992). In the context of the performed statistical analysis conducted, a significance level (α) of 0.05 was adopted, indicating an acceptable risk of a 5% Type I error (rejecting the true null hypothesis).

Analyses were conducted to assess the impact of the population size of individuals with disabilities of working age in Poland on their employment level. A panel regression model was employed (Croissant, Millo, 2018b). A two-way fixed-effects model was employed. The model enabled the control of fixed effects at two levels: units (education levels) and time (time points in the period from 2013 to 2020, with a three-month interval). This approach enabled the model to account for both unit-specific characteristics that remained constant over time and general time trends affecting all units in a uniform manner.

The employment factor was incorporated into the model as a moderating variable, enabling estimation of the interaction effect between the population and each education level, in addition to the main effect of the population variable. The education indicator was considered as a categorical variable, with individuals with higher education serving as the reference group due to the highest employment rate observed in this group.

The two-way model, presented in the form of a multilevel model, is based on the following equations (1)-(5):

The first level of analysis, or time level, is defined as follows:

$$employment_{tij} = \beta_{0j} + \beta_{1j} \cdot population_{tij} + \beta_{2j} \cdot (population_{tij} \times education_{tij}) + e_{tij}, (1).$$

Where: $employment_{tij}$ – employment for unit i at time t for education level j ; $population_{tij}$ – population of people with disabilities for unit i at time t for education level j ; $education_{tij}$ – education level j for unit i at time

t ; $population_{ij} \times education_{ij}$ – interaction between population of people with disabilities and education level for unit i at time t ; β_{0j} , β_{1j} , β_{2j} , β_{3j} – model parameters at time level; e_{ij} – random error at the time level.

The second level, or unit level, is defined as follows: $\beta_{0j} = \gamma_{00} + \gamma_{01}.education_j + u_{0j}$, (2)

$$\beta_{1j} = \gamma_{10} + \gamma_{11}.education_j + u_{1j}, (3)$$

$$\beta_{2j} = \gamma_{20} + \gamma_{21}.education_j + u_{2j}, (4)$$

$$\beta_{3j} = \gamma_{30} + \gamma_{31}.education_j + u_{3j}, (5),$$

where γ_{00} , γ_{10} , γ_{20} , γ_{30} – unit-level constants. γ_{01} , γ_{11} , γ_{21} , γ_{31} – unit-level education effects. u_{0j} , u_{1j} , u_{2j} , u_{3j} are random errors at unit level.

4.1. Characteristics of the examined sample and descriptive statistics of distributions

The dataset analysed comprised five cross-sectional units representing different levels of education. The data were collected over a period of 30 quarters spanning from 2013 to 2020. This resulted in a total of 150 observations. The examined dataset also included two numerical variables representing the population size of people with disabilities and the employment rate. Table 1 presents the descriptive statistics of the variables tested during the period 2013-2020 (first half-year).

In the period between 2013 and 2020 (the first half of the year), the largest proportion of individuals with disabilities in the working age group had completed secondary general education. This group also exhibited the greatest variability in population size (SD = 70.97 thousand), indicating a high degree of diversity in the number of individuals over time. Conversely, individuals with lower levels of education, such as those who have completed junior high, primary, or incomplete primary education, constituted the smallest population. This observation may indicate that individuals with disabilities in working age are less likely to have completed only these lower levels of education.

Table 1
Population of people with disabilities of working age in Poland in 2013 – 2020 (1st half), in thousands, n = 30

Education	M	SD	Mdn	Min.	Max.	Sk.	Kurt.	Q1	Q3
Higher	176.00	23.19	182.00	135.00	233.00	0.02	-0.58	154.25	194.00
Post-secondary and vocational secondary	336.97	19.92	338.00	290.00	374.00	-0.20	-0.54	323.75	348.75
Middle school, primary and incomplete primary	122.97	9.00	122.50	105.00	141.00	0.15	-0.96	116.00	128.75
Secondary, of general education	696.10	70.97	686.50	584.00	792.00	-0.12	-1.54	634.00	762.50
Basic vocational training	421.83	48.05	418.00	343.00	494.00	0.09	-1.53	383.00	465.75

Annotation. *Sk.* – skewness; *Kurt.* – kurtosis; *Q1* – first quartile (25%), *Q3* – third quartile (75%).

Source: Authors' results.

All groups – from individuals with higher education to those with vocational education – exhibited platykurtic distributions, indicating that the distributions were flatter than a standard normal (Gaussian) distribution. Platykurtosis suggested greater variability in the data, indicating a wider range of values. In each

educational group, there was more diversity in the number of individuals with disabilities than one might expect in the case of a perfectly “normal” distribution.

Furthermore, all groups exhibited a symmetrical distribution, as evidenced by skewness values that were close to zero. The mean, median, and mode values for each group were approximately equal, and the data were distributed evenly on both sides of the mean. No extreme values (outliers) that significantly deviated from the mean were observed, indicating that these populations remained relatively stable over the studied period.

Table 2 presents the results of the analysis of diversity for individual variables tested in the sample taken for individuals with disabilities of working age in Poland from 2013 to 2020 (first half), expressed as a percentage and with a sample size of 30. The data presented in Table 2 indicates a clear correlation between the employment rate of individuals with disabilities of working age in Poland from 2013 to 2020 and the level of education attained.

Table 2

Employment rate of people with disabilities of working age in Poland in 2013 – 2020 (1st half),
%, n = 30

Education	M	SD	Mdn	Min.	Max.	Sk.	Kurt.	Q1	Q3
Higher	51.43	7.30	50.80	40.30	67.10	0.42	-0.87	45.90	56.32
Post-secondary and vocational secondary	30.98	3.47	30.40	24.40	37.10	0.08	-1.07	28.47	33.38
Middle school, primary and incomplete primary	28.59	5.51	26.90	22.10	43.80	0.94	-0.04	24.45	32.35
Secondary, of general education	23.09	1.72	22.85	19.70	26.40	0.13	-0.80	22.00	24.27
Basic vocational training	9.90	1.10	10.05	6.91	11.80	-0.66	0.01	9.33	10.68

Source: Authors' results.

The group with higher education demonstrated the highest employment rate. This may indicate that higher education has facilitated employment opportunities for individuals with disabilities, enabling them to access roles that may not require physical work or be more flexible in terms of job requirements.

Individuals with post-secondary and vocational education, as well as those with middle school, elementary, and incomplete elementary education, demonstrated an average level of employment. This could be indicative of the fact these groups faced greater obstacles to entering the job market, likely due to limited access to workplaces that would be tailored to their skills and needs.

The group with general secondary and basic vocational education exhibited the lowest level of employment. This may indicate that individuals with disabilities at this educational level may face significant difficulties in finding employment, possibly due to a limited number of suitable job opportunities or a lack of relevant skills.

In conclusion, it can be posited that a higher level of education is a significant factor in enhancing the employment prospects for individuals with disabilities. These findings indicate that investments in education, vocational training, and support programs can facilitate enhanced employment opportunities for individuals with disabilities. Furthermore, the analysis may suggest the necessity for more robust workplace adjustments to the needs of individuals with disabilities, particularly those with lower levels of education.

4.2. Characteristics of the dynamics and the employment rate

Figure 1 illustrates the distribution of the dynamics of the population size of individuals with disabilities according to various education categories over time.

The data presented in Figure 1, indicates that from 2013 to 2020, there was a decrease in the population size of individuals with disabilities in all educational categories in Poland.

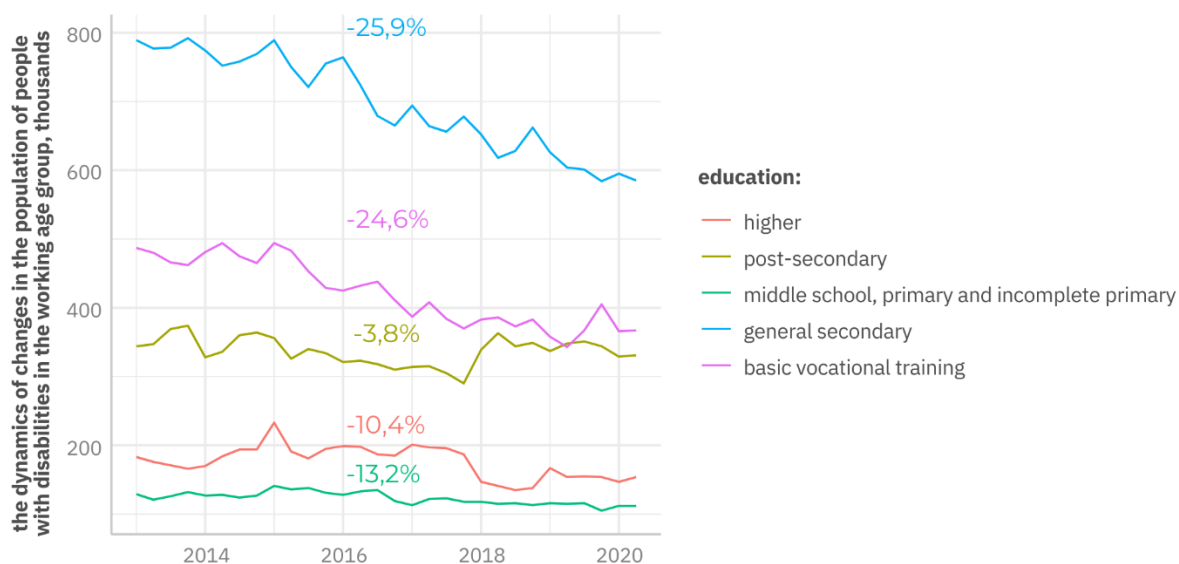


Figure 1. The dynamics of changes in the population of people with disabilities in the working age group during the period 2013–2020 (first half) divided by the level of education.

Source: Authors' results

The most significant decline was observed in the groups of individuals with general secondary education and basic vocational education, where the population decreased by 25.9% (from 789.0 thousand to 585.0 thousand) and 24.6% (from 487.0 thousand to 367.0 thousand), respectively.

The population of individuals with junior high, elementary, and incomplete elementary education experienced a moderate decline of -13.2% (from 129.0 thousand to 112.0 thousand), while that of those with higher education declined by -10.4% (from 183.0 thousand to 164.0 thousand). The smallest population decline was observed among individuals with post-secondary and vocational education, where the population decreased by only 3.8% (from 344.0 thousand to 331.0 thousand).

Figure 2 illustrates the dynamics of changes in the employment rate of individuals with disabilities in the working age group according to different levels of education during the study period. The data presented in Figure 2 was analysed in order to identify significant trends in the employment of people with disabilities in Poland from 2013 to 2020 in the context of their education.

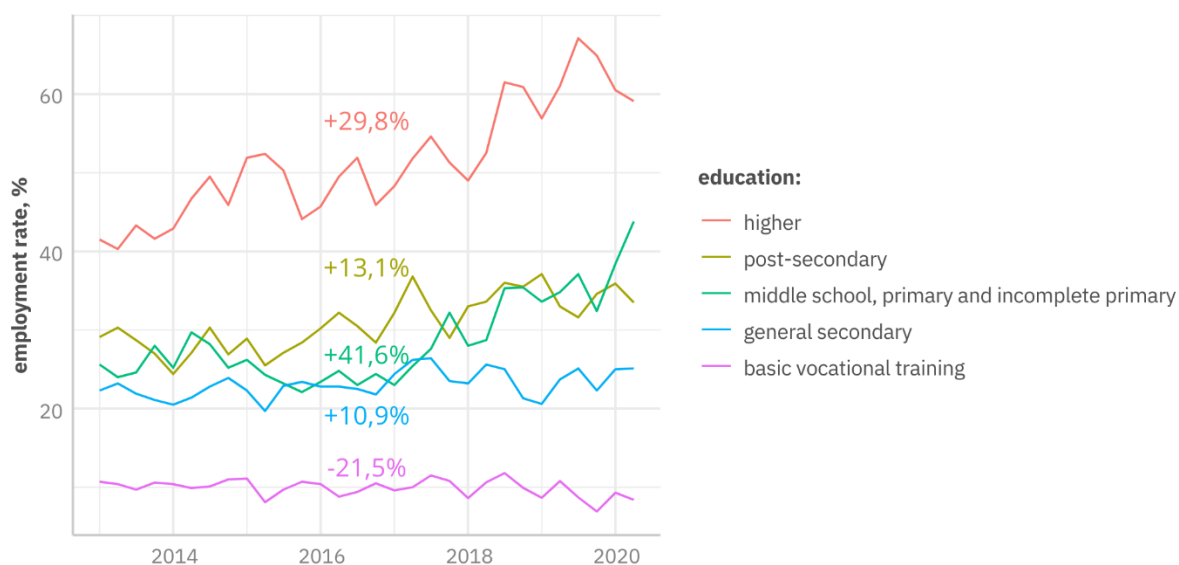


Figure 2. The dynamics of changes in the employment rate of people with disabilities in the working age group during the period 2013–2020 (first half) divided by the level of education.

Source: Authors' results

A notable increase in the employment rate was observed for individuals with higher education and disabilities, rising from 41.5% at the beginning of 2013 to 59.1% by the end of the first half of 2020. This represents a significant increase of 29.8%. This growth indicated an improvement in the employment situation for individuals with disabilities and higher education. Individuals with vocational and secondary vocational education also demonstrated an increase in the employment rate, rising from 29.1% to 33.5%. The most substantial growth dynamics were observed among individuals with lower education levels (middle school, primary, and incomplete primary education), where the employment rate increased by 41.6% (from 25.6% to 43.8%). In the case of individuals with general secondary education, the increase in the employment rate was less pronounced, reaching 10.9% (from 22.3% to 25.1%). In the category of individuals with fundamental vocational education, a decline in their employment rate was observed, with a decrease of 21.5% (from 10.7% at the beginning of 2013 to 8.4% by the end of the first half of 2020).

A number of potential explanations can be put forward for the observed trends:

- changes in the labour market structure, such as an increasing demand for workers with higher education or specialised skills, which may have influenced the rise in the employment rate for individuals with higher education;
- the increase in the employment rate can also be the result of effective employment policies and support for individuals with disabilities. A number of programmes designed to facilitate the process of finding employment for individuals in this social group, as well as vocational training, mentoring programmes, or employment subsidies, could have contributed to this,
- the reduction of the stigma attached to disability and the increase in acceptance of diversity in the workplace may also have contributed to an increase in the employment rate of individuals with disabilities,
- as illustrated in Figure 1, the observed decline in the population of individuals with disabilities may have influenced the employment rates. A reduction in the number of individuals with disabilities in specific educational categories could result in heightened competition for employment opportunities, which in turn could influence the overall employment rate.

4.3. Study of cointegration of the population size of individuals with disabilities of working age in Poland and their employment rate

The cointegration study showed that for each of the types of education examined, there was at least one long-term equilibrium relationship between the employment rate and the population of individuals with disabilities of working age at the 10% and/or 5% significance level. This indicated that these two parameters tended to move together over the period studied, maintaining a certain stable long-term relationship regardless of short-term fluctuations.

In the context of data modelling, these results suggest the need to take into account the parameter of the population of working-age individuals with disabilities when studying the impact of educational attainment on the employment rate.

4.5. Results of fitting the panel model

The developed model explains how the population size of individuals with disabilities with higher education affects the employment rate of the population of individuals with disabilities, depending on the education possessed.

The panel model fitted to the data showed a coefficient of determination (R^2) of 0.325, which means that 32.5% of the variability in the employment rate was explained by independent variables in the model. The stationarity of the time series was confirmed by the Dickey-Fuller test ($p = 0.025$). Heteroskedasticity in the data was taken into account by using estimation methods resistant to heteroskedasticity. The coefficients of the model are shown in Table 3.

Table 3

Results of fitting the panel model in terms of robust covariance matrix estimation.

Explanatory variable	B	SE	t	p
Population	-0.07	0.03	-2.44	0.016
population × education [post-secondary and secondary vocational].	0.08	0.04	1.85	0.067
population × education [middle school, primary and incomplete primary].	-0.05	0.08	-0.65	0.518
population × education [general secondary]	0.11	0.03	3.74	< 0.001
population × education [basic vocational training].	0.14	0.03	4.75	< 0.001

Source: Authors' results.

The results of the panel regression analysis indicate a significant impact of the interaction between the population of people with disabilities and the level of education on employment in Poland during the years 2013-2020.

The study also showed that this relationship is not uniform across all levels of education. This confirms the hypothesis that education plays a significant role in the employment outcomes of individuals with disabilities, and that this dependency is also influenced by the demographic factor of population size.

The estimated coefficient for the population variable was $B1 = -0.07$ and was statistically significant at the 5% level. This means that, according to the model, an increase in the population of people with disabilities with higher education by 1000 units would result in a decrease in their employment rate by 0.07%, while keeping the other variables constant. The results obtained may indicate that during the period analysed

the labour market did not meet the demand for a sufficient number of job opportunities for actively working people with disabilities holding higher education. This in turn could lead to increased competition and possibly a higher unemployment rate among the group studied.

Positive coefficients for the population of people with post-secondary and vocational education, general secondary education, and basic vocational education ($B_{21} = 0.08$, $B_{23} = 0.11$, $B_{24} = 0.14$, respectively) suggest that an increase in the number of these education groups positively associated with a significant increase in the employment rate (except for B_{21} where significance was shown at the trend level). The interpretation of these indicators may indicate a significantly higher demand for vocational and technical skills in the labor market, comparing to higher employment rates for people with disabilities possessing these specific qualifications.

The insignificant coefficient B_{22} ($= -0.05$) for the population of individuals with lower levels of education (middle school, primary, and incomplete primary) suggests that an increase in the number of people with these education levels of education has not had a significant impact on their employment rate. This lack of significance be due to other factors, such as the greater availability of jobs that do not require higher educational qualifications.

5. SUMMARY OF THE RESEARCH RESULTS

The main objective of the study was to analyse the impact of the size of the population of individuals with disabilities of working age on their employment level in Poland, taking into account differences in the level of education. The study covered the period from 2013 to the first half of 2020. The hypothesis was that there is a correlation between the level of education among individuals with disabilities and their employment rate, which is further influenced by the population's size. To verify the hypothesis, existing data from reports of the Central Statistical Office and the Survey of Economic Activity of the Population (BAEL) were utilised.

The analysis carried out confirmed the importance of the interaction between the population of people with disabilities and different levels of education in terms of their impact on employment. At the same time, the increase in the population of individuals with disabilities seems to have a different impact on employment depending on the level of education. For those with secondary and vocational education, the effect is strong and positive, while for those with higher education, it can be negative. For the other categories, an increase in the population led to a change in the employment levels similar to that of higher education.

6. CONCLUSION

Individuals with disabilities face challenges in social rehabilitation from the very beginning of their education. Their limitations affect their educational opportunities, career choices, and future financial stability. The lack of access to education for people with disabilities reinforces inequalities in employment.

The model obtained confirmed the research hypothesis, demonstrating a significant relationship between the education level of individuals with disabilities and their employment rate, further conditioned by the size of the population.

The analysis allows for several important conclusions to be drawn, which can be applied in the design of social policies related to the employment of individuals with disabilities:

1. There is a need to increase investment in education and vocational training for people with disabilities. Training programmes should focus on developing labour market relevant skills, especially for groups with lower levels of education, in order to improve their employment prospects.

2. Adapting workplaces to the different abilities and needs of people with disabilities is crucial. Creating more inclusive work environments that are flexible and tailored to different types of disability can improve their integration into the labour market.
3. Identifying and removing barriers to the labour market for individuals with disabilities, especially those with lower levels of education, is essential. Job search assistance, retraining programmes or tailor-made training programmes can help to overcome these barriers.
4. Labour market policies should focus on creating more inclusive working environments that promote equal opportunities and the integration of people with disabilities. Encouraging employers to recruit people with disabilities and creating workplace adaptation programmes can significantly improve the employment situation for this social group.
5. In the context of individuals with disabilities possessing advanced educational qualifications, it is recommended that policies focus on initiating additional employment opportunities that require higher education. This direction is crucial to prevent potential increases in unemployment rates within this particular social group.

Such a comprehensive approach, encompassing both education and workplace adaptation, supported by labor market policies, can contribute to increasing employment opportunities for people with disabilities and improving their professional situation.

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