

**THESES OF DOCTORAL (PhD)
DISSERTATION**

DÁVID HAJDÚ

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**HUNGARIAN UNIVERSITY OF AGRICULTURE
AND LIFE SCIENCES**

DOCTORAL SCHOOL OF ECONOMIC AND REGIONAL SCIENCES

**STUDY OF ADULT TRAINING FOR JOB SEEKERS IN THE
COUNTY OF BORSOD-ABAÚJ-ZEMPLÉN**

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DISSERTATION**

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1. BACKGROUND AND OBJECTIVES OF THE WORK

The availability and quality of knowledge and education and training have an impact on the economic growth and competitiveness of the region (Enyedi, 1996; Lengyel, 2012). As a consequence, the creation of a knowledge-based society and economy has become a priority (Taródiné Cseszka, 2017) and investment in human capital has become more valuable (Becker, 1964; Schultz, 1961). Lifelong learning and the development of the necessary basic competences are a key objective (Kálmán, 2012a). In this context, the vital importance of adult learning has also become a top priority, and adult learning can fill the gaps in school-based training. Adult education can replace inadequate, non-marketable knowledge, and more importantly, it can provide retraining and further training (Benő, 1996; Mayer, 2000; Mócz, 2012; Lakner, 2016), which is essential for rapidly changing economic and technological conditions (Krisztián, 2004).

The study of territorial disparities in the labour market has been a focus of interest for social scientists since the early 1990s. The alternation of cyclical and recessionary periods in the Hungarian economy has posed a serious challenge to those experts who have tried to align the structure of vocational training with labour market needs, and to those who have tried to correct its adverse effects through support policy interventions (Hajdú-Koncz, 2021; Hajdú-Koncz, 2022). From time to time, the different spatial consequences of these changes have given reason to examine how they have been reflected along Hungary's specific spatial structure (Pénzes et al, The characteristics of jobseekers and the potential for economic development in regions with different levels of development mean that different labour market instruments can be effective in expanding employment and regional incomes (Halmos, 2005). As the most difficult social group to mobilise are the disadvantaged and long-term unemployed, support policies have also shifted towards complex employment-training programmes (Benke, 2006; Kluve, 2010). In the longer term, training programmes, complemented by mentoring, which take into account local and individual specificities, can create a better social environment, fostering the receptiveness and adaptability of the population to the demand side of the economy (Alpek-Tésits, 2019).

Nowadays, the concept of disadvantage is used in different contexts, both in the labour market and in education (Alpek et al, In relation to learning, we associate it primarily with disadvantage and multiple disadvantage among child learners, which is addressed in detail in the Act on the Protection of Children and Guardianship Administration, focusing primarily on their vulnerability (Pető, 2005). Of course, children's opportunities are fundamentally influenced by the living conditions and life experiences of their parents, who, if they are also disadvantaged and registered as jobseekers, are offered labour market training in adult education to help them integrate into society and find work (Arrow, 2016). People who are disadvantaged are those whose development potential is hindered by various environmental factors (Gáti, 1987). People who are economically, socially and culturally deprived in the long term are increasingly lagging behind, their values and mindset change and their horizons narrow (Tésits-Alpek, 2013d). This social group has a low mobility capacity due to a lack of individual motivation, and are therefore usually only able to move up the social ladder with external help (Tésits-Alpek, 2013b).

In terms of the absolute number of jobseekers, the industrialised districts of Borsod-Abaúj-Zemplén county, which also have a very high population, show the highest concentration of unemployment, while the regions of Miskolc and Kazincbarcika have the lowest number of jobseekers in relation to population. The highest unemployment rates are in the districts of Encsi and Gönc, where the peripheral location and the small village structure have a negative impact on economic development (Lipták et al., 2019). The county has a very high proportion of people with or without primary education, which could be addressed through adult education, including the promotion of training for the labour market in cooperation with the Labour Centre.

My study area is in the Borsod-Abaúj-Zemplén county, whose 16 districts are quite different in terms of area and population, economic achievements and potential. The county has the second largest number of adult education participants among rural counties in the country. The county has a high unemployment rate, a relatively low employment rate and a high public employment rate.

In my dissertation, I investigate the impact of training for job seekers on the labour market and thus on the economic development of Borsod-Abaúj-Zemplén county. The aim of including jobseekers in training is to get them back into the labour market as soon as possible and to find a job in the primary labour market.

Unemployment is a global problem, and adult education can help to provide jobseekers with new marketable skills to reintegrate into the world of work. In Hungary, jobseekers receive a supplementary income support while they complete their training, i.e. they receive financial support in addition to acquiring new skills, so that they do not have financial problems during the training. These training courses can be language, professional, public authority or competence development courses.

In Hungary, jobseekers can find employment in the primary and secondary labour markets. Public employment, as a secondary labour market, emerged more strongly in 2011 as a result of decisions to reduce unemployment. Public employment is the main source of employment in rural areas, but in areas where the competitive sector is important, it has had a negative impact on the employment of those who successfully complete training in the primary labour market.

The aim of the research is to highlight the socio-economic and spatial anomalies of training supported by the Government Offices of Borsod-Abaúj-Zemplén County. These specific inequalities are caused by the fact that jobseekers supported by training do not necessarily seek to improve their labour market position through newly acquired qualifications, but some of them consider participation in training as part of their family's livelihood strategy, as a source of livelihood.

1.1 Objectives

The main aim of my study is to explore the impact of labour market training courses for adults organised in Borsod-Abaúj-Zemplén county and supported by the Government Office on the labour market situation of participants. In this context, I paid particular attention to the regional disparities that can be identified and the reasons for these disparities. Accordingly, my complex

objective can be broken down into several research objectives, to which I have assigned primary and secondary data sources.

Firstly, I wanted to explore how the training courses advertised help participants to find a job in the primary labour market in Borsod-Abaúj-Zemplén county (C1). Subsequently, my aim was to show that the objectives and expectations of the training courses differ significantly between the sponsors and the participants (C2). The aim of the training courses is to help the participants to find their way back to the primary labour market with their new qualifications. I will also describe the barriers to practical implementation, which can be traced back to the fact that for a large proportion of learners, labour market training is primarily about solving current pressing problems and only secondarily about achieving a better future. In this way, participation in training can play an important role in the livelihood strategies of disadvantaged families.

The aim of my research was to explore the spatial regularities in the locations of adult education courses for jobseekers offered by the Labour Market Department of the local Department of Employment and Labour Protection and to show the centre-periphery relations in the occupational field (C3). I have tried to analyse this topic from several angles, such as the separation of urban and rural spaces, the influence of motorway accessibility, or the beneficiary classification of districts.

My research has sought to highlight links that could have a major practical impact on the future organisation of the activities of training support and delivery institutions, which could have a more positive impact on the areas where training is provided. In my opinion, a decisive factor in slowing down, halting and possibly reversing negative demographic trends could be to increase the level of education of the population, particularly in the case of training to promote entrepreneurship.

My objective was to investigate how effective is subsidised adult education as a labour market instrument (C4)? In this respect, what differences can be identified in terms of the choice of training and the number of trainees enrolled? I have examined the differences in the labour market impact of vocational training and employability training (some of the vocational training is the training in the National Training Register, which allows participants to perform a professional job as a skilled worker, while the employability training is mostly training with an emphasis on competences such as reading, writing, adding and key competences for the workplace).

A specific objective of my research was to get to know the group of people who, due to external and internal factors, have not yet entered the primary labour market (C5). For them, the support system may determine the direction of their further progress, while they fail to exit the cycle of job-seeking - public employment - subsidised adult education status. The Hungarian state devotes considerable resources to improving the situation of the unemployed, but training can often have a greater social impact than on the labour market.

Tracking actual training needs is a priority for adult learning, but it is influenced by a number of factors. The most needy may not be adequately integrated into the training system and the supply of training may not be able to match demand. In our country, a large proportion of people who do not participate in adult learning are not those who most need it, for example to raise their level of education or to fill skills gaps. Low educational attainment not only creates

disadvantage because of a lack of basic skills, but also reflects in attitudes and communication skills that are essential for further learning and development. Today, it is no longer enough to have a good education or experience to get a job. Today, the demand is almost exclusively for a workforce that is adaptable, capable of being retrained, developed and renewed. In general, employers are looking for workers who not only have the knowledge related to their profession, but also possess the qualities needed to work effectively, such as problem-solving, good communication, compromise, openness, stress tolerance, creativity (Pirohov-Tóth, 2022; Raffay-Danyi et al, 2023). Derived from the above, my aim was to explore the comparison of the temporal and spatial distribution of adult education for the unemployed, job seekers and the number of advertised job vacancies (C6).

With my questionnaire survey of participants in labour market training, my aim was to find out about learners' family and financial backgrounds, study and work experiences, which have a major influence on their priorities for participation in training (C7). I also examined spatial differences in primary and secondary labour market participation among successful trainees, using both primary and secondary data. My aim was to explore the impact of the public work programme, which I also examined its territorial aspects and how it has contributed to the integration of participants in the primary labour market since 2011 (C8). The aim of my research was to explore the characteristics of the spatial structure of adult education at the county level (C9). I then focused on the county of Borsod-Abaúj-Zemplén and within it on the differences between the county and the municipal level of participants in adult education for the unemployed.

H1: Adult education data for Borsod-Abaúj-Zemplén county are not closely related to the number of vacancies, which is due to the fact that training is more closely aligned with labour supply than with labour market demand.

H2: Within the county of Borsod-Abaúj-Zemplén, it is possible to identify areas where adult education is not an effective part of the integration of jobseekers into the primary labour market, as participants after training have predominantly found employment only in the secondary labour market.

H3: Public employment has temporarily helped a significant number of jobseekers to find work since its introduction, but has had a negative impact on the integration of participants in subsidised adult education into the primary labour market. I assume that the reduction in the role of public employment does not lead to a proportional increase in the number of jobs in the primary labour market in Borsod-Abaúj-Zemplén county.

H4: Among the groups in adult learning, those who cannot break out of the triangle defined by the job-seeker - public employee - subsidised training status can be socially distinguished. This is due to the fact that it is possible to distinguish among jobseeker training participants those who do not participate in jobseeker training in order to acquire new information, knowledge, skills and a new job. Rather, they focus on obtaining the support that will provide them with a secure income during the training, and therefore the social role of the training is dominant, these participants can be considered as livelihood learners.

H5: Learners with a vocational qualification and experience in the primary labour market have a higher propensity to find a sustainable job.

H6: In the country as a whole, there are no groups of municipalities where adult education for jobseekers was not available within 10 kilometres during the period under study.

H7: Across the different development regions of the country, there are measurable differences in the success rates of those who successfully complete adult education for jobseekers in the primary labour market and in the secondary labour market.

In order to achieve my research objectives, I formulated the following main tasks in the framework of the work on which my dissertation is based:

- K1. Collect, organise and analyse national and international literature relevant to the topic chosen, according to subtopics.
- K2. Construction of a complex secondary database based on data provided by the Ministry of Innovation and Technology (now Ministry of Technology and Industry) and the Government Office of Borsod-Abaúj-Zemplén County.
- K3. Analysis of the characteristics of adult education, unemployment and public employment in Hungary and in Borsod-Abaúj-Zemplén county and their relation to each other, analysis and visualisation of the data using geographic information software.
- K4. Questionnaire survey of jobseekers in adult education in order to find out the experiences, current situation and future plans of the target group.
- K5. During the implementation of the research project, it became an unavoidable task to identify the impact of the COVID-19 pandemic in the sector under study.
- K6. To make recommendations to policy makers and practitioners in the field based on the main findings of the secondary and primary research.

In order to give the reader a clearer understanding of the objectives of my research and the relationship between the databases and the mathematical-statistical methods chosen to achieve them, I summarise the steps of the operationalisation in the table below (Table 1):

Table 1: Relationship between the research objectives, hypotheses, databases used and methods employed

Hypothesis	Source of data	Mathematical-statistical methods	Objective
H1	OSAP, NFSZ	Beveridge curves	C1, C4, C6
H2	ITM, B-A-Z County Government Office	Spatial autocorrelation, HotSpot analysis	C1, C3
H3	ITM, B-A-Z County Government Office	Trend analysis	C4, C8
H4	Questionnaire survey	Combined distribution test, Cross-tabulation analysis (chi-square test)	C2, C5, C7
H5	Questionnaire survey	Cross-tabulation analysis (chi-square test)	C5, C7
H6	OSAP	Territorial coverage study	C3
H7	ITM, B-A-Z County Government Office	Spatial autocorrelation, HotSpot analysis	C3, C4, C9

Source: own ed.

2. MATERIAL AND METHODS

2.1 Examination of statistical databases, secondary information

To establish my primary research, I reviewed the available national and international textbooks and journal articles on the subject, and then processed the time series of statistical databases on registered jobseekers, vacancies and participants in training for jobseekers between 2010 and 2021. The databases of jobseekers and vacancies were compiled from the data series available on the website of the National Employment Service, while information on participants in adult education was collected from the OSAP 1665 statistical interface of the Pest County Government Office. The territorial framework of the primary research was the county of Borsod-Abaúj-Zemplén, therefore I focused my analysis on this county during the preparation of the research. I compared the data from the county with the averages and trends for Hungary. I chose the Beveridge curve as a tool for comparing the different trends, which is an effective way of illustrating the different directions of change of two parameters over time. I have used data on the status (180 days after the completion of training) of those who have completed labour market training provided by the Labour Market Department of the Employment and Labour Protection Department of the Government Office of Borsod-Abaúj-Zemplén County and the Ministry of Innovation and Technology.

In the later phase of my research, I had the opportunity to process additional databases, which I specifically requested from the Ministry of Innovation and Technology (on the employment rates of those who completed the reported training courses - broken down by gender, age, educational level) and from the Borsod-Abaúj-Zemplén County Government Office (information on the projects that implemented the supported training courses). Due to the importance of the secondary labour market in the study area, I started a more detailed analysis based on the Ministry of Interior's public employment data series.

In order to further explore the broader socio-economic aspects of adult education, I considered it important to compare the data series that were the focus of my analysis with the demographic, educational data series of the Central Statistical Office. The more information-rich census data series could have been a useful reference point for my research, but due to the timing of the research I was not able to use them (the previous census was a decade ago and the 2022 Census data were not available at the time of the research). The National Spatial Development and Planning Information System provided further opportunities to investigate the relationships.

In analysing both secondary and primary databases, I consider it important to explore the relationships between the variables under study. In the case of secondary databases, I was able to work mostly with scale-type variables, whose relationships I showed through correlation and regression analysis. The correlation calculations are used to determine the closeness of the relationship between probability variables, of which I have also carried out spatial autocorrelation calculations in addition to Pearson's linear correlation coefficient, based on values for different observation units in the same data series. Since correlation coefficients are very concise measures, I have used bivariate regression calculations to explore further details of the relationships where appropriate. Univariate linear regression is used to characterise the

relationship between an independent variable and a dependent variable along the regression line. The coefficient of determination (r^2) indicates the extent to which the dependence on the independent variable explains the values of the dependent variable. The coefficient of determination can take a value between 0 and 1, with values close to 1 indicating the existence of a close relationship (Csallner, 2015).

In my tests of regional disparities, I have used two of the more widely used indicators of regional analysis. I use the concentration (also known as Herfindahl-Hirschman) index to quantify the degree of concentration of a natural characteristic between spatial units (e.g. municipality, district, county, region), pointing out also changes in the degree of spatial concentration over time (Koncz-Szűcs, 2017). I calculated and applied the HHI for the adult education indicators of the study area. The Hoover index allows us to measure the relative difference in the spatial distribution of two quantitative criteria (Németh, 2005). In my analysis, I mainly want to show how the spatial distribution of adult education participants relates to the distribution of the population, unemployed, publicly employed, etc.

2.2 Primary research

2.2.1. Implementation of the questionnaire survey

I completed my 34-question questionnaire at training sites in the Borsod-Abaúj-Zemplén county between September 2019 and June 2021. Respondents who participated in the training courses for jobseekers answered questions about their personal, family situation, labour market, training and future plans. The questions in the questionnaire mostly concerned the experiences and livelihood strategies of the trainees. I measured the mobility of participants by asking questions about their place of residence and location of training, as well as their willingness to commute. I also looked at the distribution of training courses provided by the Government Office by entry criterion in the questionnaire on prior qualifications. With the questions on work experience, I explored the participants' labour market status, their previous contact with the primary labour market and the importance of public employment. Other livelihood strategies explored included the possibility of earning income from undeclared work, seasonal work and participation in training. In line with my research objectives, the questionnaire included both single-choice and multiple-choice questions, as well as open-ended text questions asking for simple information. A total of 1786 people completed the paper questionnaire and the process of filling it in was personally supervised - with the involvement of the staff of adult education institutions). As regards the spatial distribution of the sample, the questionnaires were surveyed in 47 municipalities of Borsod-Abaúj-Zemplén county. Based on the place of residence of the respondents included in the survey, my research covered a total of 181 municipalities in the county, covering all 16 districts of the county. 36.1% of the respondents were urban residents.

Between January 2019 and December 2021, the total number of people entering labour market training in Borsod-Abaúj-Zemplén county was 8174, which is 14 months more than the time period of my primary research. I have taken this number as the base population (as I cannot provide a more precise reference period). The number of people I interviewed represented 21.84% of the base population. The representativeness of the sample was examined in several respects. In terms of the respondents I interviewed, both women and those with no more than primary education were over-represented. However, when examining the age groups, there was

similarity, i.e. the proportions in the data provided by the Ministry of Innovation and Technology were almost identical to the age group proportions of my respondents.

Most of the training was organised in the district headquarters. Commuting within the districts is financially supported by the Government Office for the trainees and therefore does not involve any costs for the participants. Border and rural municipalities are less affected by the training, which is also reflected in the study sample. The concentration of participants in training is highest in the Miskolc district (20.3%), also due to the population size and the central role of the district. In addition, the Encsi district (12.9%) was included in the sample with a share of over 10%. The next in order are the districts of Szerence (9.2%), Ózd (8.7%) and Tiszaújváros (8.2%).

The questionnaire database was created and evaluated using Microsoft Office 2013 and IBM SPSS Statistics 25. In addition to comparing the number and distribution of mentions of the responses to the questions in the questionnaire, I also examined the relationships between the variables. Due to the scale of measurement of the vast majority of variables (nominal and ordinal scale), I analysed this primarily using a cross-tabulation to explore the relationship between qualitative criteria. The distribution of the data, organised in a combinatorial table, was also plotted graphically on a bar chart, where it showed some regularity. The 'plausibility' of the relationship between the variables was tested using Pearson's chi-square test, which is a very robust method, so that no conditions are imposed on the distribution of the data when hypothesis testing is used, and its reliability is not affected (Cochran, 1952). The statistical test is designed to determine the extent of the differences between the theoretically expected and observed values compared to the null hypothesis. The extent of the difference allows us to infer the existence and strength of the interaction between the variables. A high degree of divergence indicates the probability of the existence of a real relationship between the variables (Huzsvai-Vincze, 2012).

The chi-squared test using IBM SPSS Statistics 25 compares the observed number of cases in the cells with the expected number of cases that would be obtained if there were no relationship between the two variables under investigation. If the relationship is clear, then it is a function, if it is probable, then it is a stochastic relationship. In the absence of a relationship, the two variables are said to be independent (Sajtos-Mitev, 2007). The chi-square test is characterised by its sensitivity to sample size. The χ^2 distribution is skewed, becoming more symmetric as the degrees of freedom increase. The relatively easy to interpret method is widely used in social science research (Kassai, 2012).

In cases where categorised (nominal or ordinal) variables are included as independent variables (e.g. municipality categories, districts or job centres) and dependent variables are at scale level, I used one-point analysis of variance to compare group means. An analysis of variance is a multivariate sample that examines the effect of one or more independent variables on a dependent variable by determining the differences between the mean values of the multivariate. ANOVA analysis of variance compares means through the test of the squared standard deviation, the essence of which is, does the independent variable have a detectable influence on the dependent variable? To perform the analysis, the variables must meet several conditions.

The measurement level of the dependent variable should be at least interval scale. In addition, homogeneity of variance must be fulfilled, i.e. the dependent variable must have the same standard deviation for different levels of the independent variable (Sajtos-Mitev, 2007).

2.3. Spatial analysis of adult education using spatial statistical methods

In order to explore the spatial correlation of the participants in the training courses, I conducted a spatial autocorrelation analysis using Local Moran statistics.

$$I = \frac{n}{2A} \frac{\sum_{i=1}^n \sum_{j=1}^n \delta_{ij} (y_i - \bar{y})(y_j - \bar{y})}{\sum_{i=1}^n (y_i - \bar{y})^2},$$

where n is the number of elements of the area units under study, y_i and y_j are the values of the variable under study in each area unit, \bar{y} is the arithmetic mean of the indicator under study, A is the number of adjacency relations, and the δ_{ij} coefficient is 1 if i and j are adjacent and 0 otherwise (Tóth, 2014). If $I > -1/n-1$, the autocorrelation relationship has a positive sign, and if $I < -1/n-1$, the autocorrelation relationship has a negative sign. If $I = -1/n-1$, there is no autocorrelation relationship between the territorial units (Egri, 2017).

To explore and illustrate spatial patterns, I used a local test function of spatial autocorrelation, the univariate Local Moran I method published by Anselin in 1995. This method can be used to highlight areas that are similar or dissimilar to their neighbours (Tóth, 2014). Formula of the Local Moran I equation:

$$I_{i,t} = z_{i,t} \sum_j W_{ij} z_{j,t}$$

where $z_{i,t}$ and $z_{j,t}$ are the standardised values of the observation units at time t . For the univariate Local Moran method, $z_{i,t}$ and $z_{j,t}$ refer to the same database. W_{ij} is the spatial weight matrix (Anselin, 1995). The result classifies the municipalities into four groups:

1. High-high (HH): area units with a high value, for which the neighbourhood also has a high value,
2. high-low (HL): land units with a high value where the neighbourhood has a low value,
3. low-low (LL): land units with a low value where the neighbourhood also has a low value,
4. low-high (LH): units of land with a low value where the neighbourhood has a high value.
5. non-significant category: these are areas with no significant local statistics (Tóth, 2014; Egri, 2017).

I set the Local Moran significance filter at 0.05 and the number of permutations at 499.

Using some statistical data series available at the municipal level and the specific indicators calculated from them, I performed a spatial autocorrelation analysis (hot spot analysis) using the Getis-Ord local G_i^* statistic (Getis - Ord, 1996) to delineate spatial clustering. This methodology reveals local specificities of spatial structures. The basic assumption (null hypothesis) is that there is no spatial autocorrelation between the variables under analysis, their spatial arrangement being random. The local G_i^* statistic localises the strength of spatial association based on the concentration of weighted spatial points (Tóth, 2014). The higher the Z value obtained by standardising the calculated values, the stronger the clustering of high

values. For clustering of above-average values within a given distance, the value of G_i will be high, and for clustering of low values, it will be low. The statistic can carry a symmetric spatial weight matrix whose elements can take binary (0,1) values. Elements within a bounded (d) distance have a value of 1, all others have a value of 0. According to this type of indicator, the location is self-adjacent and the value in the weight matrix is 1. The local version of the Getis-Ord statistic can be calculated using the following formula:

$$G_i(d) = \frac{\sum_{j=1}^n w_{ij}(d)x_j}{\sum_{j=1}^n x_j}$$

where: w_{ij} is the symmetric spatial weight matrix, d is the distance, x is the spatial criterion, and $i=j$ is true. In my thesis, I used row-standardized "queen" weight matrices for the neighborhood relations procedure. I set the significance level of the hypothesis test at $p=0.1$. I plotted the results on polygonal cartograms to illustrate the dosimetric extent of the detected hotspots. For the queen neighborhood, all directly adjacent, contiguous neighbors are included. My thematic maps were based on the weight matrix, but I also numerically investigated the spatial autocorrelation values that result when calculations are performed at different points in time for the nearest 5, 10 and 15 territorial units.

I aggregated the number of participants in adult education at LAU level. To examine the aggregates from a spatial perspective, I performed a hotspot analysis using general G statistics. For the analysis I used a "queen" weight matrix with significance level set at $p < 0.05$.

3. RESULTS AND DISCUSSION

3.1 Results of the secondary research

3.1.1 Evolution of the number of participants in labour market training

For Borsod-Abaúj-Zemplén county and Hungary, I compared the changes in the number of registered jobseekers and participants in subsidised training for jobseekers between 2010 and 2019. The similarity of the Beveridge curves constructed from the data series (Figure 1) shows that the trends in the county were also largely influenced by national-level regulation. The data series include all adult education participants who attended training for job seekers, including training courses, IT, language and vocational training. The lowest number of participants in training in the years under review was in 2016, but the overall ratio of jobseekers to participants in training has improved significantly over the nine years, helped by the fact that a significant proportion of those involved were able to complete more than one training course in a year. The number of registered jobseekers has fallen significantly, driven by labour demand from new investment and public employment.

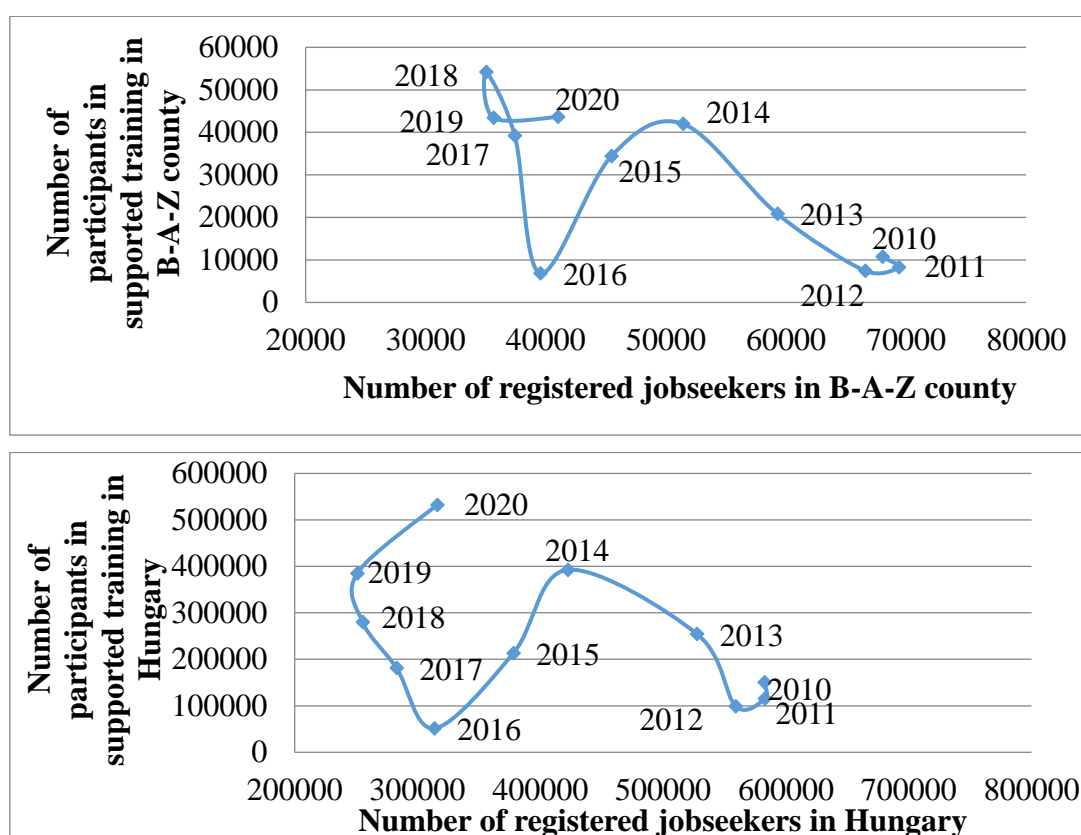


Figure 1: Evolution of the number of registered jobseekers and jobseekers in subsidised training (2010-2020)

Source: own edits based on www.osap.mer.gov.hu and www.nfsz.munka.hu (2023).

3.1.2 The relationship between vacancies and training

From a labour market point of view, one of the most important pieces of information from the point of view of employment and the organisation and delivery of training is the number of vacancies. Over the period under review (also 2010-2020), the number of vacancies increased significantly between 2012 and 2014, both nationally and in the county. This was followed by a significant decrease in the following years at the national level, while in Borsod-Abaúj-Zemplén county only a slight decrease or stagnation was observed. Then the sharp downward

trend was reversed nationally and the number of vacancies approached the 2014 level by 2019. In the northeastern county, the number of vacancies remained consistently high compared to the previous period, but no outliers were observed (Figure 2). In the Borsod-Abaúj-Zemplén county, fewer participants in subsidised training (2016) means that the number of vacancies cannot be filled, so the launch of subsidised training, and the choice of occupation is not in line with labour market needs.

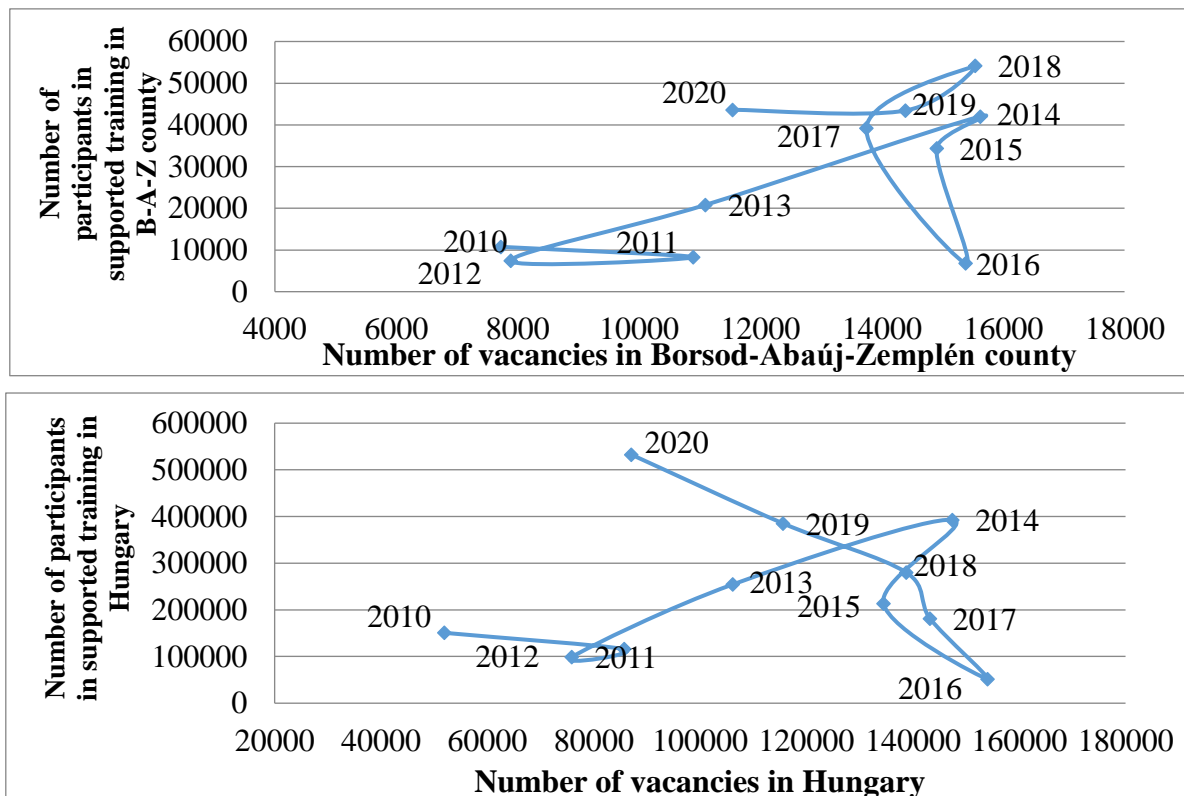


Figure 2: Number of vacancies and participants in subsidised training for jobseekers (2010-2020)

Source: own edits based on www.osap.mer.gov.hu, www.nfsz.munka.hu (2023).

3.1.3 Examining the employability of participants in adult education for jobseekers in Borsod-Abaúj-Zemplén County

In Borsod-Abaúj-Zemplén County, in the 11 years under review, adult education for jobseekers supported by the Borsod-Abaúj-Zemplén County Government Office was present in a total of 240 municipalities out of 358 municipalities in the county (67%). Most of the trained were in Miskolc, the county seat, followed by the district centres with larger populations and higher unemployment rates, such as Ózd, Sárospatak, Sátoraljaújhely, Mezőkövesd and Mezőcsát. Most of those with tertiary education were found in Miskolc and the district centres, while those with primary education or less were proportionally concentrated in smaller settlements. Those with secondary education were clustered in municipalities with larger populations, smaller towns and district centres. In terms of age, a completely hectic picture emerged, although those aged 55 and over were concentrated in smaller municipalities in rural areas with low population density (Figure 3).

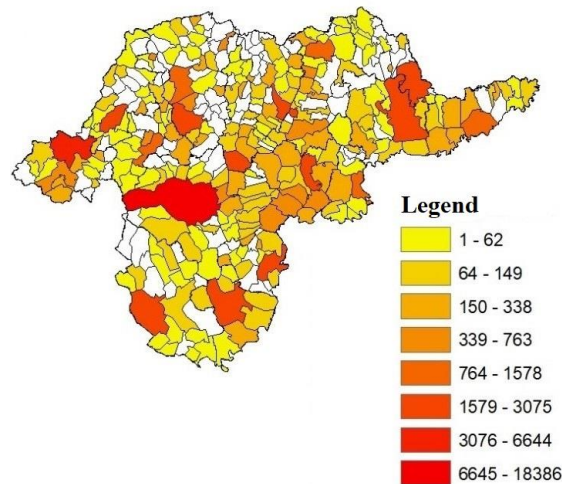


Figure 3: Total number of jobseekers trained by the Government Office of Borsod-Abaúj-Zemplén County (2010-2020)

Source: own work based on data from the Ministry of Innovation and Technology (2021)

The HotSpot analyses have highlighted the areas where those who have successfully completed the training are most likely to have found work. Of course, the spatial clustering of those in the primary and secondary labour markets is completely distinct. The primary labour market was mainly concentrated in the county seat and its surrounding municipalities and in some municipalities in the neighbouring districts of Mezőkövesdi and Mezőcsát to the south. The northern border areas with Slovakia in the districts of Szikszó, Encsi and Gönc were least affected. The secondary labour market was least concentrated in the districts of Miskolc, Tiszaújváros and Mezőkövesd, where the presence of highly employed multinational companies is most prevalent. Public employment was most prevalent in the north, in areas bordering Slovakia. It was most concentrated in the northern border areas of Edelényi, Szikszói, Putnoki and Encsi districts. Public employment also appeared as the main form of employment in the centre of the Gönc district and in the peripheral areas of the Ciganci district (Figure 4).

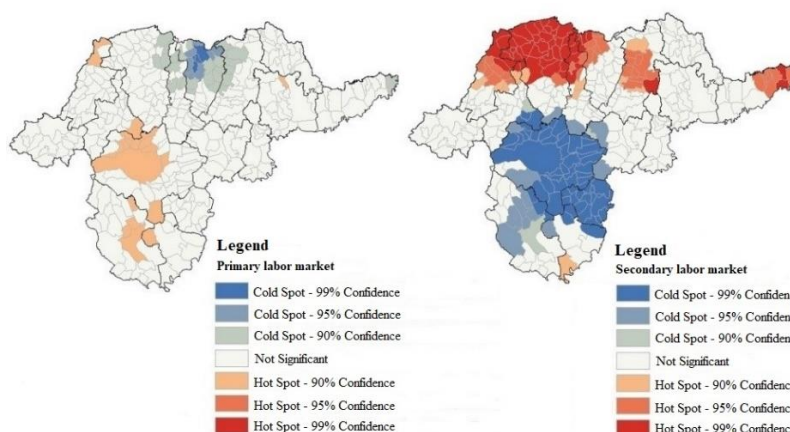


Figure 4: Average placement of jobseekers trained by the Borsod-Abaúj-Zemplén County Government Office in the primary and secondary labour market (2010-2020)

Source: own work based on data from the Ministry of Innovation and Technology (2021)

The Local Moran I statistics are positively autocorrelated in terms of primary and secondary labour market participation in the study area. The Moran index of 0.190752 obtained in the spatial autocorrelation analysis of primary labour market locations was positively correlated (z-value=6.182531, p-value=0.000000). High-high clusters were formed in Miskolc and its agglomeration, in the southern and northern parts of the county in the district centres and their catchment areas. Low-low clusters were formed in the northern municipalities of the county bordering Slovakia, where primary labour market employment was not prevalent. With a z-score of 6.1825312343, there is less than a 1% probability that this clustered sample could be the result of random chance. The Moran index of 0.481255 obtained in the spatial autocorrelation study of those in public employment is positively correlated (z-score=15.318435, p-value=0.000000). Low-low clusters were formed in the whole territory of the Miskolc and Tiszaújváros districts, where public employment was not present at all, also due to the high absorption capacity of multinational firms. High-high clustering was found in the areas of Putnok, Edelényi, Szikszó and Encsi districts bordering Slovakia, which are characterised by high unemployment and essentially high public employment (Figure 5). Given the z-score of 15.31843500306, there is less than a 1% probability that the clustered sample could be the result of random chance.

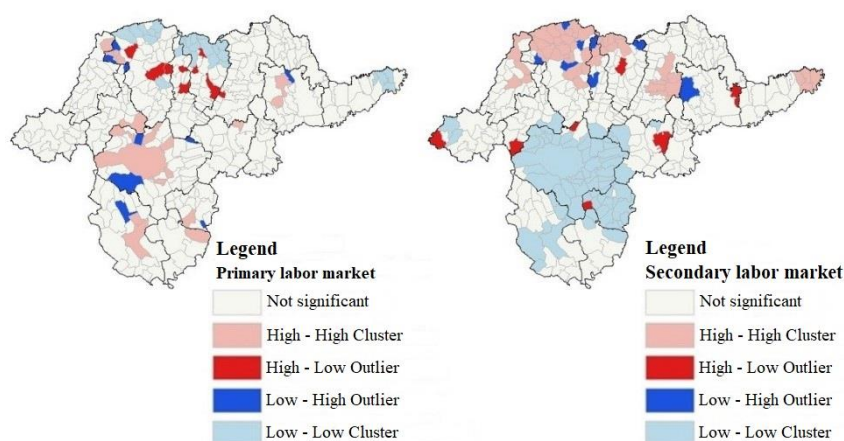


Figure 5: Average Local Moran I autocorrelation analysis of the location of jobseekers enrolled by the Borsod-Abaúj-Zemplén County Government Office (2010-2020)

Source: own work based on data from the Ministry of Innovation and Technology (2021)

3.1.4 Main characteristics of public employees in adult education in Borsod-Abaúj-Zemplén

In the first three years of the period under review (2010-2012), the role of employment in the primary labour market was dominant (initially almost exclusive). Public employment started in 2011 and showed a trend increase over time. In 2013, the two labour market segments were on the same level. In 2014, public employment reached its peak and the primary market its lowest level. As the economic situation improved, support to the secondary labour market was reduced and its role in job placement started to decline. In parallel, the role of the primary labour market started to increase, but not to the extent of the decline in the secondary labour market. After bottoming out in 2014, employment rates in the primary labour market have not recovered to the highs of 2010 (Figure 6). However, I should add that, overall, a social group with increasingly unfavourable characteristics as employment expands remains in the job-seeker

group affected by training, as I have pointed out with the change in the educational attainment of participants.

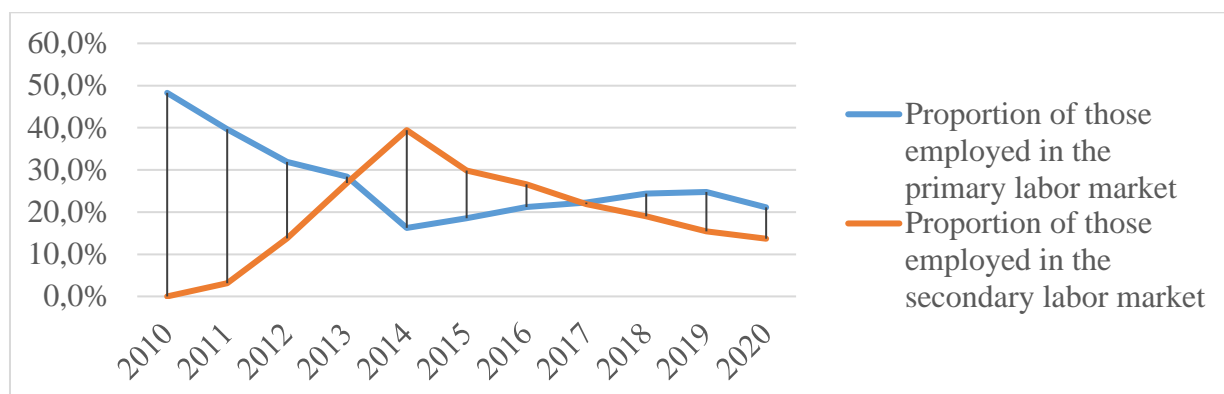


Figure 6: Employment of trainees by labour market sector (%), 2010-2020

Source: own work based on data from the Ministry of Innovation and Technology (2023)

The Kazincbarcika Branch of the County Labour Centre (24.04%) had the worst ratio of the number of public employees involved in training compared to the average number of public employees in Borsod-Abaúj-Zemplén County, while the best ratio was recorded by the Tiszaújváros Branch. Overall, 58.17% of those in public employment were enrolled in the county. Looking at the distribution of training courses for public employees across the county, it is striking that 23.94% of participants were concentrated in the county seat area during the period under review, followed by the Ózd Branch (12.38%). The lowest proportion of public employees involved in the training was in the district of the Mezőkövesd Branch (1.88%).

The effectiveness of training in the labour market is mainly shown by the job placement rates, especially if the public employee is able to re-enter the primary labour market. Overall, 41.08% of trainees were able to find a job on average over the five years, regardless of labour market sector, but placement in the secondary labour market dominated for those who successfully completed the training, with 31.19% of trainees from public employment finding continued employment in public employment. The average share of those who found employment in the primary labour market was 9.88%.

The labour market status of participants in training courses for public employees is measured by the Government Office on the 180th day after the end of the training course. Figure 7 shows the success rate of placement in the primary and secondary labour market, but it is clear that even the overall share of the participants did not reach 50% in any year, with the majority becoming unemployed or of unknown status. In terms of employment indicators, the most successful year was 2016, when 49% of participants found a job at the end of the training, and the least successful year was 2020, with only 34.6%. The placement data were significantly influenced by the secondary labour market, which showed a steadily decreasing trend between 2016 and 2020 ($y = -0.0429x + 0.4408$; $R^2 = 0.9615$). The most successful year for those in the primary labour market was 2018 (11.4%), while the least successful was 2016 (7.6%), with a slight increase in the years under study, except for a decline in 2019, which makes the increasing trend of the trend less reliable ($y = -0.0058x + 0.0815$; $R^2 = 0.3481$).

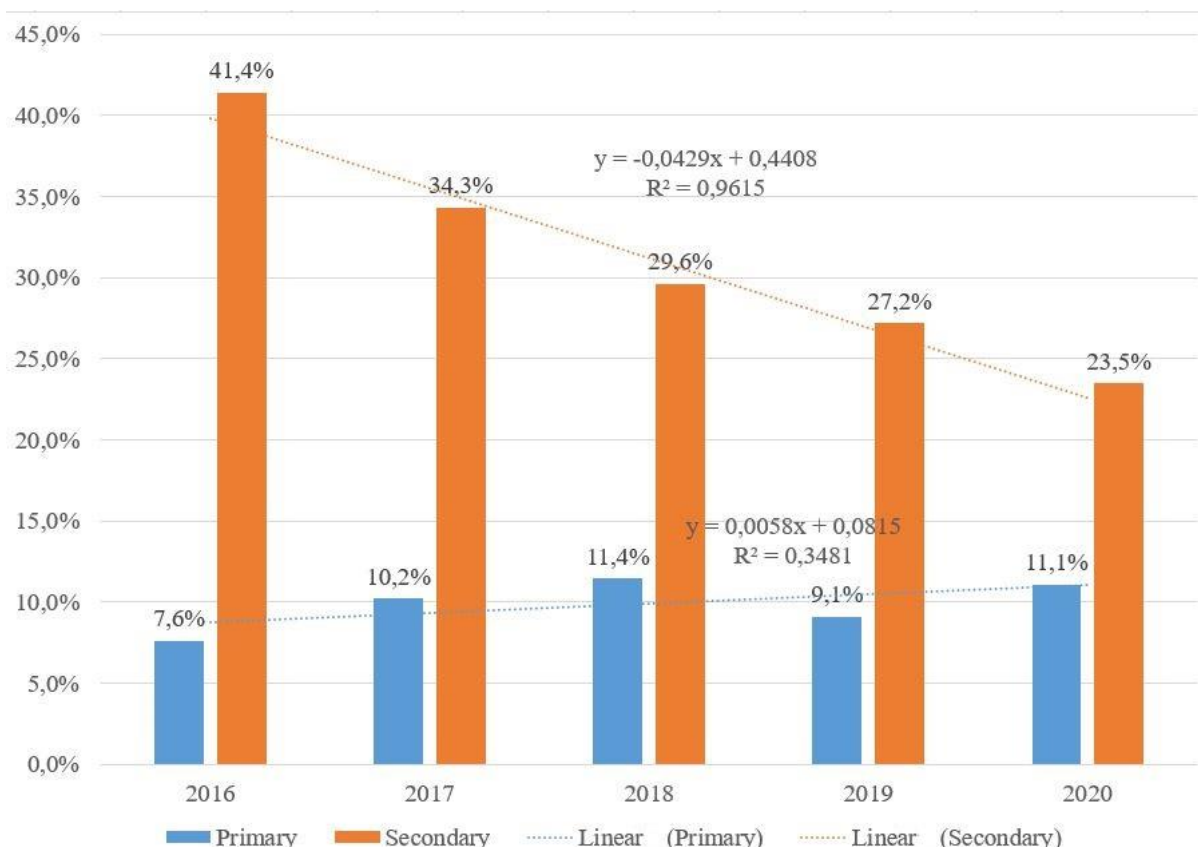


Figure 7: Employment rates in the primary and secondary labour market of participants in training courses for the public employed (2016-2020) (%)

Source: own editing based on data from the Ministry of Innovation and Technology

The number of participants in training courses for public employees almost doubled in the two years after 2016, while the number of public employees in employment was already decreasing in 2017. However, there was a significant decline thereafter, also driven by the increasing absorption capacity of the competitive sector, with vacancies exceeding 60,000 at the end of 2018. The low headcount in 2020, however, can now be explained by the emergence of the coronavirus epidemic, which made it impossible to organise and launch training courses, and the training courses that had already started were put on hold. In all the years under review, women accounted for a higher proportion of the participants in training courses for public employees. The smallest difference between the rates by gender was in 2017, when there was only a 10.4% difference in favour of women. It is also likely that women are more likely to be involved in training because a higher proportion of men in disadvantaged social groups are in undeclared or seasonal work, which can provide them with a higher income than public employment with fewer strings attached.

The success of the training is measured by the job placement rate. In our country, there are two labour market sectors: the primary labour market and public employment, i.e. the secondary labour market. As for all training, the most important thing is to find a job in the primary labour market. Government agencies assess the placement of participants in the 6 months following the end of the training. As Table 2 shows, in each year a higher proportion of those trained were able to find employment only in the secondary labour market. In the last three years of the period under review, the share of those in the secondary labour market, i.e. public employment, decreased, while the share of those in the primary labour market remained stable and the share of those not entering the (legal) labour market increased. Over the period under review, 56.1%

of those trained became unemployed, 31% were able to find a job in the secondary labour market and 12.9% in the primary labour market within 6 months of completing their training. In other words, overall, the majority of those trained do not enter the labour market, and those who do, mostly continue to find employment in public employment.

Table 2: Distribution of participants in training for public employees in the primary and secondary labour market, 2016-2020 (%)

Year	Share of people in primary labour market employment	Share of people in secondary employment	Percentage who could not find a job after training	Total
2016	8,7	40,9	50,4	100
2017	13,3	30,9	55,8	100
2018	14,1	31,8	54,1	100
2019	14	28,2	57,7	100
2020	14,2	23	62,7	100
Total	12,9	31	56,1	100

Source: own editing based on data from the Ministry of Innovation and Technology.

3.1.5. Spatial distribution of adult training in our country

In Hungary, the number of municipalities involved in adult education grew exponentially during the period under review. As Figure 8 shows, in 2019, most municipalities in the central and eastern parts of the country had access to training. In 2010, training locations were still mainly concentrated in the county seats and district centres, but 10 years later, the inclusion of rural areas in the adult education system had already started. In 2010, training sites were mostly located along main roads, while in 2019 their accessibility has become more open. If we look at the figure below, we can clearly see that in Borsod-Abaúj-Zemplén county, the main roads from the county seat (Miskolc) towards Slovakia almost completely cover the adult education sites. The western part of the country was less rich in locations for accessing training, but it can be said that adult education was available in all the duchy and district centres of the country. In terms of accessibility, small rural settlements and remote areas were not covered by training, thus exacerbating their disadvantaged situation.

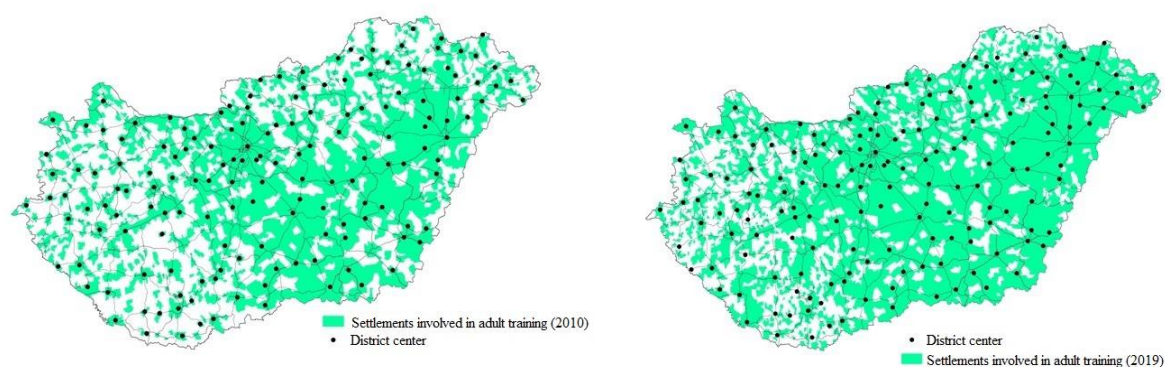


Figure 8: Availability of adult learning in Hungary (2010, 2019)

Source: based on own work (www.osap.mer.gov.hu)

I set the catchment area of the district centres at 10 km, as the mobility of Hungarian people is low and a previous questionnaire survey had given this distance as the maximum distance they are willing to travel to complete a new training course (Hajdú - Koncz, 2020). Examining the absorptive power of district centres in adult education revealed the most lagging areas of the country in terms of access to adult education. In the central and eastern parts of the country, the largest area without training is located in Borsod-Abaúj-Zemplén county, along the Slovakian border. As illustrated in Figure 8, adult education sites were found around the main roads. Border areas are characterised by settlements with high unemployment, relatively low employment and high public employment, where adult education could be reduced by organising adult education locally to prevent and mitigate high out-migration. In the western half of the country, a corridor without training emerged south of Lake Balaton in both years under review. This adult education deficit corridor covered six counties in the southern and western parts of the country, running from east to west and affecting Bács-Kiskun County, Tolna County, Baranya County, Somogy County, Zala County and the south-western part of Vas County (Figure 9).

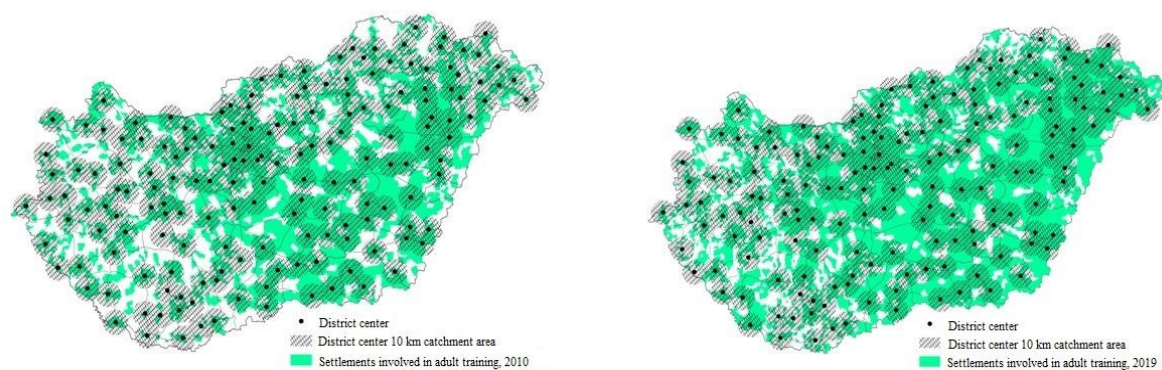


Figure 9: 10 km radius of adult education sites and district centres in Hungary (2010, 2019)

Source: based on own editing (www.osap.mer.gov.hu)

In the year before the introduction of public employment, 48.2% of those who completed the training found a job in the primary labour market thanks to the new skills, but when the two labour market sectors are considered together in terms of job placement, after an initial increase, there is a trend decline. The highest job placement rate in 2014 was 55.7%. Between the endpoints of the period under review (2010-2020), the job placement rates worsened by 13.5%. For the secondary labour market placements, 2011 was taken as the base year for the emergence of public employment, in which case there was an increase of 10.5%. In terms of employment in the primary labour market, there is a 27.1% decline from 2010 to 2020.

In terms of the number of jobseekers completing training in Hungary, three districts (Miskolc district, Tokaj district, Nyíregyháza district) and the capital city stood out on average over the period under review when analysed at the LAU2 territorial level. In the western half of the country and in the Budapest agglomeration, fewer people were involved across the board, suggesting that regions with high employment and high per capita incomes have fewer job seekers involved in training. The districts in the second highest category are mainly located in the eastern counties of Borsod-Abaúj-Zemplén and Szabolcs-Szatmár-Bereg. This category is found in the districts of the eastern part of the country, while in Western Hungary the districts of Kaposvár and Pécs.

The analysis of employment at the district level compares employment in the primary and secondary labour markets. Employment in the primary labour market shows a completely different picture than the proportion of people in public employment. The share of people in the primary labour market was highest in North-West Hungary. These are the districts in the region with low unemployment, high employment rates and relatively high GDP. Trainees in these areas are the most likely to find a job in the primary labour market in the three months following completion of their training. In the eastern part of the country, there is a low level of employment in the primary labour market, which is particularly marked in the border peripheries. Secondary labour market participation was concentrated in several large zones of the eastern part of the country (border rural areas of Borsod-Abaúj-Zemplén, Szabolcs-Szatmár-Bereg and Hajdú-Bihar counties), in the disadvantaged districts of Baranya and in the Devecser district of Veszprém county. In Central Hungary and in the northern part of Western Hungary, the presence of public employment was not typical (Figure 10).

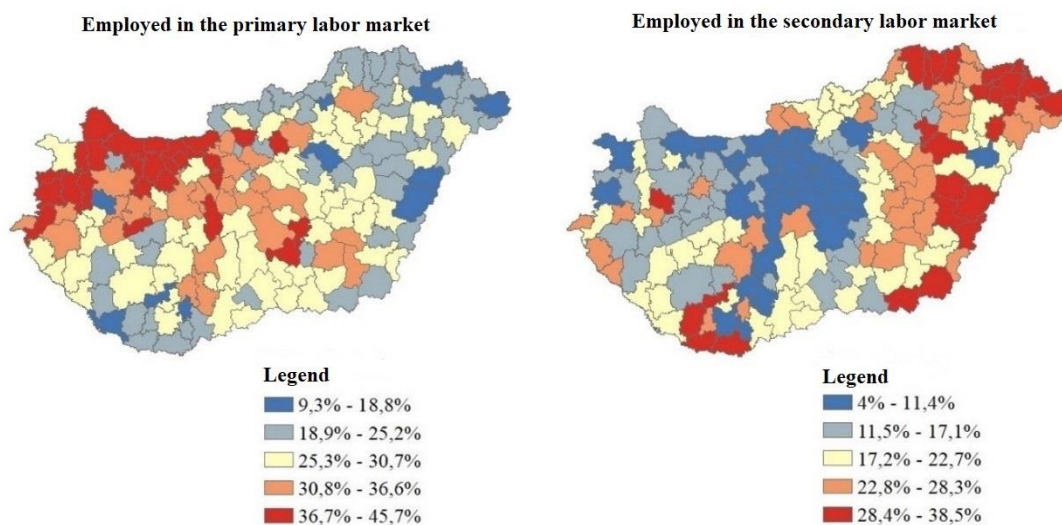


Figure 10: Spatial analysis of primary and secondary labour market participation (%) at the district level, averaged over the years 2010-2020

Source: own production based on data from the Ministry of Innovation and Technology (2023)

3.2 Results of the primary research

3.2.1 Reasons for unemployment in the group studied

In addition to the very low level of motivation to find a job, it is important to stress that long-term unemployment places an enormous burden on families, not only in financial terms (20.1%). The second highest proportion of respondents also suffers psychologically (18.6%), which, together with the persistent lack of money, can lead to illness (4.3%), generate conflicts within the family (3.6%) and jeopardise the education of children (18.2%), often limiting the future outlets of their offspring.

64.9% of respondents have experienced discrimination in their job search on the basis of some aspect (gender, age, education, financial circumstances, ethnicity), which may be more significant in a situation where it is particularly difficult to enter or return to work. The highest rate of discrimination (67.8%) was reported by those who had gained work experience exclusively through public employment. This compares with a negligible negative experience among those who had never worked and those who had already been in the primary labour

market ($\chi^2=14.634$; $df=2$; $p=0.001$). Discrimination was more commonly reported by those living in municipalities, and less of a problem in the experience of urban residents. However, it was not these factors that respondents identified as the main barrier to finding a job, but the lack of job opportunities (Figure 11), particularly in their place of residence, as previous responses suggest that commuting for work is not a real option for them.

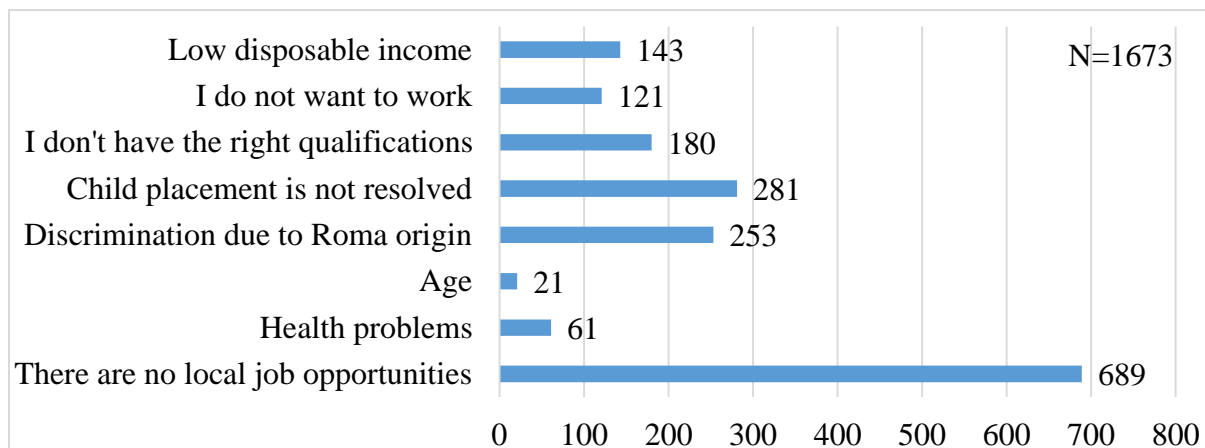


Figure 11: External and internal barriers to employment (number of mentions)

Source: based on questionnaire survey (2019-2021) owned.

The next limiting factor for employment is that 75.4% of respondents would travel up to 10 km to their new job (Figure 12). 15.4% of the sample would travel between 11-30 km, 6.9% between 31-50 km, 1.9% between 51-80 km and 0.4% would travel more than 80 km. For those in vocational education and training, the localisation is even more pronounced, as 85.9% would be located within 10 km of their place of residence. This attitude is not at all surprising among women with large families. The picture is more favourable among the smaller male respondent group, but no statistically significant difference can be found. The vast majority of respondents are basically not interested in local job opportunities. In peripheral municipalities, commuting more than 50 km a day may be necessary to find a job, but only 2.4% of respondents would be able to do so. Those who would be willing to commute more than 10 km per day are clearly less satisfied with their current standard of living. Those currently in public employment are also willing to work further away from home. However, only those who have already worked in the primary labour market would commute more than 80 km to their new job.

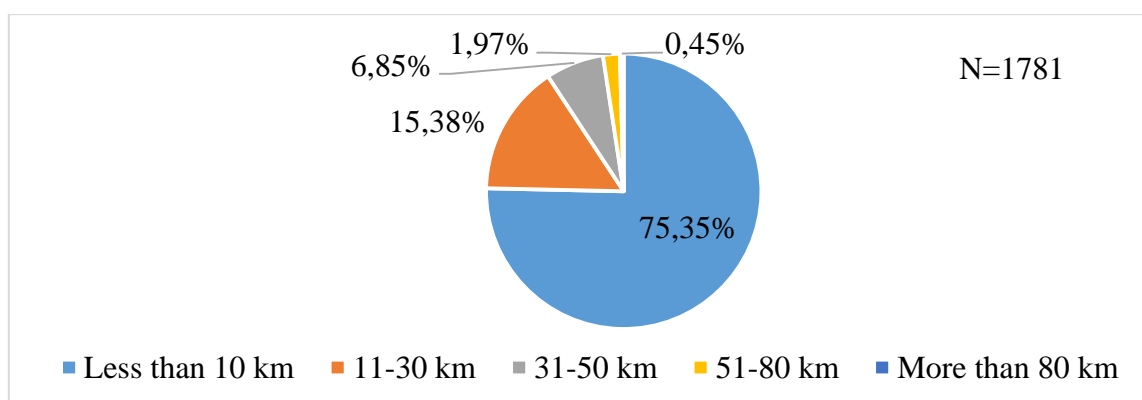


Figure 12: Willingness to commute by maximum distance travelled (km)

Source: based on questionnaire survey (2019-2021) owned.

Financial expectations of employment are largely influenced by the volume of employment substitution benefits. The minimum net monthly wage for which they would have been willing to work at the time of the survey was the category between HUF 150 000 and 200 000, which was the lowest (41.2%). 24.6% of those willing to work would settle for less than this, while 34.2% would only work for a salary above 200 000 HUF. A cross-tabulation analysis was used to examine whether education influences respondents' income expectations. A surprising result was that the group with the highest expectations was the group that had not even completed eight years of primary school. The inverse relationship between educational attainment and salary expectations was confirmed by a statistical test ($\chi^2=161.871$; $df=9$, $p=0.000$).

3.2.1 The vision of training participants

The concept of lifelong learning, which is a pillar of EU policy, takes on a rather specific meaning in this situation. While 65.2% of respondents hope to take part in more than 10 training courses in the future (Figure 13), which would seem to be perfectly in line with the idea of lifelong learning, the motivations of the respondents were quite different when answering this question. The result was not shaped by a future-oriented mindset but by a present-oriented mindset. 65.2% of the respondents in the survey would take part in more than 10 training courses in the future, compared to only 7% of respondents who would take part in one additional training course. According to the highest level of education, 70% of job seekers who had not completed primary education would take part in more than 10 training courses, as would 67.7% of those with primary education and 73.3% of those with at least 10 years of education. The highest proportion (41.9%) of jobseekers with at least a school leaving certificate would take 2-5 courses in the future, while 30.5% would take one additional course. My cross-tabulation analysis on highest educational attainment and future training participation also showed that respondents with a particularly low level of education would like to participate in a higher number of training courses in the future, as confirmed by the Chi-square test ($\chi^2 = 352.469$; $df=12$, $p=0.000$).

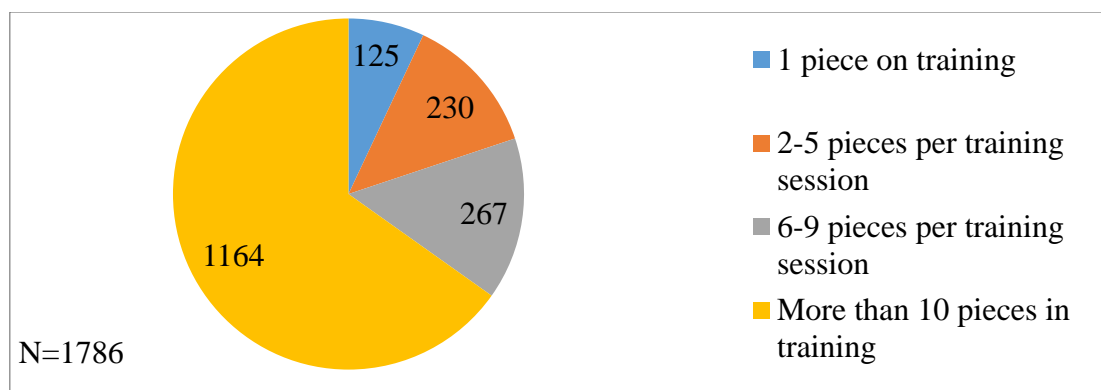


Figure 13: Training needs by the opportunity to participate in future training (number of training courses)

Source: own editing based on questionnaire survey (2019-2021).

There are also quite different perceptions of learning in terms of whether it is for the purpose of earning a living or for the possibility of future advancement. Among the responses to my question on the duration of training, 72.4% indicated a preference for training lasting longer than five months, in preference to short-term training. There could be two main reasons for this, one is that longer-term training can generally provide access to the occupations listed in the National Training Register, and the other is that the longer the training, the longer the learner

receives the earnings-related allowance that comes with the training. While only 12.5% highlighted further education as a means of improving their current standard of living, 83.7% of respondents see training for job seekers with supplementary income support as a source of income. If they did not receive the benefit alongside the training, 90% would not participate (Figure 14). This response for the current situation is virtually independent of the respondent's past work experience or future plans. Accordingly, the primary target group for training is interested in maintaining the current training-support system.

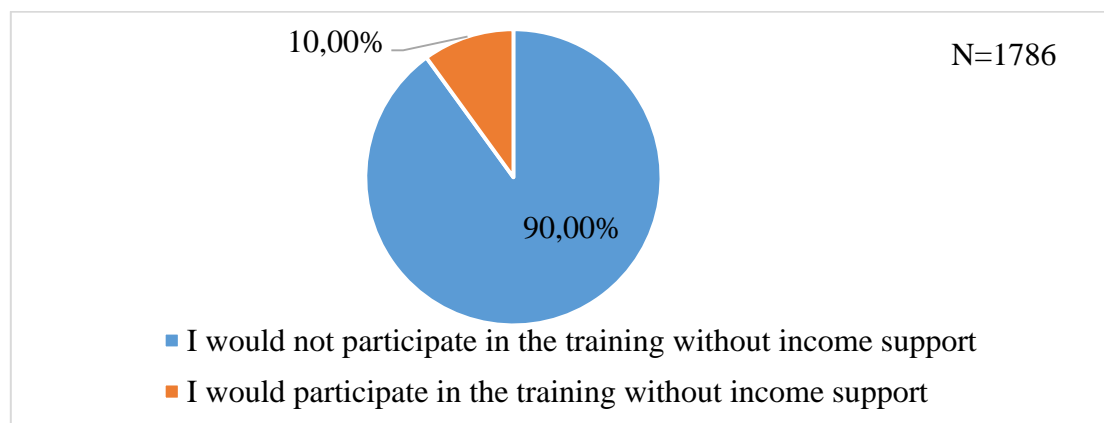


Figure 14: Willingness to participate in training without earnings-related allowances

Source: based on questionnaire survey (2019-2021) owned.

Taking into account the highest levels of education, 96.5% of those with primary education would not have enrolled in training without the replacement earnings allowance, 94.3% of those without completed primary education and 92.7% of those with at least 10 years of education would not have enrolled in training without the replacement earnings allowance. The only group by educational attainment was those with a school leaving certificate, the majority of whom thought they would have enrolled in training without the earnings-related allowance. 13.7% of those with a vocational qualification would have taken part in training without earnings compensation, compared to only 6.4% of those without a vocational qualification.

Jobseekers who see training as a source of livelihood are clearly more likely to enrol in training in the future than those who do not see training as a primary means of earning an income ($\chi^2 = 74.086$; $df=3$, $p=0.000$) (Figure 15). Of course, it also emerged that those respondents who do not consider training as a source of livelihood would be more likely to participate in training without a wage subsidy ($\chi^2 = 132.541$; $df=1$, $p=0.000$). In addition, the spatial correlations that point to differences between more developed and less developed areas within the county were confirmed. Looking at the data series from all angles, it can be observed that regions with better geographical locations and better socio-economic indicators are less likely to consider subsidised training as a source of livelihood.

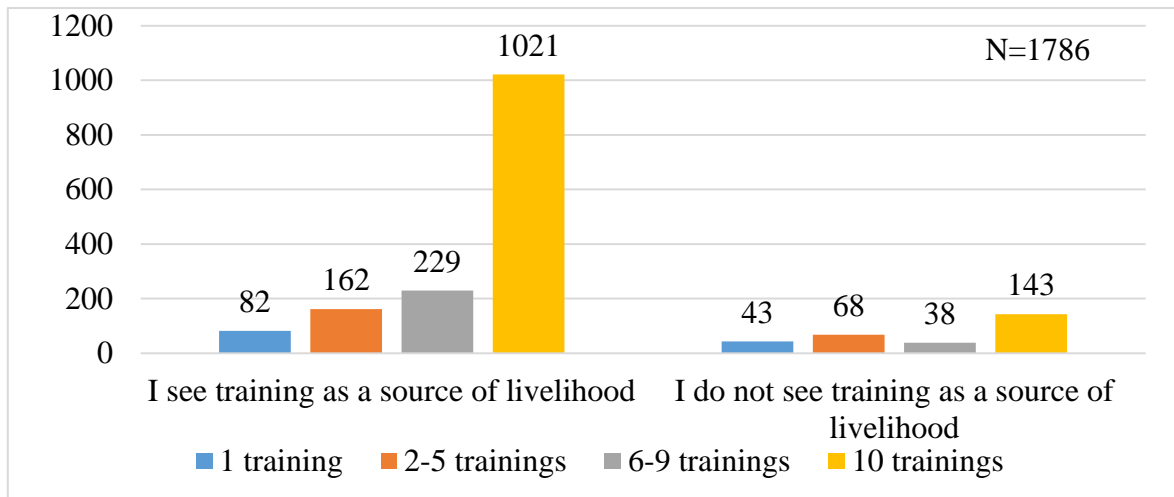


Figure 15: Relationship between respondents' perception of training as a source of livelihood and the number of training courses they would attend in the future

Source: based on questionnaire survey (2019-2021) owned.

48.8% of respondents have no professional qualifications. Basically, 26.5% of the jobseekers interviewed had a vocational qualification before enrolling in training, but after the training, this percentage increased to 51.2%. Among the sample who had never worked in any labour market sector, 62.7% did not have a vocational qualification (Figure 16). 70.9% of those who had entered public employment did not have a vocational qualification, while 74.4% of those who had already entered the primary labour market had at least a vocational qualification ($\chi^2=102.122$; $df=2$; $p=0.000$).

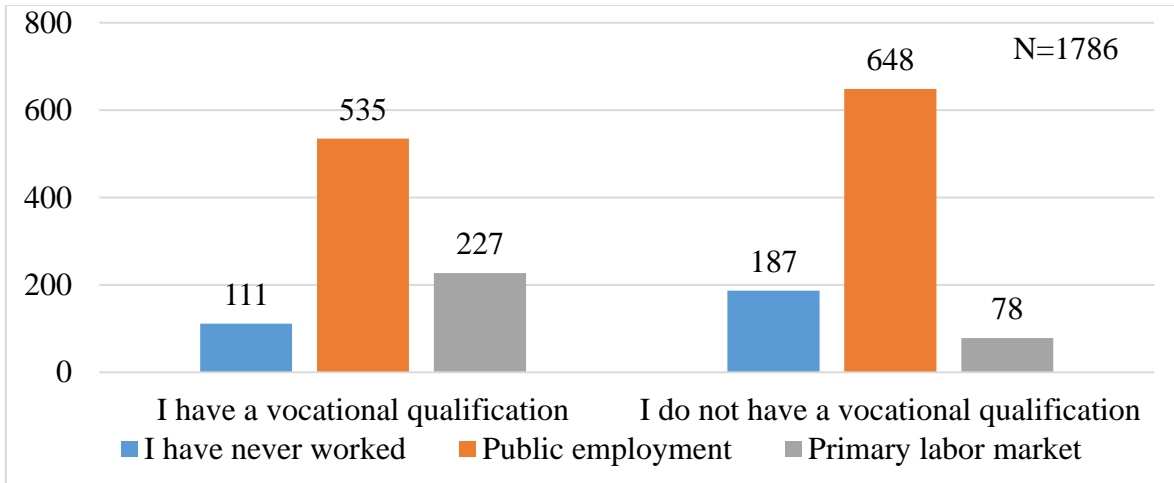


Figure 16: Relationship between professional qualifications and work experience

Source: based on questionnaire survey (2019-2021) owned.

In terms of highest educational attainment, districts targeted by the complex programme have the highest proportion of jobseekers with lower educational attainment, while districts without a high school degree tend to have the highest proportion of jobseekers with a high school degree ($\chi^2=135.382$; $df=12$; $p=0.000$). The non-beneficiary districts had the highest proportion (71.1%) of jobseekers with vocational education in the sample (Figure 17). The economically underperforming districts (districts to be developed and districts to be developed with a complex programme) had a higher proportion of jobseekers without vocational education ($\chi^2=180.365$; $df=3$; $p=0.000$).

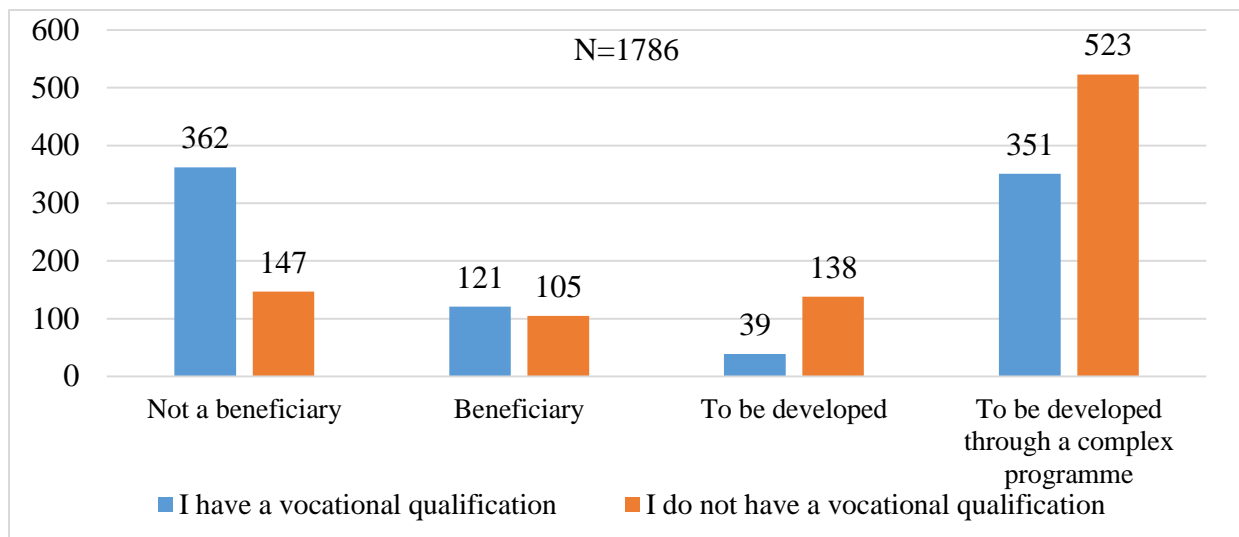


Figure 17: Relationship between the category of the district of residence of the job seekers surveyed and those with vocational qualifications

Source: own ed. based on questionnaire survey (2019-2021).

Those who had attended an OKJ course were more likely to want to find a job after completing the course than those who had attended general adult education ($\chi^2=6.443$; $df=1$, $p=0.011$). Correspondingly, a lower proportion of respondents to vocational training courses considered the income support they received during their training as a source of income ($\chi^2=83.364$; $df=1$, $p=0.000$). Furthermore, the importance of income other than benefits was much lower, as they participated in training in the hope of continuing their education (Figure 18).

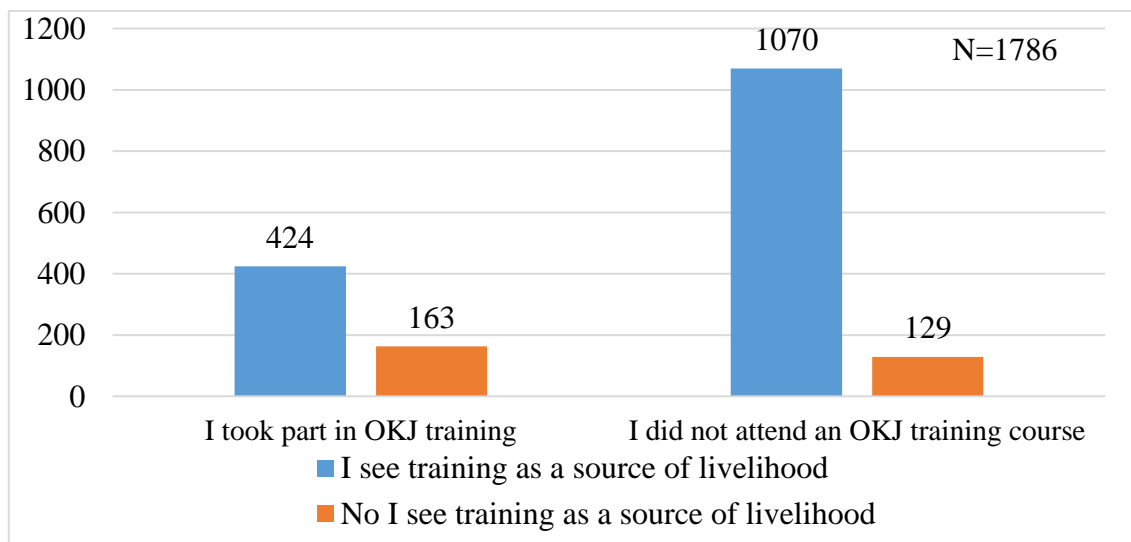


Figure 18: Relationship between participation in vocational training and the treatment of training as a source of livelihood

Source: based on questionnaire survey (2019-2021) owned.

Those in the sample who have never worked in their lives are basically not interested in finding a job even with newly acquired knowledge (Figure 19). Only slightly more favourable responses were given by those who had only ever worked in public employment. Those who had worked in the primary labour market were the most likely to want to find a job with their newly acquired knowledge ($\chi^2=184.144$; $df=2$; $p=0.000$).

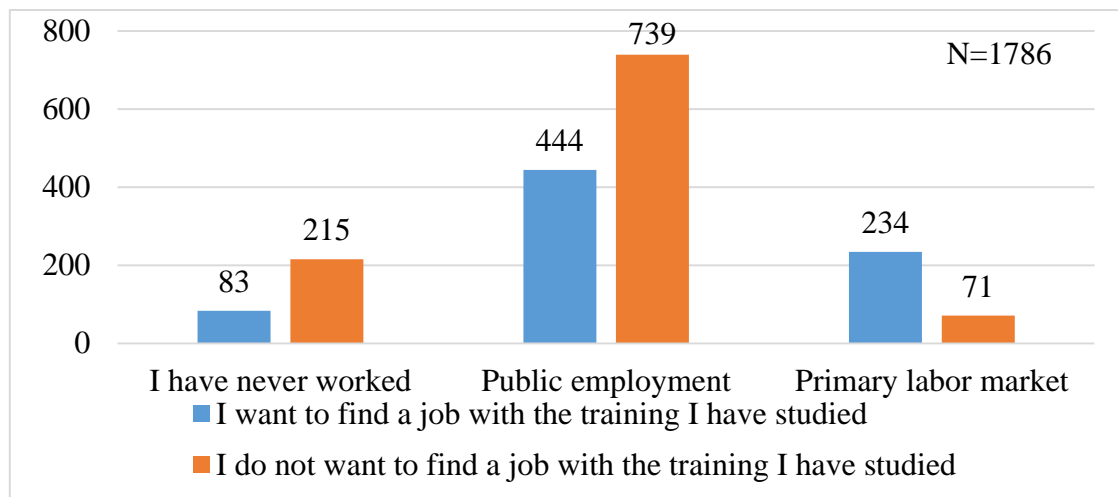


Figure 19: Relationship between the work experience of the job seekers surveyed and their intention to find a job

Source: based on questionnaire survey (2019-2021) owned.

86.3% of respondents had attended 1-2 training courses for jobseekers, 10.9% had attended 3-5 training courses, and only 2.6% had attended more than 5 training courses in their lifetime. Motorways make it much easier to get to a training course, whether by car or by public transport. Those living in a municipality with a motorway were fewer than those attending fewer than five training courses, whereas those attending more than five training courses were dominated by those living in a municipality with a motorway in the immediate vicinity ($\chi^2=11.665$; $df=3$; $p=0.009$).

Jobseekers who want to find a job with their newly acquired qualifications are more likely to successfully complete training (89.1%) than those who do not (84.6%). Inversely, only 43.8% of those who successfully complete training also want to find a job with their newly acquired qualifications. This proportion is lower, at 34.6%, among those who do not want to find a job, suggesting that drop-out is mainly due to a lack of motivation and poor academic performance rather than to the opportunity to find a job during the course. The success rate for participants in courses in the National Training Register is 98.3%, compared to only 80.7% for participants in non-technical courses.

4. CONCLUSIONS AND SUGGESTIONS

The research looked at participants in adult education for jobseekers funded by government agencies. The peak number of participants covered by the Government Agencies in the period under study was in 2014, and the number has been steadily decreasing since then. Vocational training is the most common type of training in the country, which is important for job placement, as it is easier for jobseekers with a newly acquired qualification to find a job than for jobseekers with a skills training. In terms of funding for training of persons involved in the Government Agencies across the country, domestic resources have shown a steady downward trend, supporting an almost undetectable number of people by the end of the period under review. The number of beneficiaries of EU funding fluctuated greatly during the period under review, reaching a peak in 2014, when more than 101,000 people were funded, and then declined steadily.

As regards the spatial distribution of supported training, I have shown that the number of municipalities hosting adult education courses has increased by almost 700 over the 11 years, improving their accessibility. Using spatial statistical methods, the thematic maps show that Budapest has a high concentration of training centres in the country, followed by the duchies, with a share of more than two thirds. Training was available in all the country's district centres, so that truly extensive areas could not be left without training. The spatial concentration of training sites was most marked along the main roads.

Since the results of the questionnaire survey indicated that three quarters of respondents would only commute a maximum of 10 km (for work or training), I examined the extent to which rural areas were outside the 10 km radius of the training sites. On this basis, the areas of the country with a lack of adult learning were identified, which were partly determined by the settlement network and partly by labour market conditions. The western parts of the country were characterised by higher employment rates and thus fewer jobseekers were involved. For this reason, more extensive cohesive areas were found in the rural areas dominated by small and small villages in Western and Southern Transdanubia. From a rural perspective, there is evidence of progress in access to training, but in rural areas without training this gap also contributes to further deprivation.

Supported labour market training will play a key role in achieving the objectives of reducing the number of jobseekers and helping disadvantaged groups in society to catch up. In the context of lifelong learning, workers will be able to adapt to the constantly changing needs of the labour market. However, supported labour market training also plays an important role in the integration of disadvantaged people. Recently, we have also seen increased participation of marginalised social groups.

The employment rate of participants in training has been characterised by negative trends over the last decade. The decline in employment in public employment has led to an increase in the proportion of people who find themselves in a job search or in an unknown status after training. Looking at employment, the highest rates of employment in the primary labour market were found in the western part of the country, while the highest rates of employment in the secondary labour market (public employment) were found in the eastern part of the country, in areas with high unemployment.

Based on the secondary databases, the trends examined between 2010 and 2019 show a significant decrease in the number of registered jobseekers both nationally and in Borsod-Abaúj-Zemplén county. A further positive change is that, with more significant fluctuations, the overall number of vacancies has also increased. Despite these positive trends, the number

of participants in subsidised training for jobseekers (also with significant fluctuations) remains high. This is partly due to the fact that training is still not able to respond very effectively to labour market developments - decisions are taken a year in advance on the basis of statistics rather than by assessing the needs of local employers. On the other hand, the statistics are fundamentally influenced by disadvantaged social groups who are unable to gain a foothold in the real labour market even after completing training. Public employment has temporarily provided access to work for the masses, but following a reduction in the number of public employees, the effectiveness of labour market training in terms of job placement has fallen below previous levels in the county. Integration into the primary labour market is undoubtedly a more difficult task for disadvantaged unemployed people than public employment used to be, which has also been less conducive to their development.

In rural areas of Borsod-Abaúj-Zemplén county, the state has become the primary employer through public employment. However, the income replacement benefits received in conjunction with participation in training for jobseekers generate higher income than income from public employment, so it is more financially rewarding for jobseekers to enrol in labour market training than to work in public employment. Participants in training courses for jobseekers, because they do not want to find a job with the qualifications they have obtained, do not contribute to the development of the local economy. In fact, this element of the training system can be seen as a form of disguised assistance and plays a more important role in solving acute social problems.

A specific feature of the Borsod-Abaúj-Zemplén county is the low level of education of the participants in the training courses for jobseekers. Fewer people with higher education or a vocational qualification participate in training for jobseekers, as they have been in jobseeker status for a shorter period of time. In addition to the positive effects of public employment in terms of labour absorption (the majority of respondents have worked exclusively in public employment in the past), the lack of high expectations of workers is a criticism. People are recruited without any knowledge or qualifications, which is temporarily good for rural areas, but from a labour market point of view it perpetuates the backwardness of workers.

In Borsod-Abaúj-Zemplén county, the importance of the Miskolc and Ózdi districts in the spatial distribution of the involvement of public employees in training can be highlighted. The majority of participants in training were women and had a low level of education. While those with higher education are less excluded from the labour market, public employment may not be a competitive alternative for them.

Primary labour market location was clearly concentrated in areas with a more favourable economic situation, particularly in centres that have been the target of industrial investment in recent years, along the spatial structure axes directly linked to them and in agglomerations. Employment in the secondary labour market remains predominant in the peripheral areas bordering Slovakia. employment in public employment is not at all characteristic of areas where multinational companies are present, but nevertheless employment in the primary labour market sector was also lower in these areas. This is due to the fact that in these areas the social groups under study have a very low propensity to work, which, in addition to the rational arguments mentioned, is also explained by the relationship between subsidies and incomes.

The fact that the vast majority of the respondents to my questionnaire survey could not, and to a large extent did not want to, find a job with the qualifications they had previously obtained is a failure of training, but it also reflects the attitudes of the participants. Those with lower education would only be willing to work for a higher than average income. Most people do not

blame themselves for not being able to find a job without qualifications, but point to the lack of jobs. However, they are not willing to commute for work.

The majority of participants in adult training for jobseekers are women, partly because they would not take a job anyway because of their children, and the training makes it relatively easy for them to earn an income. Where the number of people living in a household is high, enrolment in training becomes particularly important. For men, as breadwinners, undeclared work or 'mask' jobs offer higher earning potential and therefore less opportunity to participate in training.

Based on my primary research, the vast majority of students would not participate in training without a linked earnings-related benefit. They clearly saw it as a source of livelihood, as they would otherwise have to look for other sources of income instead of subsidised learning provided by the state. Thus, they can be described as livelihood learners. This is confirmed by their desire to participate in as many courses as possible and for as long a period as possible. Participation in training is the easiest and best source of income for them in their current living situation. A livelihood learner is a person who does not participate in training for jobseekers in order to acquire new information, knowledge, skills and a new job. Instead, they focus on obtaining support that will provide them with a secure income during their training.

The highest proportion of respondents had been in public employment for more than half a year, which is due to the specificity of the duration of public employment (basically, they did not stop their public employment because they left the primary labour market, but because they had to take a break from time to time). Those in public employment were either unemployed within 6 months of completing their training or were only able to re-enter public employment. The employment rates observed in the primary survey differed significantly from the distributions obtained from secondary sources. A small proportion of respondents who had previously worked in public employment found work with their newly acquired qualifications, of whom around four-fifths found new employment in public employment. The proportion of those who were in public employment and in subsidised training on a permanent basis was therefore disproportionately high in my study sample. Either they did not even try to break out of it, or they returned to it after a valiant attempt. In addition to the experience so far, the future plans of participants in subsidised training and their level of risk-taking do not suggest that there will be significant changes in this area in the future.

In peripheral rural areas, jobseekers are more likely to be unable to find work in the primary labour market due to a real lack of job opportunities, so investments are even more likely to mobilise workers with previous significant work experience in the primary labour market.

Based on the results of my research, I recommend greater involvement of local entrepreneurs in the choice of training courses to be launched. The Chamber of Commerce and Industry determines the range of training courses that can be launched, for which the Government Office invites applications from adult education institutions that meet the expected criteria. The definition of the needs is currently done in cooperation with the district offices and the municipalities, so that in most cases the jobseeker/employed person does not attend training courses of his/her own interest, but which are available within the district. This ensures that the training is launched and that a sufficient number of trainees are involved, but both labour market and job-seeker aspects are compromised.

More targeted training would reduce the number of participants in training, but would increase placement rates in the primary labour market in direct cooperation with employers. Vocational training is more costly, but the financial burden would be shared by assessing the needs of local

businesses and involving them in practical training. However, this change is not in the interest of adult education institutions, as they would lose a significant part of their subsidies due to the smaller number of staff and the "outsourcing" of apprenticeships.

It would be important for the labour market effectiveness of training to set a maximum number of participants in training, as there is virtually no link between learning and employment for those who are learning for a living. An exception could be made for remedial training, since the lack of eight years of primary schooling is a fundamental barrier to progression, excluding them from most vocational training.

In the future, greater emphasis should be placed on jobseekers who have more experience in the primary labour market or who already have a vocational qualification. Their experience from the primary research shows that they are more likely to be jobseekers, so targeted retraining can significantly increase the effectiveness of training.

5. NEW SCIENTIFIC RESULTS

1. My research partially confirmed my claim that adult education data in Borsod-Abaúj-Zemplén county are not closely related to the number of vacancies, which is due to the fact that training courses are more closely aligned with labour supply than with labour market demand.

I have examined the number of participants in subsidised adult education and the number of vacancies using a Beveridge curve for the period 2010-2020. The quantitative changes in the two variables did not move in the same direction in most cases, except for the years 2012-2014, when the number of job vacancies in public employment increased significantly. Due to changes in funding cycles, the number of EU-funded training courses was very low in 2016, while the number of vacancies hardly changed. Subsequently, the number of trainees increased again in 2018. And the COVID-19 pandemic had a much greater impact on the number of vacancies than on training. Supported training contributes to reducing skills gaps in the longer term and also responds to the social problems of the social groups concerned. Training should take into account the pre-qualification of learners. The largest share of training is for low-skilled, inclusive courses that do not require higher levels of prior learning and competencies. In addition, attracting sufficient numbers of applicants is an important factor in the effective organisation of training. An example of the latter is the hundreds of people across the county who have obtained qualifications in manicure and nail art.

2. During my research, it was partially confirmed that within Borsod-Abaúj-Zemplén county, it is possible to identify areas where adult education is not an effective part of the integration of jobseekers into the primary labour market, as they have been able to find employment after training only in the secondary labour market.

Based on the data series provided by the Ministry of Innovation and Technology, I used the method of spatial autocorrelation to identify the groups of municipalities in Borsod-Abaúj-Zemplén county where the share of former jobseekers who were able to find a job in the primary labour market after the training was significantly higher. It should be noted, however, that the absolute number of those who found a job in the primary labour market did not exceed the number of those who found a job in the secondary labour market in any district, only in the districts of Miskolc and Tiszaújváros. The territorial structure of adult education shows that training courses are both competitiveness and inclusion oriented, but the latter does not necessarily follow labour market needs. There is a strong spatial concentration of training delivery sites, with a predominance of large cities and industrial centres, providing this service to neighbouring areas. Job opportunities through public employment have had a significant impact on the labour market in the county, with 10 out of 17 districts having a secondary labour market employment rate above 40% on average over the years 2010-2020. As a result, the overall placement rate for those who completed training was higher in the less socio-economically disadvantaged districts of the county than in the central area around Miskolc. The spatial autocorrelation was able to show where public employment is less important rather than where the rate of placement in the primary labour market is significantly lower. The study revealed the importance of Borsod-Abaúj-Zemplén County in adult education and its individual segments. It showed which training courses were advertised for the county's adult education residents and how popular and successful they were, and what proportion of adult education courses were supported by the Labour Centre and the European Union. Among the training courses, a higher number of courses were advertised that had no entry requirements, i.e. did not require even primary education. The analysis also shows the central role of Miskolc and the characteristics of each rural area.

However, adult education could respond effectively to changing labour market needs, but the ability to respond quickly is fundamentally limited by the one-year training planning cycles of the Labour Centres. As a result, it cannot respond directly to changes in the number and composition of the unemployed in a short time, which is compounded by the attitudes of those taking part in the training. There is often a mismatch between the pool of unemployed and the expectations of job advertisements. A significant proportion of participants in training for jobseekers are livelihood learners who entered the training for the source of income and only potentially found employment with their newly acquired qualifications.

3. My third hypothesis is accepted, but I have to make an additional comment on it because of the changes taking place in the labour market. As the secondary data series showed, although public employment temporarily helped a significant number of job seekers to find work after its introduction, it also reduced the number of adult learners in the primary labour market, but at the same time increased the number of employed persons in the county. Indeed, the decline in the role of public employment has not increased the rate of employment in the primary labour market among the skilled, while training is also increasingly focused on the most disadvantaged groups. The success in finding a job is therefore significantly influenced by the population and the place of residence of those who are enrolled - the least motivated and those from the least accessible municipalities remain in the system.

During the period under review (2010-2020), the employment rate in Borsod-Abaúj-Zemplén county increased by more than 12 percentage points, which was faster than the national rate of development, reducing the county's gap with the national average to five percentage points. At the same time, the number of job seekers decreased, including those who had previously been unable to find a job in the primary labour market on a sustained basis. Overall, positive changes cannot be denied, but the employment performance of participants in subsidised training has deteriorated. This can be explained on the one hand by the decline in the number of job vacancies in public employment (from 51.3% to 38.7% between 2016 and 2020), and on the other hand by the fact that the share of people in the primary labour market in 2020 was only 12.4%. The latter figure was 56.4% in 2010 and has not exceeded 20% in any year since 2012. The decline in the role of the secondary labour market has therefore not been offset by a rise in the number of people in the primary labour market, which has been the case nationally (from 16.2% to 24.8% between 2014 and 2019, before falling back in the wake of the COVID-19 pandemic). However, the increase has not nearly compensated for the decline in the secondary labour market nationally, which has been more than 25 percentage points.

4. The questionnaire survey confirmed that among the groups participating in adult education, it is possible to distinguish those who cannot break out of the triangle defined by the status of job-seeker - public employee - subsidised training. Instead, they focus on obtaining the support that will provide them with a secure income during the training, and accordingly the social role of the training is dominant, I have defined these participants as livelihood learners.

The vast majority of respondents to the primary survey were unable to find a job in the primary labour market after completing their training for various reasons, while a significant proportion were not only on their second but on their third subsidised training course at the time of the survey. The only significant employment was in public employment, which, however, for administrative reasons, cannot be permanent, up to a maximum of 12(+6) months in total. In addition, the number of people in public employment has decreased in recent years, which means that the number of opportunities is becoming increasingly limited. This is fully justified from the point of view of the support sector, as the long-term objective of transit employment

is to move on to the primary labour market. However, according to the experience of the questionnaire survey, very few of these transitions have taken place. Sooner or later, they were back on the labour market, from which a new training course was the quickest and surest way out. This is confirmed by the fact that only 0.73% of the respondents had participated for the first time in training for jobseekers at the time of the survey, and the response to several questions in the questionnaire also showed that participants were interested in taking advantage of the opportunities offered by the support system rather than competing in a real competition.

The study presented the socio-economic characteristics of the participants in the training. Disadvantaged groups have a different, distorted perspective from the majority society and adapt their coping strategies accordingly. This often focuses on easy to obtain and secure sources of income that do not require major investments and new expectations. The results of the questionnaire survey confirmed that the vast majority of participants attend the courses to earn an income, with the supplementary income providing an important monthly income for these families. 83.6% of the respondents considered the courses as a source of income, without the income support 90% of them would not be able to attend the courses - they would have to look for other sources of income to compensate for the time lost due to the courses. 65.2% of respondents to the questionnaire indicated that they would take up to 10 more training courses in the future, with 72.4% preferably longer than 5 months - i.e. they are basically interested in maintaining their current situation of relative security rather than the challenges and risks of moving on. 57.3% would like to find a job with their newly acquired skills, but only 66.4% in general would like to work. Evaluating the number of adults in education is not a simple task, as it is not possible to attribute normative utility to state-subsidised training, either in adult education in schools or in training and retraining for the unemployed. Those who take part in subsidised training have a legitimate expectation that they are more likely to find a job or change jobs.

5. Students with vocational qualification and experience in the primary labour market have a higher propensity to take up long-term employment, which I have confirmed with my primary research.

The questionnaire survey showed that 59.6% of respondents who did not consider schooling as a source of livelihood had a vocational qualification. On the other hand, among those who considered training as a source of livelihood, 53.2% had no professional qualifications. 13.7% of those with a vocational qualification would take part in training without income compensation, compared to only 6.4% of those without a vocational qualification. 70.9% of those in public employment have no vocational qualification, while 74.4% of those already in the primary labour market have at least one vocational qualification.

Among those surveyed, those who have already gained work experience in the primary labour market would be more likely to take shorter training courses in the future, i.e. they are not interested in maintaining a "protected status" but in competing in the competitive sector. Those in the sample who have never worked before in their lives would not, in principle, want to find a job with their newly acquired skills. Only slightly more favourable responses were given by those who have only worked in public employment. Those who have worked in the primary labour market are the most likely to want to find a job with their new skills. Jobseekers who had already taken up a job in the primary labour market tended to have higher educational attainment.

6. I do not accept my hypothesis that there are no municipalities in the country where adult education for jobseekers was not available within 10 kilometres during the period under review, the country has good coverage in this respect.

In line with the settlement factors of the service sector, the adult education function also played a greater role and showed a spatial concentration in the county seats, followed by the district centres. At the same time, there was a strong demand from the labour market for training in peripheral municipalities with higher unemployment rates. Training organisers may be interested in launching subsidised courses in smaller, more remote municipalities, even if this creates difficulties (e.g. providing infrastructure), provided that there are sufficient numbers of participants. Border areas are characterised by municipalities with high unemployment, relatively low employment and high public employment, where the organisation of adult education locally could be reduced in order to prevent and reduce high out-migration. Thus, overall, zones of functional deprivation have emerged in areas of urban deprivation and poor accessibility, mostly along the national border. The largest untrained area in the central and eastern part of the country is in Borsod-Abaúj-Zemplén county, along the Slovakian border. In addition to the central settlements, the strips along the main roads have also influenced the geographical distribution of adult education sites. In the western part of the country, a 'corridor without training' has developed south of Lake Balaton. This corridor of adult learning gaps covered six counties in the south and west of the country, running from east to west, Bács-Kiskun, Tolna, Baranya, Somogy and Zala counties, and the south-western part of Vas county.

7. My hypothesis is confirmed that there are significant differences between those who successfully complete adult education for job seekers in different regions of the country regarding placement in the primary and secondary labour markets.

The proportion of students in the primary and secondary labour market at the district level was analysed using the Local Moran I spatial autocorrelation method in different years of the study period. The spatial pattern of placement was strongly influenced by both economic processes and policy interventions, so that the extent of clusters differed significantly before the mass influx of public employment, at the peak of public employment, or even in 2020 during the COVID-19 pandemic (in which year differences were much less detectable). The thematic maps produced in conjunction with the methodology also revealed several basic features of the territorial disparities that characterise Hungary (West-East slope, centre-periphery relations). Higher rates of primary labour market participation were found in the North Transdanubian region and the metropolitan agglomeration, while lower rates were found in the border areas of the North Great Plain and the South Transdanubian region. The location where support policies enabled the creation of statuses as a means of catching up also had a major impact on the secondary labour market. Thus, the central areas could not appear with high values, while the extent of the zone of the significantly low category varied from year to year, moving from the part of North Transdanubia close to the capital to the agglomeration of the capital and then to the south-east towards Kecskemét. The above-average role of public employment was coherent in the inner and outer peripheral regions of North-Eastern Hungary, while it was not more important in the regions of South Transdanubia with unfavourable socio-economic indicators.

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3. Hajdú Dávid; Koncz Gábor; Lipták Katalin (2022): A közfoglalkoztatottak munkaerőpiacra való kilépését segítő képzések Borsod-Abaúj-Zemplén megyében, 2016–2020 = TERÜLETI STATISZTIKA 62 : 5 pp. 510-537. , 28 p. DOI: 10.15196/TS620502
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14. Hajdú Dávid; Koncz Gábor (2022): Employment data of participants in supported adult training for job seekers and their territorial pattern in Hungary, 2010–2020 = REGIONAL STATISTICS 12 : 2 pp. 117-148. , 32 p. DOI: 10.15196/RS120205
15. Hajdú Dávid (2021): Aspects regarding the development of “adult training” programs for jobseekers in Borsod-Abaúj-Zemplén county = ROMANIAN JOURNAL OF REGIONAL SCIENCE 15 : 2 pp. 15-36. , 22 p.
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17. Hajdú Dávid (2021): Distribution of Adult Education Participants in Borsod-Abaúj-Zemplén County = VISEGRAD JOURNAL ON BIOECONOMY AND SUSTAINABLE DEVELOPMENT 10 : 1 pp. 24-28. , 5 p. DOI: <https://doi.org/10.2478/vjbsd-2021-0006>
18. Hajdú Dávid (2021): The impact of population processes on adult training in Borsod-Abaúj-Zemplén County between 2010 and 2019 = STUDIA MUNDI - ECONOMICA 8 : 3 pp. 131-142. , 12 p. DOI: <https://doi.org/10.18531/Studia.Mundi.2021.08.03.131-142>
19. Hajdú Dávid (2021): The effect of the coronavirus (Sars Cov-2) on training for jobseekers in Hungary = ECONOMIC AND REGIONAL STUDIES / STUDIA EKONOMICZNE I REGIONALNE 14 : 1 pp. 80-98. , 19 p. DOI: <https://doi.org/10.2478/ers-2021-0006>
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22. Hajdú Dávid ; Greutter Zoltán ; Greutter-Gregus Éva (2022): Future plans of students In Borsod-Abaúj-Zemplén County with the vocational qualification studied, In: Bujdosó, Zoltán (edited by) XVIII. Nemzetközi Tudományos Napok [18th International Scientific Days] : A „Zöld Megállapodás” – Kihívások és lehetőségek [The 'Green Deal' – Challenges and Opportunities] : Tanulmányok [Publications], Gyöngyös, Magyarország : Magyar Agrár- és Élettudományi Egyetem Károly Róbert Campus pp. 286-291. , 6 p.
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26. Le-Dai Barbara ; Hajdú Dávid ; Koncz Gábor (2022): Differences in unemployment and adult education in Borsod-Abaúj-Zemplén County and Győr-Moson-Sopron County, In: Arany, Ferenc (edited by) RURALITY IN EUROPE 5th International Scientific Conference on Rural Development Conference Proceedings, Gödöllő, Magyarország : Hungarian University of Agriculture and Life Sciences, Gödöllő 206 p. pp. 146-154. , 9 p.
27. Hajdú Dávid ; Járdány Krisztián (2020): Territorial distribution of adult education in Hungary, In: Győri, Tímea; Arany, Ferenc; Egri, Zoltán ✉ (edited by) CHANCES AND CHALLENGES FOR THE EUROPEAN RURAL DEVELOPMENT (2021–2027) Peer-reviewed Scientific Conference Proceedings, Szarvas, Magyarország: Szent István Egyetem pp. 67-72. , 6 p.
28. Hajdú Dávid (2020): The effect of the coronavirus on unemployment in Borsod-Abaúj-Zemplén County, In: Győri, Tímea; Arany, Ferenc; Egri, Zoltán ✉ (edited by) CHANCES AND CHALLENGES FOR THE EUROPEAN RURAL DEVELOPMENT (2021–2027) Peer-reviewed Scientific Conference Proceedings, Szarvas, Magyarország: Szent István Egyetem pp. 60-66. , 7 p.
29. Hajdú Dávid (2020): Borsodchem reverse - postfordist transformation in Kazincbarcika, In: Bujdosó, Zoltán; Dinya, László; Csernák, József (szerk.) XVII. Nemzetközi Tudományos Napok : online konferencia : Környezeti, gazdasági és társadalmi kihívások 2020 után : Tanulmányok, Gyöngyös, Magyarország : Károly Róbert Kft. 1,241 p. pp. 443-450. , 8 p.

30. Hajdú Dávid (2020): Labor market analysis of Borsod-Abaúj-Zemplén County, In: Bujdosó, Zoltán; Dinya, László; Csernák, József (szerk.) XVII. Nemzetközi Tudományos Napok : online konferencia : Környezeti, gazdasági és társadalmi kihívások 2020 után : Tanulmányok, Gyöngyös, Magyarország : Károly Róbert Kft.1,241 p. pp. 451-458. , 8 p.
31. Járdány Krisztián ; Hajdú Dávid (2020): Investigation of the labor supply of Tokaj winery in the context of middle level viticulture education, In: Bujdosó, Zoltán; Dinya, László; Csernák, József (szerk.) XVII. Nemzetközi Tudományos Napok : online konferencia : Környezeti, gazdasági és társadalmi kihívások 2020 után : Tanulmányok, Gyöngyös, Magyarország : Károly Róbert Kft. 1,241 p. pp. 543-550. , 8 p.
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33. Koncz Gábor ; Hajdú Dávid (2019): Regional differences of extra-curricular adult education by Counties of Hungary, In: Zoltán, Egri; Krajcsovicz Magdolna, Molnárné; Márta, Paraszt (edited by) Digitization in Rural Spaces – Challenge and/or Opportunity? 3rd International Scientific Conference on Rural Development Conference Proceedings, Szarvas, Magyarország : Szent István Egyetem Agrár- és Gazdaságtudományi Kar pp. 182-187. , 6 p.

7.3 Presentations at scientific conferences published in abstracts

7.3.1 In Hungarian

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35. Hajdú Dávid ; Koncz Gábor (2023): A munkahelyi képzések vizsgálata a munkáltatók és a munkavállalók, In: Vágány, Judit; Fenyvesi, Éva (szerk.) Multidiszciplináris kihívások, sokszínű válaszok: 11. Tudományos Szimpózium : absztrakt füzet, Budapest, Magyarország : Budapesti Gazdasági Egyetem p. 26
36. Hajdú Dávid ; Koncz Gábor (2023): A munkahelyi képzések vizsgálata a munkáltatók és a munkavállalók In: Vágány, Judit; Fenyvesi, Éva (szerk.) Multidiszciplináris kihívások, sokszínű válaszok: 11. Tudományos Szimpózium : absztrakt füzet Budapest, Magyarország : Budapesti Gazdasági Egyetem p. 26

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37. Hajdú Dávid ; Koncz Gábor (2023): Investigation of Workplace Training from the Perspective of Employers and Employees In: Vágány, Judit; Fenyvesi, Éva (szerk.) Multidiszciplináris kihívások, sokszínű válaszok: 11. Tudományos Szimpózium : absztrakt füzet Budapest, Magyarország : Budapesti Gazdasági Egyetem p. 27

38. Hajdú Dávid (2020): Labour market analysis of Borsod-Abaúj-Zemplén County, In: Bujdosó, Zoltán; Dinya, László; Csernák, József (szerk.) XVII. Nemzetközi Tudományos Napok - Abstract Book : 17th International Scientific Days - Abstract Book, Gyöngyös, Magyarország : EKE Líceum Kiadó (2020) 245 p. pp. 105-105. , 1 p.
39. Hajdú Dávid (2020): Borsodchem reverse - Postfordist transformation in Kazincbarcika, In: Bujdosó, Zoltán; Dinya, László; Csernák, József (szerk.) XVII. Nemzetközi Tudományos Napok - Abstract Book : 17th International Scientific Days - Abstract Book, Gyöngyös, Magyarország : EKE Líceum Kiadó (2020) 245 p. pp. 104-104. , 1 p.
40. Járdány Krisztián ; Hajdú Dávid (2020): Investigation of the labor supply of Tokaj winery in the context of middle level viticultural education: A Tokaji borvidék munkaerő-ellátottságának vizsgálata a középszintű szőlészeti-borászati edukáció tükrében, In: Bujdosó, Zoltán; Dinya, László; Csernák, József (szerk.) XVII. Nemzetközi Tudományos Napok - Abstract Book : 17th International Scientific Days - Abstract Book, Gyöngyös, Magyarország : EKE Líceum Kiadó (2020) 245 p. pp. 118-118. , 1 p.