Employment data of participants in supported adult training for jobseekers and their territorial pattern in Hungary, 2010–2020

Dávid Hajdú
Hungarian University of Agriculture and Life Sciences,
Doctoral School of Economic and Regional Sciences,
Gödöllő, Hungary
E-mail: hajdu.david91@gmail.com

Gábor Koncz
Hungarian University of Agriculture and Life Sciences,
Institute of Sustainable Development and Farming
Gyöngyös, Hungary
E-mail: koncz.gabor@uni-mate.hu

The training for jobseekers, launched by government offices, aims to get participants back into the labour market as soon as possible. Our study aims to provide a true picture of the spatial differences based on the employment rates of those who complete the training. The analyses were performed for Hungary and its districts (LAU1 level) from 2010 to 2020. There are different numbers of vacancies in the country's labour market of different developed region; however, the headcount data on employment in the primary labour market were fundamentally affected by the increase and then decrease in the role of public employment. In Hungary's better-performing (central and northwest) regions, employment in the primary labour market is dominant, coupled with a higher employment rate. Large-scale employment in the secondary labour market dominated by public employment can be considered a general phenomenon in the country's eastern periphery and plays a more significant role in the southern part of Transdanubia. Our study pointed to the unfavourable change that the share of those in the primary labour market among those who completed training increased almost to the same extent as the declining importance of public employment.

Keywords:
employment,
adult training,
job search,
public employment,
regional inequalities

Introduction

One of Hungary's basic goals is to establish and make sustainable economic growth and to achieve full employment. The training system plays a major role in realising these wide-ranging commitments, as the economy expects well-prepared career starters with well-established professional skills, dexterity, and the will to do it, or overtrained and further-trained adults (Alhendi et al. 2021). The toolbox of education policy has been adapted to this: it has made fundamental changes in recent years in the system of public education, vocational training, adult education,

and higher education, in the management and content of training, organisational structure of maintainers, and training institutions (Hajdú 2021).

In recent years, there have been many (mostly legitimate) criticisms of secondary vocational training, mainly because the training could not meet the expectations of the labour market and the economy in terms of either its vocational structure or content (László 2015). Most graduates did not receive the practical skills required for the job during their training, with high drop-out rates, while employers reported labour shortages in several occupations. The problem is quite complex; it is a 'fault' of the education system and because it is linked to the lack of the concept of industrial development, the low social prestige of manual work, geographical segmentation, the draining effect of European labour markets, wage tensions and more (Vámosi 2015). A greater proportion of previously acquired skills are obsolete or belong to a – currently – crisis sector such as construction, whose labour demand is also well below available resources. The primary labour market does not know what to do with those who do not have a profession. If they do not know or want to continue their studies, they become the most disadvantaged members of the group with secondary education (Tésits–Alpek 2013).

Labour market processes interact strongly with other phenomena in economic and social environments. In most cases, the process of peripheralisation in Hungary goes hand in hand with a strong decline in population (Tagai et al. 2018, Demeter 2020). The unemployment rate has decreased significantly in Hungary over the last decade. However, the rate of decline was not the same in a region of the country with different endowments (Le-Dai 2020). Significant differences can be seen between regions when looking at the situation of disadvantaged social groups who have been excluded from the labour market for a longer period (Siposné Nándori 2016). Spatial differences in educational attainment are a key determinant of regional labour market outcomes (Kramarics–Szekeres 2007). However, for disadvantaged groups, physical and mental health status can also have a major impact (Bálint 2011). The unfavourable financial situation of the potential workforce often leads them to make forced decisions that may not be in line with longer-term objectives (Tésits et al. 2021). The reintegration of these groups is supported by specific policy instruments, but it is challenging to succeed in improving their employability (Tésits–Alpek 2015, Meyers 2016, Alpek et al. 2018). In the mid-2010s, public employment ensured the employment of many people in the secondary labour market, with a spectacular impact on the relevant statistical data series (Alpek–Tésits 2019a).

Our study aims to explore the development of the number and distribution of participants in supported adult education for the second decade of the 21st century, by which we can point out the main labour market trends and employment policy interventions of the period. Trainings were analysed according to the purpose and source of funding. We had data on the distribution of participants in trainings organised among jobseekers by gender, age, and education. However, the central

aim of our study was to describe the territorial specificities of training and labour market relations. The regional level of the study was reported in the districts. The thematic maps depicted the spatial characteristics of the employment of participants and the skilled, the latter in the breakdown of the primary and secondary labour markets. HotSpot and Local Moran I autocorrelation analysis were used in all three cases to determine statistically significant spatial differences.

The issue of employability in the literature

In conceptualising employability, it can also be said that although researchers in the literature approach the issue from different aspects, the common element of employability definitions is that they consider the employability of an individual to be employable, influenced by many factors (Kiss 2014a, 2014b, 2015). In the centre of Hungarian employment, policies are the priority of classical wage labour and the expansion of the number of jobs. However, based on global trends, a lasting disintegration of the balance between wage-type jobs and the working-age population is expected (Lipták 2020). As a result of the labour market developments in recent years, economic policy faces a new, unprecedented situation: unemployment and significant labour shortages are occurring simultaneously in the national economy. They conclude that together they can manage in the long run to develop a flexible vocational and adult training system that can respond quickly to emerging labour market needs, and its training content meets the expectations of companies. Additionally, active governmental and municipal employment policy instruments and modern recruitment procedures of employers can play a significant role in the short or medium-term (Szemereyné Pataki–Bódi 2018).

The primary goal of active labour market programs is to provide direct assistance to the long-term unemployed and other social groups missing from the labour market for their long-term return to the world of work (Crépon et al. 2012). Their most important types are various training and employment support programs, public employment, and active job search assistance. They mostly try to achieve their goal by developing the skills needed to work successfully, saying that the participants' skills can be brought to the appropriate level by participating in the program (McQuaid 2006). In terms of content, the most common types of active labour market programs are training programs (general training, vocational training, on-the-job training), employment support programs (support for employers, support for self-employment), public employment, and active job search assistance (Nyilas 2018).

According to József Mayer (2009), only high education and expertise can guarantee that as many people as possible can meet the need to be permanently present in the labour market and that the enrichment (development) of the personality cannot be indispensable for individuals. Thus, their harmonious integration into the learning society can take place smoothly to maintain social cohesion.

The toolbox of the active labour market policy, as defined above, is the range of services and benefits that:

- supports the transition from unemployment to the primary labour market (transitory nature)
- prevents the perpetuation of unemployment, the development of multigenerational unemployment (preventive nature)
- contributes to the development of the abilities and skills of unemployed people (improving or maintaining their position in the labour market)
- assumption of individual activity on the part of the client (initiating nature)
- providing the conditions for moving forward (emphasizing the possibility over the obligation)
- not as attractive as the opportunities offered by the primary labour market (the principle of less choice) (Csoba 2010b).

It has recently come to the fore that the problem of long-term unemployment is both a labour market and social policy problem. In the past, most countries' labour market institutional system has not paid sufficient attention to this. Its tool system was focused on those strata of workers who, with their ability to work, could be put to work immediately (Lipták 2020). Moreover, those limited in their ability to work were referred to the social welfare system (Frey 2007). Ráczné (quoted by Csoba 2010a) in 2007 also confirms that the labour organisation in Hungary is not prepared to perform the special tasks to be provided to the unemployed. This results in the dysfunctional operation of the system; although it formally performs the task, it commits the resources that can be used for it, it lags far behind the possible ones in terms of its efficiency (Csoba 2006, 2007, 2010a).

Hungary still had a large, free, and relatively cheap labour base in Central and Eastern Europe for a decade. Consequently, economic growth based on increasing employment rates has become possible since the crisis. A large part of the integrable labour reserve has been absorbed by the economy, the further increase in the number of employees runs into employability constraints, so there is already a labour shortage in some areas. In Hungary, jobseekers with low education and public employees still provide many free labour reserves. However, they are typically long-term unemployed, low-skilled, often unmotivated, and therefore challenging to employ (Tésits et al. 2020). Nowadays, raising the employability level of this group can be one of the most important tasks. This was largely achieved through public employment in the mid-2010s (Győri–Juhász 2020). Employability and the labour market situation are closely interlinked but do not cover the same issue. High employability and a potentially exploitable labour base are also conceivable in areas with unfavourable labour market situations (Alpek–Tésits 2019b). Particularly, municipalities with fewer than 1000 inhabitants require a specific approach, implementing social innovations, and broadening the basis for cooperation involving local cooperatives, municipalities, and firms (Tésits–Alpek 2017).

One of the main directions of international research in the years after the Millenuim has been to clarify conceptual issues in defining the tasks of employment policy services alongside the evaluation (Kluve–Schmidt 2002). Employability depends on the individual factor and structural and cyclical processes. Psychosocial studies of employability emphasize the need for flexibility and proactive adaptability with the advent of new career models (Peck–Theodore 2000, Fugate et al. 2004, de Grip et al. 2004).

Professionals formulate three performance requirements for adult education (Janssen et al. 2015). The first is for those who need it most to participate in adult learning, as it increases their chances of finding a job and their position in the labour market to the greatest extent. The second goal is for as many people as possible to complete the training they have started successfully so that the dropout rate is kept to a minimum. The third is to have the highest possible employment rate after completing the training (Pulay 2010).

In many cases, the long-term unemployed do not have sufficient competencies for their previously acquired profession; this is even more true for those without qualifications. It is impossible to teach successfully without filling in the missing basic knowledge (Hajdú–Koncz 2021).

Jobcentres are not busy enough to order the necessary training modules due to the efficiency requirement. According to the efficiency requirement, the more training you provide, the less money you need. When training the unemployed, it has to decide whether these people will take part in more costly complex programs for employment or give up all of them. This can be followed by the teaching of mental and professional skills. The most important aspect is the use of differentiated progress training systems, which can reduce social disparities. In connection with the training of the disadvantaged, the following expectations had to be met: stabilisation of the personality, open systems built on each other, replacement of basic knowledge, differentiated treatment, and development of communication skills (Halmos 2005).

The main reason for participating in adult learning is financial motivation, and additional motivations are usually of external origin. These external motivations aim to improve the labour market position, which can be manifested in the confirmation of employment opportunities, gaining a job position, employee advancement, and job change (Cseszka 2017).

Vocational training outside the school system is important in improving and maintaining employment, which raises the biggest question of how effectively the vocational training system can alleviate structural unemployment (Jacot et al. 2019). Previous studies have shown that most people have acquired hospitality, economic, and commercial qualifications, meaning that trendy professions can be observed from time to time in adult education, which cannot facilitate employment in the labour market to such an extent (Farkas 2013).

The medium-term target system of employment policy in Hungary has been defined per the European Union's Europe 2020 Strategy – a European strategy for smart, sustainable, and inclusive growth. The document adopted in 2010, in addition to making it a priority to promote a more resource-efficient, greener, and more competitive economy, placed great emphasis on human resources, including education and employment. A priority goal has been set to increase the employment rate of the 20–64 age group from 69% to at least 75%. At least 40% of the population aged 30–34 should have tertiary education instead of 31%. To help the disadvantaged: the number of Europeans living below the national poverty line has been reduced by 25% (affecting more than 20 million people). An important precondition for this is to improve skills and employment situations (European Commission 2010).

The EU budget for the period 2014–2020 has been set in line with the objectives of the Europe 2020 strategy. The cohesion policy of the EU aims to strengthen social and territorial cohesion and promote harmonious development. As regional disparities have only been exacerbated by the global financial crisis, most EU funds and programs have been specifically targeted at less developed regions to help them converge towards more developed ones (Panzera–Postiglione 2021).

Legal background of training for employment

Act IV of 1991 on the Promotion of Employment and Benefits for the Unemployed (hereinafter referred to as the Flt.) and Act No. 6/1996 Coll. on subsidies to promote employment and subsidies provided by the Labour Market Fund for the management of employment crises. (VII. 16.) MüM Decree (hereinafter Decree) 1–7. § support may be provided from the National Employment Fund for the training specified in the Decree.

The legal regulation related to the establishment and payment of employment-promoting training subsidies provided within the framework of the labour market programs (European Instrument for Democracy and Human Rights, Regional and Settlement Development Operational Programme) financed by the European Social Fund is regulated by 2014–2020. Decree 272/2014 on the procedure for using grants from certain European Union funds during the programming period. (XI. 5.) laying down common provisions for the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund, the European Regional Development Fund, the European Social Fund Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down general provisions on the European Regional Development Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006 Methodological Guide on the given labour market program issued by the managing authority.

In implementing the EU-funded labour market program, the procedures for subsidies that are elements of each program are specified in Act IV of 1991 on the Promotion of Employment and Benefits for the Unemployed (hereinafter referred to as the Flt.). Moreover, its implementing regulations in the procedures related to subsidies that qualify as budget support, the CXCV of 2011 on public finances (Áht.) and 368/2011, issued for its implementation. (XII.31.) The government of the Republic of Hungary (Ávr.) and the Hungarian administrative procedure law in force [CL. Act] shall apply. Support for employment-friendly training does not constitute budget support. The granting of the aid is decided at the discretion of the territorially competent district office (as an organisational unit entitled to take action) acting within the competence of the state employment body. [The rules of competence of public employment bodies are laid down in Decree 320/2014 on the appointment of the public employment body, labour protection and labour authority, and performance of official and other tasks of these bodies (XII. 13.), and its rules of jurisdiction are laid down in Decree No. 67/2015 on the area of competence of district (capital district) offices acting as a state employment body (III. 30.), and Decree 86/2019 on government offices in the capital and counties, as well as district (capital district) offices. (IV. 23.) Government Decree.]

In the case of providing training support under the applicable legislation, regardless of the source of funding (domestic budget or EU), parties (the competent district office acting under the authority of the client and the public employment body), and training institution on the training list of the county government officials acting under the authority of the public employment body and concluding a civil law contract with it ('cooperation agreement') enter into an adult training contract.

Each year, the government office defines and publishes training specialisations that support registered job-seekers for participation in training and to those belonging to the target group defined in EU programs at its discretion. The 2019 training list is valid until 31 December 2020 and is available on the website of the County Government Offices.

Elements of the training support provided to the jobseeker: (Section 14 (4) of the Flt.)

As a training grant (generally)

(a) reimbursement of training costs,

(b) Reimbursement of reasonable expenses incurred in connection with the care and upkeep of a relative in need and the care of a child, including an adopted and foster child, during the training period, to ensure the possibility of participating in the training, and

(c) a replacement allowance may be granted.

Training costs are partially or fully reimbursable (Section 14 (11) of the Flt.). The amount of earnings-related benefit may not be lower than 60% of the mandatory minimum wage in force at the time of its establishment and may not exceed the

amount of the minimum wage in force at the time of establishment. (Section 14 (6) of the Flt.) No earnings-related allowance may be paid for the days when the person participating in the training did not fulfil his or her obligation to attend classes for reasons attributable to him or her. In this case, the replacement allowance shall be paid in the amount reduced by the amount of the replacement allowance on the day of default, without a separate decision to that effect (Section 14 (9) of the Flt.).

Material and method

We reviewed the domestic and international textbooks and journal articles available on the topic as a basis for secondary research. After the literature analysis, we processed the data provided by the Ministry of Innovation and Technology regarding Hungary and its districts [1]. This study covers the period from 2010 to 2020. To present the changes in the spatial structure of Hungary over time: thorough analyses were carried out based on other socio-economic indicators (Kincses–Tóth 2020b). We aimed to explore the peculiarities of Hungary's spatial structure based on the relationship between adult education and employment. During the surveys, we reviewed the statistical data of the participants in the training for jobseekers launched by the government offices, focusing on the success of the employment, distinguishing between the primary and secondary labour markets. The collected databases were processed and evaluated using Microsoft Office 2016 and IBM SPSS Statistics 25 software packages. For spatial analysis of the calculated statistical data and mapping of the obtained results, we used the ArcGIS 10.6.1. software.

We performed the bivariate Global Moran I test for some data obtained from secondary sources to evaluate the spatial dependence of the variables under study (Egri–Kőszegi 2018). Local Moran statistics were then used to explore spatial correlations to discover spatial relationships that may not be possible using global statistics (Ord–Getis 1996, Egri–Tánczos 2018, Szabó–Sipos 2020, Fitriani et al. 2021):

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

where n is the number of area units, y_i and y_j are the values of the examined variable in each area unit, $\bar{y}$ is the arithmetic mean of the examined indicator, A is the number of neighbourhood relationships, and the value of δ_{ij} is 1 if i and j are adjacent, and 0 in the absence of a neighbourhood. The number of items is indicated by n (Tóth, 2014). If $I > -1/n-1$, then the autocorrelation relationship is positive; if $I < -1/n-1$, then the autocorrelation relationship is negative. The extreme values of the interpretation of Local Moran statistics are 1 and –1. If $I = -1/n-1$, there is no autocorrelation relationship between individual territorial units (Egri 2017, 2020). The I values obtained should be standardised so that the

distorting effects can be better filtered out. The Z value is obtained by standardising the I values. According to the basic assumption, there is no spatial autocorrelation between the studied variables, and their spatial arrangement is random (Anselin et al. 2006).

We used the local test function of spatial autocorrelation to describe the spatial patterns, the univariate Local Moran I method developed by Anselin in 1995. This method is suitable for detecting similar or different areas from their neighbours (Tóth 2014, p. 62). The formula for Local Moran I is:

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

where z_i, t and z_j, t are the standardised values of the observation units at time t. For a univariate Local Moran, z_i, t and z_j, t refer to the same database. W_{ij} is the area-weight matrix (Anselin 1995). The obtained results classify the settlements into five groups (Tóth 2003, Egri 2017, Egri–Kőszegi 2020, Kincses–Tóth 2019, 2020a, Kovalcsik et al. 2021, Jeneiné Gerő et al. 2021).

1. High to high (HH): high-value territorial units for which the neighbourhood also has a high value,
2. High–low (HL): units with a high value for which the neighbourhood has a low value,
3. Low to low (LL): low-value areas where the neighbourhood also has a low value,
4. Low–high (LH): territorial units with a low value, in which case the neighbourhood has a high value,
5. Non-significant category: these territorial units do not have significant local statistics.

We determined the significance filter of the Local Moran below 0.05 and the number of permutations in 999.

Territorial autocorrelation analysis (Hotspot analysis) was performed on the raw data and specific indicators related to the participation and employment rates available at some settlement levels using Getis-Ord's local Gi * statistics (Getis–Ord 1996, Bertus 2017).

Results

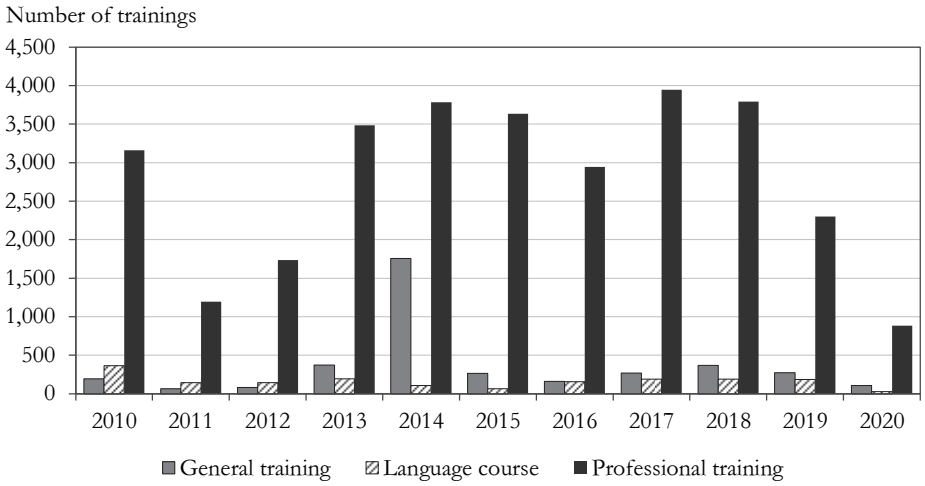
Participation and distribution data in supported adult trainings

In Hungary, in the grouping according to the training purpose of the adult training courses for jobseekers launched by the government offices, more emphasis was placed on vocational training throughout the study period. Most vocational trainings were launched in 2017, when the number of training sessions reached approximately 4,000. However, most trainings took place in 2014, when the number of general adult training groups increased. This training includes competency development

training, integration training, primary school catch-up training, et cetera. The types of training included in general adult education do not directly affect jobseekers' employment, but they play an important role in preparing for vocational training and retaining jobs. The latter is gaining more importance in on-the-job training. Within the period under review, a larger decline in the number of training groups was observed in 2011–2012, followed by a sharp upward trend in 2013–2014. Then, until 2016, there was a strong downward trend again, then an upward trend until 2018, and since then, there has been a steadily declining trend (Figure 1). The fluctuating number of trainings were significantly influenced by the announcement of support programs and the availability of tender funds, which was added in 2020 to the decline caused by COVID-19.

Figure 1

Distribution of trainings for jobseekers supported by government offices by training purpose in Hungary



Source: Created based on data from the [1].

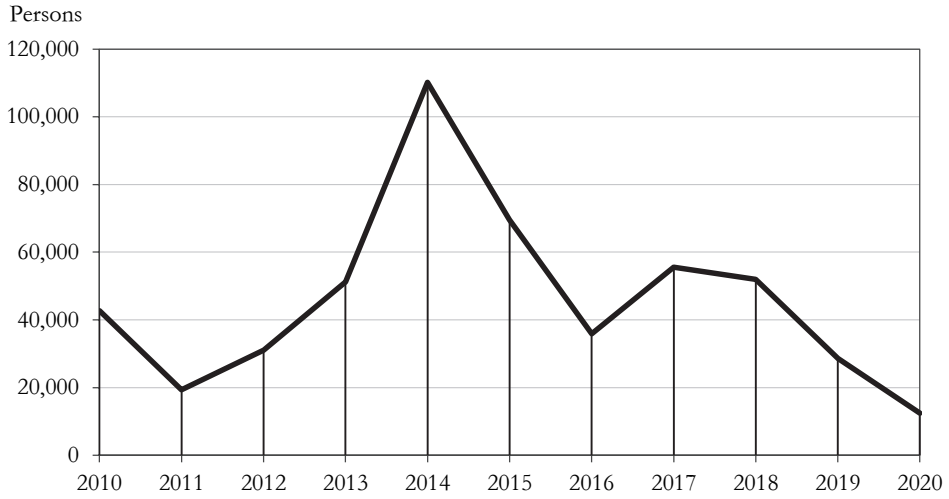
In the distribution of the type of training, most trainings were started in each of the examined years among the training sessions, giving the vocational qualification listed in the National Training Register (OKJ). These were followed by non-OKJ vocational training courses, which culminated in 2013 when there were 1,525 training courses of this type. This was followed by language courses, which had the highest number of groups launched in 2010 and has shown a steadily declining trend in each year examined. The year 2013 can be a watershed in terms of adult education, as primary education has appeared in the system, i.e., 5–6 and 7–8 primary school catch-up trainings. In this type of training, participants can complete primary school and obtain a certificate, in which case the training company also has a public education licence.

The number of jobseekers participating in the training showed a rapidly changing picture over the 11 years examined. From 2011 onward, there was a steady, drastic increase, and in 2014, the number of people involved in the training was the highest when it exceeded 110,000 people. Then there was a 67% decline. The COVID-19 pandemic resulted in an unprecedented decline by 2020, with training reaching more than 97,000 fewer jobseekers per year than the 2014 maximum (Figure 2).

In a gender distribution, from 2010 to 2015, men were more involved in the training than women were. The largest gender gap in favour of men was in 2011 when it exceeded the proportion of females by 19.9%. From 2016 onward, a higher proportion of female jobseekers appeared during training in every year examined. The largest divergence in favour of women was in 2019, when 25.7% more women participated in supported training, a trend that remained until 2020.

Figure 2

Number of participants in trainings for jobseekers supported by government offices in Hungary



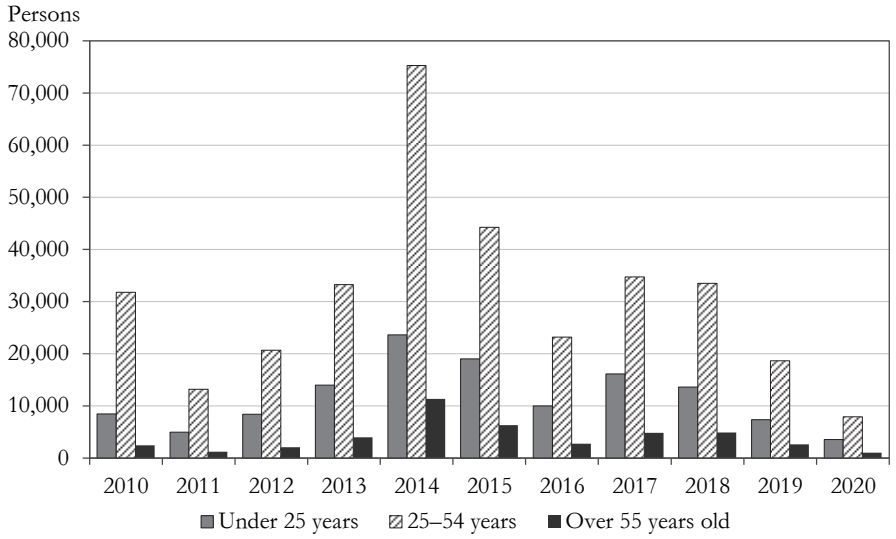
Source: Created based on data from the [1].

The examination by age groups clearly shows that the largest number of jobseekers involved in the training came to the school desk from the age group of 25–54 yearly. However, the number of people in this age group and the number of people involved in all training, followed a steady downward trend after 2014, the year in which the highest number of people was registered for each age group. The number of jobseekers in adult education under the age of 25 has been on a declining trend. In terms of its share, the largest share of those involved in the training was still in 2017, when the share of this age group reached 27.9%. The largest number of

people over the age of 55 and the most significant proportion was observed in 2014. Apart from 2017, their numbers are on a downward trend. (Figure 3).

Figure 3

Distribution of participants in trainings for jobseekers supported by government offices by age group in Hungary



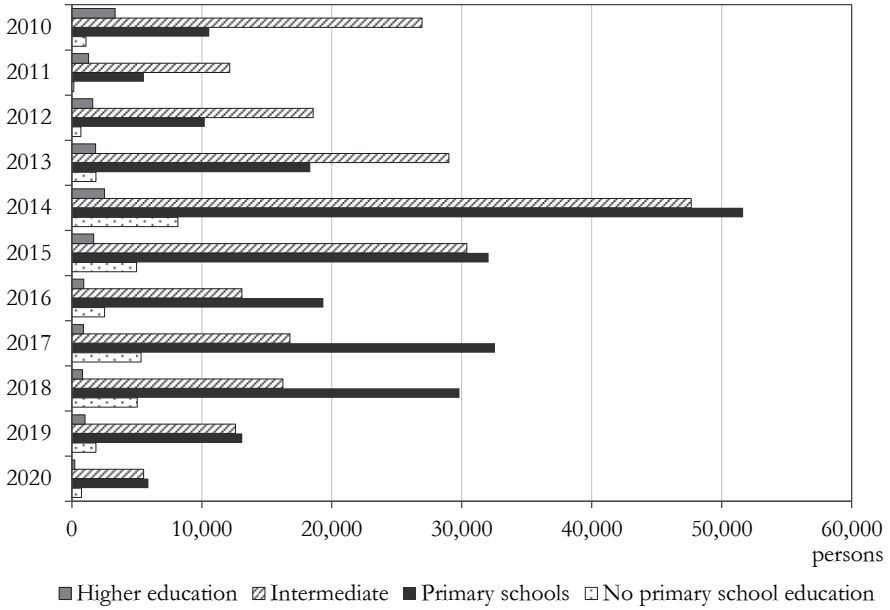
Source: Created based on data from the [1].

When examining the distribution by qualifications, we divided the participants of adult education into four groups: those without primary education, primary education, secondary education (including vocational, vocational training, grammar, vocational secondary, vocational grammar, and technical schools), and tertiary education in which colleges and universities are included. From 2010 to 2013, those with secondary education were still the majority of the participants in the training sessions, but this changed in 2014. Those with primary school education came to the fore, and since then, their share has exceeded the combined share of the other categories every year. The highest share of those with secondary education was in 2010 (64.2%), whereas those with primary education were present in 2017 (58.6%). The number of those without primary school education reached its highest value in 2014 (8,162 people), whereas their share in 2018 approached 10%.

Those with tertiary education were present in small numbers in adult training for jobseekers each year, with the highest proportions and numbers in 2010 (Figure 4).

Figure 4

Distribution of participants in trainings for jobseekers supported by government offices by (main) highest level of education in Hungary



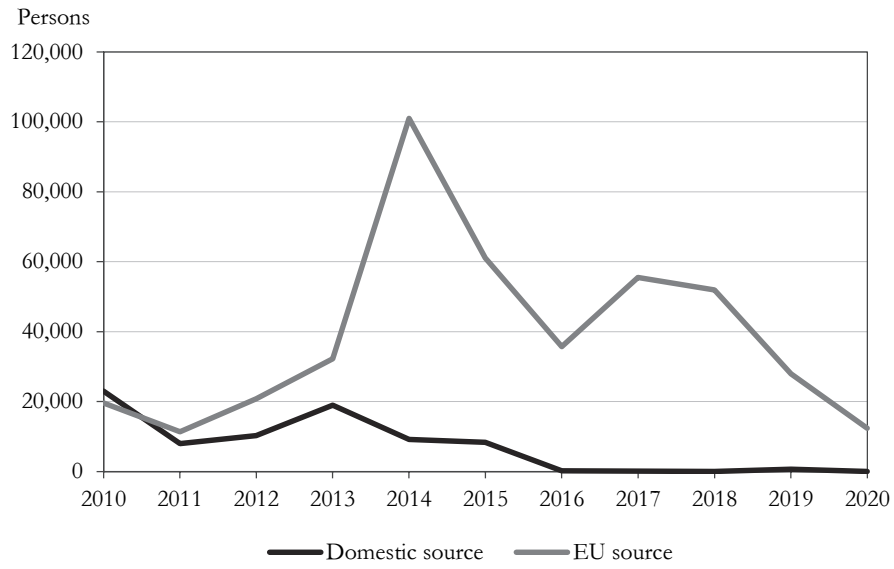
Source: Created based on data from the [1].

For participants in adult training for jobseekers supported by government offices, the cost of training is covered by grant sources. There are two groups of this: National and European Union funds. In the period under review, initially, there was a majority of participants in the training supported by the National Funds; however, after 2010, the number of those supported by the Hungarian sources was minimised, and the training financed by the European Union became a significant majority. The number of EU-supported participants peaked in 2014 and has been declining since then (Figure 5). Of course, this does not mean that the EU supports fewer jobseekers, but that some projects have been closed and other jobseekers are involved. Jobseekers can participate in a maximum of two trainings per project, and the support periods are divided into 7-year cycles, within which the sub-programs appear in different periods.

Not only is participation free of charge for participants in these subsidised trainings, but they also receive financial support (income replacement allowance), the amount of which varies from county to county.

Figure 5

Distribution of participants in trainings for jobseekers supported by government offices by (main) source of support in Hungary



Source: Created based on data from the [1].

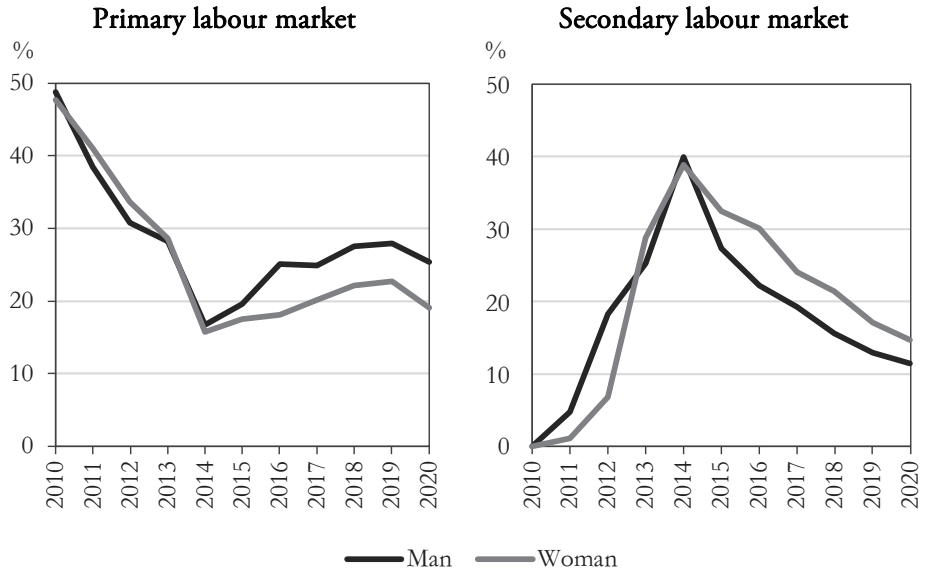
Employment rates in the primary and secondary labour markets

The effectiveness of training for jobseekers is mostly shown by employment rates. When examining the employment of participants, we analysed both known labour market sectors. Employment in the primary labour market is much more effective in the long run than in the secondary labour market (public employment). A gender study showed that women and men are more likely to take advantage of newly acquired education. Thanks to the development of public employment, 2014 brought a significant change in this respect. Subsequently, men were more successful in the primary labour market, while women entered the secondary labour market at a higher rate in the second half of the period analysed (Figure 6).

In the distribution of employment rates by education, those with higher education were able to find the highest percentage in the primary labour market. In each of the years analysed, those with primary education in the primary labour market were in the worst position in terms of employment, although in 2010, they still reached 41%. In the secondary labour market, those with primary education received the highest share of employment, reaching the highest share in 2014 with 44.1%. This, of course, is not surprising, as public employment programs were set up to help them, whereas those with tertiary education made little use of the opportunity provided by public employment.

Figure 6

Employment rate of participants in training by sex and labour market sectors in Hungary



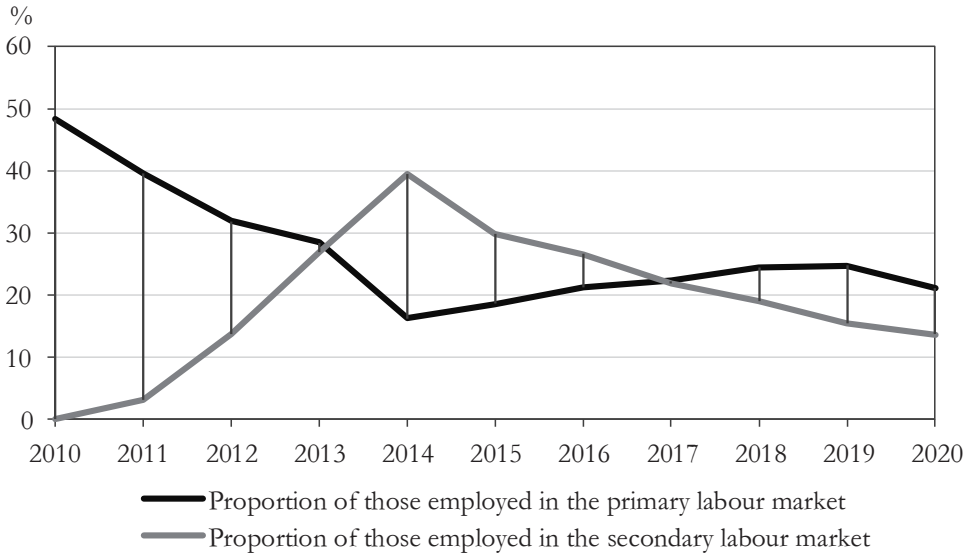
Source: Created based on data from the [1].

In the age group, employment in the primary and secondary labour markets showed a completely different picture. Those under 25 years were employed in the highest proportion each year in the primary labour market, whereas in public employment (secondary labour market), they were employed in the lowest proportion. Among those completing adult training for jobseekers entering public employment, the age group over 55 was the most affected, and in each of the years surveyed, they were the most placed in the secondary labour market.

In the first three years of the period under review (2010–2012), employment in the primary labour market played a decisive (initially almost exclusive) role. Public employment started in 2011 and has shown a trend-like growth over time. In 2013, the two labour market segments were already at the same level. With the strengthening of public employment, the primary labour market has been pushed into the background in terms of employment. In 2014, public employment reached its maximum, and the primary market reached its lowest level. As the economic situation improved, support for the secondary labour market was reduced, so its role in employment began to decline. Simultaneously, the role of the primary labour market began to grow, but not to the extent of a decline in the secondary labour market. Employment rates in the primary labour market could not reach the 2010 highs after 2014 (Figure 7).

Figure 7

Employment of training participants by labour market sectors in Hungary



Source: Created based on data from the [1].

However, it should be added, that with the expansion of employment, a social group with increasingly unfavourable characteristics remained among the jobseekers affected by the training, which we also pointed out with the change in the educational level of the participants.

In the year before the introduction of public employment, 48.2% of those who completed training found a job in the primary labour market due to new knowledge; if we examine the two labour market sectors together in terms of employment, a trend-like decrease can be seen after the initial increase. In 2013 and 2014, more than 55% of those who completed the training could find a new job in the three months following the training.

The highest employment rate in 2014 was 55.7%. Between the endpoints of the study period (2010–2020), employment rates deteriorated by 13.5%. In terms of employment in the secondary labour market, 2011 was considered the base year for the emergence of public employment, in which case it shows an increase of 10.5%. In terms of employment in the primary labour market, there was a decline of 27.1% from 2010 to 2020.

Regional inequalities based on participation and employment

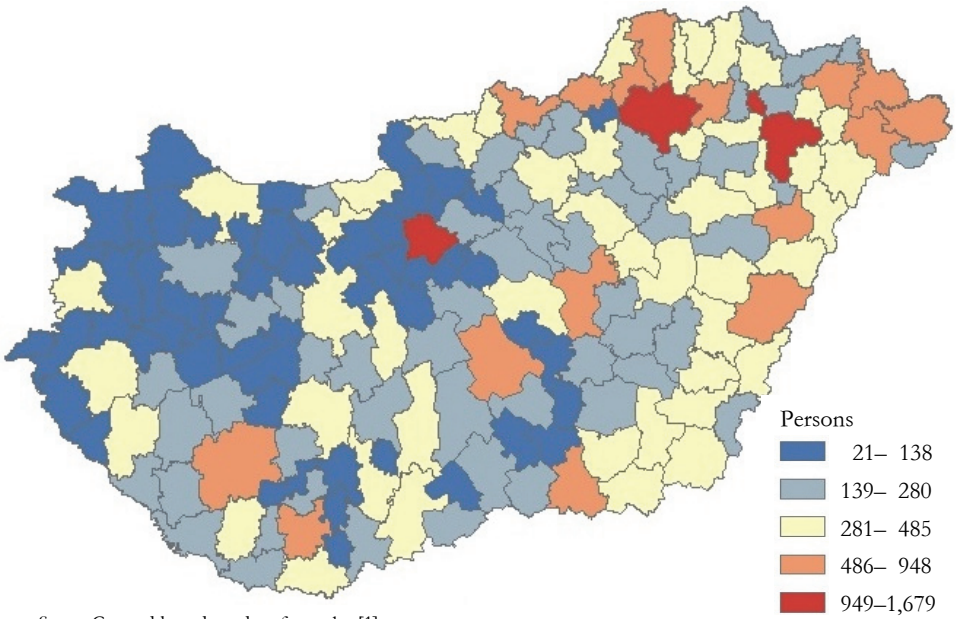
Based on the number of trainers for jobseekers in Hungary, three districts (Miskolc, Tokaj, and Nyíregyháza) and the capital stood out in the analysis of the country at the LAU1 territorial level. On average, fewer people were involved in the western

part of the country and the Budapest agglomeration, so it can be said that in areas with high employment and high per capita income, fewer jobseekers are involved in training. The districts in the second-highest category are mostly located in the Borsod-Abaúj-Zemplén and Szabolcs-Szatmár-Bereg counties in the eastern part of the country. This category appears in the districts of the county seat of the eastern part of the country, whereas in Western Hungary in the districts of Kaposvár and Pécs (Figure 8).

In the district-level analysis of employment, participation in primary and secondary labour markets were compared. Employment in the primary labour market presents a completely different picture from those employed in public employment. The share of those employed in the primary labour market was the highest in North-West Hungary. These are the districts in the region with low unemployment, high employment rates, and relatively high gross domestic product (GDP). Those who complete the training find the most jobs in these areas in the primary labour market in the three months following the completion of the training. In the eastern part of the country, employment in the primary labour market is low, particularly in the border regions (Figure 9).

Figure 8

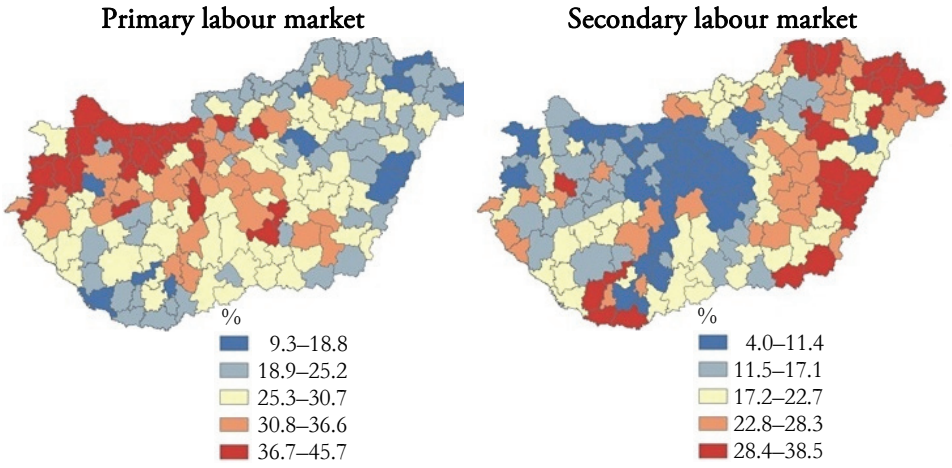
District-level territorial analysis of training graduates in the average of 2010–2020 in Hungary



Source: Created based on data from the [1].

Figure 9

District-level territorial analysis (2010–2020) of those employed in the primary and secondary labour market on average in Hungary



Source: Created based on data from the [1].

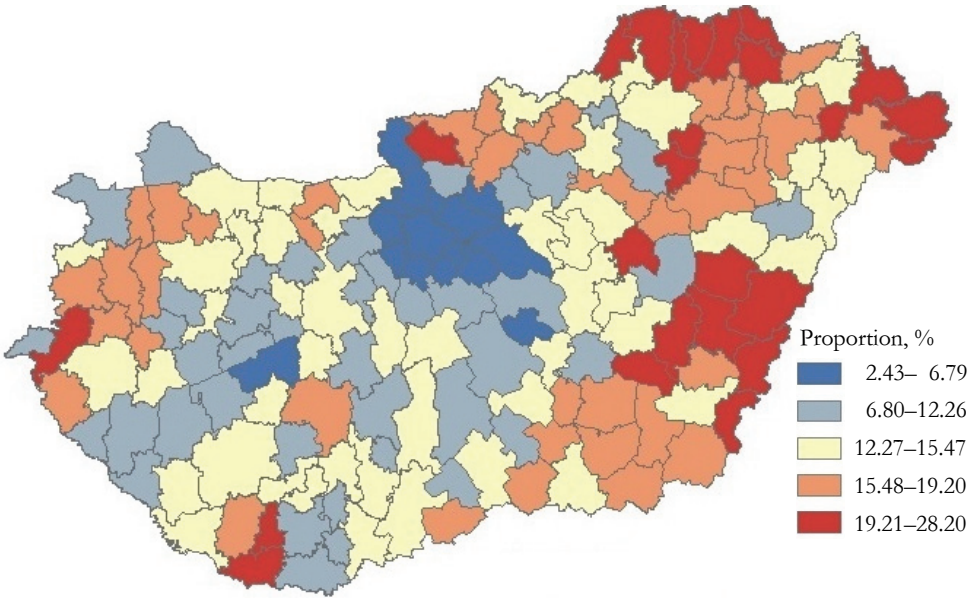
Employment in the secondary labour market for several extensive zones in the eastern part of the country (Borsod-Abaúj-Zemplén county, Szabolcs-Szatmár-Bereg county, and Hajdú-Bihar county border rural areas) (Kóti 2018) and the disadvantaged districts of Baranya county and Devecseri District of Veszprém county; employment in public employment was not typical in Central Hungary and the northern part of Western Hungary.

Those employed in the primary and secondary labour markets are examined together, in which case we obtain a completely different picture from the employment rates shown in Figure 8. More than 56.5% of those who find work are in the northwest. The proportion of those employed is close to the districts located near the Austrian border. A maximum of 46% location was detected in the districts of the county seats.

Based on the average number of jobseekers aged 11 and jobseekers enrolled in government offices, it can be stated that those counties in those districts achieved a higher proportion of jobseekers involved in adult education compared to the unemployed, characterised by high unemployment. These areas are located in the northern part of Borsod-Abaúj-Zemplén county, in the eastern part of Szabolcs-Szatmár-Bereg county, and the part of Hajdú-Bihar county bordering Békés county (Figure 10).

Figure 10

Proportion of participants in adult training for jobseekers within the average number of jobseekers (district level territorial analysis in the average of 2010–2020) in Hungary



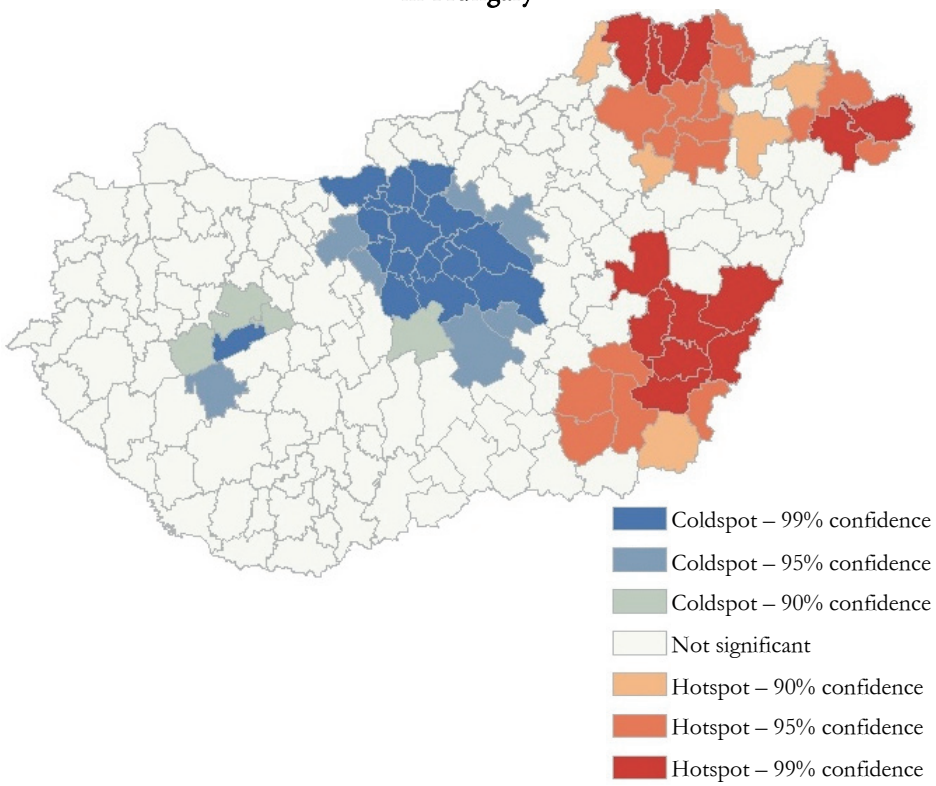
Source: Created based on data from the [1].

Jobseekers were less involved in Budapest and districts of capital agglomeration. Relatively fewer adults were enrolled in adult education in the western part of the country, but a band crossing Győr-Moson-Sopron, Vas, and Zala counties can be designated, which shows higher values, at a rate of 19%.

In the average of the examined period, the Hotspot analysis of the proportion of participants in adult education projected to the number of unemployed showed a similar picture as in the area analysis shown in Figure 9. The eastern half of the country is completely separated from the central and western parts of the country. Hotspot confidence of 99% developed in the border areas of the eastern part of the country, bordering Slovakia, Ukraine, and Romania. In almost the entire area of Borsod-Abaúj-Zemplén county, 95% and 99% hotspot confidence was shown. In the west, coldspots developed in the northern part of Lake Balaton, in the entire area of Pest county and the northern districts of Bács-Kiskun county (Figure 11).

Figure 11

Average district-level Hotspot analysis of the proportion of participants in adult training for jobseekers to the average number of jobseekers (2010–2020) in Hungary

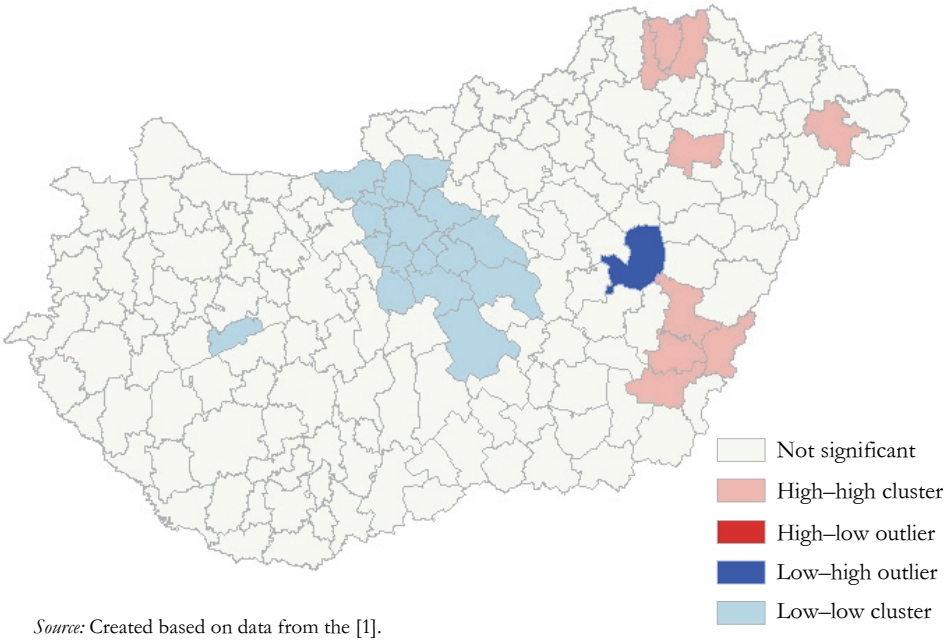


Source: Created based on data from the [1].

Standardised Local Moran I statistics were positively autocorrelated in terms of the proportion of adult learners to jobseekers relative to the average number of jobseekers in the country's districts. The 0.556155 Moran index obtained in the spatial autocorrelation study of the 11-year mean data were positively correlated (z-score=12.063847, p-value=0.000000); that is, significantly strong clustering was present. High–high clusters have formed in the Edelényi, Encsi, and Szikszó districts in Borsod-Abaúj-Zemplén county, in Mátészalka district in Szabolcs-Szatmár-Bereg county, in Hajdúnánás district in Hajdú-Bihar county, and Békéscsaba district of Békés county. These areas had the highest proportion of jobseekers involved. Low–low clusters have developed in the central part of the country, almost in the whole of Pest county and in the Kecskemét district. The mentioned areas are characterised by a low unemployment rate, so fewer jobseekers were involved in the training (Figure 12).

Figure 12

Local Moran I autocorrelation analysis of the proportion of participants in adult education for jobseekers to the average number of jobseekers (2010–2020) in Hungary



Source: Created based on data from the [1].

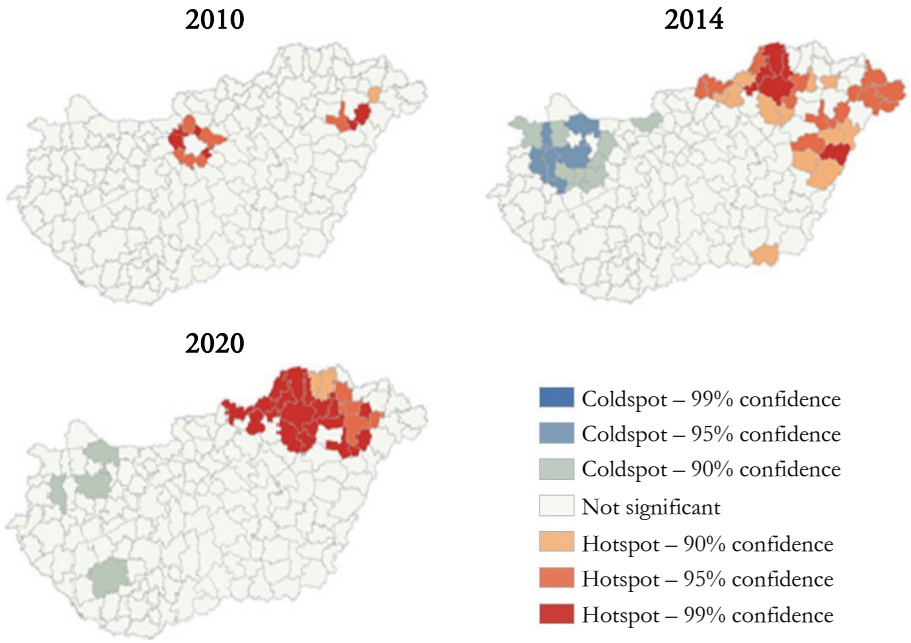
In the territorial analyses of the districts, we illustrate the base year (2010), 2014, when most participants were involved in the training, and 2020, as the last year examined, on the cartograms.

In the illustrated three years, the image of our country was completely transformed during the hotspot analysis. In 2010, 95% hotspot values appeared in the districts surrounding the capital and in the southern agglomeration of the Nyíregyháza district. In 2014, when most jobseekers were involved in the training, 99% and 95% coldspots appeared in the triangles of Győr, Sopron, and Veszprém districts.

In Borsod-Abaúj-Zemplén county, 99% of the hotspot values developed in the northern environment of the Miskolc district up to the Slovak border. In 2020, 90% coldspots were created in the western part of the country in the vicinity of Győr district, while 99% hotspots were created in the entire area of Borsod-Abaúj-Zemplén county up to Salgótarján district (Figure 13).

Figure 13

District-level Hotspot analysis of training graduates in Hungary

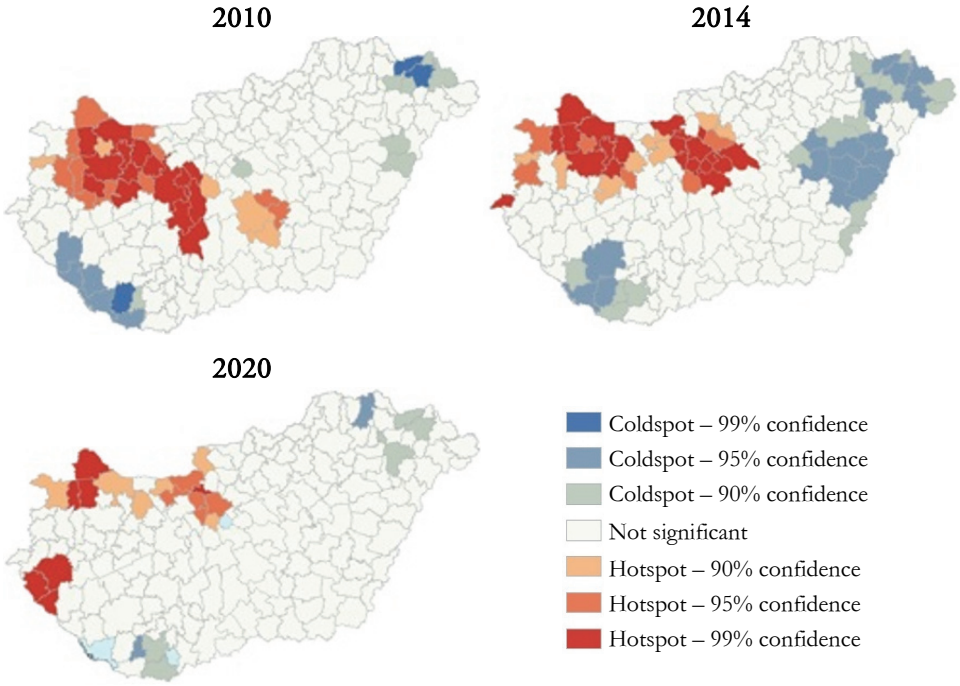


Source: own editing based on data from the [1].

The Hotspot analysis of employment in the primary labour market provided a similar picture in the development of hotspots, with a value of 99% in each year examined. In 2010, hotspots emerged in the northern and central parts of Western Hungary in areas with high GDP. Coldspots developed in the eastern border areas and southwest in the border areas of Baranya and Somogy counties. In 2014, hotspots appeared in the capitals of the capital and its agglomeration, in the eastern part of the country in the high unemployment districts of Hajdú-Bihar county and Szabolcs-Szatmár-Bereg county. In 2020, coldspots were pushed into the background, both in the eastern and southwestern parts of the country, and hotspots developed in the part of the country bordering Slovakia from Mosonmagyaróvár district to Budapest (Figure 14).

Figure 14

District-level Hotspot analysis of those employed in the primary labour market in Hungary

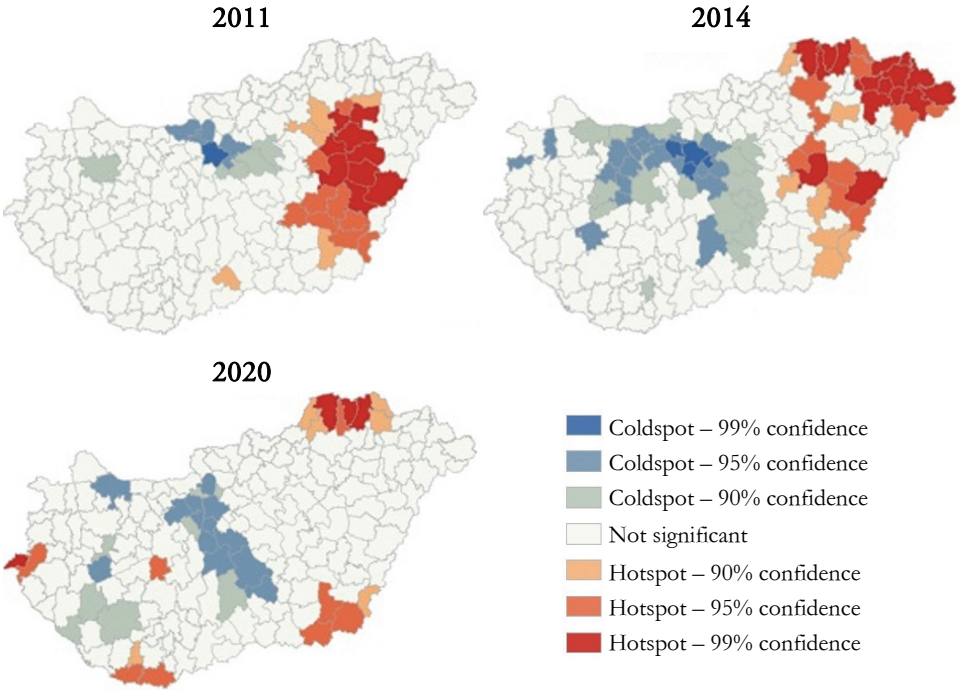


Source: own editing based on data from the [1].

In the analysis of employment in the secondary labour market, the examined years are 2011, 2014, and 2020. The base year can be considered as 2011, as there was no public employment in Hungary in the years before that. Hotspots were established in Hajdú-Bihar county, the southern parts of Borsod-Abaúj-Zemplén county, in the western parts of Szabolcs-Szatmár-Bereg county, and the northeastern part of Békés county. Coldspots developed in Budapest and some of the districts around them. In 2014, coldspots developed in almost the entire Central Hungarian region and on the line connecting the capital with the Győr district. Hotspots have been established in the northeastern border districts of the country and in the southern part of Hajdú-Bihar county. In 2020, hotspots developed in the districts of Borsod-Abaúj-Zemplén county bordering Slovakia, and coldspots appeared on the section connecting the capital with the Kecskemét district (Figure 15).

Figure 15

District-level Hotspot analysis of those employed in the secondary labour market (public employment) in Hungary



Source: Created based on data from the [1].

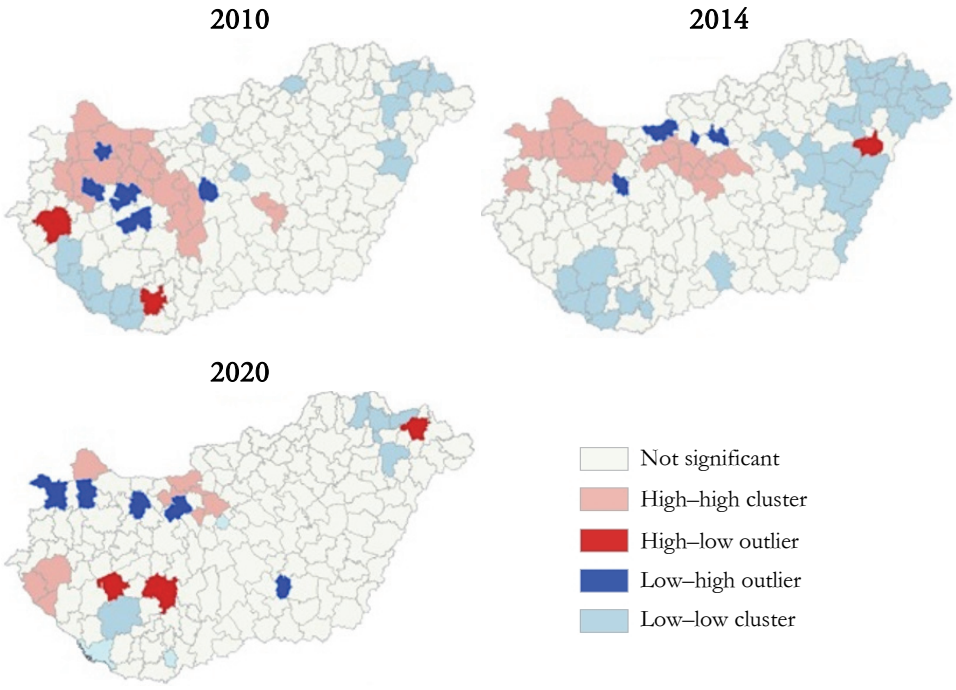
The standardised Local Moran I statistics were positively autocorrelated in terms of those employed in the primary labour market in the study area. In 2010, within 0.3 months of completing the training, the 0.306362 Moran index obtained in the spatial autocorrelation study finding a job in the primary labour market was positively correlated (z-score=6.715724, p-value=0.000000); that is, it had a significantly strong clustering present. High–high clusters have formed in the western part of the country, from Győr district to Székesfehérvár district to Paks district. Low–low clusters were formed in the northeastern part of Szabolcs-Szatmár-Bereg county. Significantly positive strong clustering also emerged in 2014, with the 0.443444 Moran index obtained in the autocorrelation study showing a positive correlation (z-score=9.727703, p-value=0.000000). High–high clusters formed in Győr-Moson-Sopron county, in the capital, and the surrounding districts. Low–low clusters have been established in the southwestern border regions of Eastern Hungary and the country. The number of clusters decreased in 2020, but the 0.134426 Moran index obtained in the spatial autocorrelation study was positively correlated (z-score=2.918535, p-value=0.003517). High–high clusters

were established between the Budapest and Esztergom districts. Low–high clusters were formed in some districts of the section between the Sopron and Bicske districts.

Low–low clusters appeared in the Nyíregyháza district and the southeastern parts of Borsod-Abaúj-Zemplén county (Figure 16). Given the results of the z-scores, there is less than a 1% probability that this grouped sample would be the result of randomness.

Figure 16

District-level Local Moran I autocorrelation study of those who were employed in the primary labour market in Hungary



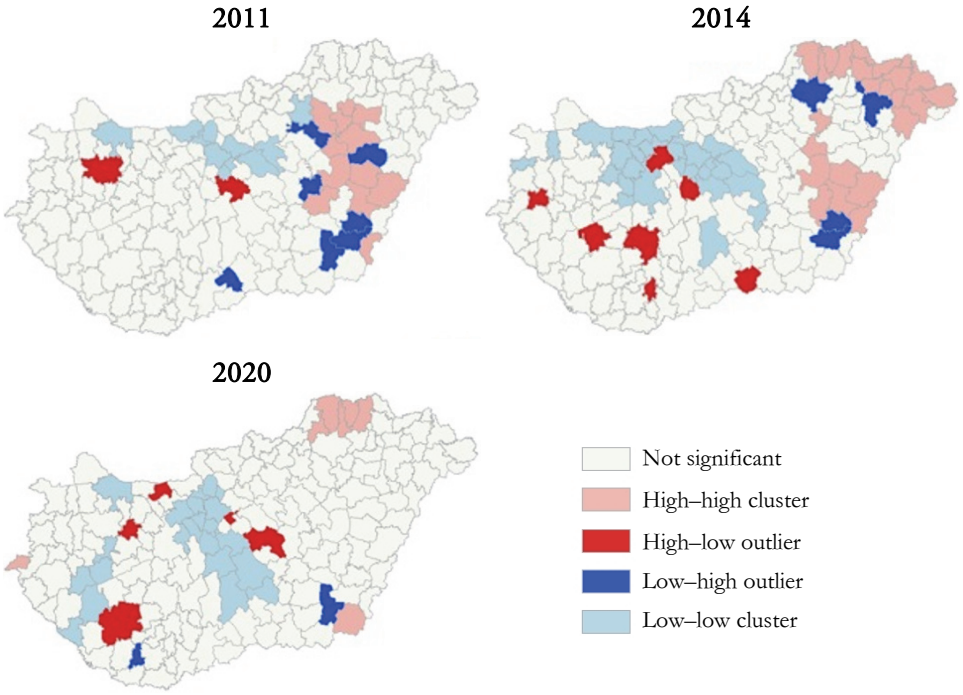
Source: Created based on data from the [1].

The standardised Local Moran I statistics were positively autocorrelated in terms of those employed in the secondary labour market, that is, in public employment, in the study area. In 2011, the 0.122792 Moran index obtained in the spatial autocorrelation study of jobseekers in the secondary labour market was positively correlated (z-score=2.769567, p-value=0.005613). High–low clusters developed in the Pápa district in the west and the Gyál district in Central Hungary. Low–low clustering appeared in Budapest and the surrounding districts. High–high clusters were formed from the districts in the southern part of the Miskolc district on the section connecting the Berettyóújfalu district, where low–high clusters also appeared

sporadically. In 2014, the 0.444105 Moran index obtained in the spatial autocorrelation study of jobseekers in the secondary labour market was positively correlated (z-score=9.636013, p-value=0.000000). A high–low cluster was created in the capital. In the districts surrounding Budapest, low–low clusters formed in the western direction to the Győr district and in the eastern direction to the Tiszakécske district; in Hajdú-Bihar county, in the northern districts of Békés county, in the border districts of Borsod-Abaúj-Zemplén county and Szabolcs-Szatmár-Bereg county, high–high clustering was detected. In 2020, the 0.241593 Moran index obtained in the spatial autocorrelation study of jobseekers in the secondary labour market was positively correlated (z-score=5.374755, p-value=0.000000). In the east, high–high clusters were formed almost exclusively in Borsod-Abaúj-Zemplén county in the Slovak border districts. Low–low clustering was established in central Hungary (Figure 17). Given the results of the z-scores, there is less than a 1% probability that this grouped sample would be the result of randomness.

Figure 17

District-level Local Moran I autocorrelation study of those in the secondary labour market in Hungary



Source: Created based on data from the [1].

Conclusions

In the study, we examined participants in adult training for jobseekers funded by government offices. The peak number of participants involved by government offices in the period under review was in 2014, and their number has been steadily declining since then. Vocational training is most prevalent in the country, which is important for jobs, as newly acquired vocational qualification makes it easier for jobseekers participating in the training to find a job than with competency development training.

In the distribution by age group, the 25–54 age group was the majority in all examined years, but in the primary labour market, those under 25 years were the most employed, while the age group over 55 was the most employed in public employment.

Regarding the financing of the training of the persons involved by the government offices, the domestic resources show a constantly decreasing trend; at the end of the examined period, they supported an almost undetectable number. Those supported by European Union funds show a hectic comparison, reaching the maximum of the period under review in 2014 when more than 101 thousand people were supported.

In the distribution of participants in supported trainings by education, those with primary education had the majority. In the breakdown of their employment by education, those with higher education could find the highest share in the primary labour market, whereas those in public employment with primary education were the most employed, and the higher the individual's education, the sooner the primary labour force can return.

The employment rate in the primary labour market has been steadily declining. With the advent of public employment, most of those who completed their training got a job, thus being further excluded from the primary labour market for a time. It can be said that public employment had an adverse impact on the graduates' employment in jobseeker training.

From the point of view of the participants in the training, the eastern part of the country stands out, where most jobseekers are involved in the training. In the western parts of the country, characterised by high employment, fewer jobseekers are involved.

In terms of employment, employment in the primary labour market was highest in the western part of the country, whereas employment in the secondary labour market (public employment) was highest in the eastern part of the country in areas with high unemployment.

With the relegation of public employment to the background and a well-chosen targeted training structure, employment in the primary labour market could be re-established.

Acknowledgements

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