Spatial Differentiation of Educational Outcomes at Junior High and High School in the Region of Małopolska in a Historical Perspective

Abstract: the term “institution” refers to the collection of certain practices and principles that are part of everyday social life. This set of accepted norms and rules of behaviour in communities of different territorial units is usually associated with their history and institutions operating on their territory. Today it is believed that the relational and social capital primarily determine the potential economic development of a territorial unit. In the knowledge economy, particular attention is focused on qualified staff. Therefore, a robust and efficient educational system remains an essential element of economic development. Respect for science and knowledge in a given society, not only by its usefulness, is one of the conditions of its evolution. The region of Małopolska was deprived of universal primary education until the times of the Galician autonomy. The school allowed not only professional career but also ensured social advancement. Małopolska shows significant spatial variations at the level of education. Kraków has remained the strongest centre of education for centuries, with an extensive participation of Tarnów and Nowy Sącz. In spatial terms, better education was recorded in the north-west of the region and around Kraków. However, in recent years a noticeable growth of education in the peripheries has been observed. Examples include high schools located around Kraków, which is associated with sub-urbanisation and an increase in the quality of education in closed centres (e.g. Piekary), or local centres of education (e.g. Rabka-Zdrój). The largest increase in knowledge according to the Education Value Added occurs in schools located peripherally.

Keywords: education; exams; Galicia; Małopolska; neo-institution

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Introduction

The term “new institutional economy” (NIE) was introduced to the specialist literature by O. E. Williamson. It assumes that economic, political and social phenomena cannot be analysed without taking into account the institutional environment. However, the very notion of “institutions” has not been clearly defined. “Institution” is a collection of individual practices and principles that are part of everyday social life. The set of adopted norms and rules of conduct in the communities of different territorial units are linked to their history. In the neo-institutional trend, the institution is understood as a set of standards that organise the lives of individuals whose rationality and stability of priorities does not necessarily meet the requirements of a rational choice (Nyckowiak, 2013). At the core of the institution lie the prime factors of behaviours, codifications or rules, not necessarily sound, but well rooted in the community as a result of prolonged repetition. It includes the level of social optimism, education and social promotion criteria (Niedzielski, 2014). In general, the term “institution” refers to any element of social life that is part of its permanent structure. It is a set of more or less everyday practices and formalised elements of our social life (Pieliński, 2013).

The attempt to explain spatial differentiation in the level of scientific development is not possible without taking into account the institutional conditions of economic processes, and thus the differences between countries and regions at the level of introduced regulations and the culture and mentality of their inhabitants. Therefore, in recent years there has been an increase in interest in institutional economics, especially in the context of innovation and human capital differentiation (Firszt, 2009). Among the institutional factors influencing the level of development of the knowledge economy, we find an educational system that determines the level and profile of the qualification of citizens (and thus affects their functioning as producers and consumers), and cultural factors shaping the attitudes of people (Firszt, 2009; Kilar, 2008; Dorocki, Brzegowy, 2014). Informal institutions also play an indispensable role in stimulating progress. In this case, we can talk about norms influencing entrepreneurship in its broad sense. This comprehensive outlook on “entrepreneurial attitudes” includes above all: energy, perseverance, enthusiasm for work, initiative, creativity, world curiosity, confidence and self-confidence, self-discipline, willingness for risk-taking, and taking responsibility for themselves and others (Rachwał, 2005). It directly affects the social and economic development of territorial units of different tiers. The general level of effectiveness of entrepreneurial attitudes depends on the adherence to generally accepted norms and principles by society members, whether by individual axiological positions or by social pressure.

The historically shaped mentality in the region is a resource that can affect entrepreneurship of inhabitants regarding upgrading their qualifications. Raising pro-education awareness requires residents to need continuous education, which should be supported by a well-functioning system of elementary and higher education, as well as opportunities for lifelong learning (Jastrzębska, Lechwar, 2009). In the knowledge-based economy, particular attention is paid to the qualified staff dependent on the efficient educational system (Borowiec, Dorocki, 2011; Dorocki, 2013).

Social capital is a term introduced into sociological literature in the 1970s. The term is defined by P. Bourdieu (1985) as the sum of real and potential resources whose existence is made possible by the interactions between the participants of the network created by
more or less institutionalised relations. It includes individual entrepreneurship expressing life attitudes resulting from the ability to be entrepreneurial, having the spirit of initiative or resourcefulness (Piecuch 2010). Nowadays it is believed that it is precisely social and relational capital that determines the economic development potential of a given territorial unit (Cierniak-Szóstak 2006).

Therefore, the subject of the following considerations are features, both vested by the inhabitants of the area concerned and continually reproduced by them via upbringing in the given environment. The manifestation of entrepreneurial attitudes in pupils is the desire to increase knowledge, self-education (self-improvement), ambition and perseverance in pursuit of the goal, which affects school performance together with the abilities. The aim of the study is to investigate the sustainability of spatial structures of educational level in Małopolska concerning the so-called long-term duration. Due to the lack of data, there has been no compilation of behavioural and attitudinal characteristics in a given community with the achievement regarding pupils’ school performance, limited to the analysis of the sustainability of the phenomenon, which may indicate the existence of certain institutional circumstances.

The study of determinants influencing the spatial differentiation and the quality of education in primary schools in Wrocław (Raczyk, Malinowska, 2011) were the main reasons for considering the spatial differentiation of educational level in a historical aspect in Małopolska. These studies have shown that the school potential of individual schools has not affected the level of pupil education. It was noted that students’ results were most influenced by social factors – the environment of upbringing. With the above-presented assumptions in mind, an attempt was made to answer the question whether there is spatial variation in the level of education in the present Małopolskie Voivodeship and whether it can be referred to neo-institutional factors that exhibit high temporal stability. Therefore, the results of secondary and lower secondary school examinations for Małopolska schools were applied to the distribution of schools in the voivodeship at the beginning of the 20th century and the results of teaching at that time. Do the results of student achievement have a particular spatial structure in Małopolska and is it sustainable concerning the concept of long duration? the study included the mean values for the results of high and junior high school exams for the years 2015 and 2016 to exclude one-year variations. The study excluded home schooling, adult schools and high schools with under ten graduates (about 150 secondary schools and 140 vocational high schools were included). The study also did not include the additional subjects selected in the examinations because of the impossibility of making spatial comparisons of their results. The spatial analysis of the results was based on standardised data and weighted average values. In the case of junior high schools, this was the average of the standardised values (by mean and standard deviation) for the results of the Polish (oral and written) core exam, history and social studies, mathematics, natural sciences and average scores from the base level of the foreign languages exam. For the high school, a weighted average was calculated. It included standardised values for the participation in the positive Matura examinations, i.e. passing the exams (weight 20), the mean scores obtained in the exams – basic level (weight 30) and the average for the results of the Polish and mathematics exams (weight 50). The data was obtained from the website of the Regional Examination Board (Okręgowa Komisja Egzaminacyjna – OKE) in Kraków (www.oke.krakow.pl).
Development of education in Galicia during the Partitions

The development of people’s (elementary) and secondary schools in Małopolska took place at the time of the Partitions and dated its development from the two provisions of the Emperor Francis Joseph of 1867. The first one, sanctioned by the National Law of 22 June and adopted by the Galician Sejm, referred to the language of instruction in community and high schools in the Kingdom of Galicia and Lodomeria with the Grand Duchy of Kraków. The second one was the proclamation of the emperor’s order of 25 June, permitting the establishment of the National School Council for the Kingdom of Galicia and Lodomeria with the Grand Duchy of Kraków. However, five days before the official incorporation of Galicia into Austria in 1772, guidelines were drawn up to the development of Galician education (Röskau-Rydel, 1997: 371). All children between 6 and 12 years old were required to attend school for a minimum of 6 years. Four core subjects were taught at school: religion and morals, essential subjects: writing, reading and math, German language and introduction to Latin. Despite the many mistakes and attempts at Germanisation in people’s schools, compulsory education apparently contributed to the development of modern society and the economic development of Galicia. As early as in 1828, it was pointed out that in addition to the existence of academic establishments, schools for primary education and real schools for the merchants in Lvov and Brody, Galicia lacked technical, economic and medical schools resulting in the lack of “useful” people (Łoziński, 1905: 80). In 1805 the universal education system was replaced by the political constitution of German schools in the Imperial-Royal hereditary countries (Röskau-Rydel, 2011). These conversions mainly concerned changes in the qualifications for teachers and the education of children who were no longer under compulsory schooling (over ten years). It should be emphasised that in the case of both the Polish and Ukrainian populations educational activities brought poor results, as evidenced by high levels of illiteracy. In 1904, the Viennese government allocated 17.8% of the appropriate budget line to the Galician education, while the population of Galicia constituted 26% of the total population of the Empire. However, in comparison with the Russian and Prussian partitions, education in Galicia was highly autonomous and continued its development.

Secondary and higher education remained the deciding factor in shaping human capital. The predominant type of secondary schools in Galicia was the junior high school (gymnasium), six-class until 1848, extended in successive years to eight classes (Kudła, 2005). The junior high school was divided into lower and higher schools, each of which comprised four classes preparing pupils for further study at colleges. Junior high education was limited to the major cities only. The location of junior high schools was dependent on the communication accessibility, especially the railway line. As noted by Kudła (2005), the top education rate in western Galicia was due to a higher level of education at the level of people’s schools, but also resulted from the fact that about 70% of high school pupils were Poles. Meanwhile, the attractiveness of junior high schools located in major cities was due to their reputation, as well as the possibility of giving private lessons by poor pupils of higher grades. The L’viv centre with eight junior high schools was the largest centre of secondary education in Galicia. Only Kraków with five junior high schools could compete with it. At the beginning of the academic year 1912/1913, Kraków had 3,143 pupils (9.6% of 32,886 in education in 62 Galician establishments) in five institutions and their branches. At the same time, in the eight schools of Lviv, there were
6,085 pupils (18.5% of those in education in Galicia) (Siudut, 2013). Junior high schools differed in both the level of teaching and the structure of the pupils, among which, as the rural population was getting richer (which was also the result of increasing transatlantic migration to America and seasonal emigration to Western Europe), there was a noticeable increase in the share of this social class. The recruitment of teachers to junior high school was based on the competition after graduation. Eventually, the decision to allocate the workplaces was made by the Emperor (Röskau-Rydel, 2011). Among teachers of junior high schools and people’s schools were many Poles.

The data for schools during the Galician autonomy was taken from the reports of the Imperial-Royal National School Council. These were the Report of the Imperial-Royal National School Board on the state of public upbringing in the 1901/1902 school year (1902), and the Report of the Imperial-Royal National School Board on the situation of the high schools in Galicia in the academic year 1900/1901 (1901).

Education in Malopolska at the beginning of the 20th century

Subsequently, an attempt was made to demonstrate the level of education in Malopolska at the beginning of the 20th century, when education became universal. Education in Malopolska, as noted above, occurred at two levels: elementary (people’s) and junior high (secondary).

By analysing the variation in the conditions of primary education, we can see that there were striking disproportions in the area of Malopolska a hundred years ago. As for the availability of people’s schools (909 schools), the best situation was in Kraków itself and the gminas located to the north of the city, i.e. Kraków Vicinity and Chrzanów, and in the Gorlice Poviat in the eastern part of the voivodeship (Fig. 1A). In the case of the number of pupils per school, the distribution shows high intensity of students in the western part of the voivodeship, as well as in Kraków and Tarnów (Fig. 1B). These were mainly large schools, while in the south-eastern region of Malopolska schools were on average smaller by half. In general, the share of children in education was between 57% and 96% for all the Malopolska poviats (Fig. 1C). The highest proportion of students was recorded in the suburbs of Kraków (Kraków Vicinity). This share was more than 95% of children in the education system (95.7% in daily learning and 93.1% in supplementary learning), while in Kraków this share was only 58.7% (78.4% in daily learning and 22.7% in supplementary learning). Saturation with teaching staff was also recorded in the Kraków region and Nowy Sącz (Fig. 1D). The indicator of the number of teachers per 1,000 pupils was highest in Kraków – 17, followed by 14 in Podgórze and 13 in Wieliczka and Nowy Sącz.

Also, the results of primary education in 1902 in Malopolska were very diverse. The pupils obtained the best average results in the poviats of Kraków Vicinity, Żywiec, Gorlice and Kraków (Fig. 2). And so in the poviat of the Kraków Vicinity, the pupils of 58 schools received an average grade of 4.5. In the Żywiec Poviat – 32 schools – the average grade was 4.25. In Gorlice, students of 58 schools received an average grade of 4.2, and in Kraków itself, where 20 people’s schools were located, their pupils received an average grade of 4.1. At that time the Gorlice and Żywiec Poviats remained the most economically developed regions of Western Galicia. In the case of Gorlice, it was the oil industry, while in Żywiec the metal industry. High grades in the poviat of Kraków Vicinity and Kraków
Fig. 1. Diversification of the conditions of education in people's schools in the area of the then Małopolska Voivodeship in the school year 1901/1902 by poviats

Source: own work based on the Report of the Imperial-Royal National School Board on the state of public upbringing in the 1901/1902 school year (1902)

Fig. 2. Diversification of the conditions of education in people's schools in the present-day Małopolskie Voivodeship in the school year 1901/1902 broken down into the then poviats

Source: own work based on the Report of the Imperial-Royal National School Board on the state of public upbringing in the 1901/1902 school year (1902)
itself may have been caused by the fact that compulsory primary education (compulsory schooling) was already functioning there at the times of the Kraków Republic/Free City of Kraków. By the act of the statute of 1817, a School Fund was established and implemented in a top-down process. Moreover, the General Supervision of Initial Schools in Kraków was established. These actions ensured the efficient organisation of schools regardless of the wealth of the village and how many tuition fees were actually paid.

In the case of junior high schools at the beginning of the 20th century, it should be noted that they were located only in the largest cities of Western Galicia. Also, in their case, we can presume the level of education was diverse (Fig. 3). It is evidenced by the notes by E. Romer, who in the published memoirs mentions the Junior High School in Nowy Sącz as a “punitive” school for teachers, since those who were directed there were poor, which resulted in low education level (Romer, 1988).

When analysing the diversity of secondary education, junior high schools (gymnasiums) and real schools were combined. In Małopolska at that time there were 13 junior high schools and three real schools – two in Kraków and one in Tarnów. These schools, unlike the humanistic gymnasiums, had a greater share of Mathematics and Natural Sciences (the so-called real ones), and in their curricula they took more into account the efficient preparation of pupils for life and work.

Kraków with its six junior high schools was the biggest centre of such education. Besides Bochnia, where pupils of the older classes (5 to 8) accounted for 37.8% of the total number of students, Kraków also had one of the highest shares of older pupils in Western Galicia (36.4%). In other centres, this proportion was lower than 30%, which was a sign of a lower level of education.

Fig. 3. Junior high and real schools in the area of the modern-day Małopolskie Voivodeship in the school year 1900/1901

Source: own work based on the Report of the Imperial-Royal National School Board on the state of the high schools in Galicia in the school year 1900/1901 (1901)
of the lack of interest in continuing education for most of their pupils. Kraków also had the largest schools, with an average of 42.6 pupils per class, while in Bochnia it was 41.1 and in Nowy Sącz 40.8 students.

However, regarding the results of the Matura exam, the data for the whole of Kraków were worse than for other towns (Fig. 4). The reason for that was the fact that although Kraków had schools with the highest number of decorated pupils (I Gymnasium of St. Anna – 24.4%, II Gymnasium of St. Jack – 23.7%), the city also had schools with much worse results. That is why high results for the gymnasiums in Tarnow (26.7%) and Podgorze (23.6%) influenced the recognition of these places in the ranking of schools in Małopolska (Fig. 9). Also concerning the Matura success, values of 95.6% for Tarnow and 91.2% for Podgorze placed these schools at the top of the ranking in Małopolska (the highest score was achieved by Wadowice –100%). On the other hand, the worst results were recorded in junior high in Nowy Sącz with only 9% of decorated students and 84.6% of graduates.

It should be noted that home-schooled extramural pupils showed a noticeably high participation among those taking the Matura exam. In large part, these were women who, despite the existence of girl schools, were discriminated against in the education system. Also, the academic staff of junior high schools, as well as real schools, was strongly connected with educational institutions. Classes were taught by university lecturers and scientists associated with the Academy of Learning, which influenced high education level.
Spatial variation of the education standard in Małopolska in the years 2015–2016

By adhering to the analysis of contemporary educational differentiation in the Małopolskie Voivodeship, the factors determining the level of education should be taken into account. Usually, studies consider many variables which affect the school success of pupils. These may be objective factors, such as the number of students per class, availability of extracurricular activities (mainly extra courses for disadvantaged students and additional activities for gifted pupils), place of residence and parental wealth, which affect access to out-of-school educational services, the age of students, etc. (Krispin, 2015). However, it seems that the decisive factor in the analysis of student achievement are the so-called soft factors associated with the values of the pupils and their parents. The awareness of the need to improve knowledge and the patterns of pro-educational behaviour affect the individual attitudes and decisions of students and their parents. It is the perception of the role of education and learning regarding recognised life success criteria and the ability to achieve financial satisfaction (professional success) influence engagement in the learning process. Individual attitudes, such as ambitions and personal predispositions, should also be taken into account. It is assumed that all these different characteristics have a normal distribution and are proportionately represented in all the centres, mainly concerning primarily schooling, which is heavily influenced by zoning. On the other hand, in the case of secondary education, the process of concentration of pupils with higher potential in centres with high positions in school rankings will be observed (in about 40% of cases students commute to high schools).

As an exemplification of the diversity of educational potential in Małopolska concerning the intellectual capacity and ability of students, the variety of participation of dyslexic pupils can be used (Fig. 5). The level of dyslexia as measured by the share of students taking junior high school exams in the years 2015–2016 was very different regarding individual gminas and schools. In general, there is a high concentration of people with a disability certificate in the Kraków agglomeration, as well as in western and southern gminas (over 25% of those taking the exam). The largest share was recorded in major cities in non-public and profiled schools mainly related to arts (such as fine arts) and Catholic schools, where the percentage of pupils with dyslexia was close to 100%. of course, such a high proportion of students with disability certificate is, on the one hand, the specificity of non-public schools, which attract students with learning disabilities with better conditions (e.g. The small number of pupils per class, individual approach to the student, extracurricular activities, etc.).

Similarly, in the case of art schools, there is a belief that these institutions have a more flexible approach to learning than other types of schools, with greater emphasis on the development of pupils’ talents. Besides, a high proportion of dyslexic pupils in major cities and the agglomeration area may indicate better access to professionals. In general, apart from small schools where even a few dyslexia cases result in a significant proportion of such pupils in the total number of those examined (e.g. Racławice 42.3%, Bukowno 37.5%, Sękowa 26.6%), the largest percentage is evidenced – besides Kraków (31.4%) – in its neighbouring gminas (Alwernia, Skala, Mogilany, Krzeszowice, Zabierzów, Skawina). Distribution of pupils with reduced requirements correlates at a very low level (r = 0.26) with the average score received at the junior high school exam. It appears therefore that,
Fig. 5. Average participation of students with dyslexia certificate among the students taking the junior high school exam in the years 2015 and 2016 in the Małopolska Voivodeship

Despite the existence of unitary cases affecting the level of education, it is possible to generalise the results of education based on the results of the examinations in junior high and high schools, taking into account these individual factors in the analysis.

If differentiation of education level is considered, the results of junior high education were firstly examined, which as a consequence of the reform in 1999 fulfilled the requirements of spatial accessibility for all pupils, also for the youth from peripheral areas (mainly rural areas). Besides, due to the specialisation of learning, pupils can develop their interests through the development of profiled classes (related to pedagogical innovations). These schools are the first stage in the differentiation of the teaching level with their general availability. It is particularly evident in the case of lower secondary acting independently, rather than in the case of small high schools combined with primary schools. It is evidenced by the average results of the junior high school exams received by independent schools and those in the school complexes. However, it has to be emphasised that in most cases the level of the class is decided by its staff and efficient management. It is because behind every student’s success there is always a human, not institution.

Thus, when analysing the average share of awarded points, the highest values were received by gminas located in the north-western part of the voivodeship (Fig. 6). Junior high schools, which achieved the result of over 70% were in most cases located in Kraków (over 80% of schools) and other big cities like Nowy Sącz and Tarnów (one school each). However, in the major cities, there are also schools that achieved poor results. Therefore, taking into account the average results for entire gminas, besides cities (e.g. Bochnia, Jordanów, Nowy Sącz, Kraków >60%), rural gminas of Zielonki, Krościenko nad Dunajcem, Zabierzów, Niepolomice, Stryszów and Zembrzyce also received high results.
In most cases, these were the gminas within the agglomeration of Kraków participating in the process of suburbanisation. According to researchers, the so-called new suburbanisation (Frey, 2002) includes a large proportion of middle-class people with higher education, including academics (Howley et al., 2005; Kontuly, Tammaru, 2006; Kurek. Gałka, Wójtowicz, 2015). Therefore, with the intensification of migratory processes from large agglomerations, the “brain drain” of their inhabitants is first, and the educational problems in peripheral regions of cities are increasing (Czapiewski, Janc, 2012; Runge, 2015). Changes in the social structure of pupils, on the one hand, affect the growth of educational opportunities in rural schools but also increase the demand for knowledge-based services. Therefore, in suburban areas, we notice in recent years the rapid expansion of private educational institutions (kindergartens, primary schools, lower secondary). As a result of this process, there is also a greater variation in the level of education in cities (there are high-performing institutions and those in which the results of school tests are found at the end of the ranking). Also, in the towns where there are a few junior high schools, there may be a situation of intense polarisation of learning outcomes, which results from the selection of students in the recruitment process. Suburbanisation, therefore, influences not only the social structure of suburban areas but also the social capital of these regions.

In Kraków, the difference of points received by particular schools was quite large. On the other hand, in the case of gminas, it averaged about 10% with the sustainability of the spatial structure. Compared with the 2015 results, in 2016 almost all voivodeship gminas recorded an increase, with the highest values in the gminas north of Kraków, and around the major cities, as well as in the western Małopolska gminas.
Due to the differences in the average level of scores received in the junior high school tests in 2015 and 2016, the results were standardised against the mean and standard deviation. According to the indicator, in the area of Małopolska it is possible to distinguish distinct centres of higher values. It is mainly the agglomeration of Kraków and the area of adjacent gminas, such as Zielonki, Niepolomice and Zabierzów (Fig. 7). The high values recorded in the junior high schools located here result from greater access to extracurricular education. It includes proximity to institutions of higher learning that organise activities for children and young people, e.g. University for children, numerous cultural and art institutions, courses and trainings, libraries, as well as the availability of home schooling – tutoring offered by college students. They are also the effect of the increasing role of education in life connected with the process of suburbanisation and lifestyle changes, especially in suburban areas (Mrozik, 2013). Other centres with a high index are the towns of Krościenko nad Dunajcem, Bochnia, Nowy Sącz and Jordanów. These localities differ significantly in size and function. Therefore, it seems that the influential factors included organisation of school teaching (e.g. extra classes to help weaker pupils, educational pathways), social values and learning traditions (Zborowski, Chaberko, Kretowicz, 2011).

In general, differences in the level of results between the east and west of the voivodeship can be noted. Higher standardised results of examinations are held by the gminas of western Małopolska, especially the Andrychów and Wadowice regions, which historically exhibited the highest level of economic development and the fastest industrialisation. Later, the area was strongly linked with the economically developed region of Silesia.

The variation in the standardised results for individual schools did not exceed 16% of the coefficient of variation. The highest values of the coefficient of variation were recorded in the main cities such as Kraków and Tarnów, and smaller ones such as Nowy Targ, Zakopane and Mszana Dolna. High values of coefficients of variation of the results were also found in the industrial gminas of western Małopolska: Skawina, Trzebinia and Olkus.

The next step of the research included the study into the level of learning based on the results of the Matura examination. The analysis covered 152 high schools and 140 technical schools. The study excluded the schools with a small number of graduates (under 11 students), as well as special-needs schools and adult institutions. High schools show an uneven distribution in Małopolska. The city of Kraków is home to about 48% of high schools and 60% of high school graduates. The next one is Tarnów (14% and 19% respectively) and Nowy Sącz (10% and 15%). However, taking into account the number of graduates per 100 people aged 5–20, the indicators for these centres are not the highest in the voivodeship; for Tarnów it is 10, Nowy Sącz – 9 and Kraków – 5. In the peripheral centre, however, these values exceed 20 people in the case of Kalwaria Zebrzydowska. Also, centres such as Zakliczyn, Limanowa, Myślenice, Biecz, Sucha Beskidzka, Olkusz, Grybów, Wadowice and Rabka-Zdrój perform important educational functions for the neighbouring areas (over ten high school graduates per 100 people aged 5–20).

When analysing the variation in the level of education, it is important to take into account the current “brain drain” in local education centres. Although Kraków, Nowy Sącz and Tarnów attract students from almost the entire region, this process is limited and covers only individuals. An important factor in choosing a high school is the distance
from the place of residence, which allows zoning of the level of education with a link to local social capital.

In the case of technical schools, the differentiation is no longer as significant as in high schools, although Kraków is also dominant (about 20% of both schools and graduates). In Tarnów and Nowy Sącz, these values are 8% for high school graduates and 6% of the number of schools. In other cases, this value is 1%. In this case, peripheral centres such as Nowy Targ, Limanowa, Bochnia and Myślenice are also of great importance.

The analysis was based on the developed indicator of the level of education, which, based on standardised values, included: the share of high school graduations, the average value of results in compulsory subjects and the total value of the points earned on the Matura exam. By analysing the obtained results, the dominance of “elite” high schools is apparent. These are primarily high-level institutions (including high school leagues where teaching staff are made up of university cadres), and non-public schools, including centres run by religious associations, whose financial capacity allows them to attract talented but poorer youth. That is why the best schools are concentrated in major cities (Kraków, Tarnów, Nowy Sącz), but also in their neighbourhood, for example, the school in Piekary in the gmina of Liszki near Kraków. These schools attract talented young people who have high marks in junior high school exams. However, in addition to these elite establishments in the major cities, there are schools, including technical ones, where Matura grades classify them at the end of the Małopolska school ranking. In smaller centres, however, minor variations in exam scores and higher overall average scores for high school exams than in the major cities are noticeable. Therefore, in the ranking of gminas the first places are not taken by the most major cities, but small centres such as Liszki...
It should be noted that although the level of education is related to the size of the centre, it is not a determinant of the level of the Matura exam results. Peripheral centres, in comparison with other institutions in the voivodeship, achieve lower Matura scores, but they are characterised by higher “educational productivity”. It is evidenced by the indicator of educational added value (EAV). The greatest increase in knowledge in high school was recorded between 2013 and 2015 in schools located outside major cities, such as Libiąż, Rabka-Zdrój and Wadowice. The level of education is influenced by family traditions, employment structure or personal aspirations. According to the model based on the potential of gminas and taking into account the interpolation of the indicator of the results of junior high and high school examinations in the years 2015 and 2016, higher values in the western part of the voivodeship can be noted (Fig. 8).

Conclusions

Summing up the considerations on spatial variation in the level of education in Małopolskie Voivodeship, the differences in the effects of post-primary education in this area are confirmed. In Małopolska, regarding achievements in junior high and high schools, the Kraków region, comprising Kraków and suburban gminas, is distinguished. As a result of suburbanisation, the level of education in junior high schools in rural areas in the Kraków agglomeration area increases. At the same time, the process of differentiating the level of education is visible in Kraków itself. Besides outstanding schools, there are schools with poor learning outcomes. Outside the Kraków region, the higher education indicators are recorded by major cities (e.g. Tarnów, Nowy Sącz) and western Małopolska. It is mainly related to the level of economic development and accessibility to educational infrastructure. School cooperation with higher education institutions and highly
qualified teachers are of particular importance. The process of shaping regional (local) educational centres, which can compete with Kraków schools, is also noticeable. These are both junior high schools and high schools, which, thanks to their traditions or financial and human resources, attract talented youth. Examples may be the high schools in Piekary or Rabka-Zdrój.

It seems that an important element influencing the shaping of the modern educational structure of Małopolska is the level of social capital shaped in large part in historical times. Current processes, such as migration, overlap cultural determinants and past educational policies. As indicated in the presented text, more than one hundred years ago, in the area of present Małopolska, there were differences in the educational outcomes, to which modern educational structures greatly relate. It should be remembered that many elite high schools in Małopolska have their roots in Galician junior high schools and real schools.

On the one hand, this historical spatial stability in the educational structures of Małopolska results from the need for stability and sustainability of this infrastructure, but also from the time required for the development of relevant education processes and mechanisms. As one of the great advocates of the development of education prof. J. Dietl said: “The money you spend on education is not spent, it is only loaned because education is the most responsible debtor, education that gives birth to freedom, morality and prosperity will pay us money back with usury” (Niemiec, 1939: 16). It is, therefore, to be agreed with the Professor that the development and status of education, even at the lowest level, affects not only the general knowledge of the society but also its moral attitudes. Both at present and in the past, the educational system conditioned citizens’ views. Thus shaping entrepreneurial attitudes in the past, through institutional factors, in many cases influences present picture of the level of education in Małopolska. It is hoped that both the enormous efforts of appropriately qualified teachers, supported by responsible education policy of local and state authorities, as well as values passed from generation to generation in local communities, in the coming years will bring the levelling of education standards in Małopolska, with its overall growth.

References


Regionalne, 10, 33–52. [Accessibility and quality of education, and the education level of the inhabitants vs the functional structure of the gminas of the Mazowieckie Voivodeship.]


Panel participants were asked about the quality of education and the education level of the inhabitants vs the functional structure of the gminas of the Mazowieckie Voivodeship.


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