EDUCATION AS A FACTOR THAT DIVERSIFIES THE POSSIBILITIES OF ECONOMIC DEVELOPMENT

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ABSTRACT: The main objective of that paper is to present the role that education plays as the factor that to great extend diversifies development potential. The focused on depiction of the relationships between development centres and peripheral areas. Polish space is obviously divided into the core- towns, especially large ones, and periphery- majority of rural areas scheme. It has significant implications for spatial planning, e.g. the necessity of rising the availability of education for the rural youth.

KEYWORDS: education, migrations, EU funds absorption, accessibility, core-periphery, rural development

INTRODUCTION

Nowadays, education and human capital that depends on it very strongly are recognised to be the key factors of the development. They explain the causes of unequal growth of spatial systems much better than the classical economic factors used previously (land, capital, and labour). As Florida (2002, p. 221) points out the clustering of human capital is even more important to economic growth than the clustering of companies. Thus, places characterised with a great concentration of people with high education should be recognised as potential areas of economic development. According to von Hayek (1945), the economic success is, in great extend, realised thanks to the knowledge that enables rational assessment of the situation and realistic formation of own objectives. The greater the knowledge, the better educated the man is.
The basic factor responsible for the level of knowledge is education, or to be more precise its availability. Establishment of centre-periphery scheme that is observed in modern economy at almost all reference levels appears already when access to education is concerned. Migrations of people that are the most enterprising and have the best knowledge and skills are both consequence and the factor that causes the establishment of the core-periphery system. It results in formation of areas where people with higher education concentrate as well as in consistently better education of councillors in local authorities. The level of absorption of the funds from the European Union (EU), that is also an important factor that diversifies development potential of local economies, depends in great measure on the councillors’ competence (see Bański, Stola 2002; Ciok, Raczyk, 2006).

The main objective of that paper is to present the role that education plays as the factor that to great extent diversifies development potential. Spatial diversification of education processes is here described with the following factors: education availability at the junior high school and university level, migration processes and education of the local authority councillors. The analysis should enable depiction of the relationships between development centres and peripheral areas, which mainly rural areas are considered as. We recognise absorption of the finances from the EU structural funds (ISPA, SAPARD, and PHARE) in years 1990-2003 as a feature describing the ability of territorial systems to establish socio-economical development. Our hypothesis is that influx of external finances is positively correlated to the education of authorities and inhabitants.

Analysis was based on the statistical data coming from the state offices as well as from the surveys. Spatial frames cover the whole country, mainly in the dis-aggregation into counties (NUTS 4), while time span spreads throughout last several years.

ACCESSIBILITY TO THE EDUCATION SERVICES FOR THE YOUTH

From the point of view of the education success, the junior high school level (pupils at age of 14-16) is very important. Knowledge obtained at this time influences the possibility of the high school choice and, as a result, further education way at the high education level. Pupils with poor grades have narrower choice that is limited to the high schools of rather lower training level. Virtually, it prevents them from studying at the best universities, at the best, from the well paid job point of view, faculties.

In comparison to the youth from the urban schools, pupils from the rural schools achieve at the final exam after junior high school results that are 10% lower on average. One of the most important reasons of relatively poorer exam results of these pupils should be recognised in worse spatial accessibility of different cultural and education institutions.

In 2006 a survey was conducted and it polled a representative for Poland group of 1551 pupils from the 3rd grade of junior high school (16 years old). For only 30 per cent of those polled it
takes less than 10 minutes to reach the commune capital while in case of pupils from the urban schools this share equals 80%. Access of the pupils from the rural areas to the localities that host administration institutions of the higher level is obviously more difficult (Figure 1).

*(insert figure 1)*

Pupils from the rural schools have on average more than 70 minutes to reach the voivodeship capital, and for every fourth pupil it takes more than 120 minutes. Such a distance prevents them from often travels to the regional centre where a lot of institutions that offer additional training and possibilities to develop own hobbies and skills are located. Many of such institutions offering different education services are located in county capitals too. But even in this case the temporal availability of them is fourfold worse for the pupils from rural schools than from the urban ones.

Only every third of the polled pupils lives in the same locality where their school is located. Such situation extorts everyday transport to and from the school, which significantly extends the time of commute (Figure 2). A pupil from a rural school needs on average 15 minutes to go to school and back, while it takes 13 minutes for a pupil from an urban school. The difference in time is not significant because school bus goes 15 kilometres on the communal roads as long as it takes for the public transport to travel 3 km in rush hours. Significant difference appears when one analyses how long pupils from rural and urban junior high schools have to wait for the beginning of the classes after their arrival to school or for the return-transport after the classes have finished. Urban pupils can use municipal means of transport that goes very often, while rural pupils have to go by school bus or public transport. Total travel time of the rural pupils is therefore almost 20 minutes longer in comparison to their urban peers. Even more unfavourable differences and the “waste of awaiting time” takes place in case of pupils for whom the school does not organise the commute and the youth has to use public means of transport (Guzik, 2003).

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Urban youth has also more possibilities of additional trainings and development of their talents. Every second urban and every fourth rural pupil have declared participation in various after school activities (language and exam courses, interest clubs). This situation is related to the poor spatial and temporal availability of different cultural and entertainment institutions for the rural youth (above described long commute time to the town and the lack of such possibilities in home locality).
Although the physical distance to school is less essential at the university level than at the lower stages of education, it still plays an important role. It is especially crucial for the rural youth that can rarely afford to live in an academic centre. At the beginning of the 1990s the number of academic centres was limited to 33 towns with higher education institutions and 21 towns with their branches and external divisions (Figure 3). In the following years, the dynamic increase in number of schools and their branches took place. In 2002 there were 133 localities that can be recognised as academic centres (at least one institution or a branch). Relations of higher education institutions with settlement network and towns hierarchy are clear. Universities have gradually begun to appear in smaller towns, however the greatest increase is observed in the neighbourhood of the traditional and the biggest academic centres. It is caused on one hand by limited mobility of the scientific personnel that is in majority attached to the academic centres because of work and accommodation and on the other by foundation of new institutions in places of the greatest demand.

(Insert figure 3)

Increase in number of schools meant obvious growth of number of students. At the beginning of the 1990s it was relatively low (1.4% of population), but increased in the following years constantly (2.5% in 1996, 4.2% in 1999) up to almost 5% in the year 2002. In 2002 the highest number of students was in Warszawa (300 thousand) and the next three centres (Kraków, Poznań and Wrocław) characterise the similar number of those studying (130-150 thousand). These centres, together with some other towns with the highest number of high education institutions, offer wide range of the fields of study, which is contrary to the private institutions in smaller towns that have mainly only economics courses. One should also consider their prestige, atmosphere of studying, availability of culture, scientific resources (libraries, archives, bookshops) and entertainment infrastructure. These places are attractive to the youth not only from the nearest surroundings but also from the more distant parts of the region.

Despite constant increase in the density of academic centres network in the last decade of the XX century, there still were areas with their poor availability in 2002. Changes in the availability of higher education institutions that took place in the 1990s resulted not only in the general increase in number of people with higher education, but paradoxically also in decrease in the share of the rural students at the universities. Taking into consideration the fact that very low percentage (3%) of rural youth studies (Bański, Stola, 2002), one may assumes that the level of their education will probably decrease without far-reaching changes in the system of support of education aspirations for rural population. Barriers in the access to the higher education are very important.
factors affecting such situation. Some kinds of barriers ought to be distinguished. As mentioned above, the selection at the level of junior high school is essential. Economic barrier gains more importance for the inhabitants of rural areas. The lack of financial possibilities to take up the studies results from their smaller wealth and necessity of the earlier start of professional work. Another reason for the poorer education of the inhabitants of rural areas lies in fact that the rural youth repeats the education patterns of their parents. As research of Domański (2000) reveals, only about 1 per cent of farmers' children graduates from the university. It is caused by lower educational aspirations of the rural youth. Only 38 per cent of the rural pupils at the age of 16 wants to obtain the higher education, whereas this rate among urban youth amounts to 60% (Czapiewski, Śleszyński, 2006).

Figure 4 presents relations between the higher education institutions and share of people with higher education in the dependence on the distance from the main academic centres. The biggest (according to the number of students) three centres were analysed. For concentric spheres of communes (NUTS 5) around the academic centre we calculated percentage of people with higher education and the number of universities. In total seven areas were considered with the academic centre being the first one.

(insert figure 4)

Co-presence of universities and great share of people with higher education is observed clearly. The percentage of people with higher education in all localities in Poland that are the academic centres- 15,4% confirms that. Value of this rate for the rest of the country amounts to 6,1%. Concentration of the schools and people with higher education in the main academic centre occurs in all presented areas. Then in majority of cases there is a drastic decrease in share of people with higher education. Presence of the next academic centres in the following concentric spheres causes simultaneous increase of this rate.

It is interesting to observe the gradient of the decrease in share of people with higher education with the increasing distance to the academic centre. As far as surroundings of Warszawa are concerned one observes a slow fall in education level, while in the neighbourhood of Kraków and Wrocław there are the greatest differences between the central unit and the closest sphere of communes. In these cases the average value of the share of people with higher education is similar to the value for the whole area around academic town already in the second sphere. It means that the spatial influence of these centres to the surrounding areas is scarce.

The observed relation is partially caused by the character of the localities in which universities are localised. These are large and medium urban centres where even without presence of the high education institution the share of people with higher education would be
greater than in the other areas. That is why there is co-presence of these phenomena. On the other hand however, one cannot underestimate influence of the presence of universities on the concentration of well-educated people. It is important that students that came from the outside of the academic centre stay there once they have graduated. That is, in turn, related to the greater possibility of finding satisfying job in the larger town. One should surmise that the fact of students staying in the place of studies after the graduation is caused by family-factors, that is marriages or formation of constant relationships during the education period.

COUNCILLORS’ EDUCATION

Spatial diversification of the councillors’ education (Figure 5) allows to state that there are differences between big agglomerations and less urbanised units. The majority of the largest towns where percentage of councillors with higher education is above 74%, and regions added to Poland after the World War II stand very clearly out. They characterise in great measure with average value of the rate contrary to the central and eastern part of the country, where the lowest values occur. It is interesting that this pattern bears no resemblance to general diversification of the education level. One ought to relate this state of affair to the voters’ preference towards councillors with potentially greater knowledge, which is presented in some regions. It is worth to recall results of Gorzelak and Jalowiecki (1997). According to them inhabitants of western Poland recognise the most that poor qualifications limit local authorities activity. This fact seems to explain in great measure the picture of spatial diversification of analysed feature. Without data referring to the councillors’ tenures one cannot find out if the inhabitants’ choice was caused either by the effectiveness of the local authorities activities or by the voters’ assumption (without confirmation in the reality) that people with higher education are more competent representatives of local societies.

(insert figure 5)

It has to be emphasised that education of the councillors in rural areas is much poorer than in the towns. The percentage of the councillors with higher education in the tenure 2002-2006 amounted to 30 per cent in rural communes whereas in urban communes this rate was over twice higher and reached 67%.

MIGRATIONS

During the whole period after the World War II population of rural areas in Poland has not changed much and has amounted to 15 million. The surplus of people that was created due to high positive birth rate moved to dynamically developing and industrialising towns or abroad. In years
1995-2002 rural localities were left by over 277 thousand of inhabitants. Average annual birth rate in that period was 1.64‰ while the migration rate amounted to –2.37‰. Thus the real birth rate was –0.73‰, which meant the outflow of 10 thousand people from rural areas per year. In the 1970s, when the intensive industrialisation took place Poland, over 250 thousand people moved annually from villages to towns. However one should remember that the suburbia are nowadays the most often chosen destination of settlement and, in statistics, they are in majority of cases considered as rural areas. Outflow from the rural areas that are located peripherally to the large urban centres and important communication routes is still very big. Areas that are characterised with mono-functional (agricultural) structure of economy, low living conditions and peripheral localisation the population outflow is over five times higher than from the multi-functional areas (Figure 6).

(insert figure 6)

The suburbia are the destination of migration for inhabitants of both areas of depopulation and towns (Figure 7). The previous group settles in suburbia with the intention of finding a job, i.e. there is a decisive role of economic factor. The latter one consists of wealthy people who seek for the better living conditions in these areas, i.e. the decision is made up because of esthetical and health reasons (Śleszyński 2004).

(insert figure 7)

Young, enterprising and mobile people are the most willing to migrate, so the demographical potential of the migration destination areas rises significantly. Research conducted for Wroclaw reveals that the largest number of migrants from the rural areas is at age of 20-35 (Huk, 2002). The other reasons of migration from rural areas to the towns and suburbia include: small income from the work in the agriculture, low prestige of the profession of farmer, poor outfit in various infrastructure facilities in the rural areas and difficulties in finding a partner to start a family (Bański, 2006).

ABSORPTION OF EU FUNDS

Allocation of finances from the European Union is very diversified in Poland. There are many reasons of that: individual area needs of new investments, course of important communication routes, international neighbourhood and current regional development policy (e.g. efficiency or equality, competitiveness or cohesion). However, inner potential that could be able to utilize possible external support seems to be the factor of equal or even the highest importance.
Sobala-Gwosdz (2005) points out aptly that the level of utilisation of elements coming from the outside (finances, investments, tourism and governmental or EU programmes) depends on the level of endogenous factors. External stimulation of the development is important, sometimes even essential, but even great support may be wasted without the proper local base.

Since May 1st, 2004, when our country became the Member State of the European Union, Poland can use the wide range of EU programmes, funds and initiatives. However, already before the accession Poland had taken part in three pre-accession programmes: ISPA, PHARE and SAPARD. The objective of ISPA programme \textit{(Instrument for Structural Policies for Pre-Accession)} was to support the candidate-countries in social and economical cohesion with co-financing huge investment programmes in environment and transportation sectors. At the beginning programme PHARE \textit{(Poland and Hungary Assistance for Reconstructing of their Economies)} focused only on the support for the economies of Poland and Hungary, however later it was extended for all candidate-countries. The programme aimed to making up the delays and inequalities in development of regions by promotion of economical activity, solving the problems connected to the labour market, re-structuring and development of the infrastructure. Programme SAPARD \textit{(Special Accession Programme for Agriculture and Rural Development)} was directed towards the improvement of food processing and infrastructure, diversifying economical activity in rural areas and vocational trainings (www.funduszestrukturalne.gov.pl).

Over 5 billion Euro, i.e. 140 Euro per capita, flocked to Poland in period 1990-2003 within these three programmes. Western Poland obtained the most of this finances- over two times more than the national average.

The greatest success in absorption of EU funds characterises counties located along Polish-German border and Dolnośląskie voivodeship (Figure 8). It is related to the realisation of many projects within Euro-regions existing there. Relatively much finance flocked to almost all capitals of voivodeships. Some counties are characterised with unexpectedly high influx of structural funds. However it is related to the realisation of the large-scale activities within ISPA programme in these areas e.g. counties east of Warszawa, where international railway Berlin-Warszawa- Moscow was modernised.

\textit{(insert figure 8)}

Very similar spatial pattern was observed when absorbed finances were calculated per capita. The highest values occur in border areas, which includes the eastern part too. It is a result of directing the structural funds for realisation of infrastructure projects (e.g. construction and modernisation of border crossing points with Byelorussia and Ukraine) or international co-operation. Symptomatically, the central part of the country, where agriculture is very important in
land use and the space is dense with rural localities, have the lowest level of absorption of EU funds both in direct and *per capita* aspect.

The last stage of the analysis was devoted to the comparison of the height of finances from EU funds to the education of local authority councillors (Figure 9).

*(insert figure 9)*

One third of the units was characterised with positive correlation; i.e. absorption of EU funds finances has higher values than the national average and corresponds to the high value of councillors' education. These counties are inhabited by almost 18.5 million people, i.e. 48 per cent of country population. Negative relation occurred in the other one third, which means low level of absorption and councillors education. Only 20 per cent of population of Poland live there. In other counties no relation was observed. High values of the both analysed features occurred mainly in western part of the country and in large towns. In turn, low values can be found in eastern and central Poland. These regions are characterised with small urbanisation and great importance of agriculture in functional structure of rural areas.

**CONCLUSIONS**

Analysis presented in this paper lead to the conclusion that Polish space is obviously divided into the core- towns, especially large ones, and periphery- majority of rural areas scheme. It has significant implications for spatial planning. Firstly, clear disproportions in access to the education at junior high school and university level cause the necessity of rising the availability of education for the rural youth. Especially important is to improve the access to the junior high schools as pupils from the rural areas loosing at this early stage of education with their urban peers are condemned to the worse start at the labour market in the future. Observed migrations that are caused by unequal development chances will contribute in constantly increasing process of peripheralisation of Polish countryside unless the proper activities are taken up. It is essential that at least part of the best educated young people stayed in home localities. Any qualitative changes in rural areas will be difficult or even impossible without that. It may be especially dangerous for mono-functional areas.

The analysis did not deal with the qualitative aspect of education, however it is worth to mention that Polish education system, especially at the highest level is not fully adjusted to the demands of market economy. Fields of study that are not popular at labour market dominate in the education. It is worth to quote here Beck who said about German education system of the 1980s that *they handle over tickets for trains that generally either are overcrowded anyway or do not depart for the announced direction* (2002, p 222). These words seem to illustrate the actual state of
education in Poland totally. What is more important the fields of study that offer the full employment and high salary require good preparation at the earlier stages of education, which, as proved in this paper, is unfavourable for the rural youth.

These factors (education, migration) that affect the diversification of development possibilities are supplemented by unequal distribution of councillors with the highest qualifications in Polish space. It has been obviously proved that the education of councillors is extremely important as far as absorption of EU funds is concerned. It is important fact that as EU funds are now the main part of the finances allotted for infrastructure investments and different types of training, courses, development actions that aim to make people more active economically. The difference between urban and rural areas will enlarge without successful obtaining of these funds. It is especially worrying for one consider the fact that areas with great importance of agriculture characterise also with the lowest education of councillors and the poorest absorption of EU funds so far. At the beginning of 2007, Poland, similarly to the other countries from Eastern and Central Europe, faces the big challenge of absorption of EU funds from the new programming period. Thus, considering above deliberations, one should wait with apprehension whether the rural areas will be able to overcome former problems and take the advantage from the great chance to rise the level of socio-economical development.

REFERENCES


Figure 1. Average time of commute to the different levels of local authorities for examined pupils from rural and urban schools.

Source: Czapiewski, Śleszyński (2006).
Figure 2. Examined pupils’ time of commute to school and home and their time of anticipation of transport and school classes.
Source: Czapiewski, Śleszyński (2006).
Figure 3. Universities and their branches in the years: 1993, 1996, 1999 and 2002.
Figure 4. Changes in share of people with higher education and in number of universities in individual groups of communes around the largest academic centres.

Source: Own calculations based on Main Statistical Office of Poland; Szkoły wyższe i ich finanse w 2002 roku (2003).
Figure 5. Share of the councillors with higher education (2002).
Source: Main Statistical Office of Poland.
Figure 6. Demographical processes in mono- and polifunctional rural areas.
Source: Main Statistical Office of Poland and own calculations.
Figure 7. Migrations increase (A) and decrease (B) in Poland in period 1995-2002.
Source: Main Statistical Office of Poland.
Figure 8. Finances from structural funds (1990-2003) in Poland (in million of Euro).
Source: Office of the Committee for European Integration.
Figure 9. Relationship between the absorption of structural funds and education of councillors in local authorities. A- high values of both phenomena, B- low values of both phenomena, C- no relationship.

Source: Own calculations based on Office of the Committee for European Integration, Main Statistical Office of Poland.