Human and social capital in Poland – spatial diversity and relations

Krzysztof Janc
Department of Spatial Management
Institute of Geography and Regional Development
Wrocław University
Kuźnicza 49/55
50-138 Wrocław
Poland
janck@wp.pl
Abstract

The paper aims to describe spatial diversity of human and social capital in Poland as well as to define relation between these features. Composite indices were used to describe spatial diversity of human and social capital. High quality of human capital in Poland is characteristic mainly for big cities and their surroundings. The difference between eastern and western Poland, where the quality is better, is also significant. Significantly high level of social capital is characteristic for some of big cities, prevailing part of the west of the country and in south-eastern Poland. Lower values are typical for central and north-eastern Poland. Spatial diversity of human and social capital in Poland is clearly seen. Correlation between social and human capital is positive and relatively strong.

Key words

Human Capital, Social Capital, town-countryside division, Poland
Introduction

Greater and greater role is being given to the human capital in increasing the differences between core and periphery areas. The social capital has become another important factor present in studies of socio-economical geographers for some years. Human and social capitals have become one of the main factors that explain spatial diversity of socio-economical development.

Concept of human capital was at first identified mainly with benefits from such investments in people as: education, trainings, health service, vitamins consumption and gathering of information about economical system (Becker 1962). These investments should benefit in form of higher incomes. During last years, this term has been extended with such elements as: motivation, moral values and interpersonal attitudes and abilities (Cote 2001). The income aspect has been also extended with wider concept of prosperity- social freedoms, right to extend the knowledge, and noticeable well-being. Presently, the human capital is the most often determined as knowledge, skills, competence and other attributes embodied in a human being that enable establishment of personal, social and economical prosperity (OECD 2001).

The beginning of wider interest in the concept of social capital dates back to Coleman’s work (Coleman 1988). He defines the social capital as the ability of people to work together in frames of groups and organizations in order to realise common purposes. These abilities result mainly from interpersonal trust, social norms and networks. Social capital is invisible resource embodied in relations between people and like the other forms of the capital influences economical activity. Putnam (1995), on the basis of Coleman’s approach, states that the social capital reveals in social engagement and reciprocity norms. According to him, a tradition is the most important source of the social capital. Fukuyama (1995, 1997), accepting earlier definitions, claims that culture has the greatest influence on the establishment of social capital. So, despite various approaches to expressions and sources of the social capital, the fact that common activity, social ties and norms have potential economical value is the main idea of the concepts of the social capital. As Portes notices (1998: 7) whereas economic capital is in people’s bank accounts and human capital is inside their head social capital inheres in the structure of their relationships.

Concepts of human and social capitals supplement each other and are comprehensive one to another by referring to the values embodied in human and interpersonal relations. Therefore, as Schuller (2000) points out, these concepts should not be confronted. Abundant
correlations between both forms of the capital cause that the most often they are analysed together and their relations become the subject of the deepened studies.\(^1\)

Attempts to describe human and social capital in Poland in the local scale are taken relatively rarely and deal usually only with the previous one (e.g. Czyżewski et al. 2001, Herbst 2004). As Domański notices (2005: 175) *the concept of social capital becomes a part of a wider course of search for social and cultural conditions of economical development and seems to have great explanation potential.* Not only may the social capital explain unequal development in different scales, but also may enable assessment of rule quality and explanation of spatial varieties of population health situation (Mohan and Mohan 2002). Taking into consideration above presented remarks, it was decided to try to introduce spatial diversity of mentioned problems.

The paper aims to present the spatial diversity of human and social capitals in Poland and to determine relations between them. The analysis of human capital was based on three groups of measures. They are related to expenditure for human capital, its stocks and effectiveness of its application successively. Spatial diversity of social capital was presented with one composite index. Relations between human and social capitals were determined statistically. On such a basis, a typology of areas according to correlations between both forms of the capital was carried out.

Counties are the relative units (LAU 1). In 2002, there were 66 urban and 314 land counties, whereas in 2003 — 65 urban and 314 land ones. In order to omit artificial split of areas that are functionally connected, urban counties were joined with corresponding land counties. In this way 332 relative units were established. Analysis has a static character and refers to the year 2002, when the National Census took place. The Census is the only credible source of information about the level of education in population. For a part of the features, especially for those that may show great temporal diversity, mean values were used.

**Data and method**

In majority data comes from Regional and Local Database of the Main Statistical Office. Moreover information from the Database about Non-Governmental Organisations (NGOs) of the Klon/Jawor Society and the State Election Committee were used.

Human and social capitals were determined with following features (S- stimulant, D- disstimulant):

\(^1\) Theoretical considerations of this matter are widely discussed by e.g. Cote (2000) and Schuller (2001).
A. Expenditure for human capital
1. level of readership- number of books borrowed from libraries per capita (2002-2004 mean)- S
2. self-governments expenditure for education per pupil in zł (2002-2004 mean)- S
3. Migration (inner and outer) balance per 1000 inhabitants (2002-2004 mean)- S
B. Stocks of human capital
1. share of people with higher education (2002)- S
2. share of councillors with higher education (2002)- S
3. demographical load- number of people at pre- and post- economically productive age per person at economically productive age (2002)- D
C. Effectiveness of human capital application
1. enterprise- number of private enterprises registered in REGON system per 1000 inhabitants (2002-2004 mean)- S
2. commune budget incomes per capita in zł (2002-2003 mean)- S
3. over-mortality of men at age of 35-60 (2002-2003 mean)- D
D. Social capital
1. number of NGOs per 10 000 inhabitants (2004)- S
2. sport clubs members per 1000 inhabitant (2002)- S

Criteria of the features choice included their factual value and availability in the local scale. Statistical criteria were also considered. In order to abandon features that multiply information, the maximum correlation threshold was defined for 0.81. Acceptation of such a value was caused by the fact that correlation of this level explains variability of one feature in $2/3$ ($R^2=0.66$). Great variability of the features is required so that they were appropriately spatially diversified. All features vary enough and accepted minimum value of 7% does not discriminate against the utility of a given feature. Another criterion that results from the specificity of chosen method was a demand of positive correlation for stimulants and negative for disstimulants (B3, C4). Correlation coefficients and variability indices for features connected to human and social capitals are presented in Table 1.

---

2 Variability coefficient determined by formula was used $V_j = \frac{S_j}{x} * 100\%$
Table 1. Correlation coefficients and variability indices for features

<table>
<thead>
<tr>
<th>(V_x)</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>33</td>
<td>1</td>
<td>0.23</td>
<td>0.04</td>
<td>0.19</td>
<td>0.34</td>
<td>-0.37</td>
<td>0.38</td>
<td>0.27</td>
<td>-0.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>27</td>
<td>1</td>
<td>0.02</td>
<td>0.68</td>
<td>0.54</td>
<td>-0.49</td>
<td>0.44</td>
<td>0.78</td>
<td>0.07</td>
<td>-0.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>296</td>
<td>1</td>
<td>0.29</td>
<td>0.11</td>
<td>-0.20</td>
<td>0.30</td>
<td>0.07</td>
<td>-0.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>33</td>
<td>1</td>
<td>0.55</td>
<td>-0.51</td>
<td>0.66</td>
<td>0.63</td>
<td>-0.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>31</td>
<td>1</td>
<td>-0.71</td>
<td>0.49</td>
<td>0.53</td>
<td>-0.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B3</td>
<td>11</td>
<td>1</td>
<td>-0.59</td>
<td>-0.49</td>
<td>0.55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td>31</td>
<td>1</td>
<td>0.51</td>
<td>-0.38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>19</td>
<td>1</td>
<td>-0.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C3</td>
<td>21</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D1</td>
<td>66</td>
<td>1</td>
<td>0.37</td>
<td>0.21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D2</td>
<td>56</td>
<td>1</td>
<td>0.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D3</td>
<td>7</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In order to reduce the features space, their aggregation into a composite index was done. A simple method of Perkal natural indices was used (Kostrubiec 1963). As pointed out earlier, the necessity of positive correlation between features is the basic formal condition of application of this method. Features that meet this requirement should be standardised as follows:

\[
z_y = \frac{x_y - \bar{x}_j}{S_j} \quad \text{for stimulants}
\]

\[
z_y = -\left(\frac{x_y - \bar{x}_j}{S_j}\right) \quad \text{for disstimulants}
\]

where: \(z_y\) - standardised value of feature \(j\) in unit \(i\), \(x_y\) - value of feature \(j\) in unit \(i\), \(\bar{x}_j\) - arithmetic mean value of feature \(j\), \(S_j\) - standard deviation of feature \(j\)

Composite indices were calculated according to the following formula:

\[
W_c = \frac{1}{n} \sum_{j=1}^{n} z_{y_j}
\]
where: $W_c$ - composite index, $n$ - number of used features

**Human capital**

Analysis of human capital carried out in division into three categories enables to present the phenomenon in a complex way.

Indices (A1, A2, A3) used to determine the expenditure enable to describe some important aspects related to the increase in knowledge and skills in a given community. The level of readership determines engagement in rising of the level of informal knowledge (gained apart from the education system). Local authorities expenses on education prove the potentially better conditions of knowledge gaining. Migration balance affects the decrease or the increase in human capital stocks as the most often these are young, well-educated, venturesome and eager to change people who migrate. The stocks of human capital were described with two features that are connected to the level of education (B1, B2). The level of education of population shows the formal knowledge resources and is a basic feature that serves to describe human capital. Education of councillors is also important. Deciding about the development way and animation of economical life they are this social layer that should have proper competitions. Demographical load (B3) informs about the balance between people at economically productive age and those living on them, which enables to illustrate the human capital in quantitative way. Features concerning economical (C1, C2) and health (C3) aspects were included in term of effectiveness of human capital application. The enterprise as a feature describing people’s ability to take up challenges and activity is enormously important component of socio-economical life. Commune incomes prove both success in individuals activity and efficiency of local governments. Over-mortality of men is one of the most essential features presenting health condition and pro-health attitudes of the society that, in great measure, are the consequence of the level of the formal knowledge. One should remember that groups of features distinguished in this way are related to each other not only in a simple cause and effect way: expenditure-stocks-effects, but also there are other relations: e.g. effects- expenditure.

In a group "expenditure for human capital” (Figure 1) there is no evident regionalization, while urban areas distinguish positively. It is a result of couple of causes. Towns and their neighbour areas, because of offered chances for better-paid and more prestigious work and because of a better access to the social infrastructure, are attractive destinations for migration. Expenses for education are in towns remarkably higher too. Low
expenditure occurs in Opolszczyzna, where it is mainly caused by the outflow of people to the neighbour agglomerations and abroad. In central and eastern Poland low expenditure is connected to specificity of these areas. These are mainly rural areas with great emigration and poor access to the social infrastructure, which affects the low level of readership.

Figure 1. Expenditure for human capital (composite index) in counties

Analysing the spatial diversity of human capital stocks attention should be paid for a dominant role of large towns. They are the concentration places for people with higher education mainly because of better access to universities, lower costs of studying for the local people and immigration of well-educated to the work. Local authorities in towns also distinguish themselves with higher level of education. Immigration of young people and lower birth rate result in smaller demographical load as well. This phenomenon is perfectly evident in case of Warsaw, Kraków and towns in Górny Śląsk region. A belt from Małopolska to Dolny Śląsk, western Poland and seaside region also emerges clearly. It is the area of human capital stocks higher than in the rest of the country. Areas located away from large towns (mainly rural ones) are characterised by relatively small stock of human capital.
The greatest effectiveness of human capital application occurs in towns, western part of Poland, Pomorze and in the majority of southern Poland. The split into the west and the east is evident, but unlike the human capital stocks, in the west there is not such a big distance between large towns and areas located away (e.g. Wielkopolska, Pomorze Zachodnie). In the east, similarly to the stocks of human capital, the town- countryside division is sharp. It is mainly a result of greater enterprise of people from the west and greater efficiency of local authorities. One should remark that such a situation is strongly affected by better conditions for economical activity- proximity of western border (investments, diffusion of values and attitudes), better infrastructure, lower share of people that have been living only on agriculture until recently.
Evident spatial relations between analysed composite indices, especially in town-countryside and east-west dimension require statistical confirmation. Correlation diagrams (Figure 4) show positive relation between expenditure and human capital stocks as well as between stocks of human capital and effectiveness.

**Figure 3. Effectiveness of human capital (composite index) in counties**

**Figure 4. Relation between expenditure for human capital and human capital stocks and between human capital stocks and effectiveness of human capital**
Positive correlation between individual components of human capital confirms that it may be established by suitable policy and that there is a shift between quality and socio-economical advantages of human capital. It is essential that relations are not so strong. It results from other factors that are superficial to the human capital and that in important way shape socio-economical behaviours.

Expenditure for human capital explains the variability of human capital stocks in 44%. So these areas may be stated either to be responsible for resource establishment or to utilize effects of this process. In such a case we deal with brain-drain.

The human capital stocks, explains their effectiveness in 63%. It is a high value and it confirms what is present in majority of theories of development that is the fact that human capital is a basic factor for the development.

The spatial diversity of synthetic indices of expenditure, human capital stocks and effectiveness presented on Figure 5 shows above described principles. It is important that the town-countryside division is more evident when all features related to human capital are included in one synthetic index than in the case of partial indices. One may state that in town there is an accumulation of expenditure, human capital stocks and effectiveness, and that their correlations are strengthened. The core- high value of the index and periphery- low value arise obviously. It is evident that the larger the town, the greater the area of higher or medium human capital. It is the most obvious in case of Warsaw. Similar situation occurs around Górny Śląsk conurbation, Kraków and Poznań. It is caused also by generally better level of socio-economical development as the majority of these towns are located in regions recognised as well-developed for ages. Of course, the influence of even the largest town is limited spatially, hence the development of human capital in periphery areas will not be easy.
The east-west dimension of diversity is also very evident. It is a result of aforementioned causes. However, once all three components are included, the diversity is less sharp. The difference of one or two classes appears. In case of individual components, the variety was greater. It is caused by high values of the composite index for counties with large towns.

**Social capital**

Construction of the composite index describing the social capital was based on three features. NGOs density (D1) shows how the society is interested in activity aiming at the community prosperity and ability to cooperate. It is the simplest measure of social capital and is often used by the scientists (e.g. Putnam 1995, Kołodziejczyk 2003). The membership in sport clubs (D2) is a measure that enables determination of quantity of people engaged in activity aiming at establishment of social ties by repeatable interactions among people. Activity in the field of promotion of physical culture is one of the most important forms that integrate the society not only by active, but also by passive participation. Voters’ turnout (D3) refers to the level of the development of civil society, therefore it is one of elementary measures of the social capital. Such determined index surely does not present this complex...
phenomenon in an exhaustive way. However, it might be said to approximate it to the great extend. Figure 6 presents spatial diversity of this phenomenon.

![Figure 6. Social capital (composite index) in counties](image)

High values of social capital index characterise large towns, south-eastern Poland and some areas of western part of the country. As long as town-countryside scheme is evidently noticeable, the east-west diversity is less clear than in case of human capital. High level of social capital in towns results from couple of causes. Firstly, there is greater concentration of NGOs. It is caused by the specificity of this kind of activity that is supposed to fill gaps among the state, local authorities and private sector actions. The proximity of governmental and self-governmental authorities, regional institutions, and big companies seats is necessary element of NGOs activity (Janc 2004). Membership in sport clubs is also higher in towns. Generally urban population is more eager to take part in election, but it is not a rule. There is a large group of towns where the civil society development level is low. Greater election activity is connected to better access to the politicians, information and wider offer of media. Higher education level is also essential as civil engagement, in great measure, depends on this factor. Apart from presented social conditions of urban population behaviours, processes in the society are important. Urban population turns to post-modernistic values in greater extend than rural people. Together with better living conditions, contestation of pure materialism and
better awareness of social problems urban society begins to engage into pro-social activity. Activity in NGOs and especially participation in sport clubs become a form of spending one’s free time and also an investment. The possibility of spending one's time with people of similar interests as well as auto-realisation out of the work are essential elements of widely understood prosperity. Difficult situation in the countryside- both economical and social (higher unemployment, lower incomes) affects the greater passivity of the society.

High social capital is characteristic for south-eastern Poland that is areas inhabited by people who have been living there for long time and have been cultivating the tradition. It is also a region with the highest religiousness in the country. It affects election behaviours and participation in various forms of public activity in great measure — these areas are characterised by numerous membership in sport clubs. High social capital occurs in part of western and northern Poland too. Some causes of such situation may be found out. Wielkopolska, as a region with developed organisation of social and economical life, distinguish itself with high voters turnout (the highest in the country), which influence high value of social capital index the most. High social capital in Pomorze is mainly a result of great number of NGOs while the other parts of the synthetic index are also high. These are areas of poor economical situation (former areas of great share of social-agriculture), therefore a conclusion may be drawn that in this case the situation stimulates the society to activity. Natural and cultural attractions and environmental threats are the other factors that influence the high social capital. Listed factors may be a starting point of common activities that integrate the society, which together with the enterprise of local authorities or other social-life driving forces affects the increase in social capital. Such a situation occurs in Legnico-Głogowski Cupper Region (ecological dangers) and in some counties of Lubelskie and Warmińsko-Mazurskie voivodeships (natural attractions). The worst situation as far as the social capital is concerned occurs in central Poland, Podlasie and Opolszczyzna. In case of central Poland it might be explained by aforementioned civilization conditions. Disintegration of social ties, poor cultivation of tradition, small social and civil activity (low turnout, low membership in sport clubs, little NGOs) influence the low value of the social capital index. The fact that these are areas with great share of rural population is the factor that strengthens the situation. More difficult economical and social circumstances and the lack of proper actions of the social life animators turn into the increase in social and civil passivity. With Opolszczyzna the case is different. Great share of people who, although registered there, are temporarily or permanently abroad (inhabitants have double, Polish-German citizenship), which affects values of the index negatively.
Above presented matters may lead to the conclusion that social capital in Poland is not homogenous, as there are various conditions of its level. High level is a result of, on one hand, inherited value system and traditionalism and, on the other hand, of factors related to challenges caused by socio-economical situation. So, we may talk about the social capital that arises from the tradition and that results from the change of values. This latter factor is mainly present in western and northern regions, where the exchange of the population took place. Regional identity and awareness of people who live there, in great measure, have been established for several years, hence they accept changes easier and are more prone to cultural novelties. Without deeper studies it is hard to judge which form of the social capital is more favourable.

**Relations between human and social capitals**

Statistical relation between social and human capitals is positive (Figure 7). However, one cannot state there is a simple shift between them. ($R^2=0.42$).

![Figure 7. Relation between social and human capital](image)

Analysis of the regression rests\(^3\) enables to state that the greatest positive deviation from the trend-line is characteristic for towns (the highest value: Sopot, Warsaw), the greatest negative- counties from Opolskie voivodeship (double citizenship population), north-eastern and central Poland (except large urban centres). The value of the social capital depends on the level of human capital, however other circumstances are important as well. Very big deviation

---

\(^3\) $z=y-Y$, where $z$- regression rest, $y$- real value of social capital index, $Y$- regression value of the index
from the trend-line characteristic for towns with the highest values of human capital proves that after achieving defined threshold of human capital, the social capital increases remarkably. It is worth noticing that the surplus of social capital occurs also in counties of south-eastern Poland where human capital is low unlike the social one that is high. It confirms the earlier remark about heterogeneity of social capital. Quite important conclusion comes from this- social capital may be only in some, limited extend created by proper activities of decision makers.

A classification of counties was done in order to present diversity of Polish space on account of relations between human and social capitals. It was carried out on the basis of values of composite indices suitable for each kind of capital. Plus and minus signs were included and four classes informing about the kind of the relation were distinguished on such basis (Figure 8).

![Figure 8. Classification of counties based on the values of human and social capital indices](image)

Positive human and social capitals occur in towns in the majority of western Poland (especially Dolny Śląsk and Wielkopolska) and in the seaside belt. It confirms the spatial diversity of social and spatial capitals. Negative human and social capitals are characteristic for eastern Poland (except urban counties) and in Opolszczyzna, Kujawy and some counties.
of western voivodeships. Positive social capital and negative human capital appear in great part of south-eastern Poland. This confirms conclusions of the regression rests analysis. Such a situation takes place also in a part of Pomorskie voivodeship. Negative social capital and positive human capital appear usually around large towns and in smaller urban counties.

Some conclusions may be drawn from presented statistical and spatial relations between both forms of the capital. Firstly, high level of human and social capitals in the largest towns is a result of a specific environment that supports their establishment. It is worth noticing that in a town, as in the place inhabited by great number of people, face-to-face contacts are very usual, which in great extend affects the raising of human capital and establishment of social capital. It is connected to the fact that these contacts distinguish with successful communication, are useful for problem-solving, enable socialisation, education and increase in shared values and attitudes (e.g. Bathel et al. 2004, Storper and Venables 2004). Universities and high schools play an important role being not only responsible for the level of education, but also for establishment of civil attitudes basis. Population of towns and their neighbour areas has the easiest access to the higher education and it is not only about the lack of the distance barriers, but also about better economical situation of urban population. Rural youth constitutes a small part of the students\(^4\), which is mainly connected to the costs of the studying ( economical barrier). High level of social and human capitals in towns is also affected by such determinants as: easier access to places that offer possibility of spending one’s free time (recreation centres, cinemas, theatres, galleries, museums, night clubs), opening and greater approval for behaviours that are not tolerated in traditional societies (Florida 2002), and specific climate of some cities.

Historical conditions, tradition and political system influence the level of social capital\(^5\). Hence positive social capital appears together with negative human capital in south-eastern Poland. Areas where the tradition was kept in the most strong way prove that social capital may establish in the societies with low level of human capital.

**Conclusion**

Some conclusions may be drawn on the basis of presented analysis of spatial diversities and relations between social and human capitals.

The core-periphery scheme reveals. Evidently developed core-periphery scheme has serious consequences. On one hand establishment of megalopolises rich in human and social

\(^4\) According to Bański and Stola (2002) only 3% of rural youth studies

\(^5\) Putnam proves it on the example of analysis of the civil life in Italy (1995) and USA (2001)
capitals should enable them successful competition at international stage. On the other hand establishment of strong centres at the costs of peripheral areas is a serious problem. Great differences that appear between large towns and the rest of the country may get deeper as long as there are no development impulses from the centre to peripheries.

Spatial diversity of analysed phenomena coincides in great measure with the level of socio-economical development of the country that is the east-west dimension. It proves the lasting heritage of Polish space that corresponds with the period of foreign rules in XIX century. Observed importance of historical and cultural conditions of social and economical activity is undoubtedly a cause of establishment of new concepts that are supposed to explain differences in the development of individual areas. Utility of the concept of social capital seems to be great, especially as there are a lot of relations to the human capital. These relations, although sometimes are hard to define in cause-effect way, should be valuable extension of analysis dealing with diversity of socio-economical processes in the local scale.

Existing relations between human and social capitals proves that there is some possibility to influence their development. It is crucial for this chance to be taken. However, there might be a conflict caused by heterogeneity of social capital. One should assume that two main causes of high level of social capital that were pointed in this paper- tradition (weak relations to human capital) and new attitudes and values (strong relations to human capital) are not the only ones. More studies are required, especially on establishment of measurement methods and set of indices so that it would be possible to determine human and social capitals in various spatial scales. Present state of available statistics leads to this that analysis based on it cannot explain the phenomenon of social capital and its relation to the human capital totally.
Acknowledgement
This paper was supported by Ministry of Science and Information Society Technologies and it is a part of scientific project Spatial diversity of human capital in Poland (grant No 2 PO4E 032 28).

References

Kołodziejczyk, D. (2003), Kapitał społeczny w rozwoju obszarów wiejskich [Social capital in the development of rural areas in Poland], Studia Obszarów Wiejskich, 4, IGiPZ, PAN i PTG, Warszawa, 27–38.

Kostrubiec, B. (1963), Klasyfikacja dynamiczna i wielocechowa województw Polski [Dynamic and multivariable classification of Polish voivodeships], Biuletyn KPZK PAN, 35: 28-49.


