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INNOVATIVITY OF SLOVENIAN REGIONS AND PUPILS' KNOWLEDGE

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Abstract:
In this article we present the results of a study on the correlation between socio-economic development indicators in different regions of Slovenia and primary pupils' academic achievement on external tests. It is clear that Slovenian pupils' results in the national examination system are correlated with and strongly co-dependent on the development of the broader social environment. It is clear that these factors have more influence at the aggregate level in eastern Slovenia, particularly in Pomurska region. This means that disincentivising or negative environmental factors are present and stronger in eastern Slovenia. This reason this situation exists lies in the importance of economic, cultural and social capital within the family, and the broader external influences of regional and socio-economic policy and the existing social inequality and stratification. While this class stratification of society remains, so will educational inequality, but appropriate broader policies and education policy can reduce the impact of the various forms of capital on the unequal academic performance of young people. A question remains whether academic performance can be improved without improving the development of the broader social environment.

Keywords: regional development, regional creativity, social environment, external examinations, academic results of primary school pupils.

1. INTRODUCTION

The debate on improving or deteriorating academic performance by Slovenian school pupils in individual reasons and the related causes has become increasingly heated among the Slovenian public. The data revealed to the public the little known fact that the knowledge acquired on average by pupils in Pomurska in north-eastern Slovenia is not equivalent to that acquired by their peers in other regions of Slovenia. The problem must be examined from all points of view. The question is which the fundamental issues are and which are the subordinate. This is a question of how schools operate and how they fit into the wider social context. The question of how different creative potential in Slovenia regions, expressed in the overall economic and social development of the region affects other major factors in people's lives, has been paid little attention to date.

One of the central problems is the issue of decentralisation. The fact is that Slovenia is one of the most centralised states in the EU, which means calls for decentralisation are understandable (Setnikar Cankar, 2008). Irrespective of people's views on Slovenia's past economic and non-economic development within the former Yugoslavia, a positive view of the spatially relatively equal development in the 1970s and 1980s is commonly held. This means that regionally Slovenia is well developed, and differences in the level and quality of development between different regions are not so great, particularly in comparison to inter-regional differences in other EU member states (both older and newer members). Unfortunately, conditions over the past 17 years have changed significantly, since some of the larger centres, towns or sectors have developed considerably. The centralisation of economic development coincided with the centralisation of economic power and political influence. The concentration and centralisation of capital, jobs and economic and political power are causing major social changes, between social groups, and mainly between a few developing centres and other parts of the country.

One of the main indicators for an individual region is the academic performance of pupils. This is because Slovenian primary education is public and should therefore be of approximately the same quality throughout the country. This means that the state must provide equal basic public services. The quality of the educational system cannot be assured today without decentralisation and empowerment of peripheral parts of the system. This involves the development and the strengthening of school autonomy. The national examination system aids schools in this process. This is a form of external assessment of knowledge, which is one means of providing this kind of information to the entire educational system. Of course, the national examination system primarily presents an illustrative overview. The situation is different when we attempt to respond to the same questions systemically. This entails asking whether the environment in individual regions in the widest sense affects pupils' results to the extent that they are higher in some regions than others, and then the reason this occurs, and what influences this. In that case the quality of teaching may be approximately the same in all regions, yet this may still not ensure equal results. These cases demand additional research with a narrower focus that can reveal the relevant background in greater detail.

This paper addresses the complexity of processes in the environment and pupil knowledge expressed in the national examination system. We want to demonstrate the correlation between creativity indicators for Slovenian regions and the socio-economic status in the regions and the results achieved by primary school pupils in external examinations. The basic aim of the study is to determine whether there is a correlation between the socio-economic

environment of the Slovenian statistical regions, and primary school performance, measured by assessment of pupils' knowledge.

2. METHOD

A wide range of secondary data was selected for this paper from a wide range of sources. The data is organised at the level of 12 statistical regions. The selected socio-economic indicators were the creativity index, annual net salary, level of achieved education, employment rate, employment rate in agriculture, and development deficiency index. Primary school performance was measured using pupils' results in external assessment in Slovene and mathematics. The correlation between the selected indicators was tested using the Pearson's correlation coefficient and graphically with scatter diagrams.

3. RESULTS

Table 1 gives selected data for Slovenian statistical regions and pupil results in national examination system for mathematics and Slovene. The table indicates that the highest ranking region is Central Slovenia and the lowest Pomurska for all indicators.

Table 1: Scores by region for selected indicators

Region	Creativity index	Net salary	Education level	Prop. of people in paid employment	Proportion of farmers	Developmental threat index	Maths results	Slovene results
Gorenjska	0.67	10.568	3.24	90.22	2.49	83.1	53.73	62.93
Goriška	0.49	10.648	3.11	88.66	3.69	93.8	56.80	62.93
South-East Slovenia	0.48	10.513	2.98	88.99	5.25	101.7	53.22	62.91
Koroška	0.36	9.704	3.05	88.56	4.87	103.9	51.53	60.50
Notranjsko-Kraška	0.28	9.700	3.05	88.72	3.87	127.0	55.28	60.53
Obalno-Kraška	0.56	10.807	3.26	89.16	1.65	82.4	52.67	59.26
Central Slovenia	1.00	11.959	3.52	92.79	1.46	8.7	57.12	64.66
Podravska	0.46	10.098	3.18	88.45	4.92	116.8	49.04	59.10
Pomurska	0.16	9.301	2.90	82.78	11.34	159.5	44.82	58.08
Savinjska	0.46	9.904	3.08	88.76	5.26	92.3	52.19	60.65
Spodnjeposavska	0.29	10.120	2.99	84.39	8.40	116.8	51.45	61.65
Zasavska	0.51	10.294	3.05	90.65	2.77	113.9	50.24	61.03

Sources: Malačič et al. (2005); Statistical Office of the Republic of Slovenia (21 April 2010); Pečar and Kavaš (2006); National Examination Centre (2008).

The remaining regions rank at intervals between the Central Slovenia and Pomurska regions for all indicators. Unlike the two 'outlying regions', the other regions rank differently for the various indicators, i.e. their ranking differs according to the indicator selected. Despite this, individual regions are generally ranked in a similar position for each indicator, e.g. the Gorenjska region features in the top half of the table, which indicates a good correlation between individual indicators.

Pupils in the Pomurska region achieved the lowest results in the national knowledge assessment for maths and Slovene, but the difference with other regions was not the same in both cases. In the case of Slovene, pupils from Podravska achieved a very similar result to that of their peers in Pomurska, while the difference between Podravska and Pomurska for maths – again the lowest two sets of results - was much larger. The differences in pupil performance in maths are also significantly larger than for Slovene when Pomurska is compared to Central Slovenia.

The collected data indicates two significant facts. The first is that the environment in the individual statistical regions differs considerably, with Central Slovenia and Pomurska as outlying regions. The second fact is that, in line with the first, pupils' results in the national examination system are also different. This suggests that environmental factors are linked to the primary school performance and that this influence is reflected most in a negative form in the Pomurska region, from which we can conclude that it has the least encouraging environment for successful primary education (within the current framework). This is seen in the results of pupils from the region in the national examination system, particularly in maths. The opposite applies to the Central Slovenia region.

Table 2 illustrate the correlation of the creativity index for Slovenian statistical regions, net salary, and population education level, proportion of people in paid employment, and self-employed farmers, and the developmental threat index for individual regions with pupils' results in the national examination system for Slovene and maths.

Table 2: Correlation by region between selected indicators

Pearson (sig.)	Creativity index	Net salary	Education level	Prop. of people in paid employment	Proportion of farmers	Developmental threat index	Maths results	Slovene results
Creativity index	1	0.933 (0.000)	0.916 (0.000)	0.840 (0.001)	-0.763 (0.004)	-0.947 (0.000)	0.611 (0.035)	0.701 (0.011)
Net salary	0.933 (0.000)	1	0.855 (0.000)	0.716 (0.009)	-0.695 (0.012)	-0.918 (0.000)	0.674 (0.016)	0.739 (0.006)
Education level	0.916 (0.000)	0.855 (0.000)	1	0.744 (0.006)	-0.744 (0.006)	-0.899 (0.000)	0.572 (0.052)	0.489 (0.107)
Prop. of people in paid employment	0.840 (0.001)	0.716 (0.009)	0.744 (0.006)	1	-0.936 (0.000)	-0.780 (0.003)	0.680 (0.015)	0.596 (0.041)
Proportion of farmers	-0.763 (0.004)	-0.695 (0.012)	-0.744 (0.006)	-0.936 (0.000)	1	0.718 (0.008)	-0.716 (0.009)	-0.485 (0.110)
Developmental threat index	-0.947 (0.000)	-0.918 (0.000)	-0.898 (0.000)	-0.780 (0.003)	0.718 (0.009)	1	-0.718 (0.009)	-0.732 (0.007)
Maths results	0.611 (0.035)	0.674 (0.016)	0.572 (0.052)	0.680 (0.015)	-0.716 (0.009)	-0.718 (0.009)	1	0.789 (0.002)
Slovene results	0.701 (0.011)	0.739 (0.006)	0.489 (0.107)	0.596 (0.041)	-0.485 (0.110)	-0.732 (0.007)	0.789 (0.002)	1

Sources: Malačič et al. (2005); Statistical Office of the Republic of Slovenia (21 April 2010); National Examination Centre (2008).

A review of the Pearson coefficients indicates that all indicators used to measure environmental factors are closely correlated to pupil results in the national examination system. Despite the high coefficient the corresponding statistical significances are somewhat higher, however, they still indicate the correlation between the environment and pupil results in the national examination system. A slightly lower statistical significance applies primarily to Slovene, while for maths it is much stronger. It can therefore be concluded for Slovenia that the higher the creativity index, net salary, education level of the population, and proportion of people in paid employment, and the lower the proportion of self-employed farmers, and the development threat index in a region, the better the pupil results for the region in the national examination system for Slovene and particularly for maths.

The results indicate that all environmental indicators that influence pupil performance in the national examination system have a higher correlation. It was found that the environments with individual regions are quite homogenous, while it is not possible to expect a major improvement in an individual indicator for a region, without a simultaneous improvement in all other indicators in the region. Similar findings are arrived at if the analysis is expanded to include other indicators. To take an example, a region's gross social product per capita, which is very highly correlated with all the selected indicators, and also quite highly correlated with pupil results in national examination system, which is in line with the findings based on the selected indicators.

4. DISCUSION

It is clear that Slovenian pupils' results in the national examination system are correlated with and co-dependent on the development of the broader social environment. Given that the results differ significantly among the individual statistical region, one can conclude that Slovenian compulsory public education is not of equal quality throughout Slovenia. The data indicates that Pomurska primary school pupils are permanently ranked at the foot of the list for pupil knowledge by region.

At first look it seems that the causes of this state must be sought in individual Pomurska schools. If one proceeds from the statement that the case in question entails an infringement of children's rights to an education, it must be asked to what extent the state in responsible. Since this case involves poorer academic results for numerous schools or even most schools in Pomurska, the state should be responsible for closely analysing the reasons affecting pupil performance and preparing appropriate measures. The state attempted to ensure the principle of equality by defining a standard curriculum and regulations intended to provide all schools with equal conditions for work. The question is how the state ensures people can exercise this right.

Of course, responsibility for this state cannot only be sought in individual schools. Žakelj et al (2009), for example, found only a 6.8 % and 11.7 % of the difference in results between pupils for Slovene and maths respectively can be credited to schools, while the remaining 93.2 % and 88.3 % represent differences between pupils within the schools. Other researchers had similar findings. When researching school assessments, Marjanovič Umek et al. (2006) became interested in how to clarify scores. Are individual's characteristics decisive and to what extent, and how much it is from factors of youth and the social environment? The authors' opinion is that the schools do not differ significantly in terms of average pupil knowledge, and that only 0 to 9% of variability in pupil knowledge can be ascribed to the school. Young people's intellectual capacity, parents' education, and some components of

parent influence over schools are of major importance (Cankar et. al., 2009). This means that the quality of teaching in all regions is approximately the same, despite the fact that this does not provide pupils with equal opportunities.

Education policy is therefore also ineffective, since it cannot significantly contribute to making conditions equal throughout the different regions. The socialisation potential of the overall environment is decisive. In the background are the ambitions, exhibitions and motivation that a community produces and transfers to the next generation. If parents and the environment do not have the power to want to do something more for themselves, one cannot really expect a large proportion of the young population to be ambitious enough to make a educational breakthrough and achieve better results in school. This leads one to enquire whether pupil performance in school can be improved, without the developmental level of the social environment also being raised (Žakelj & Ivanuš Grmek, 2010). A number of reasons based on complex and interrelated historical and economic factors, social, cultural and intellectual potential of the entire environment or region.

Multiple factors of good academic results do not affect learning performance only in a direct way; their impact may also be indirect. Such is, for example the case of a socio-economic situation of the family a pupil lives in. Parents with higher education also have in average better academically performing children than parents with lower educations. Those connections may also be indirect: parents with higher education quite often pay more attention at their children's schooling, they are more involved in education, whey are very well familiar with their children's achievements and they are alert and proud of their children's successes. This way they affect their children's academic performance in an indirect way: through their actions they rise their children's learning motivation as well as their education aspirations and strengthen the image of their children's learning self-efficiency. Regarding this issue Puklek Levpušček and Zupančič (2009, p. 14) emphasise that parents' lower education does not necessarily combine with their lower interest for their children's schooling. Parents' lower education might be a risk element for their children's failure in education when it is combined with unfavourable socio-economical conditions of a family, with the stressful incidents within a family, with ineffective socialisation approach and combined with negative relation of parents towards education and learning.

One explanation that offers at least a partial understanding of these phenomena is offered by Berger and Luckmann (1988). In the book *The Social Construction of Reality*, the authors discuss the typified and objectivised part of the social reality and described procedures that people use in everyday life to form the world around them through their positions and opinions. They raised the question of what connects human society, and to what extent the existence of society comes from the conscious actions of actors and to what extent it comes from social structures? The authors consider that human behaviour cannot be explained solely in terms of the influence of structures, nor can it only be described in terms of psychological mechanisms. At the heart of this is the mutual dependence of social structures (reality) and their reflection (knowledge); it is therefore a construction of reality.

The authors point out this interweaving of objective and subjective reality and indicate how two individuals create reciprocal typification behaviour via direct interaction. Reciprocal typifications only grow into social institutions with the arrival of new generations, which come face-to-face with the existing routines of the previous generation as well as demands for the typification to be taken as an instruction of how to act. The institutions are therefore the result of two processes – the process of typification of interactive patterns and the process of

objectification that is the transfer of these patterns to a younger generation, which experiences them as objective, natural givens. The institution typifies individuals and their actions. It controls behaviour by placing an individual in a pre-defined behavioural model that directs them in a specific direction that is opposed to numerous other theoretical possibilities. Each individual constructs a background to stabilise their behaviour and reciprocal actions. The roles via which a permanent link is created during the everyday interaction of specific individuals and institutes have a key role in this process. These roles are a vital component of the objectively attainable world of any society. Institutions live and function via roles, which constitute an individual's daily life.

Like all other people, the population of Pomurska functions with a typification scheme, within which they understand and deal with those they come into contact with. These contacts at home, at school and in the environment may be reflected in greater or less ambitious expectations, objectives and demands. The sum of all these typifications and repeating patterns of interaction which are transferred from generation to generation is the social construction, which then represents an essential element of everyday reality. This is a social reality, which is by its nature more collective and not an individual, socio-psychological phenomenon that occurs through reciprocal comparison, persuasion, concession, and adaptation. When that social reality has been constructed there is a pressure to conform, which is necessarily applied by the majority (Bečaj, 2009). Individual convictions are not isolated but are connected within a consistent, socio-cognitive whole. A change in an individual's conviction is only possible, if all the others, connected to him, change at the same time. Therefore, either the whole orientation is adjusted or nothing at all.

Differences in development between regions will always exist, with some more developed and others less. That is the law of social development (Senjur, 2009), characterized by a distribution of people in a social space that results from uneven distribution of different kinds of capital. People with a similar amount of these types of capital live in similar living conditions and enjoy similar possibilities. Especially important is a family transmission of the cultural capital as well as the transmission of the social capital in a local community, exposed to a neighbourhood social pressure and social networks that serve for exchange of experience The role of school is to provide access to the dominant cultural capital through the curriculum. Consequently, only the pedagogical practice that recognizes the above differences and systematically connects individual pupil's existent cultural capital with the dominant cultural capital can be successful.

It is not socially just, that Pomurska is consistently the least developed region of Slovenia. The poorer pupil results are not therefore only a subjective responsibility that only affects the schools, teachers and pupils, but there is also an objective responsibility that affects the central government, which is responsible for the entire economy. There must be a debate on this issue within the region. The debate must include the issue of educational development, including the performance of pupils and students. This cannot be effectively done without decentralisation and an increase in school autonomy (Bečaj, 2009). Autonomy is not an abstract concept; it requires a high degree of responsibility and especially collaboration and networking. School and teachers cannot function in isolation from their broader environment, they have to connect and collaborate with parents, broader local community and experts.

You cannot simply give development to a region as a gift. Knowledge and creativity as well as their manifestation in the form of innovativeness are the key leverages for the production of added value in the contemporary time and space, therefore a lot more potentials, which

would insure this, should be activated in the area of Pomurska. The local environment or region must prepare development projects itself that open new employment opportunities and ensure the region's development. Pomurska clearly does not have the capacity to generate development projects in which the central government could participate. It is difficult to help such regions. Expectations that projects would be organised for Pomurska in the capital, financed with national funds, and implemented by managers and experts from other places are misplaced (Bečaj, 2009, p. 35). It is also clear that Slovenia's regional policy has not fulfilled its function. It is only successful in maintaining current regional differences, and preventing them from increasing. Even the additional drawing down of EU funds has failed to reduce the differences. Improving conditions in Pomurska will therefore require developmental, cultural, social and regional policy that increases the possibility of utilising and exchanging the economic, cultural and social capital of the broader environment and family.

5. CONCLUSION

There will always be differences among regions. Certain regions will be more developed others less. Regardless the imbalance of several indicators which were demonstrated in the paper searching for solutions regarding problems and difficulties, as well as searching for opportunities of different and better work should be transferred there, where difficulties emerge and where one can better see concrete opportunities for a different work. Practice shows that in order to achieve effective development trends in a certain region a systematic and balanced development of all stakeholders of the region is needed.

Implementing the principle of ensuring equal education opportunities for the optimal development of young people can be achieved through decentralisation and increasing school autonomy and transferring powers and responsibilities to schools themselves. This includes appropriate policies, which must reach beyond the school environment, if we want to improve or change economic, cultural and social disadvantages of young people, and offer genuine opportunities to use and exchange capital.

Continued research should focus on the factors that more strongly contribute to differences between regions, which would make it easier to plan tangible measures to improve education policy. Within schools it would be worthwhile researching schools' inclusion in different project, involvement of schools in the region, cooperation with parents, inclusion in international projects, how critical are schools in their approaches to introducing innovations and what approaches do they use, and how do they define and evaluate their work.

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