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## A RELATION BETWEEN HIGH-SCHOOL STUDENTS' ACHIEVEMENT AND THEIR SOCIO-ECONOMIC STATUS IN POST-YUGOSLAV COUNTRIES AND WESTERN EUROPE<sup>3</sup>

### Odnos između postignuća i društvenog položaja učenika u Zapadnoj Evropi i post-jugoslovenskim državama

**ABSTRACT:** *In the contemporary global context of growing inequalities, it is important to explore what effect socio-economic status has on educational practices and to investigate educational inequalities. Having in mind that post-Yugoslav societies have a shared past of being a part of the same socialist country, we wanted to compare the importance of socio-economic status in post-Yugoslav countries and countries with longer capitalist tradition from Western Europe. Besides, bearing in mind Serbia's specific path towards capitalism, our goal is to compare it to other countries on the same relationship between student achievement on the external testing and socioeconomic variables. Since we tend to use a comparative approach, we utilize the data of PISA study. In order to observe the tendencies, we use the data from two waves of study (2012 and 2018). For analysis of student achievement, we rely on the students' scores on the reading, Mathematics and Science performance while the PISA's Index of economic, social and cultural status was a proxy for the socio-economic status. Results are revealing that there is a stronger correlation between socio-economic status and student achievements in Western Europe compared to post-Yugoslav countries and that there are significant differences in the correlation between examined variables among post-Yugoslav countries.*

**KEYWORDS:** *Student achievement, PISA, Socio-economic status, post-Yugoslav countries, Western Europe.*

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**APSTRAKT:** *U savremenom globalnom kontekstu rastućih društvenih nejednakosti, važno je istražiti uticaj društvenog položaja na obrazovne prakse i ispitati obrazovne nejednakosti. Imajući na umu da post-jugoslovenska društva dele istu socijalističku prošlost, želeli smo da uporedimo značaj društvenog porekla u post-jugoslovenskim zemljama sa zemljama Zapadne Evrope koje imaju dužu kapitalističku tradiciju. Osim toga, uzimajući u razmatranje specifičan put Srbije ka kapitalističkom uređenju, naš cilj je da uporedimo Srbiju sa drugim državama uzimajući u razmatranje istu vezu između postignuća učenika na eksternim testiranjima znanja i socioekonomskih varijabli. Pošto smo želeli da upotrebimo komparativni pristup, koristili smo rezultate PISA studije. Kako bismo utvrdili tendencije, koristili smo podatke iz dva ciklusa ove studije (iz 2012. i 2018. godine). U analizi postignuća učenika, oslonili smo se na rezultate učenika u vezi sa čitalačkim, matematičkim kompetencijama i kompetencijama u vezi sa prirodnim naukama, dok smo koristili indeks ekonomskog, društvenog i kulturnog statusa koji se koristi u PISA testiranju kao proksi za društveni položaj. Rezultati otkrivaju da postoji jača povezanost između društvenog položaja i postignuća učenika u Zapadnoj Evropi u poređenju sa post-jugoslovenskim državama i da postoje značajne razlike u korelaciji između ispitivanih varijabli među post-jugoslovenskim državama.*

**KLJUČNE REČI:** *postignuće učenika, PISA, društveni položaj, post-jugoslovenske države, Zapadna Evropa.*

One of the main questions of the sociology of education is how social origin influences the educational outcomes in terms of achievement and attainment (OECD, 2010a; OECD, 2023). In that respect, sociology of education is focused on the interplay of the educational, social and cultural factors and its effects on the social structure. Though authors have different theoretical backgrounds and focus on different aspects of social structure, such as economic factors (Bowles & Gintis, 2011; Breen & Goldthorpe, 2007) or cultural capital (Burdije & Paseron, 2014), their papers document effect of social structure on school performance. Even though educational institutions are often regarded as a mechanism for minimizing economic and social inequalities, they are to a great extent a place for the reproduction and the legitimization of social inequalities (Sacks, 2007).

Many results of international studies prove the point that economic and social conditions influence educational outcomes (Schütz, Ursprung and Woessmann, 2005; Sirin, 2005; OECD, 2010b, UNESCO, 2010). For example, in Central and Eastern Europe data reveal that achievement gaps among different school types and regions are connected and can be explained by socioeconomic status of students (UNESCO, 2007 in Rutkowski and Rutkowski, 2013). Despite the many heated debates and policy measures, whose aim is to improve the access and quality of education, socio-economic inequalities persisted (OECD, 2010b:52), socio-economic background and the performance at school are proved to be

correlated in many contexts (Coleman et al., 1966; Shavit and Blossfeld, 1993; Gamoran and Long, 2007; Bukodi and Goldthorpe, 2011).

In this paper we will highlight the difference in the educational performance on the external testing among students from different social backgrounds in order to investigate correlation between socio-economic status and student achievements among investigated countries. Therefore, we will be able to compare variability of the student performance taking into consideration the social origin since the economic and social factors in the different extent influence the student achievement in different countries. Consequently, they have influence on the educational and social inequalities and the fairness of the educational system. These findings will give us insights into the differences between countries which can be important for understanding the wider context in which educational systems are embedded and give the chance for creating the strategy for the change of educational practice.

This article tends to contribute to the debate on educational equality and the influence of the social origin in the educational processes. In the first section, we stress the importance of comparative research, as well as benefits and drawbacks of the PISA testing. It is followed by the second section where the key findings based on PISA data from Serbia and other countries are presented. The aim of the paper is to compare correlation between socio-economic status and student achievement on PISA testing between Serbia and other post-Yugoslav countries. The same analysis will be held on post-Yugoslav countries and selected old capitalist societies from Western Europe (France, Germany, the United Kingdom). The empirical section and conclusion follow.

## **1. The comparative studies in the sociology of education and the PISA results**

Comparative studies of educational systems have a significant place in the interdisciplinary educational research (Little, 2000; Phillips, 2006). Saha (2001:163) defines comparative education as “the study of the variations in educational systems and processes, and how education relates to wider social factors and forces”, showing roles of the education systems in different cultural settings (Saha, 2001:163). The literature on cross-national comparative research is extensive (Shavit and Blossfeld, 1993; Breen and Luijkx, 2004; Shavit, Arum and Gamoran, 2007). Having in mind that the educational processes are affected by the various contextual factors (as a consequence of difference in the educational, systems, programs and curricula, school organization and climate, as well as wider social, cultural and economic context), it is quite challenging to conduct the comparative long scale research which will cover many countries with the representative samples and comparable variables (Duru-Bellat and Suchaut, 2005:1).

PISA is an international assessment testing organized by OECD which is organized every three years from 2000 (Baucal, 2012; Rutkowski and Rutkowski, 2013). It is one of the three most significant large-scale student assessments

(others are PIRLS for reading literacy and TIMSS for mathematics and science – organized by the International Association for the Evaluation of Educational Achievement). What is specific for the PISA is that it is age – based (OECD: 2012), thus the survey is conveyed on the students at the age of 15, rather than on the students attending the certain class (for example TIMSS at the fourth and eighth grade). The limitation is that coverage of the population aged 15 by education differs greatly between countries, since the PISA testing covers only the schooled population (Duru-Bellat and Suchaut, 2005:2).

The goal of the PISA is to discover to what extent students obtained the knowledge and skills in mathematics, science and reading literacy which are important for participation and employment in the modern world. Moreover, the PISA test is focused on practical knowledge, policy orientation, functional literacy, and readiness for lifelong learning (motivation and attitudes toward learning) (OECD, 2010b: 17). Besides that, PISA is giving background data on students and schools cross-nationally, so it is possible to measure in which extent contextual variables influence student performance and to give insights into the educational inequalities worldwide. In other words, it shows “how equitably they distribute educational opportunities among students, regardless of family and socio-economic background” (OECD, 2010b: 26). In that regard, PISA uses indicator of economic, social and cultural status (ESCS) which gives a comprehensive overview of the student social origin (Rutkowski and Rutkowski, 2013).

Using PISA data, we can easily compare the student performance from different educational systems. They are very useful for summing up the global trends in education and they are “a heuristic tool for international comparisons, with the cautiousness required in any empirical research” (Duru-Bellat and Suchaut, 2005:1). Other benefits are regularity since the tests are organized periodically so it is useful and practical for the following trends in the longer periods of time. The advantage is the geographical coverage since it is organized in many countries and the number of participating countries is growing (65 countries in 2012; 79 countries in 2018 and 88 countries in 2022<sup>4</sup>). Finally, it is organized in line with the quality-assurance mechanisms in all segments of the research and data analysis process (OECD, 2010b:17) focusing on providing “comparable target populations” (OECD, 2010b:20).

However, those studies got significant critiques. The procedure of the comparison of mean scores gives simplistic and insufficient information without going into detail about the context and differences in the countries and educational systems which are compared. For that reason, critics used to call them “a horse race” and a “cognitive Olympics” (Huang, 2009). To give a more differentiated and precise picture, scientists use different measures which show not only position but also variability and skewness and investigate variability between different groups in the sample (Huang, 2009). The other downside of this research stems from the difficulty to operationalize and measure the knowledge and skills in general. Cultural and gender differences in results can exist due to bias in testing. Another question is to what extent results can be

4 <https://www.oecd.org/pisa/aboutpisa/pisa-2018-participants.htm>

comparable across countries due to cultural and educational differences (Duru-Bellat and Suchaut, 2005:2).

Furthermore, the critiques are focused on the validity, reliability and comparability of the measuring socio economic status (Rutkowski and Rutkowski 2013; Willms and Tramonte, 2015). Namely, the composite nature of the index of economic, social and cultural status (ESCS) which measures socio-economic status in PISA was faced with criticism (O'Connell, 2019). Rutkowski and Rutkowski (2013) discuss the index of socioeconomic background at PISA and especially home possessions index as a crucial segment of PISA's socioeconomic indicator and questions whether it is suitable for the comparative studies. Furthermore, some aspects of the index of SES (especially "household possessions") changed significantly between the waves and it still differs between countries (due to specific contextual factors for every country) which makes it hard to make comparisons across time and countries (Avvisati, 2020).

This debate opens broader and fundamental theoretical and methodological consideration in the analysis and interpretation of the PISA results in the secondary studies. In this paper we cannot go into detail in this elaboration on the serious debates about the operationalization and measurement of socio-economic aspects of the educational processes. Finally, many authors (Hauser, 2009; Rutkowski and Rutkowski, 2013; Avvisati, 2020:30) conclude that in PISA results the validity and cross-country comparability is quite high and the data can be used for cross-countries analysis, giving valuable insights and key features of the educational systems. This is proved in the numerous papers which were using PISA results in order to measure the influence of social origin on the educational outcomes. Nonetheless, considering that in this paper we rely on ESCS as a proxy of socio-economic status, the aforementioned should be kept in mind since it consists of one of the key limitations of our research.

## **2. Literature on relation between student achievement and socio-economic status using PISA results in Serbia and other countries**

The data from PISA 2018 state that socio-economic background strongly influences student performance, educational aspiration and expectations in most EU countries. Besides, it is noticed that countries which have a bigger proportion of underachieving students have larger gaps between advantaged and disadvantaged students concerning socio-economic background (European Commission, 2019:6). Similar trend was noticed in the previous waves. According to the PISA results from 2009, social background has a strong effect on educational achievement (OECD, 2010b:13). The PISA 2018 testing also shows the big variability in the social inequality among European countries ranging from Estonia (lowest) to Hungary (highest)(Radulović, Radulović & Stančić, 2022: 1030). Moreover, results show that the some of the educational systems (such as Finland, Japan, Korea and the partner economies Hong Kong-

China and Shanghai-China) with the best performance have the most equitable systems providing high-quality education for students from different social backgrounds (OECD, 2010b:13). Notwithstanding, PISA results from 2018 show that countries with above average performance have below average educational equality (Radulović, 2023), proving that the correlation between performance and equity does not always exist.

Socio economically well-off students generally perform better in PISA testing, but the relationship between socio-economic background measured by the PISA index of economic, social and cultural status and student performance is not deterministic showing the existence of “resilient” students. Furthermore, the analysis is focused on how effects of educational policies (availability of preschool education, an all-day school tradition, tracking on the secondary level, the size of the private sector, average class size and educational costs) moderate social background and educational success (Duru Bellat and Suchaut, 2005; Lavrijsen and Nicaise, 2016: 208). Finally, it should be stated that studies are ambiguous when it comes to measuring effect of different structural characteristics on school performance in post-socialist societies. Some studies are arguing that there is difference between post-socialist and Western old-capitalist countries, i.e. that social background influences performance to a higher extent to Eastern compared to Western Europe, Romania excluded (Schlicht, Stadelmann-Steffen and Freitag, 2010). However, there are studies showing that some structural characteristics, such as cultural capital, have the same correlation with the performance in the post-socialist countries as in the Western countries (Bodovski, Jeon and Byun, 2017 in Radulović, 2023).

In Serbia the effect of socioeconomic factors on the achievement on the external testing is also followed and examined in the great extent (Čaprić, Plut and Vukmirović, 2008; Pavlović Babić, 2008; Baucal et al., 2006; Pavlović Babić and Baucal, 2013), proving that the level of the formal education and occupation of parents play an important role (it is positive and statistically significant) and that students with a higher socio-economic background have higher scores. According to the results from PISA 2003, the socioeconomic background explains 14.1% of the variance of test score, which was below the OECD average, which shows that effect of socio-economic status on the test results was less remarked (Pavlović Babić, 2008). Similar findings were noticed in later waves of study, where the strength of the relationship for Serbia is less than 10% (OECD, 2010b:54), performing below-average performance and below-average impact of socio-economic background on performance (OECD, 2010b: 59).

Comparative analysis of the PISA results from 2003 and 2006 was conducted and it compasses a comparison of Serbia with following countries Croatia and Slovenia (as ex Yugoslav countries), Bulgaria and Romania (as ex socialist countries), Slovakia and Poland (as ex socialist with good scores on PISA testing) and Norway and Finland (as a successful Scandinavian countries) (Baucal and Pavlović Babić, 2009: 6). The results show that the quality of the education in Serbia is slightly above the level of Bulgaria and Romania and it is much lower than the educational quality in Poland, Slovakia, Croatia and Slovenia. It can be

concluded that the education system in Serbia is not preparing its students for the future challenges. Regarding equity, results shown that it is slightly higher in Serbia than the average for OECD countries (Baucal and Pavlović Babić, 2009: 10), while in PISA report from 2018 it is shown that this discrepancy is even bigger (OECD, 2019). Even though the equity of education in Serbia is above the OECD average, on the results from PISA 2009 it is confirmed that cultural capital and socioeconomic background are predictors for performance, thus the higher cultural capital the higher is achievement on the external testing (Štrangarić, Rodić Lukić and Marić, 2017). Furthermore, on the same sample it is noticed the influence of the socioeconomic context and cultural capital on the motivational variables and competences, such as self-efficacy, intrinsic motivation for learning, anxiety toward school and the values toward education (Marić, Rodić Lukić i Štrangarić, 2018). Using PISA 2009 results Baucal (2012) proves that socioeconomic factors influence performance, and they are mediated by school anxiety and intrinsic motivation.

Finally, even though it is based on TIMSS study which, like PISA testing, measures achievement in Mathematics and Science (just on different age group), it is important to mention paper that analyzed the influence of cultural capital on achievement in mathematics and science tests among 10-year-olds and that showed that this influence is higher in Serbia than in other ex Yugoslavian countries and that it increased in previous years (Radulović & Gundogan, 2021).

### 3. Research goals and method

Bearing in mind shared history post-Yugoslav countries, the fact that they all went through post-socialist transformation, as well as some specific characteristics of this transformation in Serbia we aimed to:

- To compare correlation between socio-economic status and student achievement between post-Yugoslav countries (Serbia, Montenegro, Croatia, Slovenia) and selected old capitalist countries from Western Europe (France, Germany, the United Kingdom);
- To compare correlation between socio-economic status and student achievement between Serbia and other post-Yugoslav countries to test whether it is different in Serbia than in other post-socialist countries due to specific economic and cultural characteristic of Serbian countries due to blocked post-socialist transformation (Lazić, 2011).

This paper analyzes the equity of educational systems observing the distribution of performance on the PISA test and the effect the socioeconomic background has on the learning outcomes. Since we tend to use a comparative approach, we utilize the data of PISA testing on 15-years old students. In order to observe the tendencies, we use the data from the last two waves of study in which Serbia participated (2012 and 2018, data from 2015 were not used since Serbia did not participate). We analyzed data for 7 countries, with totally 91.537 15-years old students. The data on numbers of students per country and per wave of study

are in Table 1). More precisely, we analyzed data from ex-Yugoslav countries that participated in both selected waves (Croatia, Montenegro, Serbia and Slovenia), while data from Bosnia and Herzegovina, Kosovo and North Macedonia were not used since these countries/territories participated just in PISA 2018. Western European societies with long capitalist tradition were represented by France, Germany and the United Kingdom. These counties were selected as countries that throughout history shaped European capitalism (industrialization, political organization, integration), as (arguably) most influential countries in nowadays Europe, and (unarguably) 3 countries with highest GDP in Europe).

**Table 1.** *Research Sample*

PISA 2012							PISA 2018						
Western Europe			Ex-Yugoslavia				Western Europe			Ex-Yugoslavia			
FRA	GER	UK	CRO	MNE	SER	SLO	FRA	GER	UK	CRO	MNE	SER	SLO
5001	4613	12659	5008	4744	4684	5911	6308	5451	13818	6609	6666	6069	6401
Total:19328			Total:20347				Total:25577			Total: 26285			

For analysis of student achievement, we rely on the students’ scores on the Reading, Mathematics and Science performance while the PISA’s Index of economic, social and cultural status (which is consisted of parents’ highest educational level, occupational status and household possession) was a proxy for the socio-economic status (OECD, 2018a).<sup>5</sup> In order to test the relation between socio-economic status and achievement we used Pearsons’ correlation coefficient and Fishers’ Z transformation to compare correlations between different countries/regions.

### 4. Results

Before results regarding relation between socio-economic status and achievement are presented it should be mentioned that selected Western European countries have higher achievement than ex-Yugoslav countries. As presented in Table 1, average for selected Western countries in both periods is around world average (500), while achievement in ex-Yugoslavia is one level below it. Namely, PISA defines 6 levels of performance, and if for example for reading if we analyze scale for reading in 2018 Western Europe is on level 3 (score from 480.18 to 552.89), while ex-Yugoslav countries in general, and each of them separately are at level 2 (from 407.47 to 480.17) (OECD 2018b, 25).

<sup>5</sup> See more in OECD, 2018a.



**Table 2.** PISA achievement in the investigated countries in 2012 and 2018

Country/Region	PISA 2012			PISA 2018		
	Reading	Mathematics	Science	Reading	Mathematics	Science
Western Europe	501,74	496,57	510,93	495,83 <sup>6</sup>	495,55	496,51
ex-Yugoslavia	453,91	454,27	462,17	454,54	459,29	454,55
Croatia	484,2	469,98	490,33	477,38	462,57	470,73
Montenegro	419,98	406,73	408,2	421,86	430,36	415,68
Serbia	445,71	447,46	443,94	439,88	448,8	440,1
Slovenia	461,98	484,53	496,07	480,1	469,85	493,25

When it comes to the relation between socio-economic status and achievement, it could be argued that education is more equal in ex-Yugoslavia. Namely, differences in correlation between two variables among Western Europe and ex-Yugoslavia that are presented in Table 2 are statistically significant for all tests in both periods.<sup>7</sup> Moreover, educational inequalities are significantly higher in Western Europe than in Slovenia, as country with highest inequalities among ex-Yugoslav countries.<sup>8</sup>

**Table 3.** Correlation between socio-economic status and reading, Mathematics and Science achievement in the investigated countries

		Western Europe	Ex-Yugoslavia	Croatia	Montenegro	Serbia	Slovenia
PISA 2012	Reading	r=.380	r=.320	r=.337	r=.346	r=.296	r=.350
		sig.<.01	sig.<.01	sig.<.01	sig.<.01	sig.<.01	sig.<.01
		n=18177	n=20136	n=4991	n=4688	n=4624	n=5833
	Mathematics	r=.399	r=.357	r=.347	r=.361	r=.342	r=.369
		sig.<.01	sig.<.01	sig.<.01	sig.<.01	sig.<.01	sig.<.01
		n=18117	n=20136	n=4991	n=4688	n=4624	n=5833
Science	r=.418	r=.331	r=.322	r=.354	r=.299	r=.362	
	sig.<.01	sig.<.01	sig.<.01	sig.<.01	sig.<.01	sig.<.01	
	n=18117	n=20136	n=4991	n=4688	n=4624	n=5833	
PISA 2018	Reading	r=.370	r=.289	r=.286	r=.243	r=.303	r=.333
		sig.<.01	sig.<.01	sig.<.01	sig.<.01	sig.<.01	sig.<.01
		n=23725	n=26030	n=6576	n=6607	n=6516	n=6331
	Mathematics	r=.424	r=.342	r=.333	r=.280	r=.345	r=.387
		sig.<.01	sig.<.01	sig.<.01	sig.<.01	sig.<.01	sig.<.01
		n=20869	n=26030	n=6576	n=6607	n=6516	n=6331
Science	r=.406	r=.311	r=.309	r=.244	r=.330	r=.363	
	sig.<.01	sig.<.01	sig.<.01	sig.<.01	sig.<.01	sig.<.01	
	n=20869	n=26030	6576	n=6607	n=6516	n=6331	

6 If all ex-Yugoslav countries/territories were included, since they all participated in PISA 2018, score would be even lower (426,38).

7 PISA 2012:  $Z_{-reading}=7.07$ , sig.<.01,  $Z_{-mathematics}=4.78$ , sig.<.01,  $Z_{-science}=9.89$ , sig.<.01; PISA 2018:  $Z_{-reading}=10.13$ , sig.<.01;  $Z_{-mathematics}=10.35$ , sig.<.01;  $Z_{-science}=11.75$ , sig.<.01.

8 PISA 2012:  $Z_{-reading}=2.3$ , sig.<.05,  $Z_{-mathematics}=2.34$ , sig.<.01,  $Z_{-science}=4.39$ , sig.<.01; PISA 2018:  $Z_{-reading}=2.98$ , sig.<.01;  $Z_{-mathematics}=3.09$ , sig.<.01;  $Z_{-science}=3.5$ , sig.<.01.

Regarding comparison between Serbia and other countries in the region, results differ to a great extent between two periods. In the first period Serbia had lower correlation between socio-economic status and achievement than other 3 countries in all 3 tests. Though difference in correlations is statistically insignificant when it comes to mathematics, Serbia had significantly lower correlation than other 3 countries when it comes to reading ( $Z_{CRO}=2.23$ , sig.<.05;  $Z_{MNE}=2.69$ , sig.<.01;  $Z_{SLO}=3.06$ , sig.<.01), and lower correlation than Slovenia and Montenegro when it comes to science ( $Z_{MNE}=2.97$ , sig.<.01;  $Z_{SLO}=3.59$ , sig.<.01). Six years later correlation between socio-economic status and achievement in Serbia was lower only than the one in Slovenia ( $Z_{-reading}=1.89$ , sig.<.05,  $Z_{-mathematics}=2.75$ , sig.<.01,  $Z_{-science}=2.13$ , sig.<.05), there is no longer significant difference between Serbia and Croatia (that actually has somewhat lower correlation), while correlations are significantly higher in Serbia than in Montenegro ( $Z_{-reading}=3.71$ , sig.<.01,  $Z_{-mathematics}=4.13$ , sig.<.01,  $Z_{-science}=5.37$ , sig.<.01). This difference in two periods is consequence of decrease of educational inequalities measured by correlation between achievement and socio-economic status in Croatia and especially in Montenegro, but also consequence of growth of inequalities in Serbia. As it can be seen in Table 2, Serbia is the only country with an increase of correlation between status and achievement between two periods in all 3 tests (though this difference is statistically significant just for science –  $Z=1.79$ , sig.<.05).

## 5. Discussion and conclusions

The results are indicating that both, the quality of education (measured by the achievement on the PISA testing) and educational inequalities (measured by correlation between socio-economic status of student and achievement on the PISA testing), are lower in the ex Yugoslav countries than in examined Western European countries. These findings are in the line with the previous research (Baucal and Pavlović Babić, 2009).

We assume that the lower educational inequalities in the region are a consequence of the socialist legacy in the educational system still can slightly compensate economic and social inequalities. More specifically, since many studies show that Eastern European countries have higher educational inequalities (Schlicht, Stadelmann-Steffen and Freitag, 2010), these results might suggest that the shared historic background in Yugoslavia is still some kind of protecting force. Unfortunately, we cannot conclude based on the available data what factors influence the lower educational inequalities. Nonetheless, we can assume that it is related to the values regarding education or structure of the educational system that remained similar in these countries. For example, the studies in many contexts analyze the influence of streaming in the educational system on the PISA results and more generally on the educational and social inequalities. Since in ex-Yugoslav countries the educational streams are not as differentiated as in some Western European countries (such as France or Germany), i.e., transition from one educational level to another is not strictly determined by previous

educational choices and private educational sector on the primary school level is still insignificant, educational inequalities remain lower.

The results show that in Serbia during the estimated period the educational inequalities are becoming more significant than in other countries. Concretely, while in other investigated countries the correlation between socio-economic status and achievement on test decreased, in Serbia relation between two variables remains stagnant (slightly but insignificantly increased). Bearing in mind that a study based on large-scale educational research from 2019 is showing a significant increase of educational inequalities among 10-year-olds and that these inequalities are becoming higher in Serbia than in the region (Radulović & Gundogan, 2021) our finding is even more worrying. It would be useful if similar studies would be conducted in future (possibly on PISA 2022 data) to test if inequalities that are noticed in 2019 on the 10-year-old population “followed” these children to older years. Since Serbia is faced with growing economic inequalities (Krstić, 2016), and is conducting educational policies that can hardly decrease inequalities (such as introduction of dual education), such results might be expected. Finally, analyzed data cannot tell us anything about reasons for increase of inequalities in Serbia, compared to region, but it might be understood as a consequence of the blocked post-socialist transformation (Lazić, 2011). Namely, it is possible that since Serbia joined the world capitalist system in different times and consequently occupied a more peripheral position, that this peripheral position is associated with development of wild capitalism and higher inequalities.

Bearing in mind that difficulty of the large-scale research to tackle the various contextual factors dealing with differences in the educational systems as well as wider social, cultural and economic context (Duru-Bellat and Suchaut, 2005:1), this study is good stepping stone for the capturing the wide pictures of educational inequalities in different counties. However, it should be stated that educational equality differs among capitalist countries and that, even though we believe that we have chosen 3 most representative countries, by choosing different countries our results might differ. Additionally, we still lack a deeper understanding of the processes leading to the unequal opportunities for students in different educational systems. These deeper insights, that are culturally specific and embedded in the concrete context, are necessary in order to tackle the problem of educational inequalities and formulate educational policies that might mitigate inequalities. For this purpose, it would be very fruitful to conduct additional studies focused on inequality, and not primarily on achievement. It would be especially valuable to gather data using qualitative and mix-method approach, since it is lacking in Serbian context and it might be helpful for understanding the meanings that actors are associating to their activities which eventually lead to the reproduction of inequalities in education. Nonetheless, large scale comparative studies might be very useful for policy decision making, setting policy targets and measurable goals (OECD, 2010b:17), indicating the problems and shortcomings of the current state of the educational system. In that line, there are many successful examples of how countries changed their

educational policy and improved their educational systems through deep analysis of the PISA data such as the German (Davoli and Entorf, 2018) and Estonian (Tire, 2021) example.

## 6. Literature

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