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Kosovo's Low Performance in PISA 2015: An Explanation From a Socioeconomic Perspective

ARIF SHALA and ALBULENE GRAJCEVCI

Abstract

This paper will analyze the performance of Kosovar students in PISA 2015 and explain the low performance from a socioeconomic standpoint. On its first participation in this assessment, Kosovo was ranked among the three lowest achieving countries. It is the argument of this paper that parental education and home possessions, both measures of socioeconomic status, determined the performance of students in Kosovo. There is compelling evidence that links student achievement and socioeconomic factors, a link that is well established in research. PISA is the first study to link student achievement in international assessments and socioeconomic factors in Kosovo and this paper is the first one research this link in the case of Kosovo. According to the PISA results, the higher the education levels of the primary caregiver, the higher the achievement of the student. In terms of home possessions, the higher the numbers of resources (Internet, computers etc.) the higher the student achievement in mathematics, reading and science. In light of this evidence, any policy that fails to account for the impact of familial socioeconomic status will not improve the education quality in Kosovo.

Keywords: Kosovo, PISA 2015, socioeconomic status, parental education, low performance.



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Introduction

The Organization for Economic Cooperation and Development (OECD) employs the Programme for International Student Assessment (PISA) every three years, a project that tests levels of literacy in reading, mathematics and science in 15 year old students worldwide. PISA, as a form of assessment, has changed over the years in order to adjust its focus and items to the ever-altering economies of the new century. In other words, the first PISA test conducted in 2000 emphasized reading, PISA 2003 focused on math, and PISA 2006 emphasized science. PISA tests are unique compared to other international assessments because it has successfully separated itself from school curricula and has instead focused on skills and knowledge that are key to 21st century economies, with the key domains being reading, mathematics and sciences (OECD, 2004) under the general understanding that education today is a mirror image of the economy tomorrow.

To that end, Kosovo followed the trend in terms of international assessments and specifically the importance given to PISA. Kosovo participated in PISA assessments in 2015 for the first time. While there were many reasons to participate in PISA, the country needed urgent feedback on the current standing of its education quality, as well as information on where it stands in relation to other countries in the region and the world. By contrast, the results published in December 2016 generated an immense shock since the country ranked as the third worst performing in the world. The country averages (362, 378, 347) are well below the OECD average (490, 493, 493). In comparison to other countries in the region Kosovar students were the weakest achievers. Importantly, OECD has anticipated the need of countries for feedback that goes beyond scores and as a result, along with achievement, the organization measures a wealth of variables and constructs that can be used to understand scores as well as draft appropriate intervention policies. To that end, the Kosovan government ought to realize that PISA is not only about the current quality of education systems, but also about gathering information on what is hindering the academic achievement of students. It is the argument of this paper that among all factors, socioeconomic status is the variable which fundamentally contributed to the low performance of students.

This paper argues that social inequalities have played an important role in the low performance of students. To that end, socioeconomic status (SES) exerts influence over domains such as development, health and education primarily due to the influence on cognition, educational outcomes and overall wellbeing (Bradley & Corwyn, 2002). Scholars make a persuasive argument when explaining that parents who have higher socioeconomic status are the ones who are able to support the learning needs of their children, both in terms of available home resources and financial support. To that end, these parents are more likely to provide an environment that fosters cognitive development and are also more likely to enroll children in prestigious schools (Schulz, 2005). In light of this evidence, the existence of low SES in families across Kosovo played a considerable role in student achievement. Evidently, the link between socioeconomic status and student achievement is well established in the literature. However, PISA is the first study to assess student achievement and socioeconomic status across Kosovo, and since these are the first data available it is of imperative importance to document the impact of familial socioeconomic status on student achievement in Kosovo. Finally, this paper is the first to draw attention to this topic in the hopes of addressing the literature gap in the case of Kosovo.

Introducing the Kosovo Education System

Kosovo is a developing country located in the Balkans which established its independence in 2008 and with it began the consolidation of its education system. The problems faced by the country are similar to those faced by developing countries around the globe with its primary concern being investment in education. The World Bank (2015) reported that in 2012, the Kosovan government had assigned 4.1% of its GDP to education, which was significantly higher compared to what the country had designated in 2007, which was 3.3% of GDP. Regardless of this impressive increase, Kosovo still spends on average less on education compared to countries in Europe and Asia. In comparison to other Balkan countries, Kosovo invests more than Albania (3.3%) and the Former Yugoslav Republic of Macedonia (FYRoM) (3.5%), but less when compared to Serbia (4.7%) and Croatia (4.4%). Unfortunately, Kosovo spends less on its school pupils than all other countries in the region and countries that share the same level of income (World Bank, 2015).

Available data suggests that in the 2015/2016 academic year, 367,940 students were enrolled in Kosovan pre-university level education. Among these students, the majority of them, 258,464 students, were enrolled in primary and lower secondary schools. The second major group were 83,906 students attending upper secondary schools, followed by 21,655 students involved in pre-primary education (5-6 years). Finally, the smallest group were the students in pre-school levels, 3,915 (Republic of Kosovo, Ministry of Education, Science and Technology, 2016). Students are automatically enrolled in primary and lower secondary schools, but this is not the same for upper secondary schools which are attended by 84.7% of students, of whom half attend vocational schools (Republic of Kosovo, Ministry of Education, Science and Technology, 2016).

During recent decades Kosovo has undergone a painful processes in order to update its education system. Most of the financial burden of these initiatives was carried by donors and international partners aiming to support Kosovo in its quest to align its education platform to those common to Western Europe. The key drawback in these processes were tendencies to model interventions according to the donor countries and in many cases the willingness of the Kosovar governing structures to readily adopt good models without many modifications. The country has often been praised for the policies it has set in place, but the application of these policies has remained a challenge (Republic of Kosovo, Ministry of Education, Science and Technology, 2016). However, what the country has managed to reform include, but are not limited to, curriculum, school textbooks, and teacher professional development. These reforms were initiated and carried out simultaneously. Ultimately, the country was in need of an assessment of the current state of its education system which is why it participated in PISA. The shocking results raised the question of what resulted in such a low performance when the government had done a great deal to align teaching and learning in schools across Kosovo to what is being learned and taught across schools in Europe.

Impact of Socioeconomic Status on Student Achievement

The relationship between SES and educational achievement is a well-established fact in education research (Noel & de Broucker, 2001; OECD, 2004). Socioeconomic status influences inequalities in education since the low socioeconomic standing of the family will signal inequalities in terms of access to education resources. This link has a positive and

strong correlation since findings report that students who have high socioeconomic standing are those with the highest academic achievements. Students who have high SES are those with the highest scores on standardized tests, completed secondary school and universities compared to students who come from low socioeconomic backgrounds (Sirin, 2005).

The current understanding in science is that the socioeconomic status of students is linked to educational achievement, regardless of what instruments are used to assess this achievement, whether local, national or international assessments. The consensus is that SES levels predict the achievement of students in a number of countries (Rumberger & Palardy, 2005; Sirin, 2005). Similarly, it is of equal importance to understand through which mechanisms SES influences school success. Evidence argues that familial SES influences the degree of development of a student's executive functioning—which refers to working memory, flexibility, attention, and planning—and cognitive skills, which are the mechanisms of how a student actually learns, remembers, solves problems and pays attention. Executive function (EF), as a construct, is a strong predictor of academic achievement (Ursache, Blair, & Raver, 2012). Studies have found that children of low SES perform on average worse compared to high SES children on tasks that require memory, flexibility, and planning abilities (Sarsour et al., 2011). Furthermore, there is evidence that students who report low familial socio-economic status are more likely to report lower levels of skills and abilities (Shala & Grajevci, 2017). To summarize, the development of executive functioning depends on the socioeconomic status of the family.

In light of this evidence, children of low SES families such as those in Kosovo with limited resources, are unable to develop executive functioning to the desired level. Low performance in assessments can be attributed to this inequality. Secondly, there is ample support for the claim that socioeconomic factors influence the development of cognitive skills among children (Aber, Jones, & Cohen, 2000). To that end, research studies generally discover that parents invest in the development of cognitive skills in children by purchasing materials such as books and educational toys, while also fostering activities such as reading. Investment in materials and in activities results in the development of cognitive skills (Gershoff, Aber, Raver, & Lennon, 2007). Both activities may be evident in families which benefit from high SES, but the same activities cannot be completed by families who are low on socioeconomic resources. Deficits in cognition have also been reported to signal low socioeconomic status in families (Mackner, Black, & Starr, 2003).

This paper therefore suggests that the low socioeconomic status of families in Kosovo results in low cognitive skills. This situation has further hindered the academic achievement and performance in general of Kosovan school students, which manifests in poor international assessments such as PISA, to be specific. To that end it is the argument of this paper that familial socioeconomic status determines achievement in PISA tests by exerting control over the two factors responsible for learning, namely executive functioning and cognition. To summarize, education inequalities are evident between high SES families and low SES families which are not in the position to provide the environment to foster executive functioning and cognition, which is detrimental to future student academic achievement.

Performance in PISA as Determined by Familial Socioeconomic Status

This paper puts forward the view that socioeconomic factors—as a measure of inequalities between families—predict student achievement in international assessment

tests. Socioeconomic status has been assessed through a number of different instruments (Sirin, 2005). One solution that is being employed is to assess family SES through the following three variables (i) parental education, (ii) parental occupation and (iii) household items. Researchers agree that a combination of these variables is a representation of the socioeconomic standing of a family (Schulz, 2005). Of all these factors, PISA 2015 assessed only parental education and household items for students in Kosovo, therefore these two variables are the measure of familial SES in Kosovo.

Parental Education and Student Achievement

Parental education, as a measure of socioeconomic status, is linked to student achievement since the literature suggests that parents who have higher levels of education are more likely to have children who participate in higher education (Drolet, 2005; Knighton & Mirza, 2002). What is more, parents who are more educated are also more likely to raise levels of achievement motivation and aspiration in their children, along with providing them with a set of skills that are conducive to achievement (de Broucker & Underwood, 1998; Lareau & Weininger, 2003). Another key thing to remember is that parents who are a part of the middle class have more financial resources in which to invest in learning materials, tutors and other extracurricular activities, while they also have better contacts with education institutions, as well as with other higher status parents (Edgerton, Peter, & Roberts, 2008). Finally, studies also suggest that there are differences in the expectations that parents set for their child's achievement. These expectations are ultimately linked to the type of achievement goal adopted by the student (Grajcevci & Shala, 2017). Evidently a combination of these factors leads to distinguishable student achievement.

In relation to achievement in PISA tests the literature suggests that parental education levels impact performance in PISA tests across all European countries. For instance, students whose mothers only have a secondary school education score 20 points less across all domains, math, science and reading, compared to students whose mothers have completed vocational schooling. In the case when both parents have vocational training, their children score more than 40 points higher in the tests than their peers whose parents have high school levels of education (Cicccone & Garcia-Fontes, 2009).

To summarize, the PISA results for Kosovo support the existing literature. Specifically, student achievement increases with an increase in the mothers education, with differences of 45 points in mathematics, 44 points in reading and 37 points in science. The results for the fathers' education are a bit more confusing as students performed best when fathers completed only secondary school, with a difference of 68 points in mathematics, 81 reading and 51 points in science. This discrepancy can be attributed culturally in that childrearing responsibilities in Kosovo are largely left to the mothers, and Kosovar men have traditionally distanced themselves from childrearing responsibilities. Taking this traditional role into consideration, Kosovo follows the footsteps of other countries, in that the more educated the primary caregiver responsible for the children is, the higher the student achievement.

Home Possessions as a Measure of Familial SES and Student Achievement

Home possessions are also a measure of familial socioeconomic status since family wealth is argued to be a better assessment of family resources compared to income (Bradley & Corwyn, 2002), and as a result of which household assets are used to measure the socioeconomic status of a family (Filmer & Pritchett, 1999). The current study, based on

OECD instruments, explores the influence of home possessions and characteristics such as having an own (bed)room, a quiet place to study, Internet connection at home, a computer, desk, textbooks, number of phones with Internet, and number of computers at home, all of which are variables influencing the socioeconomic standing of the family and thus student achievement in PISA tests.

Table 1 presents the PISA scores in mathematics according to home possessions which is a measure of family socioeconomic status. Students who did not have their own room performed lower (374) compared to those who had their own room (363). Students performed best when they had Internet connection at home (368), had a quiet place to study (365), had a desk (377) and had a computer (367). On the other hand, students performed much lower when they did not have Internet connection at home (325), did not have a quiet place to study (350), did not have a desk (335), or did not have a computer (344). It was unexpected to find that students performed lower when they had textbooks (364) and higher when did not have textbooks (369). As the literature suggests, students performed worse when they had no computer at home (332), and performance increased with the number of computers; one (362), two (375) and performed best when students had three or more computers at home (384). It was the same with access to cellphones at home, since students performed best with three or more cellphones at home (384) and the performance decreased according to the number of phones, namely two (361), one (335) and none (323).

Table 1. Scores in mathematics according to home possessions

		<i>Scores in Mathematics</i>
Own Room	Yes	363
	No	374
Internet	Yes	368
	No	325
Quiet place to study	Yes	365
	No	350
Desk	Yes	377
	No	335
Textbooks	Yes	364
	No	369
Computer possessions	Yes	367
	No	344
Cellphones with Internet access at home	None	323
	One	335
	Two	361
	Three or more	384
How many computers at home	None	332
	One	362
	Two	375
	Three or more	384

The impact of home possessions in the reading scores of students were similar to those seen for mathematics. For instance, students performed lower when they had their own

rooms (349) and when they had textbooks (350), in comparison to students who did not have their own room (365) or had no textbooks (354) who performed higher in reading. Students performed higher where they had Internet connection at home (353), had a quiet place to study (351), had a desk (364) and possess a computer (353), compared to students who do not have Internet connection at home (317), had no quiet place to study (332), no desk (317), or no computers (328) who performed at a lower level. In terms of access to cellphones with Internet at home, the data suggests that the more cellphones the higher the achievement, since students who lived in homes with three or more cellphones performed the highest (368), followed by those who reported having two (352), or one (322), and finally those that had no cellphones with Internet at home who performed the worst (305). Finally, in terms of computers at home, students performed best when they had two computers (366), followed by those who reported having three or more computers (357). The worst performance was by students who had no computer at home (316), followed by those who had only one computer (348).

Table 2. Scores in reading according to home possessions

		<i>Scores in Reading</i>
Own Room	Yes	349
	No	365
Internet	Yes	353
	No	317
Quiet place to study	Yes	351
	No	332
Desk	Yes	364
	No	317
Textbooks	Yes	350
	No	354
Computer possessions	Yes	353
	No	328
Cellphones with Internet access at home	None	305
	One	322
	Two	352
	Three or more	368
How many computers at home	None	316
	One	348
	Two	366
	Three or more	357

Table 3 presents the PISA scores in science according to home possessions as a measure of family socioeconomic status. Students who do not have their own room performed lower (393) compared to those who had their own room (379). Students performed best when they had Internet connection at home (384), had a quiet place to study (382), had a desk (394) and had a computer (383), while they performed much lower when they did not have Internet connection at home (351), no quiet place to study (365), no desk (354), and no computer (363). It was unexpected to find that students performed lower when they had textbooks (382) and higher when did not have textbooks (371). As the literature suggests,

students performed worse when they had no computers at home (353), and performance increased with the number of computers; one (378), two (393) and performed best when the students had three or more computers at home (392). It is the same with access to cellphones at home, since students performed best when there were three or more cellphones at home (395) and the performance decreased with the number of phones, namely two (380), one (360) and none (341).

Table 3. Scores in science according to home possessions

		<i>Scores in Science</i>
Own Room	Yes	379
	No	393
Internet	Yes	384
	No	351
Quiet place to study	Yes	382
	No	365
Desk	Yes	392
	No	354
Textbooks	Yes	371
	No	382
Computer possessions	Yes	383
	No	363
Cellphones with Internet access at home	None	341
	One	360
	Two	380
	Three or more	395
How many computers at home	None	353
	One	378
	Two	393
	Three or more	392

PISA results indicated that students will achieve higher if they have more possessions at home. As family SES increases and students gain access to Internet at home, study desks, quiet places to study, three or more computers and cellphones with Internet at home they will achieve highest scores. By comparison, as familial SES decreases, so do the levels of achievement in science.

Conclusion

Existing literature considered, researchers agree that the variable which explains differences in levels of educational achievement is the socioeconomic status of the family (Rutkowski & Rutkowski, 2013). Beginning with the work of Coleman (1968), who established that socioeconomic status and achievement are linked and that the latter is strongly determined by the first, the relationship has been researched thoroughly as a result of which differences in achievement are mostly attributed to differences in the socioeconomic standing of the family (Evans & Rosenbaum, 2008; Hattie, 2009; Sirin, 2005). In light of the existing evidence, UNESCO (2007) explains that in Central and Eastern Europe, socioeconomic status explains gaps in student achievement across regions and if such

socioeconomic differences were to vanish, countries would benefit from better economic outcomes (OECD, 2001, 2004, 2007, 2010) and better societies (UNESCO, 2007, 2010). The PISA results for Kosovo are in line with existing research in that the students achieved higher scores across all domains as the level of home possessions increased. Evidently the lowest performing categories are students who come from low socioeconomics standing.

The literature also links parental education to achievement and performance. Parents who are more educated tend to support learning in children by increasing motivation to learn as well as offer access to settings that place value on education and learning in general (Davis-Kean, 2005; Roksa & Potter, 2011). Data reveals that parental education explains 14% of the variance in scores of the reading tests in PISA 2009 (Rajchert, Zultak, & Smulczyk, 2014). Similar to existing evidence, students' performance in PISA in the case of Kosovo supports the understanding that parents who are educated will have the highest performing children.

It is the argument of this paper that the first step in improving education quality is to fight inequalities and in this regard socioeconomic status is of particular importance. Low achievement of Kosovar's students can be attributed to a great degree to low parental education and a lack of resources at home; both of which signal inequalities. Pisa 2006 results provided that the majority of disadvantaged students failed to reach the minimum proficiency levels. In light of this information, experts have been wondering why some students managed to perform well despite being from a disadvantaged group. Data suggests that one variable that is detrimental in this respect is the time spent in class. A review of PISA 2006 indicated that students who come from disadvantaged backgrounds spent less time studying in school compared to students who come from advantaged background. This suggests that schools may be a factor that can mitigate the negative effects of inequalities in socioeconomic status. To that end, experts have argued that schools should offer more chances for disadvantaged students to learn in class, thus increasing the number of hours spent in class. Similarly teachers should change their teaching methods in order to foster learning in these students (OECD, 2010) by accounting for what they are missing in parental support. With this information in mind, policymakers in Kosovo will be able to target education quality.

Currently Kosovo is in a state of shock and is still processing the negative feedback it received regarding the quality of its education system. Soon enough, the government will initiate reforms and interventions to address the low-level of student achievement as seen in the PISA exercise. To that end, reforms ought to consider these two factors which raise the issue of how to influence or mitigate the impact of parental education and socioeconomic status. All data considered, SES provides for a persuasive explanation to low performance, but even more, it provides a compelling argument as to why policymakers ought to place considerable attention to this variable. The literature suggests that this can be achieved by increasing the number of hours of these marginalized groups in schools, as well as to change teaching methods to better serve their needs. Above all, student achievement will increase once the government puts in place policies which mitigate the impact of low familial socioeconomic factors in student learning and achievement; the inequalities into which the students are born.

Notes

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