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PARENTAL INVOLVEMENT AND THE EDUCATIONAL STRATEGIES OF YOUTH IN RUSSIA

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This paper studies the influence of parental involvement in the educational process on the educational achievements of Russian students and their educational strategies, such as studying in high school and successful admission to university. We argue that the patterns of parental involvement represent a link between the formal (school) and informal (family) educational institutions and can have a beneficial effect on academic performance and contribute to the choice of the educational pathway to higher education. Based on data from the longitudinal study 'Trajectories in Education and Careers', it was shown that the results of school state examinations are positively associated with the active participation of parents in school meetings, the employment of tutors (except for the Unified State Exam score in mathematics), and the provision of additional literature for the child. A negative relationship was found between homework control and student success. In general, the factor of 'rational' (not excessive) involvement is positively associated with educational achievement and educational choice, which may indicate the non-linear nature of the relationship. Parental involvement itself depends on the family characteristics, such as mother's education, family income and the number of books at home. In addition, family has a positive impact on educational success and educational strategies, and high school characteristics are especially important for the results of the Unified State Exam and the university choice.

JEL Classification: I21, I26

Keywords: parental involvement, educational pathways, educational achievements, the Unified State Exam, university choice, college choice

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Introduction

Academic achievement, educational choice and student trajectories are some of the main topics studied in the economics and sociology of education (Poynton, Lapan 2017; Taylor et al. 2014; Drake et al. 2016; Hill, Wang 2015; Frischmann, Moor 2017), since these indicators determine student success in the future, individual and social returns on investment in education (Brand, Xie 2010; Blundell et al. 2000; Moretti 2004; Brand 2010; Vedder 2004), and also contribute to the economic development of society as a whole (Hanushek, Woesmann 2010). Traditionally, individual characteristics of students, family characteristics, the social environment, and features of educational institutions are among the factors considered to affect academic performance. These factors have a complex effect on student academic achievements (Hanushek 1979). In other words, in addition to individual abilities and student preferences, family and school play an important role in the educational process and results.

From the point of view of institutional theory (Stiglitz 2000; Keefer, Shirley 2000), schools and school systems can be considered as formal institutions of education, since they have formal rules and procedures. The family is an informal institution of education, since parents can invest time and money in their child's education, but this process is not regulated. Family and school are important resources for investment in a child's human capital. Hence, both school and family can influence a student's academic performance and educational choice through formal and informal channels.

There are many studies where the positive impact of school and school resources on student performance has been established (Hanushek 1997; Fowler, Walberg 1991; Krueger 1999; Woessmann 2005). Likewise, the role of family is also crucial (Coleman et al. 1966): parental education (Hearn 1991; Perna, Titus 2005; Sandefur et al. 2006; Okpala et al. 2001), the level of social and cultural capital, SES (Baird 1967; White 1982; Hill, O'Neil 1994; Morris et al. 2004; Davis-Kean 2005; Dahl, Lochner 2005; Prakhov, Yudkevich 2019). Various studies have proposed mechanisms explaining why children from better-off families study better and receive higher levels of education compared to children from disadvantaged households (Davis-Kean 2005; Leibowitz 1977). For example, more educated parents or parents with a higher level of cultural capital can take an active part in the additional education of the child and make extra investment in his/her human capital. More affluent families have more resources to hire tutors for their children.

For the educational strategies of youth, family as an informal institution can maintain the effectiveness of formal schooling through parental involvement (PI) in the educational process (Castro et al. 2015; Ma et al. 2016). However, there are not many studies on the

interaction between the family and the school, while PI in the educational process may serve as a mechanism that provides informal support for the formal educational institution and thus may enhance the synergistic effect of school and family input on academic achievement. Given the importance of educational outcomes and decisions made to continue learning in the further development of an individual, it is worthwhile to pay attention to the role of PI in educational pathways.

This study investigates the influence of various forms of PI in the educational process on the educational attainment and trajectories of students, given the characteristics of the family and the school. In addition, it examines the factors influencing the formation of PI strategies. The paper is structured as follows. Section 1 presents the results of previous studies and the analytical framework of the study. Section 2 describes the data and methodology of the empirical research. We use data from a large longitudinal study of Russian students 'Trajectories in education and careers'[5], conducted by the Institute of Education of HSE University. Section 3 presents the results of the regression analysis. The last section concludes and discusses the results.

1. The analytical framework of the study: the determinants of the educational achievement of youth and the role of parental involvement

Educational choice is a complex multi-step process that involves a series of decisions (Chapman 1981; Litten 1982; Perna 2006). For example, during secondary school, the student needs to choose an educational trajectory. In Russia, the first decision is made in the 9th grade and involves the choice between continuing education at high school[6], receiving lower post-secondary vocational education, or starting work. The second decision is taken at the end of the 11th grade and represents a choice between work, university and a lower post-secondary vocational education. The model of educational choice (Vossensteyn 2005) suggests that the following groups of factors affect the individual educational trajectory of a student:

- *the individual characteristics of the student*: gender, intelligence level, abilities, motivation, socio-psychological characteristics, health (Slobodskaya et al. 2008; Ilyin 2011; Kholodnaya 2018);

- *family factors*: family composition, the number of children, parental education, family income, parental attitudes to education, social and cultural capital, parental expectations

[5] https://trec.hse.ru/en/.

[6] Hereinafter we use the term 'secondary school' for 5-9 grades and 'high school' for 10-11 grades.

(Cutrona 1994; Allen, Stoltenberg 1995; Dennis et al. 2005; Jeynes, 2007; Hill, Tyson 2009; Roshchina 2012; Tovar Garcia 2013; Froiland, 2015; Bonneville-Roussy et al. 2017; Prakhov 2016; Prakhov, Yudkevich 2019);

- *school factors*: the characteristics of the secondary/high school (type, specialization, size, teacher/student ratio) (Lee, Loeb 2000; Fowler, Walberg 1991; Krueger 1999); teacher characteristics (gender, age, education, experience, specialization, etc.) (Darling-Hammond 2000; Caprara, et al. 2006), peer-effects (Brunello et al. 2010; Andrushchak et al. 2012); the institutional characteristics of the school system (a centralized or decentralized national system of education, the level of autonomy of the educational institution in the development of curricula) (Jeynes 2007; Woessmann 2005; Roschina 2012).

All these factors have a complex effect on academic achievement and the choice of educational trajectory. However, it is important to take into account that students are minors, so parents have a significant influence on their decisions. In other words, educational choice is largely determined by the parents and the corresponding family characteristics. The effectiveness of such a choice, as well as academic performance, can be determined by PI in the educational process, which is a connecting element between family and school characteristics. Next, a rationale for the influence of PI on educational achievement and choice through the prism of institutional theory is proposed.

In many studies, the effects of family and school characteristics on educational achievement and student educational choice have been studied separately. However, there are far fewer studies devoted to studying the impact of family-school interactions on educational outcomes. One of the mechanisms of such interaction is PI in the educational process. PI in the educational process means parental readiness to engage in the child's learning process, as well as in school life with the greatest possible activity within their capabilities and competencies (Mertsalova, Goshin 2016).

According to the institutional approach, if the school is a formal institution of education, then the family participating in the educational process is an informal institution. The interaction between formal and informal institutions can take various forms: they can contradict each other (for example, newly adopted laws can conflict with established informal norms), or they can complement and support each other (Stiglitz 2000; Keefer, Shirley 2000). When formal and informal institutions do not conflict with each other, a positive effect of their interaction can be observed. In our case, close collaboration between parents and the school can have a positive impact on student success. In other words, PI in the educational process can be considered a link between the investment in the student's human capital on the part of the school (formal education) and on the part of parents (e.g., assistance in choosing an

educational pathway and extra classes). This can help improve the student's educational attainment and also encourage the child to choose higher levels of further education. In particular, parents can additionally motivate their children to obtain higher education.

The influence of formal and informal educational institutions and their connecting link – PI – is shown schematically in Fig. 1. We assume a joint positive effect of the family and the school on student performance, expressed in the results of the Basic State Examination (BSE, a final standardized exam at the end of the 9th grade) and the Unified State Examination (USE, a standardized exam at the end of the 11th grade, which is also required for university entrance). In addition, according to the models of educational choice, PI along with the characteristics of the family and school can have a positive impact on the decision to continue education. PI may be a significant factor influencing the university admission outcomes: given formal and informal educational institutions, PI in the educational process can contribute to successful admission to university.

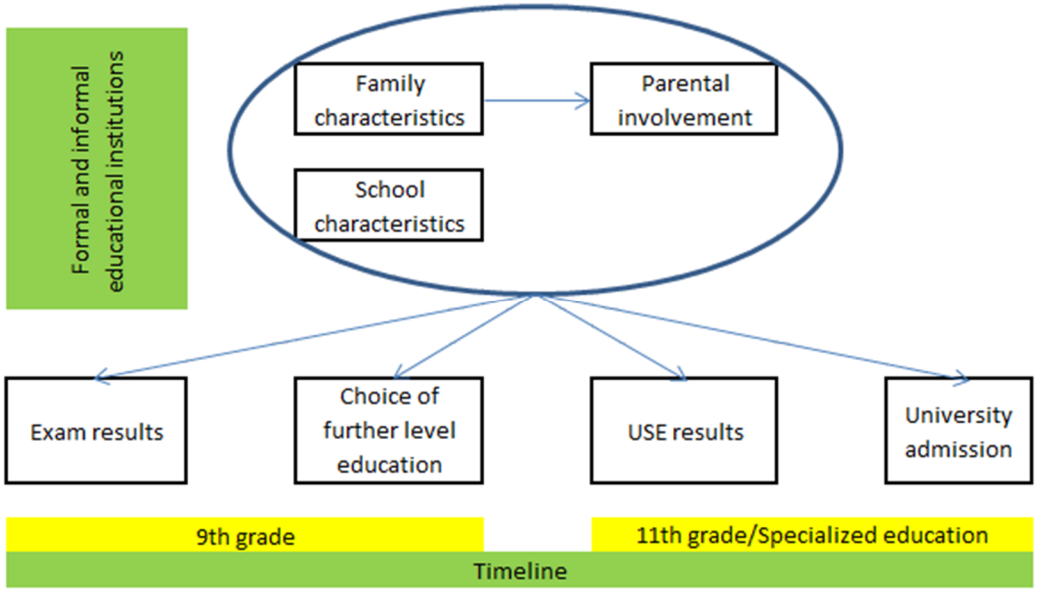

Figure 1. The model of PI

Next, we consider the results of previous studies on the role of PI in the educational process and describe the main types of PI that affect the educational achievements and trajectories of students. There are three main reasons for PI: (1) parental awareness of their own role in a child's life, (2) their confidence that they can provide children with significant assistance in achieving student success, (3) the institutional role of parents in parent-school relationships (Hoover-Dempsey, Sandler 1997).

There are three main types of PI in the educational process: home involvement, school involvement and academic socialization. PI at home is manifested in help with homework, student subscription for extra classes, etc. Involvement in school can be manifested in attending classroom meetings, interaction with teachers, etc. (Yang 2017). In addition, researchers have separately noted the role of parents in the academic socialization of the student. Academic socialization refers to the development of problem-solving skills and independent decision-making, as well as explaining the link between schooling and future goals (Hill, Tyson 2009). Academic socialization as a component of PI can have a significant impact on the choice of educational trajectory and its success. Many studies confirm that a high level of PI in the educational process at all stages has a positive effect on the personal development and academic performance of students (for example, Hoover-Dempsey, Sandler 1997; Jeynes 2007; Wartman, Savage 2008; Hill, Tyson 2009).

However, PI itself can be influenced by the socio-economic status of the family. For example, a lack of free time and/or low levels of parental education may limit the degree of involvement. Parents may lack the time and financial resources to provide assistance and psychological support for the child, to stimulate independence, to structure and enrich the home learning environment (Lee, Bowen 2006; Antipkina et al. 2018). In addition, PI can be influenced by cultural traditions (Antipkina et al. 2018), parental individual characteristics (Hoover-Dempsey, Sandler 1997), teacher-student relationships (Kerr et al. 2012), and relationships within the family (Crosnoe 2004). For instance, a study in Canada showed that parents with high expectations regarding the academic results of their children demonstrate faith in the academic success of their children, regardless of their actual academic performance. Conversely, when parents doubt their own abilities to help a child, their children begin to doubt their ability to achieve academically (Bonneville-Roussy et al. 2017). As a result, these students reduce their efforts in studying, and their academic performance decreases.

A number of authors (for example, Ma et al. 2016) argue that the family, as an informal educational institution, can have a much stronger impact on academic performance than the school. It is believed that parents who are actively involved in the education of their children, contribute to their social, emotional, and academic development (Hoover-Dempsey, Sandler 1997). However, this effect can be positive, negative, or completely absent. The nature and degree of influence is largely determined by the type and amount of PI. Thus, PI can affect the degree to which the family and the school influence educational achievement.

Established communication between school and family is an important condition for high PI in school life (Loudová et al. 2015). Such interaction contributes to improving the

academic results of children, their behavior in the classroom, motivation, self-esteem and interest in school. This also helps parents better understand their children (Lyubitskaya, Shakarova 2018). It was found that in secondary schools with a certain status (schools with in-depth study of certain subjects and gymnasiums) various forms of PI are more common. Consequently, such a factor as the type of educational institution also influences PI.

A meta-analysis of 37 articles (Castro et al. 2015) showed that the following types of PI have the most significant impact on students' academic performance: high academic expectations, regular communication about classes and extracurricular activities, and support and encouragement for reading habits. Such patterns of PI as checking homework and monitoring school attendance do not affect the performance of children, and in some cases they have a negative effect. This result is explained by the fact that constant monitoring is associated with pressure and thus demotivates students (Rogers et al. 2009).

PI in education can be a mechanism to increase the child's success in school, which helps to reduce the significant gap in educational outcomes between children from the most and least well-off families. A learning environment, encouragement and support, high expectations and parental participation in school life have a beneficial effect on the educational outcomes of children, regardless of their social, national, cultural or economic backgrounds (Goshin, Mertsalova 2018).

Many studies confirm that PI can have a positive impact on the personal development and performance of students, and there is a positive relationship between parents supporting their children's autonomy, their motivation for learning, and academic performance (Su and Reeve 2011; Froiland 2015). In addition, the significant influence of PI on the choice of educational path has been confirmed (Mogilchak 2009). Next, we investigate which patterns of PI, together with the effects of the school and family affect the educational strategies of Russian youth.

2. Data and methodology

This study is based on data from the longitudinal study 'Trajectories in education and careers'. The data are a series of 4 student surveys. The first survey was conducted in 2012, when children studied in the 9^{th} grade. At the same time, a survey of their parents was conducted, they were asked questions about their involvement in the educational process, and about family characteristics (level of parental education, occupation, family income, books at home, etc.). The following two survey waves were conducted in the fall of 2013 and in the spring of 2014, when some of the students studied in 11^{th} grade, others were receiving lower post-secondary vocational education, or had entered the labor market. The next survey was

conducted in the spring of 2015 among first-year students, students of vocational schools and those who did not study at the time of the survey. The design of the project allowed us to measure the educational achievements of students at different points in time (BSE and USE results), as well as analyze the educational trajectories (the presence or absence of transition to the 10th grade, the fact of being admitted to the university).

Descriptive statistics are presented in Table 1.

Table 1. Descriptive statistics

Variable	**N obs.**	**Min**	**Max**	**Mean**	**Std. Dev.**
Dependent variables:					
BSE score in Russian	3919	2	5	4.0536	0.75557
BSE score in Mathematics	3804	2	5	3.8893	0.81924
Attended high school	4138	0	1	0.6518	0.47647
USE score in Mathematics	2419	3	100	50.92	17.143
USE result in Russian	2428	3	100	67.62	15.030
Admitted to university	3612	0	1	0.5687	0.49533
Independent variables (patterns of parental involvement):					
Parental control of homework in Mathematics	3672	1	4	2.7843	0.96622
Parental control of homework in Russian	3662	1	4	2.8154	0.98738
Parental control of homework in the main subjects	3551	1	4	2.4763	0.85288
Participation in parental committees	3552	0	1	0.1830	0.38672
Attending parental meetings	3669	0	1	0.8305	0.37527
Calling teachers about current student achievement	3565	0	1	0.3905	0.48792
Visiting school (and teachers)	3571	0	1	0.3968	0.48930
Initiation of extracurricular activities	3539	0	1	0.0574	0.23256
Helping with homework	3662	0	1	0.8293	0.37627
Hiring tutors	3582	0	1	0.3939	0.48868
Assistance with further readings (additional literature)	3571	0	1	0.6088	0.48809
Asking friends to help with the studies	3557	0	1	0.3916	0.48818
Control variables:					
Male	3827	0	1	0.4918	0.50000
Mother's education (=1 if higher education)	3575	0	1	0.3597	0.47999
Father's education (=1 if higher education)	2795	0	1	0.3120	0.46339
Family income (rubles per month)	3520	10000	95000	26831	20394.13
Books at home	3670	5	650	138	177.87
School with a specialization in the 9th grade	3774	0	1	0.5193	0.49969
School with a specialization in the 11th grade	3867	0	1	0.2051	0.40380
Class with in-depth studying of certain subjects in the 11th grade	3867	0	1	0.3701	0.48288

Student performance indicators and indicators reflecting educational trajectories are used as dependent variables. Independent variables reflect the characteristics of PI in the educational process, namely, how often parents control homework in Russian, Mathematics, and basic subjects, whether they are on parental committees, whether they attend parent-teacher meetings, whether they call teachers about grades and visit the school, whether extracurricular activities are initiated, whether they provide assistance with homework, whether they hire tutors, whether they provide assistance with further readings, or ask friends to help with studies. Control variables are represented by the student's gender, family characteristics (mother's education, father's education, family income, number of books at home), and school characteristics (school with specialization in the 9th and 11th grades, classes with in-depth study of certain subjects in the 11th grade).

In the empirical part of the study we evaluate PI as a function of family characteristics, and secondly, assess educational achievement and educational trajectories of students as a function of family, school, and PI. Such a strategy answers the question of how PI is related to the characteristics of the family, and how PI is associated with academic performance and educational choice. We control for family and school characteristics; models using OLS and 2SLS methods:

$$Y_{is} = f\left(PI_i, Individual_i, Family_i, School_i\right) \quad (1),$$

$$\Pr\left(Strategy_{is} = 1\right) = g\left(PI_i, Individual_i, Family_i, School_i\right) \quad (2), \text{ where}$$

Y_{is} – academic achievement of a student *i* in the grade *s*: individual results of BSE in the 9th grade, and USE scores in the 11th grade;

$\Pr(\cdot)$ – the probability of educational strategy of the student *i*: the probability of studying in a high school, and the probability of being admitted to university;

PI_i – a vector of the characteristics of parental involvement;

$Individual_i$ – a vector of individual characteristics;

$Family_i$ – a vector of family characteristics (SES);

$School_i$ – a vector of school characteristics;

$f(\cdot)$ – linear function, $g(\cdot)$ – logistic function.

The specifications of models (1) and (2) are the most general and include the characteristics of PI controlling for school and family factors. The vector of characteristics of PI is multidimensional, therefore, in order to reduce the dimensions of this vector, principal

component analysis (PCA) is applied. PCA allows to group variables reflecting different features of PI into the smaller number of categories, which represent initial PI characteristics. The variables (components, PC_k) reflecting the characteristics of PI are obtained. Then, the models in the following specifications are evaluated:

$$Y_{is} = f\left(PC_{ki}, Individual_i, Family_i, School_i\right) \quad (3),$$

$$\Pr\left(Strategy_{is} = 1\right) = g\left(PC_{ki}, Individual_i, Family_i, School_i\right) \quad (4).$$

Since the analytical framework of the study suggests that the characteristics of PI can be formed under the influence of family factors, the following models of simultaneous equations are evaluated:

$$\begin{cases} PC_{ki} = q\left(Family_i\right) \\ Y_{is} = f\left(\hat{P}C_{ki}, Individual_i, School_i\right) \end{cases} \quad (5),$$

$$\begin{cases} PC_{ki} = q\left(Family_i\right) \\ \Pr\left(Strategy_{is} = 1\right) = g\left(\hat{P}C_{ki}, Individual_i, School_i\right) \end{cases} \quad (6).$$

Equations (5) and (6) allow the separation of direct and indirect effects of family on student achievement and educational trajectories. First, we estimate the relationship between family characteristics and patterns of PI (using principal components). Then we substitute the estimated values of the principal components ($\widehat{PC_k}$) into the next equations of academic achievement and educational choice. This method solves the potential problem of endogeneity and provides an empirical estimation of the link between family and educational outputs through the patterns of PI.

PCA identified 4 factors which describe various patterns of PI in the educational process (Table 2). The first factor (column 1) can be treated as a factor of parental control, since the monitoring of homework in various subjects plays an important role in its structure. As a rule, parents monitor homework, visit the school or call teachers about grades in cases where the child's academic performance is low. The second factor is the most saturated (possibly, even excessively), since it includes the highest number of PI characteristics (factor of full involvement). The third factor reflects the 'correct' or 'rational' PI in the educational process in terms of additional literature, homework, and attendance of parental meetings. The fourth factor reflects organizational type of PI, because it includes participation in parental

committees and the initiation of extracurricular activities. In the empirical part of the study we show how these different dimensions of PI contribute to students' educational outcomes.

Table 2. The results of principal component analysis

Characteristics of PI	**Factors**			
	Factor of control	**Factor of full (excessive) involvement**	**Factor of rational involvement**	**Factor of organizational involvement**
	1	**2**	**3**	**4**
Parental control of homework in Mathematics	0.934	0.114		
Parental control of homework in Russian	0.887		0.114	
Parental control of homework in the main subjects	0.886	0.109	0.102	
Participation in parental committees	0.137	0.625		0.213
Attending parental meetings	0.148	0.615		0.112
Calling teachers about current student achievement		0.578		
Visiting school (and teachers)		0.574	0.176	-0.143
Initiation of extracurricular activities	0.257		0.709	
Helping with homework		0.293	0.675	
Hiring tutors			0.557	0.201
Assistance with further readings (additional literature)			0.135	0.768
Asking friends to help with the studies		0.141		0.731

3. Results of regression analysis

The results of the regression analysis are presented in Table 3. The BSE results are negatively related to indicators of control, and we can assume that this relationship is a reverse one: in families of low-achievers, parents are more inclined to control children, including their homework. Calls to teachers about current achievement can also fall into this category: parents usually ask teachers about the results of their children if they are studying poorly: the factor of control is negatively correlated with student performance in the 9th grade.

Attendance of parental meetings is positively related to BSE results, but parental visits to school or being on parental committees are significant only in one specification. The initiation of extracurricular activities is insignificant, as is the factor of full (excessive) involvement. The factor of organizational involvement is positively associated with the academic success of ninth graders.

Table 3. Results of regression analysis

Independent variable	BSE score in Russian language					BSE score in Mathematics				
Model (method) / Independent variables	1 (OLS)	2 (OLS)	3 (OLS)	4 (OLS)	5 (2SLS)	6 (OLS)	7 (OLS)	8 (OLS)	9 (OLS)	10 (2SLS)
Parental control of homework in Russian	-0.059** (0.025)	-0.030 (0.026)								
Parental control of homework in Mathematics						-0.166*** (0.029)	-0.156*** (0.029)			
Parental control of homework in the main subjects	-0.096*** (0.029)	-0.065** (0.030)				-0.040 (0.033)	0.005 (0.033)			
Participation in parental committees	0.010 (0.039)	0.020 (0.039)				0.050 (0.043)	0.080* (0.044)			
Attending parental meetings	0.179*** (0.041)	0.200*** (0.043)				0.177*** (0.046)	0.203*** (0.048)			
Calling teachers about current student achievement	-0.112*** (0.032)	-0.048 (0.033)				-0.133*** (0.036)	-0.124*** (0.037)			
Visiting school (and teachers)	0.036 (0.032)	0.010 (0.033)				0.091** (0.036)	0.053 (0.037)			
Initiation of extracurricular activities	0.099 (0.065)	0.069 (0.064)				0.106 (0.072)	0.046 (0.072)			
Helping with homework	0.019 (0.040)	-0.014 (0.041)				0.008 (0.044)	-0.050 (0.046)			
Hiring tutors	0.185*** (0.030)	0.094*** (0.032)				0.183*** (0.034)	0.086** (0.036)			
Assistance with further readings (additional literature)	0.139*** (0.031)	0.063** (0.032)				0.168*** (0.035)	0.105*** (0.036)			
Asking friends to help with the studies	-0.129*** (0.031)	-0.104*** (0.031)				-0.130*** (0.035)	-0.093*** (0.035)			
Factor of control			-0.143*** (0.015)	-0.089*** (0.015)				-0.187*** (0.016)	-0.141*** (0.017)	
Factor of excessive involvement			0.007 (0.015)	-0.008 (0.015)				0.014 (0.016)	-0.017 (0.017)	
Factor of rational involvement			0.062*** (0.015)	0.037** (0.015)	1.180*** (0.094)			0.067*** (0.016)	0.041** (0.017)	1.351*** (0.107)
Factor of organizational involvement			0.036** (0.014)	0.034** (0.014)				0.053*** (0.016)	0.047*** (0.017)	

Independent variable	BSE score in Russian language					BSE score in Mathematics				
Model (method) / Independent variables	1 (OLS)	2 (OLS)	3 (OLS)	4 (OLS)	5 (2SLS)	6 (OLS)	7 (OLS)	8 (OLS)	9 (OLS)	10 (2SLS)
Male		-0.345*** (0.030)		-0.351*** (0.030)	-0.360*** (0.028)		-0.140*** (0.034)		-0.153*** (0.034)	-0.169*** (0.032)
Mother's education		0.250*** (0.033)		0.263*** (0.033)			0.266*** (0.037)		0.280*** (0.037)	
Family income / 1000		0.002** (0.001)		0.002** (0.001)			0.004*** (0.001)		0.004*** (0.001)	
Books at home / 100		0.030*** (0.008)		0.031*** (0.009)			0.024** (0.010)		0.029*** (0.010)	
School with a specialization in the 9th grade		-0.029 (0.030)		-0.021 (0.030)	-0.017 (0.029)		0.072** (0.033)		0.078** (0.034)	0.050 (0.033)
Constant	4.191*** (0.057)	4.098*** (0.067)	4.043*** (0.015)	4.021*** (0.032)	4.165*** (0.025)	4.167*** (0.063)	3.903*** (0.074)	3.887*** (0.016)	3.659*** (0.036)	3.871*** (0.028)
R^2	0.068	0.149	0.046	0.140	0.113	0.088	0.146	0.063	0.128	0.075
Number of observations	2532	2292	2532	2292	2513	2434	2198	2432	2198	2416

Table 3 continued

Dependent variable	Probability of studying in a high school					Probability of being admitted to university				
Model (method) / Independent variables	11	12	13	14	15 (2Step)	16	17	18	19	20 (2Step)
Parental control of homework in the main subjects	-0.099*** (0.012)	-0.061*** (0.013)				-0.116*** (0.014)	-0.054*** (0.015)			
Participation in parental committees	-0.015 (0.026)	-0.009 (0.027)				0.019 (0.029)	0.015 (0.032)			
Attending parental meetings	0.079*** (0.028)	0.077*** (0.031)				0.111*** (0.031)	0.100*** (0.040)			
Calling teachers about current student achievement	-0.078*** (0.021)	-0.067*** (0.023)				-0.070*** (0.024)	-0.021 (0.027)			
Visiting school (and teachers)	0.062*** (0.021)	0.049*** (0.022)				0.003 (0.024)	-0.014 (0.027)			

Dependent variable	Probability of studying in a high school					Probability of being admitted to university				
Model (method) / Independent variables	11	12	13	14	15 (2Step)	16	17	18	19	20 (2Step)
Initiation of extracurricular activities	0.058 (0.040)	0.037 (0.043)				0.063 (0.047)	0.019 (0.053)			
Helping with homework	0.019 (0.026)	-0.009 (0.028)				0.034 (0.030)	0.030 (0.036)			
Hiring tutors	0.117*** (0.019)	0.028 (0.022)				0.176*** (0.022)	0.048* (0.026)			
Assistance with further readings (additional literature)	0.113*** (0.021)	0.079 (0.022)				0.121*** (0.023)	0.032 (0.027)			
Asking friends to help with the studies	-0.068*** (0.021)	-0.050** (0.022)				-0.088*** (0.023)	-0.063** (0.027)			
Factor of control			-0.093*** (0.010)	-0.059*** (0.011)				-0.108*** (0.011)	-0.050*** (0.013)	
Factor of excessive involvement			0.021** (0.009)	-0.002 (0.010)				0.016 (0.011)	-0.014 (0.012)	
Factor of rational involvement			0.044*** (0.009)	0.029*** (0.010)	0.961*** (0.073)			0.054*** (0.011)	0.026** (0.013)	0.777*** (0.087)
Factor of organizational involvement			0.016* (0.010)	0.011 (0.010)				0.025** (0.011)	0.014 (0.012)	
Male		-0.115*** (0.020)		-0.118*** (0.020)	-0.121*** (0.019)		-0.125*** (0.025)		-0.124*** (0.025)	-0.125*** (0.023)
Mother's education		0.188*** (0.021)		0.193*** (0.021)			0.128*** (0.026)		0.132*** (0.026)	
Family income / 1000		0.004*** (0.000)		0.004*** (0.000)			0.004*** (0.000)		0.005*** (0.000)	
Books at home / 100		0.015** (0.007)		0.017*** (0.007)			0.019** (0.008)		0.018** (0.008)	
School with a specialization in the 9th grade		0.006 (0.020)		0.010 (0.020)	0.007 (0.019)					
School with a specialization in the 11th grade							0.194*** (0.027)		0.195*** (0.027)	0.228*** (0.024)
Class with in-depth studying of certain subjects in the 11th grade							0.357*** (0.021)		0.359*** (0.021)	0.372*** (0.020)

Dependent variable	Probability of studying in a high school					Probability of being admitted to university				
Model (method) / Independent variables	11	12	13	14	15 (2Step)	16	17	18	19	20 (2Step)
Pseudo-R^2	0.051	0.110	0.037	0.104	0.070	0.064	0.270	0.043	0.268	0.234
Number of observations	2638	2390	2638	2390	2618	2302	1835	2302	1835	2016

Table 3 continued

Dependent variable	USE score in Russian					USE score in Mathematics				
Model (method) / Independent variables	21 (OLS)	22 (OLS)	23 (OLS)	24 (OLS)	25 (2SLS)	26 (OLS)	27 (OLS)	28 (OLS)	29 (OLS)	30 (2SLS)
Parental control of homework in Russian	-1.978*** (0.556)	-1.481*** (0.560)								
Parental control of homework in Mathematics						-0.488 (0.690)	-0.975 (0.701)			
Parental control of homework in the main subjects	-1.212* (0.663)	-0.898 (0.664)				-1.100 (0.793)	-0.692 (0.814)			
Participation in parental committees	-0.746 (0.866)	-0.790 (0.878)				-0.082 (1.041)	0.094 (1.073)			
Attending parental meetings	0.913 (0.980)	0.820 (1.030)				1.616 (1.191)	2.214* (1.276)			
Calling teachers about current student achievement	-1.252* (0.737)	-0.768 (0.751)				0.478 (0.896)	0.079 (0.931)			
Visiting school (and teachers)	0.088 (0.735)	0.026 (0.739)				-0.519 (0.895)	-0.881 (0.916)			
Initiation of extracurricular activities	2.540* (1.405)	2.065 (1.393)				-0.382 (1.683)	-0.954 (1.693)			
Helping with homework	-0.837 (0.890)	-1.461 (0.924)				-0.252 (1.079)	-0.472 (1.137)			
Hiring tutors	2.738*** (0.678)	1.214* (0.707)				-0.386 (0.822)	-1.293 (0.869)			
Assistance with further readings (additional literature)	3.617*** (0.000)	2.375*** (0.736)				1.394* (0.868)	1.152 (0.910)			
Asking friends to help with the studies	-1.653** (0.709)	-1.486** (0.713)				-2.259*** (0.865)	-1.548* (0.883)			

Dependent variable	USE score in Russian					USE score in Mathematics				
Model (method) / Independent variables	21 (OLS)	22 (OLS)	23 (OLS)	24 (OLS)	25 (2SLS)	26 (OLS)	27 (OLS)	28 (OLS)	29 (OLS)	30 (2SLS)
Factor of control			-2.839*** (0.326)	-2.181*** (0.339)				-1.523*** (0.396)	-1.639*** (0.419)	
Factor of excessive involvement			0.334 (0.328)	-0.068 (0.332)				-0.665* (0.391)	-1.015** (0.405)	
Factor of rational involvement			0.567* (0.337)	0.060 (0.362)	15.970*** (2.117)			0.361 (0.400)	0.398 (0.442)	10.856*** (2.579)
Factor of organizational involvement			0.222 (0.314)	0.136 (0.310)				0.088 (0.374)	-0.027 (0.377)	
BSE score in Russian	8.897*** (0.472)	7.959*** (0.495)	9.112*** (0.475)	8.000*** (0.496)	8.390*** (0.483)					
BSE score in Mathematics						9.296*** (0.505)	8.861*** (0.530)	9.312*** (0.500)	8.726*** (0.525)	9.150*** (0.500)
Male		-3.756*** (0.705)		-3.806*** (0.696)	-4.015*** (0.670)		3.167*** (0.850)		3.471*** (0.838)	3.080*** (0.794)
Mother's education		2.288*** (0.725)		2.489*** (0.718)			3.370*** (0.892)		3.112*** (0.878)	
Family income / 1000		0.075*** (0.016)		0.080*** (0.016)			0.045** (0.020)		0.043** (0.019)	
Books at home / 100		0.416** (0.191)		0.503*** (0.189)			-0.088 (0.232)		-0.068 (0.229)	
School with a specialization in the 11^{th} grade		1.552** (0.754)		1.742** (0.753)	1.972*** (0.732)		2.135** (0.921)		2.025** (0.916)	2.158** (0.881)
Class with in-depth studying of certain subjects in the 11^{th} grade		1.830*** (0.684)		1.910*** (0.683)	2.366*** (0.664)		1.572* (0.839)		1.601* (0.834)	1.846** (0.801)
Constant	35.351*** (2.436)	35.343*** (2.617)	28.354*** (2.038)	28.984*** (2.188)	30.464*** (2.116)	15.643*** (2.711)	12.690*** (2.910)	12.436*** (2.078)	8.861*** (2.213)	9.231*** (2.109)
R^2	0.286	0.339	0.268	0.330	0.290	0.239	0.278	0.236	0.276	0.251
Number of observations	1457	1320	1457	1320	1446	1387	1251	1387	1251	1374

Standard errors in parentheses. Significance levels: *** – 1%, ** – 5%, * – 10%.

Note the significance and positive signs of hiring tutors and assistance with additional literature. In general, the factor of rational involvement was significant in all specifications. When controlling for gender, family and school characteristics, it was found that boys get lower BSE results than girls, and the characteristics of the family (mother's education, income, number of books at home) are positively related to the final results of ninth graders. The effects of the school are insignificant.

When evaluating the regressions using the 2SLS method (models 5 and 10), it was found that family characteristics influence the patterns of PI (see Table 4 below), and the rational involvement predicted by an additional regression has a positive effect on student performance in the 9^{th} grade. Thus, for the BSE scores, a similar result was shown in all models regardless of the method.

The probability of continuing education in a high school is positively influenced by attending parental meetings (in all specifications), hiring tutors and assistance with further readings (without controlling for the characteristics of the family and school). The factor of the rational PI was significant in all specifications with a positive sign, and the patterns of control (incl. the corresponding factor) demonstrated a negative relationship with the probability of transition to 10^{th} grade. Family characteristics significantly influence this educational strategy.

For USE results in compulsory subjects (Russian and Mathematics), which are among the main criteria for admission to university, we found stable significant relationships between academic performance in the 11^{th} grade and in the 9^{th} grade. Given that BSE results are dependent on various patterns of PI, for USE results this relationship still holds, but in some cases it becomes indirect. Thus, PI, even in the preceding stages of education, can influence academic achievement, even though the nature of this influence has changed. In other words, the positive returns on parental investment in the human capital of their children persist, which indirectly confirms previous results (Heckman 2011; Doyle et al. 2009). Hiring tutors and assistance with additional educational literature are positively related to USE results in Russian, but for USE results in mathematics the number of direct statistically significant relationships is lower. Control of homework (for Russian) and asking for help from friends are negatively connected with exam results. The rational involvement factor was significant in a number of specifications, however, the effects of PI for USE results are weaker than for BSE scores, but school characteristics (schools with in-depth study of subjects or classes with specialization) become significant. Family characteristics are still important for academic achievement by the end of secondary education.

The probability of successful admission to university is positively associated with the factor of rational involvement, as well as with the practice of hiring tutors in grade 9. The factor of parental control and its components negatively affects the probability of being enrolled in a university (through academic performance). The factor of excessive involvement is insignificant. In a secondary school family and PI have a greater impact on performance and educational choices, while in a high school the influence of PI is somewhat reduced, but the characteristics of the school (and the fact of studying in grade 10 or 11) acquire special significance. As students learn, there is a shift towards the importance of formal educational institutions.

While describing the analytical framework of the study, it was noted that patterns of PI can be shaped by family characteristics. To verify this thesis, auxiliary regressions were run (the first step of a 2SLS procedure), where factors of parental involvement were chosen as dependent variables, and independent variables were represented by family characteristics. As shown in Table 4, each of the factors can be explained by several family characteristics. The correlation between the vector of family characteristics and the factor of parental control is negative. This is because in disadvantaged families, children usually study worse, so parents are forced to control them more often. On the other hand, in more educated (and wealthy) families, parents can choose other, more effective forms of PI that will positively affect student outcomes, as shown in the regressions of factors of full, rational and organizational involvement.

Table 4. The results of auxiliary regressions (the first step of 2SLS)

Independent variables	**Dependent variables**			
	Factor of control	**Factor of full (excessive) involvement**	**Factor of rational involvement**	**Factor of organizational involvement**
Mother's education	-0.205*** (0.039)	0.091** (0.041)	0.183*** (0.039)	0.055 (0.041)
Family income / 1000	-0.004*** (0.001)	0.005*** (0.001)	0.0001 (0.001)	0.003*** (0.001)
Books at home / 100	-0.030*** (0.010)	0.036*** (0.011)	0.055*** (0.010)	0.027** (0.011)
Constant	0.254*** (0.031)	-0.214*** (0.032)	-0.112*** (0.030)	-0.123*** (0.032)
R^2	0.031	0.022	0.025	0.008
Number of observations	3031	3031	3031	3031

Standard errors in parentheses. Significance levels: *** – 1%, ** – 5%, * – 10%.

Conclusion

This article examined how PI can affect academic performance and educational trajectories of Russian students by providing a link between formal and informal educational institutions. Participation in parental meetings is positively associated with the results of final school exams, and also increases the likelihood of studying in high school and of entering university. Providing the child with additional literature is positively associated with the results of final school exams in all specifications and the educational strategies of youth in a number of specifications. Hiring tutors in secondary school is positively related to BSE results, the probability of attending a high school (without control for the family characteristics), the USE results in Russian, and the likelihood of being enrolled in university. In general, the factor of rational PI, which includes the characteristics associated with the support of studies (but not with the control of homework), is significant in all the specifications of the regression models. The factor of full (excessive) involvement, which includes the greatest number of characteristics of PI, in most cases does not contribute to improving educational outcomes, which may indirectly indicate a non-linear relationship between PI and educational outcomes.

Parental control, expressed in the verification of homework in various subjects, and calls to the school does not contribute to the improvement of educational results, but is negatively associated with the indicators of academic achievement. This can be explained by the fact that the characteristics of parental control and the control factor are necessary in the case of poor academic performance. We observe the opposite effect: low achievers force their parents to check their homework, and such students are less likely to go to higher grades and universities. It should be noted that in general, PI in the educational process of ninth graders continues to influence educational strategies during and after higher grades. Hence, it is shown that PI, on the one hand, is determined by family characteristics, and on the other hand, is associated with academic performance and the educational trajectories of youth.

It was shown that the family (an informal educational institution) is of great importance in determining academic achievement expressed in BSE and USE results, and also contributes to decision-making on continuing education and determines the likelihood of being admitted to university, which is consistent with the results of previous studies. In addition, mother's education, family income, and the number of books at home are significantly related to patterns of PI, positively affecting indicators of full, rational, and organizational involvement and negatively correlating with the control factor.

Along with the transition from the 9^{th} grade to high school and entering university, the characteristics of the school as a formal institution of education become significant in

determining academic performance and the successful outcomes of university admission. It should be noted that the specialization of the school does not matter for the results of BSE, while studies in higher grades with in-depth study of subjects and/or in a class with a specialization increase USE scores in compulsory subjects. This fact can be explained as follows. First, high school students go mainly to higher education, and in some cases choose a school with a specialization. Secondly, students with low academic performance, as a rule, choose other tracks of study, entering the VET (vocational educational training) institutions. In this case, the school acquires special significance in determining the final performance on the basis of USE (since this exam is a strategic one and required for admission to university). The quality of the school contributes to successful admission to university, which also correlates with the results obtained earlier.

In the regression models the student's gender was used as a control variable. It was shown that boys get lower BSE results than girls, however, when examining USE results, girls retain their advantage only for the final grades in Russian, and boys demonstrate better USE results in mathematics. Such results can be explained, for example, by a bias in the sample of those who sit USE (to enter university), compared with the sample structure in the 9^{th} grade: tested binary choice models show that boys are less likely than girls to continue their education in a high school. Boys are also less likely to go to university than girls. This conclusion is interesting from the point of view of the emergence of gender inequality in the future, when men receive higher wages compared to women. This question requires a separate study.

References

Allen, S. F., & Stoltenberg, C. D. (1995). Psychological separation of older adolescents and young adults from their parents: An investigation of gender differences. *Journal of counseling & development*, *73*(5), 542-546.

Androushchak, G. V., Poldin, O. V., & Yudkevich, M. M. (2012) Peer effects in exogenously formed student groups (Effekty soobucheniya v administrativno formiruemyh studencheskih gruppah). *Prikladnaya ekonometrika*, *2*(26), 3-16 (in Russian).

Antipkina, I. V. (2017) Studies of "parental involvement" in Russia and abroad (Issledovaniya "roditelskoy vovlechennosti" v Rossii i za rubezhom). *Otechestvennaya i zarubezhnaya pedagogika*, *4*(41), 102-114 (in Russian).

Antipkina, I. V., Lubitskaya, K. A., & Nisskaya, A. K. (2018) Third-Grade parent's involvement in schools (Vovlechennost roditeley tretyeklassnikov v uchebnye dela detey). *Voprosy obrazovaniya*, *4*, 230-260 (in Russian).

Baird, L. L. (1967) Family income and the characteristics of college-bound students. ACT Research Report, 17.

Blundell, R., Dearden, L., Goodman, A., & Reed, H. (2000). The returns to higher education in Britain: evidence from a British cohort. *The Economic Journal*, *110*(461), F82-F99.

Bonneville-Roussy, A., Bouffard, T., & Vezeau, C. (2017). Trajectories of self-evaluation bias in primary and secondary school: Parental antecedents and academic consequences. *Journal of school psychology*, *63*, 1-12.

Boonk, L., Gijselaers, H. J., Ritzen, H., & Brand-Gruwel, S. (2018). A review of the relationship between parental involvement indicators and academic achievement. *Educational Research Review*, *24*, 10-30.

Brand, J. E. (2010). Civic returns to higher education: A note on heterogeneous effects. *Social Forces*, *89*(2), 417-433.

Brand, J. E., & Xie, Y. (2010). Who benefits most from college? Evidence for negative selection in heterogeneous economic returns to higher education. *American sociological review*, *75*(2), 273-302.

Brunello, G., De Paola, M., & Scoppa, V. (2010). Peer effects in higher education: Does the field of study matter?. *Economic Inquiry*, *48*(3), 621-634.

Caprara, G. V., Barbaranelli, C., Steca, P., & Malone, P. S. (2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: A study at the school level. *Journal of school psychology*, *44*(6), 473-490.

Castro, M., Expósito-Casas, E., López-Martín, E., Lizasoain, L., Navarro-Asencio, E., & Gaviria, J. L. (2015). Parental involvement on student academic achievement: A meta-analysis. *Educational research review*, *14*, 33-46.

Chapman, D. W. (1981). A model of student college choice. *The Journal of Higher Education*, *52*(5), 490-505.

Coleman, J. S. (1968). Equality of educational opportunity. *Integrated Education*, *6*(5), 19-28.

Crosnoe, R. (2004). Social capital and the interplay of families and schools. *Journal of Marriage and family*, *66*(2), 267-280.

Cutrona, C. E., Cole, V., Colangelo, N., Assouline, S. G., & Russell, D. W. (1994). Perceived parental social support and academic achievement: An attachment theory perspective. *Journal of personality and social psychology*, *66*(2), 369-378.

Dahl, G. B., & Lochner, L. (2005). *The impact of family income on child achievement* (No. w11279). National Bureau of Economic Research.

Darling-Hammond, L. (2000). Teacher quality and student achievement. *Education policy analysis archives*, *8*, 1-44.

Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: the indirect role of parental expectations and the home environment. *Journal of family psychology*, *19*(2), 294.

Dennis, J. M., Phinney, J. S., & Chuateco, L. I. (2005). The role of motivation, parental support, and peer support in the academic success of ethnic minority first-generation college students. *Journal of college student development*, *46*(3), 223-236.

Doyle, O., Harmon, C. P., Heckman, J. J., & Tremblay, R. E. (2009). Investing in early human development: timing and economic efficiency. *Economics & Human Biology*, *7*(1), 1-6.

Drake, E. C., Sladek, M. R., & Doane, L. D. (2016). Daily cortisol activity, loneliness, and coping efficacy in late adolescence: A longitudinal study of the transition to college. *International journal of behavioral development*, *40*(4), 334-345.

Duncan, G. J., Morris, P. A., & Rodrigues, C. (2011). Does money really matter? Estimating impacts of family income on young children's achievement with data from random-assignment experiments. *Developmental psychology*, *47*(5), 1263.

Fowler Jr, W. J., & Walberg, H. J. (1991). School size, characteristics, and outcomes. *Educational evaluation and policy analysis*, *13*(2), 189-202.

Frischmann, J. A., & Moor, K. S. (2017). Bridging the gap-supporting the transition from high school to college. *Administrative Issues Journal: Connecting Education, Practice, and Research*, *7*(2), 3128.

Froiland, J. M. (2015). Parents' weekly descriptions of autonomy supportive communication: Promoting children's motivation to learn and positive emotions. *Journal of Child and Family Studies*, *24*(1), 117-126.

Gofen, A. (2009). Family capital: How first-generation higher education students break the intergenerational cycle. *Family Relations*, *58*(1), 104-120.

Goshin, M. E., Mertsalova, T. A. (2018) Types of Parental Involvement in Education, Socio-Economic Status of the Family and Students' Academic Results (Tipy roditelskogo uchastiya v obrazovanii, sotsialno-ekonomicheskiy status semyi i rezultaty obucheniya). *Voprosy obrazovaniya*, *3*, 68-90 (in Russian).

Hanushek, E. A. (1979). Conceptual and empirical issues in the estimation of educational production functions. *Journal of human Resources*, 351-388.

Hanushek, E. A. (1997). Assessing the effects of school resources on student performance: An update. *Educational evaluation and policy analysis*, *19*(2), 141-164.

Hanushek, E. A., & Woessmann, L. (2010). Education and economic growth. *Economics of education*, 60-67.

Hearn, J. C. (1991). Academic and nonacademic influences on the college destinations of 1980 high school graduates. *Sociology of education*, 158-171.

Heckman, J. J. (2011). The economics of inequality: The value of early childhood education. *American Educator*, *35*(1), 31.

Hill, M. A., & O'Neill, J. (1994). Family endowments and the achievement of young children with special reference to the underclass. *Journal of Human Resources*, 1064-1100.

Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: a meta-analytic assessment of the strategies that promote achievement. *Developmental psychology*, *45*(3), 740-763.

Hill, N. E., & Wang, M. T. (2015). From middle school to college: Developing aspirations, promoting engagement, and indirect pathways from parenting to post high school enrollment. *Developmental psychology*, *51*(2), 224.

Hoover-Dempsey, K. V., & Sandler, H. M. (1997). Why do parents become involved in their children's education?. *Review of educational research*, *67*(1), 3-42.

Hornby, G., & Lafaele, R. (2011). Barriers to parental involvement in education: An explanatory model. *Educational review*, *63*(1), 37-52.

Ilyin, E. P. (2011) *Psychology of Individual Differences: A Textbook for Universities* (Psikhologiya individualnyh razlichiy: uchebnoe posobie dlya vuzov). 'Piter' Publishing House (in Russian).

Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement: A meta-analysis. *Urban education*, *42*(1), 82-110.

Keefer, P., & Shirley, M. M. (2000). Formal versus informal institutions in economic development. *Chapters*.

Kerr, M., Stattin, H., & Özdemir, M. (2012). Perceived parenting style and adolescent adjustment: Revisiting directions of effects and the role of parental knowledge. *Developmental psychology*, *48*(6), 1540-1548.

Kholodnaya, M. (2018) *Cognitive styles. On the nature of the individual mind* (Kognitivnye stili. O prirode individualnogo uma). Litres (in Russian).

Krueger, A. B. (1999). Experimental estimates of education production functions. *The quarterly journal of economics*, *114*(2), 497-532.

Lee, J. S., & Bowen, N. K. (2006). Parent involvement, cultural capital, and the achievement gap among elementary school children. *American educational research journal*, *43*(2), 193-218.

Lee, V. E., & Loeb, S. (2000). School size in Chicago elementary schools: Effects on teachers' attitudes and students' achievement. *American Educational Research Journal*, *37*(1), 3-31.

Leibowitz, A. (1977). Parental inputs and children's achievement. *The Journal of Human Resources*, *12*(2), 242-251.

Litten, L. H. (1982). Different strokes in the applicant pool: Some refinements in a model of student college choice. *The Journal of Higher Education*, *53*(4), 383-402.

Loudová, I., Havigerová, J. M., & Haviger, J. (2015). The communication between schools and families from the perspective of parents of high school students. *Procedia-Social and Behavioral Sciences*, *174*, 1242-1246.

Ma, X., Shen, J., Krenn, H. Y., Hu, S., & Yuan, J. (2016). A meta-analysis of the relationship between learning outcomes and parental involvement during early childhood education and early elementary education. *Educational Psychology Review*, *28*(4), 771-801.

McCarron, Graziella Pagliarulo, and Karen Kurotsuchi Inkelas. "The gap between educational aspirations and attainment for first-generation college students and the role of parental involvement." *Journal of College Student Development* 47, no. 5 (2006): 534-549.

Mertsalova, T. A., Goshin, M. E. (2016) Parental involvement (Roditelskaya vovlechennost). *Direktor shkoly*, *9*, 95-103 (in Russian).

Moglichak, E. L. (2009) The influence of the family on admission to the university (Vliyanie semyi na postuplenie v vuz). *Sotsiologicheskie issledovaniya*, *8*, 126-133 (in Russian).

Moretti, E. (2004). Estimating the social return to higher education: evidence from longitudinal and repeated cross-sectional data. *Journal of econometrics*, *121*(1-2), 175-212.

Okpala, C. O., Okpala, A. O., & Smith, F. E. (2001). Parental involvement, instructional expenditures, family socioeconomic attributes, and student achievement. *The Journal of Educational Research*, *95*(2), 110-115.

Perna, L. W. (2006). Studying college access and choice: A proposed conceptual model. In Smart J.C. (eds) Higher Education: Handbook of Theory and Research, 21, 99-157. Springer, Dordrecht.

Perna, L. W., & Titus, M. A. (2005). The relationship between parental involvement as social capital and college enrollment: An examination of racial/ethnic group differences. *The journal of higher education*, *76*(5), 485-518.

Pomerantz, E. M., Moorman, E. A., & Litwack, S. D. (2007). The how, whom, and why of parents' involvement in children's academic lives: More is not always better. *Review of educational research*, *77*(3), 373-410.

Poynton, T. A., & Lapan, R. T. (2017). Aspirations, achievement, and school counselors' impact on the college transition. *Journal of Counseling & Development*, *95*(4), 369-377.

Prakhov, I. (2016). The barriers of access to selective universities in Russia. *Higher Education Quarterly*, *70*(2), 170-199.

Prakhov, I., & Yudkevich, M. (2017). University admission in Russia: Do the wealthier benefit from standardized exams?. *International Journal of Educational Development*, *65*, 98-105.

Rogers, M. A., Theule, J., Ryan, B. A., Adams, G. R., & Keating, L. (2009). Parental involvement and children's school achievement: Evidence for mediating processes. *Canadian Journal of School Psychology*, *24*(1), 34-57.

Roshchina, Ya. M. (2012) Family capital as a factor in the educational opportunities of Russian students (Semeynyi kapital kak faktor obrazovatelnyh vozmozhnostey rossiyskih shkolnikov). *Voprosy obrazovaniya*, *1*, 257-277 (in Russian).

Sandefur, G. D., Meier, A. M., & Campbell, M. E. (2006). Family resources, social capital, and college attendance. *Social science research*, *35*(2), 525-553.

Slobodskaya, E. R., Safronova, M. V., & Akhmetova, O. A. (2008) Personal characteristics and lifestyle as factors of school performance of adolescents (Lichnostnye osobennosti i stil zhizni kak faktory shkolnoy uspevaemosti podrostkov). *Psihologicheskaya nauka i obrazovaniye*, *2*, 70-79 (in Russian).

Stiglitz, J. E. (2000). Formal and informal institutions. *Social capital: A multifaceted perspective*, 59-68.

Su, Y. L., & Reeve, J. (2011). A meta-analysis of the effectiveness of intervention programs designed to support autonomy. *Educational psychology review*, *23*(1), 159-188.

Taylor, Z. E., Doane, L. D., & Eisenberg, N. (2014). Transitioning from high school to college: Relations of social support, ego-resiliency, and maladjustment during emerging adulthood. *Emerging Adulthood*, *2*(2), 105-115.

Tovar Garcia, E. D. (2013) Relationship between Parental Education, Educational Trajectories and Achievements of Schoolchildren in the Republic of Tatarstan (Svyaz mezhdu obrazovaniem roditeley, uspevaemostyu i obrazovatelnymi traektoriyami shkolnikov v Tatarstane). *Voprosy obrazovaniya*, *2*, 252-269 (in Russian).

Vedder, R. (2004). Private vs. social returns to higher education: Some new cross-sectional evidence. *Journal of Labor Research*, *25*(4), 677-686.

Vossensteyn, J. J. (2005). Perceptions of student price-responsiveness: A behavioural economics exploration of the relationships between socio-economic status, perceptions of financial incentives and student choice. Enschede: CHEPS/UT.

Wartman, K. L., & Savage, M. (2008). Parental Involvement in Higher Education: Understanding the Relationship among Students, Parents, and the Institution. ASHE Higher Education Report, Volume 33, Number 6. *ASHE Higher Education Report*, *33*(6), 1-125.

White, K. R. (1982). The relation between socioeconomic status and academic achievement. *Psychological bulletin*, *91*(3), 461.

Woessmann, L. (2003). Schooling resources, educational institutions and student performance: the international evidence. *Oxford bulletin of economics and statistics*, *65*(2), 117-170.

Yang, H. (2017). The role of social capital at home and in school in academic achievement: The case of South Korea. *Asia Pacific Education Review*, *18*(3), 373-384.

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