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Building resilient schools in Russia: effective policy strategies*

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ABSTRACT

The article uses the framework of resiliency to examine the strategies of principals in schools working under challenging socio-economic conditions that show higher-than-expected educational results. We collected a unique set of data within the Russian 'National monitoring of education markets and organisations' programme. This work continues the study, begun in 2014, of the peculiarities of the functioning conditions, management and educational strategies of different groups of schools (urban, rural, implementing higher-level programmes, private, etc.), where authors supplement the economic indicators of school performance with socio-economic contextual factors. A contextualisation model was applied to distinguish the resilient schools studied and the socio-economic characteristics for each school. The typical strategies of principals of resilient schools are as follows: recruiting more successful students from other schools, the branding of the school, creating a culture of high expectations for staff and students, and a less bureaucratic management style.

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Introduction

For several years, the Institute of Education at the National Research University (Higher School of Economics) has been conducting research aimed at analysing educational and management strategies that allow schools to be effective under the most difficult conditions: teaching socially disadvantaged contingents with limited human and financial resources. For this purpose, we designed an instrument that would estimate school performance based on socio-economic factors.

The analysis of the effectiveness of school organisations was conducted in several regions in the Russian Federation. This paper presents the results

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following the application of this instrument at the national level. Such research is carried out for the first time and presents new results for Russia with regards to the analysis of effective policy strategies.

Literature review

The term 'resilience' was used in the 2009 Programme for International Student Assessment (PISA) report with respect to students from families of low socio-economic backgrounds showing high educational achievements (OECD 2010). The most common and close definition of school resilience would be the ability of the school to demonstrate high educational achievements despite its challenging circumstances by parity of reasoning with the definition of individual or personal resilience (Masten et al. 2008). The term 'resilience' is used as a broad concept in this study; based on numerous studies, 'resilience' is transferred from the individual to the institutional level (schools) (Richardson 2002).

The research field of resilience is extremely wide and extends to psychiatry and medical psychology (Cicchetti et al. 1993; Richardson et al. 1990). The majority of contemporary studies see the origin of resilience in the dynamic interaction of different forces and impacts at play between individuals and their environment (Elder 1998; Henderson and Milstein 2003; Masten 2001). Factors causing resilience among children and young people have been examined extensively, particularly in the sphere of education (Luthar 2003; Wang and Gordon 1994). Some studies focus on the effect of schools, in particular the effect of teachers and teaching methods (Ko, Sammons, and Bakkum 2013).

Schools considered resilient schools declared their responsibility for creating an educational environment and pedagogical instruments that would allow them to form resilience among their students who are at-risk in the families and communities in which they find themselves. Resilient schools help their students achieve higher educational goals in the face of unfavourable conditions. It is important to note that researchers are interested not only in the resilience of students but also in the resilience of principals and teachers (Day and Gu 2013; Henderson and Milstein 2003; Steward 2014).

The topic of resilient schools should be discussed in the broader context of School Effectiveness Research (SER), which arises from the wide field of Educational Effectiveness Research (EER) studies (Harris et al. 2013; Reynolds et al. 2011; Teddlie and Reynolds 2001). The concept of an effective school is connected with researching school-level processes, particularly those typical of schools working under the most difficult conditions (Chapman et al. 2012; Mortimore 1988; Muijs et al. 2004).

Along with school effectiveness models, there are teacher effectiveness models (Ko, Sammons, and Bakkum 2013; Kyriacou 2009; Muijs and Reynolds 2011). Studies on school effectiveness explore the complex interconnections among single factors and processes that result in interactions aimed at

producing a higher quality of education in certain schools, whereby specific schools are able to have a positive influence on a student's educational outcomes.

This study concentrates on the analysis of the holistic effects upon school performance. The focus of our analysis is on schools that perform beyond expectations, which allows us to focus on the practices of school principals and their ability to create resilient schools.

As an indicator of school effectiveness, we use the results of the Unified State Exam, a high-stakes test on key subjects used for both graduation and university admission decisions. It is the only available outcome measure for Russian schools. To control for socio-economic conditions, an Index of Social Advantage (ISA) was developed for this study.

Within the existing literature, there is a debate on the outcome variables that measure the impact of school effectiveness on students. In addition to cognitive abilities and skills, student performance can be affected by non-cognitive characteristics, motivations and advantages (Lenkeit 2013; Van Landeghem et al. 2002). Several long-term educational effects can be observed in the cognitive field as well as in various aspects of well-being; these are represented in a longitudinal study, The Effective Provision of Pre-School, Primary and Secondary Education (EPPSE 3–16) project. The purpose of this research team was to investigate the effect of preschool education and the subsequent achievements of students in primary and secondary schools (Sylva et al. 2014). The study has also examined the further educational and professional choices (consuming deferred social effects of education) of 16-year-old students after they completed their compulsory stage of education. This effect is considered extremely important for a school's impact on the social mobility of its students.

The promotional power of schools was taken into consideration during the current research. Otherwise, the choice of the output variable would have been restricted by the quality of data. Only verified data were considered reliable, as these data are under the control of the government statistical office. Thus, the Unified State Exam score was considered as a measure of school educational achievements. The Unified State Exam has been a mandatory school graduation exam since 2009. It is not oriented towards an evaluation of the activities of educational organisations (including their effectiveness). Today, it remains the only measure of academic school results across the Russian Federation.

Some studies have found weak and statistically unconvincing relationships between a school's resources and academic achievements (Hanushek 1989; Woessmann 2005). Although recent research has used more advanced methodologies, the resulting data have also been considered very limited (Rivkin, Hanushek, and Kain 2005; Rockoff 2004). In previous studies of Russian schools in certain Russian regions, the teachers were included in a linear regression analysis. The correlation between teacher characteristics (such as student/

teacher ratio or teacher qualifications) and Unified State Exam scores turned out to be weaker than the correlation between the characteristics of students and their average school outcome (Yastrebov, Pinskaya, and Kosaretsky 2014).

Another important factor that could be a predictor of educational achievement is the structural characteristics of schools, such as their governance type (public or private). According to Unified State Exams scores, there are profound differences among children studying in public schools and children studying in private (elite) schools – students in the latter show better academic results and have higher chances of continuing their educational trajectory in universities (Roshchina 2005). The size of the school and its location are also correlated with school success (Othman and Muijs 2013). A list of earlier Russian studies (Alexandrov, Baranova, and Ivanyushina 2012; Konstantinovskiy et al. 2006; Yastrebov, Pinskaya, and Kosaretsky 2014) confirmed the importance of these factors for Russian schools. Therefore, these characteristics will be considered in the analyses after accounting for the specific socio-economic background of the groups of schools.

Research questions

Many studies have shown that there is a high correlation between socio-economic characteristics of families and educational outcomes. Since Coleman's report (Coleman 1966), there have been numerous doubts about whether schools can change the 'family situation' or not. Researchers over the past two decades have been debating the correlations among school, class sizes, teacher characteristics and student achievements. Hence the question has arisen about the types of schools that could end the 'family curse'. This paper focuses on the management and policy strategies of such schools and tries to answer the question of what enables students to achieve higher educational results according to their socio-economic background.

The goal of this study is to illuminate the specific characteristics of resilient schools, their specific environments and the strategies of their principals. These schools work with more challenging students and show high average Unified State Exam scores. Thus, four research questions guide this inquiry:

- (1) Can a group of resilient schools (which show high educational achievements in the face of adverse conditions) be distinguished from other schools?
- (2) What distinguishes resilient schools from poorly performing schools with a similar socio-economic background?
- (3) Can we identify a typical education strategy of resilient schools that is supposed to help them overcome the unfavourable conditions they work in?
- (4) What are the particular qualities and strategies of principals in resilient schools?

Data collection

Data for the analyses were received from a longitudinal study called Monitoring of Education Markets and Organizations (MEMO)¹ initiated by the Ministry of Education and Science of the Russian Federation. This survey has been carried out beginning in 2002 by the National Research University (Higher School of Economics) and provides in-depth data about the economic behaviour of education market participants.

In particular, our analysis is based on a survey of principals from the 2015 to 2016 academic year. The study tested an overall sample of 1271 principals; however, the analytic sample contains 1236 observations (school information).

In previous surveys, principals have been asked about their managerial styles and different characteristics of the schools they had worked in previously. In 2015, access to school context information became available, and this gave us an opportunity to analyse different types of schools according to their ISA and their educational achievements.

Data analysis

Multiple regression modelling was used to analyse the relationships among socio-economic characteristics of students and the average Unified State Exam scores. The analysis of principals' strategies follows the descriptive format. A multiple univariate analysis of variance was used to analyse the differences between principals of different groups of schools. All statistical tests were set at level 0.05.

Contextualisation model

Researchers in economics and sociology have developed numerous theories to explain the correlation between the socio-economic background and academic achievements from different viewpoints (Breen and Goldthorpe 1997; Coleman 1988). It is important to control the correlation between socio-economic backgrounds and educational output.

According to the findings from PISA 2009, Russia's index of social inclusion is significantly below the OECD average (OECD 2010). Moreover, students from disadvantaged families tend to be concentrated in schools with fewer resources, both financial and human (OECD 2010).

To determine the extent of a school's adversity and to estimate school achievements with respect to context factors, a contextualisation model was used. The model used in this research was created based on previous experience in other countries (OECD 2008; Recommendations to the National Centre for Education Statistics 2012).

The foundation of conceptualisation accounted for the socio-economic background of students. Numerous studies (Bourdieu 1986; Bourdieu and Passeron

1990; Coleman 1966) and more recent ones (Bowles, Gintis, and Groves 2005; Breen and Jonsson 2005; Lupton 2004; Sirin 2005) have considered the high correlation between socio-economic factors and educational outcomes. Russian researchers confirmed this relationship in the national education system (Pinskaya, Kosaretsky, and Froumin 2011; Prakhov and Yudkevich 2012).

The ISA was calculated using multiple linear regression analyses. The Average Mathematics Score and the Average Russian Language Score were used as dependent variables, and all the context variables were independent. The results of the regression model are available in Table 1. We mark those tested variables that are significant, and an R-square of models equal to 0.14 for the Average Russian Language Score and 0.12 for the Average Mathematics Score are dependent variables. The coefficients show how the dependent variable changes according to the change in context characteristics of schools by 1%.

The construction of the index follows regression coefficients and is presented below. Final weights are calculated from weights of each variable in each model. The proportion of students with Russian as a non-native language is not included in the ISA formula because it is significant only in one model. The first number allows us to reduce the scale from 1 to 100. According to that scale, a school will have an Index equal to 100 in the most favourable situation and will have an Index equal to 0 in the most unfavourable situation.

ISA = 80 + 20%*“ Proportion of children from families where one or both parents have higher education” - 15%*“ Proportion of children from families where one or both parents are unemployed ” - 65%*“Proportion of children with deviant behaviour” (Table 1)

We should note that the weights we obtain using that data are very similar to index weights researchers obtained in a previous contextualisation study

Table 1. Parameter estimates.

	Average Mathematics Score			Average Russian Language Score			Weight in ISA formula
	β	95% CI for exp(B)		β	95% CI for exp(B)		
		Lower bound	Upper bound		Lower bound	Upper bound	
Constant	45,3	43,58	47,03	65,86	64,67	67,04	-
Proportion of children from families where one or both parents have higher education	0,12***	0,09	0,15	0,10***	0,07	0,12	20%
Proportion of children from families where one or both parents are unemployed	-0,05*	-0,11	0,00	-0,10***	-0,13	-0,06	15%
Proportion of students on record in the Juvenile Affairs Commission	-0,48***	-0,73	-0,23	-0,27***	-0,44	-0,11	65%
Proportion of students with Russian as a non-native language	0,10*	0,07	0,14	-0,02	-0,04	0,01	-

* $p < .05$. ** $p < .01$. *** $p < .001$.

conducted to develop and testing the contextualisation model (Yastrebov, Pinskaya, and Kosaretsky 2014).

Findings

School grouping

We divided all schools into 4 quartiles according to ISA and USE results. Next, we focused on the extreme quartiles (Q1 and Q4) of both distributions. Thus, for analysis, we used the following groups: low results and low ISA, high results and low ISA (resilient schools), low results and high ISA (failing schools), high results and high ISA.

Connection between ISA and educational achievements

Table 2 shows the differentiation in context characteristics among distinguished groups of schools. Schools that show high average performance scores also have higher proportions of children from educated families. The group of schools with a low index (Q1) have the most challenging conditions. The proportion of children whose parents have a higher education shows a significant increase from low-index groups to high-index groups – from 11% in the 1st quartile group to 75% in 4th quartile group.

Group A has the highest percentage of children from families where one or both parents are unemployed, 20.8%, and group B has 18.8%. Schools with a low ISA have far more students on record in the Juvenile Affairs Commission.

Table 2 shows that the schools with the highest (Group B) and the lowest (Group A) results in the USE (from low-ISA schools) do not differ according to contingent of students. There are also practically no differences between the contingent of students in the most successful (Group D) and failing (Group C) schools, considering that both groups have a high ISA. In groups with a high ISA, there are 7 times more children from families with a high level of education and 3–4 times fewer children whose parents are unemployed (Table 2). The data show that such an important resource of the school as a high ESCS contingent does not guarantee high educational achievements, and its absence does not doom the school to a backlog.

Students' future career opportunities (Table 3) can also be seen as evidence of better education in some groups of schools. In resilient schools (group B), the proportion of students who continue their education in high school and enrol in universities is significantly higher than in group A, while that of students who enrol in a college or technical school is significantly higher in schools with a low ISA. The same proportion of students goes on to high school in resilient (group B) and failing (group C) schools.

Table 2. Differentiation of context characteristics of students and USE scores among schools with different ISA.

Differentiation of context characteristics of students among schools with different ISA (based on the replies of the directors)	ISA_quartile			
	Q1 (a) Mean (%)	Q2 (b) Mean (%)	Q3 (c) Mean (%)	Q4 (d) Mean (%)
Proportion of children from families where one or both parents have higher education	10,9	29,9a	47,9ab	75,1abc
Proportion of children from families where one or both parents are unemployed	19,6bcd	10,9cd	6,9d	3,6
Proportion of students from single-parent families	24,6d	26,1d	25,4d	19,9
Proportion of students on record in the Juvenile Affairs Commission	3,6bcd	1,6cd	1	0,5
Proportion of students with Russian as a non-native language	9,5	10,9	8,5	7,2
Differentiation of USE scores among schools with different ISA (based on the replies of the directors)	ISA_quartile			
	Q1 (a) Mean	Q2 (b) Mean	Q3 (c) Mean	Q4 (d) Mean
Russian language average school score	64	67a	69ab	72abc
Mathematics average school score	46	49a	50a	55abc
Average number of students who passed the USE math less than 30 points	5	5	5	4
Differentiation of context characteristics of students and USE scores (based on the replies of the directors)	Schoolgroup			
	Low score and ISA (a) Mean	Resilient schools (b) Mean	Failing schools (c) Mean	High score and ISA (d) Mean
Russian language average school score	61	71ac	65	76abc
Mathematics average school score	35	65ac	37	65ac
Average number of students who passed the USE math less than 30 points	6bd	2	3	2
Proportion of children from families where both parents have higher education	11,4	11,1	76,8ab	76,1ab
Proportion of children from families where one or both parents are unemployed	20,8cd	18,8cd	6,3	3,1
Total	121	40	43	115

Note: The letter indices near values show that this value is significantly greater than the values of the groups whose indices are indicated.

The pattern is the same for university admissions. The higher the ISA of a school, the higher the proportion of students enrolling in universities, which reaches 83% in the group with high index and low performance scores and 93% in the group with high index and high performance scores.

General characteristics of schools

The majority of schools in the sample are public (Table 4), and there are a limited number of private schools among the low-ISA schools. However, private education in Russia does not ensure higher educational results. This is seen from Group C, with its high level of ISA and low mathematics scores (42% of schools are private).

The resilient group has 20% 'elite' schools, while the group of schools with low index and low performance scores has only 4% 'elite' schools. In light of research

Table 3. Students' future career opportunities

Students' future career opportunities (based on the replies of the directors)	Schoolgroup			
	Low score and ISA (a) Mean (%)	Resilient schools (b) Mean (%)	Failing schools (c) Mean (%)	High score and ISA (d) Mean (%)
<i>After the secondary school</i>				
Proportion of students enrolled to the high school	52,7	67,9a	65,8a	83,7abc
Proportion of students enrolled to the colleges or technical schools	45,9bcd	29,7d	33,2d	15,7
<i>After the high school</i>				
Proportion of students enrolled to the university	63	75,6a	82,9a	93abc
Proportion of students enrolled to the colleges or technical schools	28,8bcd	17,5d	12,2	5,2
Proportion of students (among boys) who have military conscription duties	2,9d	3,9d	1,7	0,4
Total	121	40	43	115

Note: The letter indices near values show that this value is significantly greater than the values of the groups whose indices are indicated.

on Russian schools, it was found that the elite status of a school is a strong factor influencing the average school score, even more so than the characteristics of school composition (Yastrebov, Pinskaya, and Kosaretsky 2014).

Another important difference is a school's geographical location (Table 4). A total of 67% of schools from the group with low index and low scores are located in rural areas such as villages and townships (of less than 100 thousand people). A smaller proportion of schools (45%) from the group of low index and high performance scores is located in such areas. Among schools with a high ISA,

Table 4. School type information.

School type information (percentage of directors who answered so)	Schoolgroup			
	Low score and ISA (a) (%)	Resilient schools (b) (%)	Failing schools (c) (%)	High score and ISA (d) (%)
Public	99bcd	90cd	58	68
Private	1	10a	42ab	32ab
Total	121	40	43	115
<i>Type of school (percentage of directors who answered so)</i>				
Gymnasium and Lyceum	4	20a	28a	41a
Common school	96bcd	80	72	59
Total	121	40	43	115
<i>Location (percentage of directors who answered so)</i>				
Moscow	2	8	17a	42ab
City with a population over 1 million residents	12	28	26	17
City with a population between 100 thousand and 1 million people	20	20	40	38
Town with a population below 100 thousand residents or township	23d	15	12	8
Village	44cd	30cd	7	1
Total	121	40	43	115

Note: The letter indices near values show that this value is significantly greater than the values of the groups whose indices are indicated.

only 9–19% are located in villages and townships. Large regional centres have a higher proportion of schools in the higher level of the index: 43%–59% of schools with a high ISA are concentrated in large cities with populations over one million people and in Moscow. Among schools with low ISA and USE scores, only 2% are found in Moscow. This leads us to the conclusion that a school has a greater chance of showing high scores if it is ‘elite’ and located in a large city (even schools with low ESCS).

Human resource policy

The target group (Group B) is in a significantly less favourable situation than schools with a high index (Group C and Group D); however, this situation is more favourable than the group with low index and low performance scores (Group A). Table 5 shows the percentage of teachers with different qualifications. Group B has a higher proportion of teachers with a higher qualification category (37% in Group B as opposed to 28% in Group A). The most privileged group is group D, where the proportion of teachers with a higher qualification category equals 52%. In addition, we see that there are more teachers with PhDs in groups B, C and D.

It can be assumed that in schools with a low ISA, the lack of social, economic and educational resources of families is, to some extent, compensated by high-quality human resources. In turn, the high achievements of a group of schools with a high ISA and high results are probably due to a cumulative effect – schoolchildren from families with maximum resources meet with the most professional teachers.

Monitoring data show that schools with a low ISA cannot provide teachers and administrators with the same level of salaries as in schools with a high ISA (Table 6). According to the questionnaire, the salaries of teachers, administrators and other staff are steadily increasing as the social welfare of the school grows.

Table 5. Teaching composition.

Teaching composition (based on the replies of the directors)	Schoolgroup			
	Low score and ISA (a) (%)	Resilient schools (b) (%)	Failing schools (c) (%)	High score and ISA (d) (%)
Proportion of teachers with a PhD	0,4	3,3a	2,5a	3,7a
Proportion of teachers with a degree	88,42	88,25	92,30	90,55
Proportion of teachers with a college degree	10,9cd	8,2	5	5,7
Proportion of teachers with a higher qualification category	28	37	34,3	52abc
Proportion of teachers with a first qualification category	49,3d	43,8d	46,3d	33,7
Proportion of teachers without any qualification category	22,6d	19,2	19,5	14,3
Total	121	40	43	115

Note: The letter indices near values show that this value is significantly greater than the values of the groups whose indices are indicated.

Table 6. Average salary (RUB).

Average salary (based on the replies of the directors)	Schoolgroup			
	Low score and ISA (a)	Resilient schools (b)	Failing schools (c)	High score and ISA (d)
Average teacher's salary	25,057	25,965	33,895a	42,135abc
Average salary of the teacher who works in that school for less than 3 years	18,755	19,933	24,400	32,702 abc
Average salary of administrative and managerial staff	30,661	31,860	45,923a	56,131ab
Average salary of other categories of personnel	11,054	14,507	20,741a	25,301ab
Total	121	40	43	115

Note: The letter indices near values show that this value is significantly greater than the values of the groups whose indices are indicated.

To a large extent, this is due to the territorial affiliation of schools. More prosperous and highly successful schools are more often located in large cities, where wages are higher than in rural and small urban settlements, where one finds a significant proportion of schools with a smaller ISA.

There is little relation between the salaries of the principal and teachers and the level of results. Management personnel in schools with a high ISA and low results are paid one and a half times more money than in socially disadvantaged schools with the same low results and significantly more than in schools with a low ISA and high results. Such a situation can be considered not only unfair but also strategically unjustified. It does not allow one to attract qualified, experienced managers to administer the most disadvantaged schools, and they, in turn, cannot hire highly qualified teachers.

Schools with a high ISA have excellent financial opportunities. This confirms the kind of financial support they receive for the implementation of various programmes (Table 7). In schools with a high ISA and high results, work with gifted students is financed 6 times more often than in high-performing schools with the lowest ISA. Innovative activity of schools with a high ISA is maintained over than 5 times more often, i.e. no one expects innovation from and attention given to gifted students from socially disadvantaged schools. As a target group, only children with disabilities are considered for additional work in such schools.

Table 7. Financing for the implementation of the following programmes (over the last 2 years) (%).

Financing for the implementation of the following programmes (over the last 2 years) (percentage of directors who answered so)	Schoolgroup			
	Low score and ISA (a) (%)	Resilient schools (b) (%)	Failing schools (c) (%)	High score and ISA (d) (%)
Additional work with gifted students	6	5	9	30abc
Additional work with students with disabilities	18	13	26	19
Innovations	8	5	12	27ab
Total	121	40	43	115

Note: The letter indices near values show that this value is significantly greater than the values of the groups whose indices are indicated.

Thus, what helps resilient schools avoid the negative consequences of negative factors and achieve higher educational results? The analysis showed that one possible reason is the managerial strategies implemented by school principals. First, let us begin with the formation of school body policy.

Admission policies

In the survey, principals were asked how the school accepted students for primary, secondary and high school classes (Table 8). First, it becomes apparent that a number of schools with a high ISA and high performance scores carry out selective criteria at all levels of schooling. In the group with a high ISA, principals more often notice that it is necessary to select those children who show the best results on the enrolment exams in primary school and from primary schools in the secondary school to 'create a new class where students can apply on a competitive basis'. High-indexed schools tend to select children from other schools on a competitive basis if there are vacancies. These data could be a confirmation of a widespread opinion about the possible reasons for elite schools' successes.

Table 8. Admission policies.

Admission policies (percentage of directors who answered so)	Schoolgroup			
	Low score and ISA (a) (%)	Resilient schools (b) (%)	Failing schools (c) (%)	High score and ISA (d) (%)
<i>Primary school</i>				
Children completed special school training courses have an advantage in enrolment	18	43ac	16	25
Children living in nearby houses have an advantage in enrolment	48	28	35	40
All children are accepted regardless the area of living	41	53	47	45
Children showing the best result in enrolment test are accepted by sure	2	10	5	18a
<i>Secondary school</i>				
Children from primary school (without a competition)	88	90	88	88
From best students of other primary schools	3	5	12	29ab
From students of other primary schools (without a competition)	60b	32	70bd	43
Create a new class in which other schools primary school graduates are accepted according to a competition results	2	0	5	8
<i>High school</i>				
Children from secondary school (without a competition)	65	88ac	63	67
From best students of a secondary school	12	8	21	23
From best students of other secondary schools	10	10	28a	42ab
From students of other secondary schools (without a competition)	47d	33	49d	30
Create a new class in which other schools secondary school graduates are accepted according to a competition results	9	3	14	17
Total	96	40	34	110

Note: The letter indices near values show that this value is significantly greater than the values of the groups whose indices are indicated.

In the target group B, there are other strategies that, although not selective, are purposeful school-body formation policy. It is necessary to highlight that the main difference is that these schools must accept children from nearby regions, and they do not replace them with students with higher grades. Group B had the highest number of principals who said that children who completed the special training courses in their schools have an advantage when enrolling in a primary school. This measure allows schools to involve better-prepared children in further studies within schools. Thus, this is called *attraction policy but not selective policy*, as in schools with a high index. In group A, only 18% of principals use that strategy, and 43% use it in resilient schools.

Thus, one of the reasons for the high results in the target group is the policy of balancing the complex contingent through attracting and selecting more advanced students who show better results as they enter the school. At the same time, they do not tend to replace students with a low socio-economic background with students of a higher socio-economic background but simply follow a balance strategy that helps them to mix the contingent. Obviously, this strategy is available for urban schools, which is another reason why rural schools have fewer chances of resilience.

Strategies for attracting parents to schools

School principals were asked what affects parents' choices of a particular school. The factors principals consider as important for parents' choices may be the characteristics they wish to develop in their schools to attract more favourable families. Schools with low performance scores (Group A, Group C) did not work out any strategy that could attract parents to choose their school. At the same time, the answers of schools with high educational results are very similar. They emphasise the participation of their students in competitions and Olympiads, class specialisation, and a high percentage of graduates who score high on the USE. The analysis and data shown in [Table 9](#) raise the hypothesis that principals of the target group of schools use the same strategies as those from the most prosperous schools.

Managerial strategy

The main question concerns a principal's activity prioritisation ([Table 10](#)). The survey questionnaire included questions about the priorities of the principals regarding school management. In general, prioritizations were quite similar, and their differences were not statistically significant in all four groups. However, one item regarding the principals in target group B defines these principals' priorities in a slightly different way than all the others. Principals of schools with socially disadvantaged contingents demonstrating high educational results mark the distribution of working time (theirs and their subordinates) as a very

Table 9. Principals' strategies (principals' view on what affects parent's choices of a particular school).

Principal strategies (percent of principals who choose "very important" speaking about what affects parent's choices)	Schoolgroup			
	Low score and ISA (a) (%)	Resilient schools (b) (%)	Failing schools (c) (%)	High score and ISA (d) (%)
A significant number of graduates with high USE scores	23	51a	33	45a
High achievements of students in olympiads, contests, shows, exhibitions, competitions	50	80a	55	77a
Popularity among the city's population	75	80	86	88
Good school equipment	61	72	59	74
High ratings among students and their parents	73	80	79	86
Popularity of leaders and teachers	70	54	67	76
Transport accessibility of the school	66a	74a	69	47
A variety of profile training programmes	45	79a	64	71a
A variety of supplementary education programmes	53	70	68	70
A high percentage of graduates enrolled in universities	71	85	93a	95a

Note: The letter indices near values show that this value is significantly greater than the values of the groups whose indices are indicated.

Table 10. Managerial activity which principals consider as very important.

Managerial activity which principals consider as very important (percentage of directors who answered so)	Schoolgroup			
	Low score and ISA (%)	Resilient schools (%)	Failing school (%)s	High score and ISA (%)
Hiring and dismissal of teachers	68	74	69	71
Evaluating the teachers' performance	68	70	81	78
Evaluating the overall quality of school's performance	91	77	86	88
Budget management	76	67	74	75
Distribution of working time	43	58cd	33	34
Guidance on the curriculum	40	55	30	41
School's performance on events	54	58	56	55
Supervision of teachers' liabilities and responsibilities	40	40	30	35
Supervision of students' discipline	41	38	28	30
Interaction with local and higher authorities	64	68	56	52
Economic questions	72	70	63	58
Total	121	40	43	115

Note: The letter indices near values show that this value is significantly greater than the values of the groups whose indices are indicated.

important part of their work more often than do their colleagues. In general, this focus can be seen as a manifestation of pedagogical leadership, which is an attribute of good governance, especially in schools with more complex student enrolment and limited human resources.

Conclusion and discussion

The Index of Social Advantage provides a comprehensive assessment of the social composition of students and allows us to assign a status to a school,

which can be one of prosperity or one that shows it is operating in a complex context. The resilient group of schools was distinguished from the representative national sample using the contextualisation model. This group is represented by high-poverty schools that work with children coming from the least socio-economically advantaged families, though students from this group achieve higher than expected educational results.

Strategies implemented by principals of resilient schools distinguish them from all other principals. Educational policies are based on a purposeful school body-formation strategy even if the conditions they are working under are very restrictive and selection is limited. Schools must accept children from the nearest locality, but they also attract the most successful children from other areas when there are vacancies.

This distinctive feature is in keeping with parents' attraction policies. This strategy refers to parents who demand a good education for their children. The principals of resilient schools aim to create an intense learning environment and to offer educational opportunities that compensate for the shortage of educational resources within the family. This strategy corresponds to the theory of effective school leadership facing challenging circumstances.

Principals in resilient schools more than their colleagues focused on the distribution of their own and their staff's working time. The situation in resilient schools can form a picture of more confident supervisors with more strategic ways of thinking.

An important finding from our research is that students of resilient schools do not fully realise the opportunities that high Unified State Exam scores provide. We could possibly speak about the 'neighbourhood effects' which restrict their chances. One of the first researchers to observe how neighbourhood deprivation might lead to perpetuating disadvantage in its inhabitants was Wilson (Wilson 2012). Wilson's work shows how particular role models are embedded in local communities; thus, social norms and low expectations form a vicious circle, and as a result, low aspirations prevent children from families with low socio-economic backgrounds to succeed in life.

There are several limitations to our study. First, the analysis was carried out using aggregated data on a school level that does not allow for the separation of the influence of individual factors (i.e. family characteristics) from the broader context (i.e. school environment). Moreover, the information about academic achievements is limited and based only on the average Unified State Exam scores, which does not provide any information regarding inter-school distributions. Another important factor is that there is an asynchrony in the measurement of academic results between the schools and the contextual characteristics of the contingent. This asynchrony appears because the academic results apply only to higher schools (older cohorts) and the contextual characteristics apply to all students (all age cohorts). The result may be an underestimation of the influence family characteristics have on a student's academic

achievement. Adding individual student-level data may solve this problem in future studies.

Practical application

The study is primarily addressed to those principals forced to solve the most complex management tasks in schools working with a socially disadvantaged contingent and without sufficient resources. Many schools all over the world are in the same situation. We think that our research can help not only Russian principals, as the problems described in the study are of a global nature. The management strategies outlined here can serve as a guide for them in their search for more effective policies. The results of the study can be useful to both local and regional educational policymakers.

Note

1. <http://memo.hse.ru/en/> MEMO contains information about all levels of education in the Russian Federation, including preschool education, school education, primary professional education, secondary professional higher education, higher professional education and supplementary education.

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