

Spatial differences in access to school resources, educational trajectories, and academic results after 9th and 11th grades: multilevel analysis on Russian data

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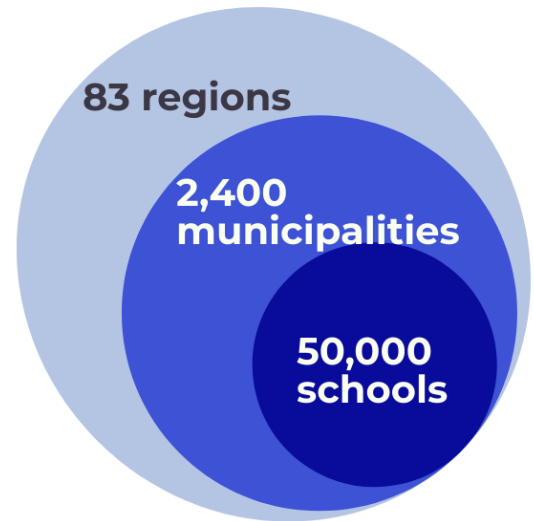
Over the past 60 years, the topic of social inequality has been one of the key to educational research. Since the 90's years of the last century, thanks to the advent of international monitoring, the main focus is on comparisons of different countries in terms of educational opportunities, as well as academic and social segregation in school.

At the same time, it is known that even within countries, especially those with a great geographical extent, differences in access to educational resources and in learning outcomes can be very large. Traditionally, researchers study these differences on individual data and focus on fairly low-level group effects, such as effects from a class and a school [5], or a neighborhood. However, differences at a higher level can also be quite significant.

Research questions:

1. How does students' access to educational resources vary on different levels?
2. How do these differences relate to students' exam results?

Hierarchical structure of the educational system in Russia:

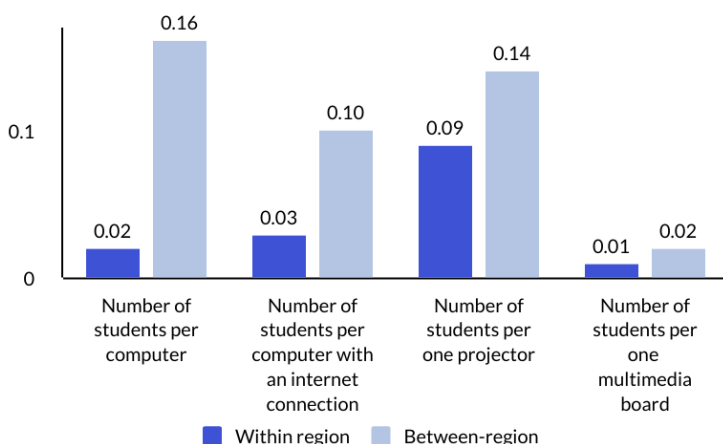
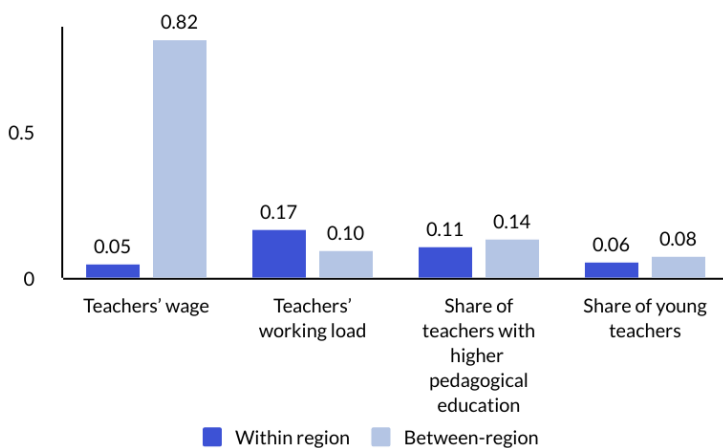


Spatial variation of school funding per student is one of the vivid manifestations of decentralized educational policy where funding norms are set at the regional level. This casts doubt on the effectiveness of educational policies aimed at supporting rural schools in general, despite the regional specifics. This peculiarity of the Russian school funding system imprints schools' human and educational resources to a great extent.

The results of the regression analysis highlight the hierarchical structure of exam scores. A significant share of variation of students' test results is explained on the regional and municipal level, regardless of the control variables. Excluding covariates, regional differences in test scores are almost twice as large as municipal ones in all three subjects. This puts students in a vulnerable position when the place of birth, even under formally favorable conditions.

The analysis shows that considering the territorial context with urban/rural specification it is not enough for evaluation of school education quality and student outcomes. It is necessary to take into account the hierarchical structure of the whole education system. Without this, the educational policy measures may not be effective enough and lead to a situation where schools that really need support will not receive the necessary assistance.

Intraclass correlation values for schools' characteristics:



Multilevel regression analysis results:

