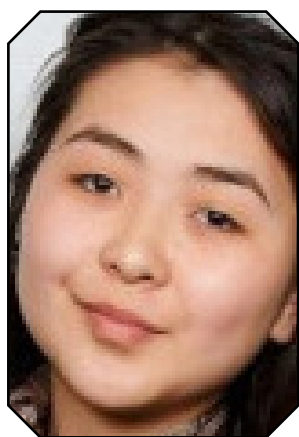


BEYOND BORDERS**Bibigul Iskakova, Sergey Kosaretsky, Sergey Zair-Bek, Konstantin Anchikov**
Education Policy and Urban-Rural Disparities
in Schooling in Post-Soviet Countries

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Abstract

The issue of urban-rural inequality is recognised as one of the most pressing and unresolved challenges, particularly in post-Soviet countries. This article examines territorial inequality in educational outcomes across seven post-Soviet countries: Estonia, Latvia, Lithuania, Russia, Moldova, Georgia, and Kazakhstan. The study analyses how students' PISA test scores vary by urban–rural location and investigates whether national educational policies, particularly school funding mechanisms and school network, have contributed to reducing or widening these disparities. Drawing on the generative theory of rurality, the study employs a mixed-methods design combining multilevel regression analysis of PISA 2009 and 2018 data with content analysis of national policy documents addressing post-Soviet educational reforms. The findings indicate a persistent and growing performance gap between urban and rural students, with the largest disparities observed in Moldova, Russia, and Lithuania. Rural location remains a statistically significant predictor of lower student achievement even after controlling for socio-economic and institutional variables. Estonia emerges as an exception, combining relatively high reading scores with a weak rurality gradient in 2018. The policy analysis suggests that per-capita and voucher-based funding mechanisms, together with large-scale school closures, have only weakly addressed the structural sources of rural disadvantage. The discussion highlights institutional and governance-related factors that may explain the limited effectiveness of these reforms and offers tentative recommendations concerning school funding design, teacher recruitment, and policy coordination in education. The article concludes by discussing study limitations and directions for future research.

Keywords: urban-rural disparities; education policy; PISA; post-Soviet countries; comparative research; mixed methods.

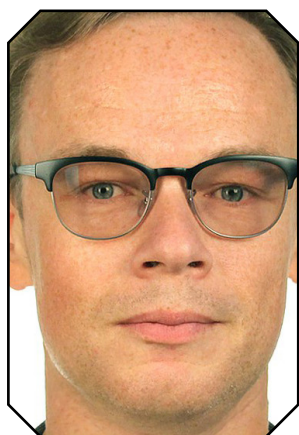
Introduction

The issue of urban-rural inequality is recognised as one of the most pressing and unresolved challenges at the global, regional, and intra-country levels [World Bank 2023]. Within scientific discourse, this issue is examined through the lenses of territorial, social, and economic development, encompassing the formation of disadvantaged and impoverished zones [Caselli 2005; Young 2013]. A substantial body of research examines the universal and specific factors that contribute to economic and social disparities between urban and rural areas [Imai, Malaeb 2016; Xu et al. 2022], as well as the policies aimed at closing this gap [Partridge, Olfert 2009].



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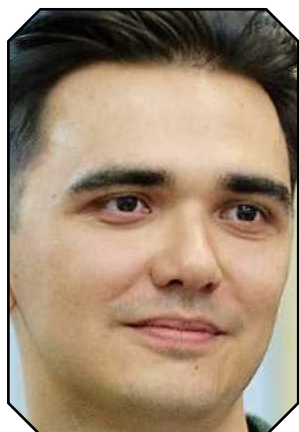
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Education plays a pivotal role in shaping inequality between urban and rural settlements [Chunling 2015]. International comparative studies, such as PISA, TIMSS, and TALIS demonstrate educational disparities between urban and rural students [Echazarra, Radinger 2019; OECD 2021a].

Ensuring equality of educational opportunities for students in rural areas is a key concern for policymakers in most countries. In some countries, the provision of education in rural communities requires targeted interventions [Echazarra, Radinger 2019] to address challenges relating to distance and size, socio-economic status (SES) factors, and access to resources. A review of these policies shows that the main measures adopted in many countries have included school consolidation reforms [Eacott, Freeborn 2020], school funding reforms [Fazekas 2012], and also programmes to attract teachers to rural schools [Kline, White, Lock 2013; Du Plessis, Mestry 2019]. These policies have been widely adopted, yet their impact on reducing urban-rural disparities has received limited scholarly attention.

Comparative cross-country studies of urban-rural inequality in former Soviet Union (FSU) countries are grounded in the common characteristics of the transition period. The disruption of vertical and horizontal economic ties established during the Soviet period between centre and provinces led to the collapse of the system of economic subsidies intended to equalise disadvantaged territories, particularly rural areas, within the planned economy [Thorez 2014; Wegren 2014]. Consequently, the quality of social services deteriorated, while migration and depopulation intensified in rural areas [Thorez 2014; Wegren 2014]. However, following the collapse of the USSR, FSU countries sought to distance themselves from the Soviet legacy to varying extents and construct their own approaches to equity in education [Yakovets 2014; Popa et al. 2011]. To achieve this, several countries employed policy borrowing and discourse borrowing to reform their education systems, including rural schools [Silova 2002; Chankseliani 2017; Kutsyuruba 2017]. Some ex-Soviet countries were part of the World Bank's reform support programmes, prioritising the enhancement of quality education in rural schools and equity between urban and rural schools [Moulton 2001]. However, the relative effectiveness of these reforms in ensuring equal educational opportunities for urban and rural students remains understudied [Chankseliani 2017].

Although the Soviet education system was organised according to unified institutional principles, empirical studies reveal significant disparities in educational opportunities across territories. Regional differences were evident in access to various types of schooling and in the factors shaping educational attainment [Titma, Saar 1995], with students' social background determining their achievements differently across republics [Titma, Saar 1995; Yastrebov 2022]. Urban-rural educational disparities have been a persistent feature of FSU countries both before and after the collapse of the Soviet Union [Simai 2006; Gerry, Mickiewicz 2007; Silova 2009; Milanovic 2013; Kuzmenko et al. 2018; Smith 2024]. This urban-rural divide was particularly pronounced in terms of both access to and quality of education [Bystrova, Bukibayeva 1988; Fuchs, Demko 1979], and its scale varied across republics. The existence of these disparities was implic-



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itly acknowledged through the allocation of preferential provisions and university quotas for students from working-class and rural families [Yastrebov 2022]. However, income levels and social infrastructure in rural areas differed significantly both between regions and between republics, directly affecting families' ability to support their children's education [Bystrova, Bukibayeva 1988; Fuchs, Demko 1979]. These economic differences exacerbated educational inequality despite the existing support measures. The precise magnitude of the urban-rural gap in each republic during the Soviet period is difficult to reconstruct due to the limitations of available data, as actual disparities were not always captured by official statistics. For this reason, we treat the late Soviet period as a common institutional starting point and focus our analysis on the dynamics of territorial disparities during the post-Soviet period, examining whether national reforms have narrowed or widened the gap.

While publications reveal manifestations of urban-rural educational inequality within particular ex-Soviet countries [Silova et al. 2007; Kryst et al. 2015], studies examining the specific features, dynamics, and determinants of broader trends and cross-country differences among FSU states remain limited. Previous publications have analysed either particular reforms or a smaller sample of post-Soviet countries [Alonso, Sánchez 2011; Grivins 2012; Levacic 2014; Amini, Nivorozhkin 2015; Kryst et al. 2015]. For example, a Russian study found that the gap between rural and urban students in PISA tests is mainly due to the socio-economic status of their families [Amini, Nivorozhkin 2015]. However, in a decomposition analysis, the authors found that rural students could perform better if schools were as effective as those in urban areas [Amini, Nivorozhkin 2015]. Using TIMSS data (1995–2011), Kryst et al. [2015] show that socio-economic status is the main factor of urban-rural disparities in achievement, but the effect of rurality is also significant for some post-socialist countries during specific periods. However, their findings are based on only a limited number of countries, restricting the generalisability of their conclusions to the broader post-Soviet context. At the same time, these studies do not cover the last decade and do not capture the impact of national policies.

The present study aims to examine differences in academic achievement between urban and rural students across seven former USSR countries, using PISA data, and to analyse whether national policies have contributed to reducing or widening these disparities. This comparative study of seven post-Soviet countries contributes to post-Soviet education research by analysing the differences and achievement gaps between urban and rural schools through a contextualised analysis of educational reforms. The study aligns with the research tradition of examining institutional arrangements of national education systems as determinants of learners' educational opportunities and inequality [Müller, Shavit 1998; Van de Werfhorst, Mijs 2010; Gross et al. 2022]. However, educational policy, which shapes the institutional organisation of the education system [North 1990], is often considered more as contextual background than as an independent explanatory factor [Papay et al. 2015; Alonso Carmona et al. 2023]. In this study, we treat educational policy as an explanatory variable, examining how specific reforms relate to changes in urban-rural disparities.

First, we quantify disparities in educational outcomes between urban and rural areas across ex-Soviet countries, testing the significance of the “ruralness” factor while controlling for socio-economic and institutional variables. Second, we analyse post-1991 education policies to evaluate their impact on inequality, linking reforms (e. g., funding formulas and consolidation) to changes in urban-rural disparities.

Methodology

Theoretical Framework and Research Design

This study draws on the generative theory of rurality [Balfour et al. 2008], viewing rurality as a transformative factor that shapes educational behaviour and influences the implementation of interventions and reforms [Balfour et al. 2008]. Rurality is conceptualised as a multidimensional construct encompassing economic constraints, resource accessibility, and demographic conditions in FSU countries [Milanovic 2013; Wegren 2014; Nefedova et al. 2016; Li et al. 2019]. Rural areas typically exhibit lower income levels, higher poverty rates, and fewer employment opportunities than urban centres owing to the legacy of centrally planned economic systems [Milanovic 2013; Wegren 2014]. Key challenges include geographic isolation and resource scarcity, such as limited internet connectivity and an insufficient supply of qualified teachers, particularly in Moldova, Georgia, and Kazakhstan [Li et al. 2019]. Furthermore, urban migration further exacerbates these challenges, leading to declining and aging populations, reduced student numbers, and heightened disparities in rural schools [Nefedova et al. 2016].

This study employs a mixed-methods research design [Creswell 1999] to investigate the role of rurality in educational outcomes by comparing PISA test results between urban and rural students in FSU countries. Understanding territorial disparities in education requires a thorough analysis of the contributing factors. To examine the impact of rurality on variation in PISA reading scores, we employ a two-level analytical framework:

1. Individual-Level Predictors:

- Socio-Economic Status (SES) [Bird et al. 2002; Lichter, Schafft 2016; OECD 2021a];
- Immigrant Status [Entorf, Minoiu 2004; OECD 2021a];
- Language Spoken at Home [Khavenson, Carnoy 2016; OECD 2016b; OECD 2021a];
- Gender [OECD 2021a].

2. School-Level Predictors:

- Territorial Affiliation (Urban vs. Rural) [Moulton 2001; Wegren 2014];
- Shortage of Teachers [OECD 2016b];
- Availability of Other Schools in the Area [Bird et al. 2002; OECD 2016b];
- Share of Teachers with Higher Education [Khavenson, Carnoy 2016; OECD 2021a];
- Type of School (Public vs. Private) [Sakellariou 2017; OECD 2021a].

We examine the role of rurality within the FSU group by assessing its significance and impact on each country individually. By comparing results across two PISA cycles, we investigate how the effects of rurality have changed over time across FSU countries. We then analyse policy documents related to educational reforms implemented in FSU countries after the collapse of the USSR to describe national strategies and identify patterns and dynamics of inequality. The framework for selecting policies in post-Soviet countries is based on categories of interventions aimed at improving the effectiveness of educational services in rural schools [Johnson, Howley 2015; OECD 2021a; Ayaiz Rather 2024].

Data Collection

We analyse differences in educational outcomes between urban and rural students using data from the internationally recognised PISA database, one of the most comprehensive and reliable sources in educational research due to its well-documented, open-access data [Sjøberg 2015]. The study focuses on two PISA cycles (2009 and 2018), allowing us to examine the effects of policies implemented over a nine-year period. Both cycles focus on reading literacy, which is a critical skill for academic success and broader life outcomes, making it an appropriate indicator for assessing educational disparities [OECD 2016a].

The analysis includes data from seven former Soviet Union countries that participated in both cycles. To enhance cross-country accuracy, we apply the weighting factor provided in the PISA database¹. Two PISA datasets were merged to classify students' territorial location, using data from both student questionnaires (test results) and school questionnaires (principal responses). Rural areas are defined as settlements with populations of up to 3,000 inhabitants, with all other areas categorised as urban. This study uses the mean of all plausible values from the PISA reading test. The primary analytical strategy involves comparing the test scores of students from urban and rural areas to identify statistically significant differences and the factors underlying them. Appendix 1 presents descriptive statistics on the distribution of urban and rural participants in the assessment.

The examination of national education policies is based on document policy analysis guided by case study principles. This approach includes an assessment of document content, context, and interconnections with related reforms and policy initiatives. Although the primary focus is on formal policy documents, selected informal English-language materials are also included to provide additional insight into the effectiveness of reforms. We analysed 65 policy documents selected according to the following criteria: (1) official status (laws/regulations); (2) focus on rural education reforms; (3) availability for the 1991–2018 period.

We searched for documents² on the official websites of national ministries of education, legal regulation platforms, and international organisations such as the World Bank and OECD. The Eurydice portal, as well as international research reports, analytical publications, and academic studies, was also consulted.

Data Analysis

The analysis of inequality in educational outcomes is based on two approaches: comparing results by settlement size (urban vs. rural) and examining the effects of rurality across FSU countries. We hypothesise that rurality remains a significant factor even when considered alongside other common explanatory variables of urban–rural disparities. To test this hypothesis, we employ multilevel linear regression models, including control variables associated with disparities in educational outcomes. This approach is applied consistently to the

¹ See: OECD. How to Prepare and Analyze the PISA Database. Available at: <https://www.oecd.org/pisa/data/httpoecdorgpisadatabase-instructions.htm> (accessed 15 May 2025).

² The list of policy documents is available at: <https://doi.org/10.17632/dw47m4zm29.1> (accessed 15 May 2025).

2009 and 2018 PISA databases for FSU countries, with reading literacy scores used as the dependent variable. Control variables include student SES, gender, and school-level characteristics (Appendix 2). To account for the hierarchical structure of the data, with students nested within schools, two-level regression models were estimated separately for each country and each PISA cycle.

National legal and regulatory documents and reform initiatives were analysed and systematised using content analysis. This approach enabled the identification of patterns, national specificities, and key policy categories related to resource allocation, funding levels and distribution, differentiated territorial funding coefficients, and rural school development [OECD 2021b].

Results

Factors of Educational Inequality in Post-Soviet Countries

Large and statistically significant gaps in PISA scores were observed between urban and rural students in the FSU countries included in the study in 2009 and 2018 (see Fig. 1). Statistically significant differences at the $p < 0.05$ level were confirmed by t-tests (refer to Appendix 3). The smallest performance gaps were found in Estonia, whereas the largest disparities were observed in Moldova, Russia, and Lithuania.

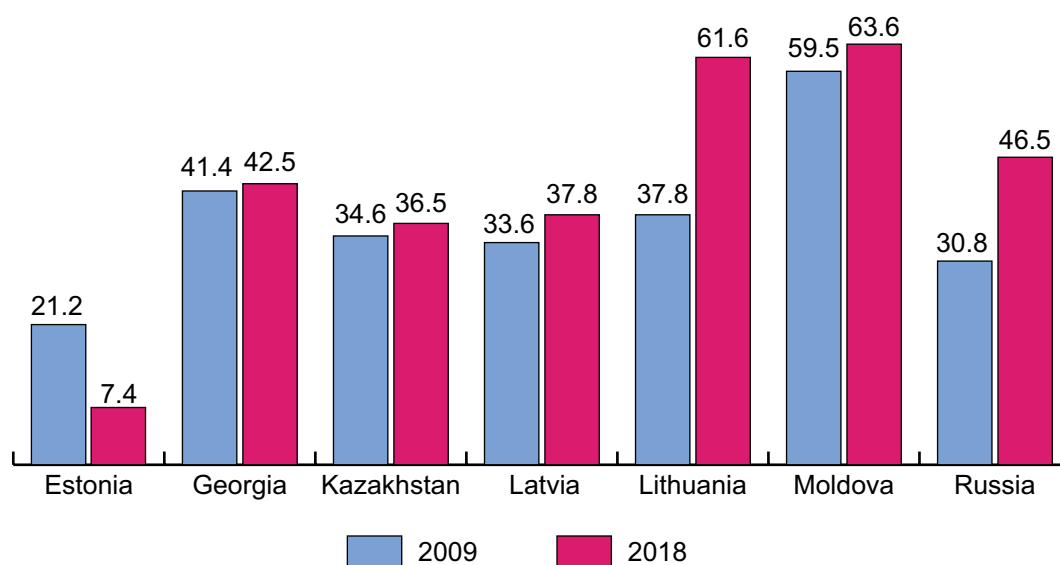


Fig. 1. Trends in the Urban-Rural Gap in PISA Reading Scores by Country, 2009 and 2018

Estonia stood out due to its substantially lower urban-rural score gaps and a clear trend towards gap reduction. In Kazakhstan, Latvia and Georgia, the gap widened slightly between 2009 and 2018. Conversely, Moldova exhibited the largest disparities, with no improvement observed by 2018. In Russia and Lithuania, the gaps widened between 2009 and 2018. In the Baltic States, the gaps and gap growth in Lithuania were higher than in Latvia and significantly higher than in Estonia. Rural location emerged as a statistically significant predictor of lower test scores across most countries in both PISA cycles. However, in Estonia in 2018 the effect of rurality ceased to be statistically significant, consistent with the narrowing of its urban-rural achievement gap.

We employed multilevel regression models with control variables to isolate the independent effect of rurality on educational disparities, first at the individual level and then at the institutional level.

Individual Level: After controlling for variables such as immigrant status, language spoken at home, SES, and gender, rural location remained a significant predictor of lower scores in most models. Exceptions included

Russia in 2009 (not significant, but significant in 2018) and Estonia in 2018 (not significant, but significant in 2009).

Institutional Level: Rural location remained significant in most cases, except for Russia in 2009 and Estonia in 2018 (see Appendix 2) after the inclusion of variables such as the school type, the availability of other schools, proportion of teachers with higher education and teacher shortages.

The estimates for the rurality factor are consistently negative across all models, indicating that rural students score lower than their urban counterparts. Confidence intervals for these estimates do not cross zero, thereby confirming the robustness of the negative effect. The significant association between rurality and test scores confirms the territorial nature of educational inequality in post-Soviet countries. Similar to the PISA SES gradient indicator, which measures the relationship between SES and test scores [OECD 2016a], we calculated a rurality gradient to assess the extent to which rural location influenced test scores (see Table 1).

Table 1

Rurality Gradient by Country

Country	R-sq*100	
	2009	2018
Estonia	1.4	0.1
Russia	2.0	3.3
Kazakhstan	3.4	5.1
Lithuania	3.6	7.5
Latvia	4.2	3.0
Georgia	4.4	5.8
Moldova	11.9	12.6

The gradient strength measures the proportion of score variation attributable to territorial affiliation. A strong association between place of residence and academic performance indicates that rurality is a reliable predictor of educational outcomes. In Moldova, rural affiliation accounts for the largest disparities (12.6%), while in Estonia, the gradient strength was close to 0.1% in 2018, indicating minimal locational effect.

A weaker gradient indicates greater territorial equality, with rurality playing a less important role in predicting academic performance. Figure 2 presents the distribution of post-Soviet countries across four quadrants according to rurality gradient strength and mean reading scores in 2018. Estonia is characterised by high reading scores and low territorial dependence. Russia, Latvia, and Lithuania demonstrated high scores but stronger territorial dependence. Moldova, Georgia, and Kazakhstan demonstrated low scores and higher rurality influence.

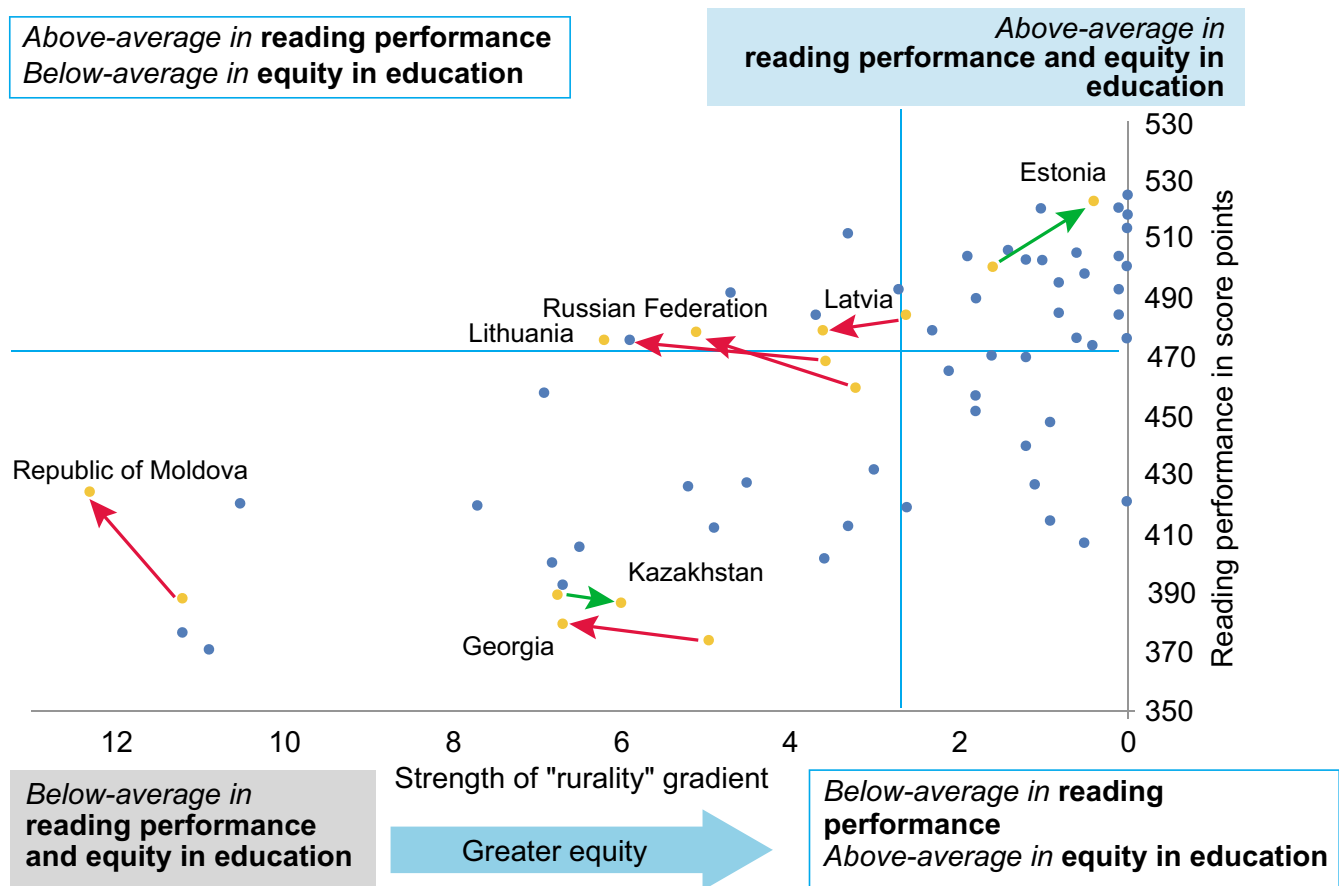


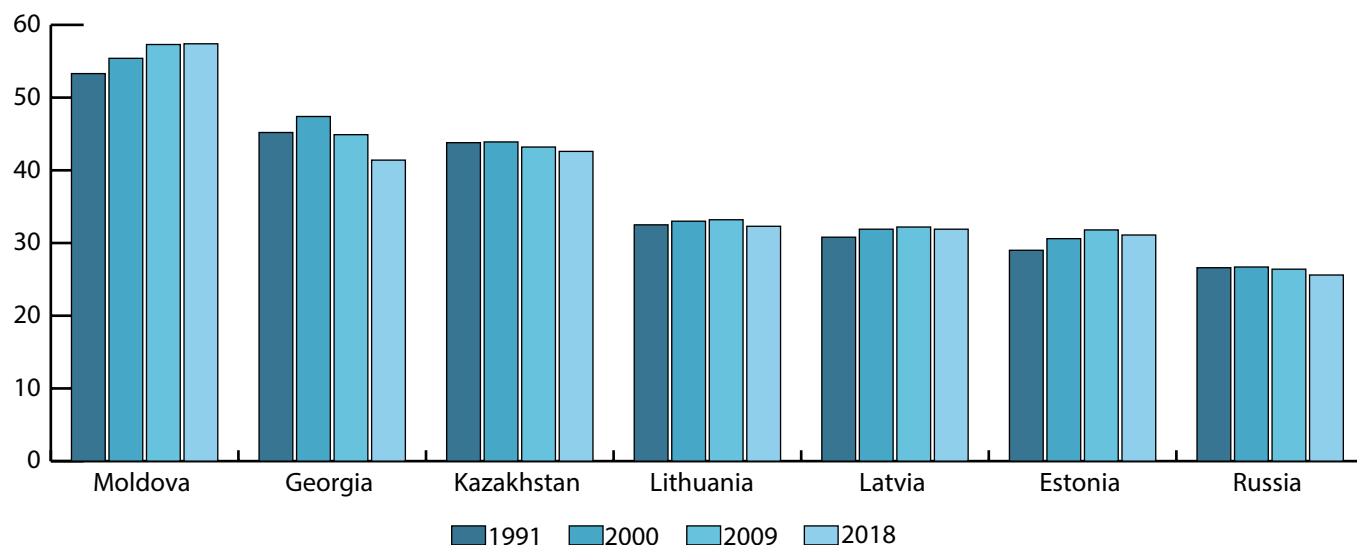
Fig. 2. Rurality Gradient Strength and Reading Scores Across Post-Soviet Countries, 2018

Analysis of Educational Policies and Reforms

Post-Soviet Context

The USSR's emphasis on universal access to education resulted in a dense network of small rural schools. Many of these schools became financially unsustainable after independence in 1992 due to declining state education budgets [Heyneman 1998]. The share of the rural population remained relatively stable in the years following the collapse of the USSR, and even increased slightly in some countries (see. Fig. 3). Furthermore, settlement patterns characterised by low population density and dispersed villages inherited from the Soviet era persisted [Nefedova et al. 2016], contributing to the continued prevalence of small schools. These factors shaped post-1991 reforms (see Table 2), which prioritised cost-efficiency over equity [Silova et al. 2007]:

- Reforms of school funding systems;
- School network optimisation;
- Transport and computerisation programmes;
- Programmes aimed at supporting and attracting teachers to rural and remote schools.



Source: World Bank; World Development Indicators Database.

Fig. 3. Share of the Rural Population by Country, 1991–2018 (%)

Funding and network reforms were not synchronised across post-Soviet countries. Rural transport and computerisation policies were incorporated into broader school restructuring reforms. Policies aimed at attracting and retaining teachers during the study period were identified only in Kazakhstan, although similar measures emerged in other countries after 2018. The country profiles below provide brief descriptions of the implementation of these reforms and assess their outcomes based on available literature.

Country Profiles

Georgia

Georgia was the only country in the post-Soviet space to shift from municipal funding to a per-capita school financing model based on student vouchers³. Voucher values differed between urban and rural areas, although the differences were uneven [Tabatadze, Gorgadze 2017]. Between 2005 and 2009, voucher values increased by 80.1% in urban schools, 59.1% in rural schools, and 57.8% in highland schools. It later became evident that the Georgian voucher system was relatively inefficient, as small schools were severely underfunded, whereas larger schools received excessive funding [Alonso, Sánchez 2011]. At the same time, the education system employed more teachers than required, and teacher salaries remained extremely low [Orivel 1998; Bochorishvili, Peranidze 2020]. Significant inequalities persisted between urban, rural, and mountain schools [Herczynski 2003; Janashia 2015]. Subsequent adjustments to voucher values also failed to produce substantial improvements. Nevertheless, the funding reform is generally regarded as relatively successful because it introduced greater transparency into the allocation of funds and helped reduce corruption [Janashia 2015].

Georgia, characterised by numerous mountainous regions, has long maintained many small schools with fewer than 100 students and consequently a high proportion of rural schools (79.33%). Mountain schools often operated for only a handful of students because transporting students to larger schools was not feasible.

³ A per-student voucher system provides schools with a set amount of funding for each student enrolled, with adjustments made for school location and needs. The voucher amount is calculated considering the number of students, hourly workload, and administrative and other expenses determined by the national curriculum. See: Eurydice, Georgia: Early Childhood and School Education Funding (2025). European Commission. 19 March. Available at: <https://eurydice.eacea.ec.europa.eu/eurypedia/georgia/early-childhood-and-school-education-funding> (accessed 15 February 2026).

Table 2

Comparative Matrix of Rural Education Reforms in Post-Soviet Countries

Reform	Variable	Estonia	Georgia	Kazakhstan	Latvia	Lithuania	Moldova	Russia
	Year of transition	1994 (pilot regime) 1998	2005	2013 (pilot regime)	2009	2002 2018	2010 (pilot regime) 2013	1998 (pilot regime) 2006
Formula funding	Type of funding	Per capita formula funding; Per class formula funding (since 2008 for small rural schools)	Vaucher funding	Per capita formula funding	Input-based system funding “Money follows the student” (since 2009)	“Pupil basket” funding; “Class basket” (since 2018)	Per capita formula funding	Per capita formula funding
	Availability of coefficients for rural schools	+	+	+	+	+	+	+
	Availability of coefficients for small-sized schools	+	+	+	+	+	+	+
School optimisation	Year of transition	+ (1999)	+ (2010)	+	+ (2008)	+ (2004)	+ (2007)	+ (2002)
Programmes to provide transport to remote schools		+	+	+	+	+	+	+
Computerisation programmes (year)		+ (1996)	+ (2005)	+ (1999)	+ (2007)	+ (2005)	+ (2005)	+ (2005)
Teacher recruitment programmes (year)		—	—	+ (2009)	—	—	—	—

A large-scale school network reform began in 2005 following the introduction of the voucher reform. The territorially differentiated model aimed to optimise the structure and scale of the school network. However, the reform failed to produce substantial changes in rural schools which remained underfunded but could not be closed because of transportation constraints. By 2018, fewer than 25% of students attended 65% of schools [Li et al. 2019]. All school categories experienced widening funding gaps, although these disparities were particularly acute in rural and highland schools [Maglakelidze 2011]. Meanwhile, the school network came under increasing pressure due to growth in the student population between 2007 and 2022. To address these inequalities, the “Transportation for Public School Students” programme⁴ was introduced in 2013.

Kazakhstan

Kazakhstan began piloting the per-capita funding model in 2013 in 63 schools across five regions, including urban, rural, small rural schools, and home-schooling settings [Mhamed et al. 2023]. Per-pupil expenditure increased, however, by 2017 public dissatisfaction persisted regarding the quality of school education and the misalignment of existing standards with contemporary challenges [Alembaeva et al. 2017]. School staff showed limited motivation to improve educational quality while the allocation of budget funds lacked transparency. The practice of collecting informal (‘shadow’) fees from parents was also reported [Alembaeva et al. 2017].

During the Soviet period, Kazakhstan had one of the highest shares of rural schools in the USSR (78.06%). Following independence, Kazakhstan closed 792 small rural schools in an effort to improve funding efficiency and increase teachers’ salaries. However, some of these schools were reopened after 1999 due to growth in the rural student population. By 2007, 55% of schools experienced teacher shortages, affecting approximately 424,000 students. The proportion of rural students peaked in 2010, reaching 51.51% of the total school population. By 2018, Kazakhstan had 2,944 small general education schools, concentrated primarily in Northern Kazakhstan⁵. Special hub-centres (160 as of 2015)⁶ were established to maintain educational quality in clusters of three to four small ungraded schools [Carlsen 2020].

The Auyl Mektebi programme (2003–2005) was introduced to improve the quality of education in rural and small schools. Subsequently, a large-scale programme aimed at attracting teachers to rural schools was launched. The programme “With Diploma to Village” provides social support through one-time allowances and subsidised loans with a preferential interest rate of 0.01%. In addition, teachers become eligible for salary increases of at least 25% after three years of service. However, the programme attracted limited interest among university graduates.

Moldova

Following the initial post-Soviet transition period, Moldova experienced significant brain drain, including among school-aged populations [Jin et al. 2019]. The country was left with an economically inefficient network of small schools characterised by underpaid teaching and non-teaching staff [Olefir et al. 2015], which prompted subsequent reforms.

The original 2010 reform formula allocated equal per-capita funding, but did not include coefficients accounting for school size. The reform largely failed because the funding formula did not account adequately for the

⁴ See: Ministry of Education, Science and Youth of Georgia. Available at: <https://www.mes.gov.ge/content.php?id=5891&lang=eng> (accessed 12 February 2025).

⁵ See: Central Asian Bureau for Analytical Reporting. Kazakhstan: Unequal Struggle for Equality in School. Available at: <https://cabar.asia/ru/kazakhstan-neravnaya-borba-za-ravenstvo-v-shkole> (accessed 21 October 2024).

⁶ See: Torebekova Z., Shamshieva N. (2016) Promoting quality education in Kazakhstan. IIEP-UNESCO. Available at: <https://learningportal.iiep.unesco.org/en/blog/promoting-quality-education-in-kazakhstan>. (accessed 21 October 2024).

high proportion of ethnic minorities and other vulnerable groups. Some local authorities continued funding small schools despite the risk of closure [Levacic 2014]. Later, additional coefficients were introduced for elementary schools with fewer than 41 pupils and secondary schools with fewer than 91 pupils.

As the reform favoured larger schools [Levacic 2014], local municipalities tended to restructure school networks without introducing substantial changes. The funding formula clearly failed to address the higher educational costs associated with specific groups, including children with SEN, students from low-SES backgrounds, and pupils from isolated rural areas. School principals were granted authority over internal budget allocation while the number of teaching positions was reduced. Local authorities were responsible for school operations and facility maintenance [Jin et al. 2019]. No reliable mechanism existed for monitoring the use of allocated funds [World Bank Group 2018].

Between 1991 and 2010, student enrolment in Moldova declined by more than 50%, while the number of schools declined by only around 14% during the same period [Olefir et al. 2015]. The number of rural schools fell from 1,168 in 2000 to 1,132 in 2009 and 924 in 2018⁷. Despite efforts to optimise the school network, average school size continued to decline between 2000 and 2016. By 2019, many small schools with low pupil–teacher ratios still remained [Jin et al. 2019]. Many teachers were above retirement age and worked in rural areas where no alternative candidates were available.

Russia

Russia's regions adopted different models of formula-based school financing. However, several requirements were established at the federal level, as follows: (1) school utility and property maintenance costs were excluded from per-capita funding standards; (2) expenditures were covered by school founders, primarily municipalities; (3) a single funding standard could include no more than seven adjustment coefficients accounting for rural schools and school size. Nevertheless, municipalities applied different coefficients under varying economic conditions. As a result, rural schools faced substantial funding deficits. The reform became a major driver of rural school network restructuring and school closures [Klyachko 2014]. The number of teachers declined even as student enrolment increased [Sodnomova 2018]. Funding allocated to support the educational process proved insufficient, particularly during the financial and economic crisis [Vethlehemsky 2009].

During the 1990s, the total number of schools declined (from 68.8 thousand schools in 1990 to 65.9 thousand by 2004) primarily in rural areas, which rendered the existing school network inefficient. The restructuring of rural schools began in 2003, with the closure of some schools, particularly those with critically low enrolment levels (1–10 students), while students were transported to larger schools. In 2005, the funding reform accelerated the contraction of rural school networks. Between 2004 and 2013, the number of rural schools declined from 45,032 to 24,001 [Kosaretsky, Froumin 2022]. The scale of school closures and consolidations varied substantially across regions.

Latvia

During the school optimisation process in Latvia, school authorities and municipalities often did not know whether particular schools would be closed [Koroleva et al. 2017]. This created tensions and disagreements among stakeholders [Šūpule, Sõholt 2019]. The 'Money Follows the Pupil' funding model introduced in Latvia in 2009–2010 contributed to school closures by rendering many schools economically non-viable. Decision-making approaches differed according to municipal socio-economic status (SES), namely 'survival'

⁷ See: National Bureau of Statistics of the Republic of Moldova. Available at: <https://statistica.gov.md/en> (accessed 10 April 2024).

and ‘quality’ approaches. While the poorer municipalities closed small schools, wealthier municipalities attempted to preserve small schools and prioritised children’s educational needs.

Approximately 100 schools across Latvia participated in the initiative “Change Opportunities for Schools” launched by the Open Society Foundation [Tūna 2015] aimed at preserving small rural schools and transforming them into multifunctional community resource centres. The initiative consisted of two phases: “Development of small schools into community learning and culture centres” (2009–2011) and “Schools as Community Development Resources” (2012–2013). Approximately one-third of Latvian schools enrolled fewer than 100 pupils in 2013–2014, most of which (255 schools) were located in small rural villages [Tūna 2015].

Between 1999 and 2010, the number of schools declined by 237. Following the school consolidation reform, the number of teachers and total school staff declined by more than 12%, while teachers’ workloads were also reduced. These developments improved the efficiency of the educational process, as average class sizes increased. Overall, the impact of the reform on class size varied considerably across localities. Class sizes increased substantially in both rural areas and cities, particularly in smaller classes, where increases ranged from 8 to 14%. By contrast, small and medium-sized classes in small towns did not expand due to local funding arrangements [Hazans 2010]. School size and teacher salaries were critical factors in student performance for both urban and rural schools in Latvia [Krasnopjorovs 2019].

Lithuania

A new general school funding system stipulated that school budgets would consist of funds for the educational environment, including capital and operational expenditures, targeted project and programme funding, sponsorship funds, and other sources, with budgets determined through the “pupil’s basket” mechanism [Giedraitienė et al. 2007]. Operating since 2002, this funding model for public and private schools allocates per-pupil funding adjusted annually by the Cabinet of Ministers [Grivins 2012]. The “pupil’s basket” model was characterised by a high degree of centralisation. It functioned as a targeted state subsidy, part of which was allocated directly to schools, while municipalities received a smaller share for redistribution [Bucaite-Vilke 2022]. As schools were still adapting to the new grant formula, additional funding based on standardised student numbers was incorporated into the grant system [Chandler 2002].

The procedure for calculating the pupil basket was revised periodically [Bucaite-Vilke 2022]. Although the initial results were positive, rural schools encountered difficulties related to low enrolment levels [Alonso, Sánchez 2011]. According to Alonso and Sánchez [2011], the funding mechanism was considered equitable for classes with more than 19 pupils. Consequently, in 2018 the government introduced a new “class basket” model, under which approximately 80% of funding was allocated to classes and the remainder to individual students. This mechanism differed from funding models adopted in other post-Soviet countries.

In Lithuania, unlike other Baltic states, school network optimisation focused primarily on reducing the number of small rural schools and consolidating urban schools in response to demographic change. Minimum enrolment thresholds for pupils and classes in upper secondary schools (gymnasiums) were introduced, resulting in fewer gymnasiums in rural areas. The structural reform reduced the number of schools from 1,499 in 2004–2005 to 1,022 in 2015–2016. However, small schools in remote areas were preserved. The school network reform proceeded gradually in line with demographic trends, namely declining birth rates and outward migration. The Yellow School Buses programme was introduced in 2009 to support student transportation.

Estonia

In Estonia, both public and private schools became eligible to receive funding under the new model. The funding formula included six to eight coefficients categorising municipalities according to student numbers:

ranging from 0.89 for cities with more than 5,000 students to 1.5 for rural municipalities with fewer than 120 students. Although these coefficients provided somewhat higher allocations for rural schools, they remained insufficient. Consequently, in 2008, the model was revised to account for the number of classes.

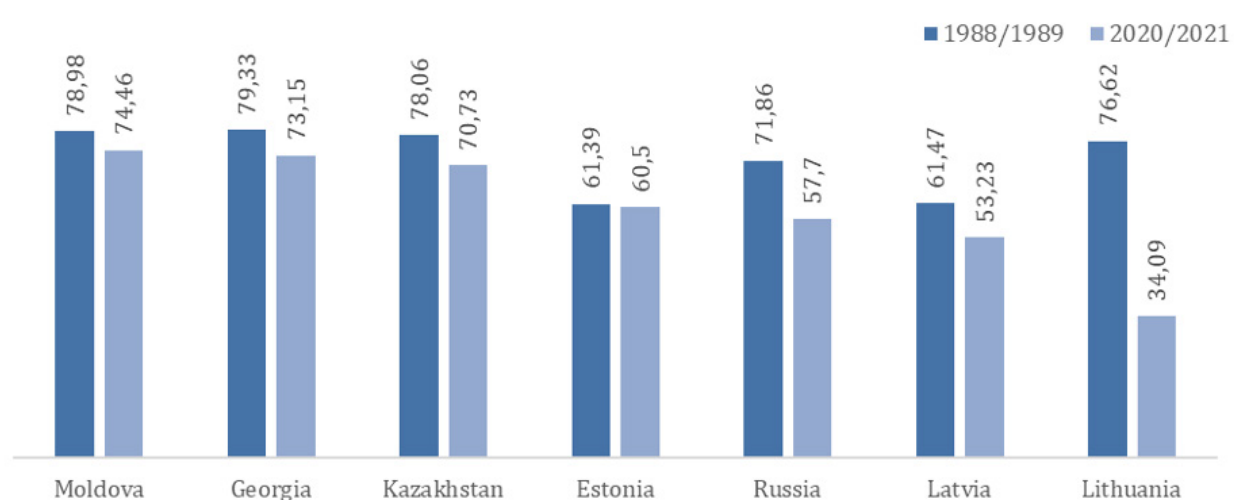
Despite limited financial resources resulting from demographic decline, small rural schools continued to be valued by rural communities. This factor constrained the downsizing of the rural school network. Other schools were funded according to student numbers, while the revised formula also incorporated actual maintenance costs, funding for minority-language classes, and expenditures related to teacher salaries, textbooks, workbooks, extracurricular activities, and capital investments. Subsequently, free meals for pupils in grades 1–9 were introduced, together with additional management-related expenditures [Grivins 2012]. This funding formula proved more effective as it provided municipalities with greater financial stability, aligned with the government's policy of rationalising education and emphasised the preservation of small rural primary schools.

Estonia thus moved towards a needs-based approach to educational financing, taking into account both children's needs and school location [Kitsing, Kukemelk 2020]. This policy reflects a preference for maintaining small rural schools, even at the expense of internal efficiency [Alonso, Sánchez 2011]. The reform was also characterised by horizontal inequalities with wealthier rural municipalities exhibiting higher per-pupil expenditures than poorer villages. Nevertheless, additional funding allocated to local authorities was expected to offset potential declines in educational quality.

Summary

School financing and optimisation policies were implemented across all seven post-Soviet countries using different approaches and with varying degrees of success. Each country adopted formula-based funding mechanisms with specific coefficients for rural and small schools. Georgia, Lithuania, and Estonia introduced distinctive funding models, such as voucher system and class-based funding, which generally had negative consequences for rural school financing.

Regarding post-Soviet school restructuring, two main approaches can be distinguished: Estonia and Latvia focused on preserving remote, small schools, whereas other countries prioritised large-scale school closures. The scale of these closures varied considerably (see. Fig. 4) and often failed to improve educational quality. Instead, the reforms primarily improved financial transparency, resource optimisation, and cost efficiency.



Sources: National Statistical Offices; National Education and Culture in the USSR (1989).

Fig. 4. Trends in the Share of Rural Schools across Post-Soviet Countries, 1988/1989–2020/2021 Academic Years

Discussion and Conclusion

The present study provides a quantitative assessment of territorial disparities in educational outcomes between urban and rural students in the seven post-Soviet countries, including an analysis of the dynamics and robustness of the rurality gradient. Our research contributes to a deeper understanding of rurality in the post-Soviet context. The study aimed to examine differences in academic achievement between urban and rural students across seven former USSR countries, using PISA data, and to analyse whether national policies have contributed to reducing or widening these disparities.

Our findings reveal that the reading score gap between urban and rural students in the seven post-Soviet countries is not only large (with the largest gaps in Moldova, Russia, and Lithuania) but also growing, except in Estonia. The positions of these countries are broadly consistent with the findings of Echazarra and Radinger [2019]. Furthermore, rural residence remains a significant predictor of educational outcomes, even when controlling for factors traditionally associated with the urban-rural divide. The strength of the rurality gradient remained particularly high in Moldova in 2018, while remaining insignificant in Estonia.

We confirm the importance of the rurality factor, consistent with Roscigno and Crowle [2001], who attribute lower educational outcomes among rural students to this variable. This finding partially aligns with previous studies on post-socialist countries [Kryst et al. 2015]. The importance of this factor can be explained by the generative theory of rurality [Balfour et al. 2008], which argues that rural areas are characterised by relative detachment from dynamic social and economic structures and resources [Balfour et al. 2008]. Educational inequalities between urban and rural students also reflect broader disparities between urban and rural areas [UNICEF 2007; Welch et al. 2007; Hernández-Torrano 2018].

We hypothesise that the widening gap between urban and rural students, together with the strength of the rurality gradient in former USSR countries, is linked to the socio-demographic structure of rural areas inherited from the Soviet period. This problem has intensified in post-Soviet countries due to demographic and economic transformations, particularly continuing population outmigration [Thorez 2014]. It is well established that a high proportion of rural residents combined with low population density contributes to the prevalence of small rural schools. The small size of these schools creates resource allocation challenges, particularly under conditions of declining educational funding in the post-Soviet period, ultimately impacting education quality.

The analysis of education policies conducted in this study demonstrates that FSU countries have attempted to improve access to quality educational resources for rural students. It is important to note that, with the exception of Estonia, reforms targeting rural schools were introduced relatively late, while adverse external trends continued to intensify. These reforms primarily involved structural measures: closing and merging rural schools and changing school funding models, often as a condition of the World Bank allocating support [Moulton 2001], and to a lesser extent, attracting qualified teachers and strengthening the educational infrastructure. To a large extent, these reforms were aimed not at reducing educational disparities between urban and rural students, but rather at improving economic efficiency by reducing the costs associated with maintaining small rural schools. In particular, the formula-based funding model primarily sought to improve financial transparency rather than respond to the actual needs of schools.

Other vulnerable groups, including children from low-SES families and ethnic minorities, were not adequately considered in funding calculations, despite their substantial representation in rural schools. The findings suggest that per-capita and voucher-based funding reforms negatively affected rural school financing. This is because small enrolment numbers generated insufficient funding despite the existence of rural coefficients, as well as limited transparency in resource allocation and high levels of centralisation. We therefore hypothesise that these reforms may have contributed to widening rural-urban disparities in educational outcomes. Estonia

represents an important exception, where a funding formula incorporating municipal coefficients and a policy of preserving small rural schools appear to have contributed to narrowing the urban-rural gap [Alonso, Sánchez 2011; Kitsing, Kukemelk 2020]. Although Fazekas [2012: 22] cautions against drawing direct links between funding formulas and educational outcomes, the consistent pattern observed across the seven countries suggests that funding design deserves closer scholarly attention.

In terms of the restructuring of rural schools, we found no clear evidence that reducing the number of small rural schools improved rural students' educational achievement whether through substantial school closures (e. g., Lithuania and Russia) or through limited restructuring without additional resource allocation (e. g., Moldova and Kazakhstan). According to Olefir et al. [2015], in Moldova the consolidation reform had a negligible effect on dropouts but increased absence among students transferred from closed schools. We suggest that the relative success of Estonia and Latvia may lie in their ability to preserve small rural schools while allocating sufficient resources to meet students' needs. Notably, Grivins [2012] found in Latvia that local municipalities frequently acted against central policy intentions by resisting school closures and redirecting funds to maintain small schools which may also have contributed to improved outcomes for rural students.

Rural tax revenues were insufficient to meet schools' financial needs and these deficits were not compensated through central or regional transfers and grants [Alonso, Sánchez 2011; Fazekas 2012]. According to the OECD, education systems characterised by unequal allocation of material resources between socio-economically advantaged and disadvantaged schools tend to exhibit lower student performance [OECD 2017]. Another study demonstrates that Estonia differs from the other countries examined in terms of the relationship between shortages of educational materials and schools' socio-economic profiles [OECD 2021b].

Finally, the analysis of reforms identifies several characteristics typical of structural changes in former USSR countries. These include discontinuity, with reforms implemented intermittently or left incomplete, and inconsistency, as reforms were implemented unevenly across regions. Furthermore, school network restructuring and financing reforms were poorly synchronised, while monitoring mechanisms remained weak and their findings were rarely used for policy adjustment [Alonso, Sánchez 2011; Grivins 2012; Janashia 2015]. Corruption in fund allocation additionally undermined reform outcomes, particularly in Georgia [Janashia 2015].

Addressing educational problems generated by adverse demographic and socio-economic conditions through educational reform alone is inherently difficult [Duncan, Murnane 2011]. However, the experience of former USSR countries suggests that inadequate reform design and governance substantially undermined reform effectiveness.

Practical Implications and Limitations of the Study

Drawing on these findings, we propose several evidence-based recommendations aimed at reducing territorial educational disparities across post-Soviet countries.

First, our analysis demonstrated that per-capita and voucher-based funding models negatively affected rural school financing because of small enrolment numbers. By contrast, Estonia's transition to needs-based financing coincided with a substantial narrowing of the urban-rural gap. We therefore recommend developing balanced needs-based funding formulas and establishing systematic, decentralised, and transparent allocation mechanisms with continuous adjustment in response to population mobility and demographic change [OECD 2017].

Second, extensive school closures in Lithuania, Russia and Kazakhstan did not improve rural students' educational outcomes, whereas Estonia and Latvia, which preserved small rural schools and provided them with

sufficient resources, demonstrated more favourable trajectories. We therefore recommend maintaining small rural schools where justified by educational needs and community impact assessments and avoiding school closures in the absence of appropriate staffing and financial arrangements [Tinkham 2014; Harris 2015]. Crucially, education network restructuring should be synchronised with funding reforms and accompanied by systematic outcome monitoring, as the absence of such coordination represented a common weakness across the seven FSU countries.

Third, our policy analysis demonstrated that targeted teacher recruitment programmes were identified only in Kazakhstan, while other countries largely neglected this dimension. Given that teacher quality is consistently recognised as a key determinant of rural school effectiveness [Monk 2007; Kosaretsky, Froumin 2022], we recommend implementing teacher incentive programmes that include financial benefits, housing support, and professional development opportunities for rural educators [Rosenberg et al. 2015; Dhaliwal, Bruno 2021].

Finally, rural location remains a significant predictor of educational outcomes even after controlling for socio-economic and institutional variables, indicating that the urban-rural gap reflects broader territorial inequalities. Educational policies should therefore be coordinated with broader social policies aimed at reducing regional inequalities through tax redistribution and labour market interventions [Jackson et al. 2014; Franck, Nicaise 2017].

These recommendations require not necessarily additional resources but rather a more equitable and efficient allocation of existing ones, tailored to local contexts. Moreover, the observational nature of the policy analysis does not permit causal claims regarding the effectiveness of specific reforms.

Several limitations should be acknowledged. This study includes only seven of the fifteen FSU countries, which limits the generalisability of the findings. Although these countries share common historical legacies [Titma et al. 2003], their socio-economic and cultural differences likely mediate reform outcomes in distinct ways [Elliott, Tudge 2013; Zajda 2014].

We use PISA data to assess educational achievement disparities while recognising limitations related to sampling characteristics, assessment design, and measurement instruments [Fernandez-Cano 2016; Echazarra, Radinger 2019; Zhao 2020; Henderson, Mandalawi 2024]. The use of the mean of plausible values may underestimate imputation variance in borderline cases. Our comparison of the two PISA cycles relies on repeated cross-sectional data, meaning that observed changes in the urban-rural gap cannot be causally attributed to specific reforms, as broader economic, demographic, and migration processes may also have contributed to these trends.

The predictors included in the analysis were determined primarily by the availability of comparable variables across countries and survey cycles within the PISA database. Although these variables capture several important individual- and school-level factors associated with urban-rural disparities, such as SES, school resources, and territorial location, they do not fully reflect broader institutional, cultural, and regional characteristics that may also shape educational outcomes [Irvin et al. 2012; Nyoni et al. 2017]. Moreover, the binary urban-rural classification (settlements up to 3,000 as rural) used in the study does not capture the considerable heterogeneity among rural schools, as proximity to urban centres may significantly shape educational conditions [Greenough, Nelson 2015; Echazarra, Radinger 2019].

Future research could include a broader sample of post-Soviet countries and multiple subject domains, covering a broader range of predictors. In particular, incorporating school-level expenditure data would enable more direct analysis of the relationship between funding policies and student outcomes. Differentiating among rural areas by population size and proximity to urban centres would provide a more nuanced understanding of

rurality. Finally, longitudinal research designs would enable stronger causal inferences regarding the effects of specific reforms on urban–rural disparities.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

During the preparation of this manuscript, the authors used DeepL Write for proofreading purposes. Following the use of this tool, the authors reviewed and edited the text as necessary and take full responsibility for the content of the publication.

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Appendix 1

Descriptive Statistics

Table A1.1

Proportional Distribution of Test Participants by Locality Type across Post-Soviet Countries

Country	2009		2018	
	Rural	Urban	Rural	Urban
Estonia	26.4%	73.6%	23.2%	76.8%
Georgia	34.1%	65.9%	30.1%	69.9%
Kazakhstan	32.7%	67.3%	29.8%	70.2%
Latvia	32.5%	67.5%	19.6%	80.4%
Lithuania	23.3%	76.7%	20.7%	79.3%
Moldova	56.7%	43.3%	46.7%	53.3%
Russia	20.2%	79.8%	14.3%	85.7%

Appendix 2

Multilevel Regression Model Results

Table A2.1

Results of the Multilevel Regression Analysis

Year	PS_Only	Parameter	Estimate	SE	95% Confidence Interval		<i>p</i>
					LL	UL	
2009	Estonia	Intercept	607.73	19.44	569.38	646.08	< 0.001
		Immigrant status	– 14.41	2.23	– 18.77	– 10.04	< 0.001
		Gender	– 42.50	1.24	– 44.93	– 40.07	< 0.001
		ESCS	17.00	0.85	15.33	18.67	< 0.001
		Language at home	– 32.75	3.87	– 40.34	– 25.16	< 0.001
		Rural settlement	– 13.83	6.75	– 27.15	– 0.50	< 0.001
		Teacher shortage	– 5.27	3.95	– 13.08	2.54	0.184
		Available Schooling	– 4.69	3.87	– 12.33	2.94	0.227
		Proportion of qualified teachers	– 1.94	13.41	– 28.42	24.54	0.885
		School type	15.91	12.85	– 9.47	41.29	0.218
	Georgia	Intercept	475.03	16.15	443.18	506.89	< 0.001
		Immigrant status	4.96	3.13	– 1.18	11.09	0.113
		Gender	– 58.71	0.84	– 60.34	– 57.07	< 0.001
		ESCS	20.62	0.50	19.64	21.59	< 0.001
		Language at home	– 20.00	3.14	– 26.14	– 13.85	< 0.001
		Rural settlement	– 20.14	8.05	– 36.02	– 4.25	< 0.001
		Teacher shortage	– 0.48	4.31	– 8.99	8.04	0.912
		Available Schooling	– 1.75	4.40	– 10.43	6.93	0.692
		Proportion of qualified teachers	– 19.82	11.72	– 42.97	3.33	0.093
		School type	32.93	7.73	17.66	48.19	< 0.001
	Kazakhstan	Intercept	502.39	29.47	444.28	560.50	< 0.001
		Immigrant status	– 2.00	0.30	– 2.59	– 1.42	< 0.001
		Gender	– 39.35	0.25	– 39.84	– 38.86	< 0.001
		ESCS	19.40	0.18	19.05	19.75	< 0.001
		Language at home	– 3.55	0.45	– 4.43	– 2.66	< 0.001
		Rural settlement	– 26.34	7.94	– 41.98	– 10.69	< 0.001
		Teacher shortage	– 0.82	3.25	– 7.22	5.58	0.801
		Available Schooling	– 2.05	4.22	– 10.38	6.27	0.628
		Proportion of qualified teachers	– 28.30	30.26	– 87.97	31.37	0.351
		School type	4.41	9.44	– 14.21	23.03	0.641
	Latvia	Intercept	557.57	15.87	526.28	588.86	< 0.001
		Immigrant status	– 4.03	1.95	– 7.85	– 0.21	< 0.001
		Gender	– 44.51	0.85	– 46.18	– 42.84	< 0.001
		ESCS	20.18	0.56	19.09	21.28	< 0.001
		Language at home	– 5.50	1.77	– 8.97	– 2.02	< 0.001
		Rural settlement	– 22.03	5.43	– 32.75	– 11.31	< 0.001
		Teacher shortage	0.21	3.54	– 6.78	7.19	0.953

Table A2.1

Year	PS_Only	Parameter	Estimate	SE	95% Confidence Interval		<i>p</i>
					LL	UL	
2018	Lithuania	Available Schooling	− 2.14	3.90	− 9.83	5.56	0.584
		Proportion of qualified teachers	− 0.34	7.33	− 14.81	14.13	0.963
		School type	16.28	13.31	− 9.98	42.54	0.223
		Intercept	542.40	42.98	457.57	627.23	< 0.001
		Immigrant status	− 6.83	2.41	− 11.55	− 2.10	< 0.001
		Gender	− 52.10	0.67	− 53.40	− 50.79	< 0.001
		ESCS	19.13	0.40	18.35	19.91	< 0.001
		Language at home	− 17.59	2.10	− 21.70	− 13.47	< 0.001
		Rural settlement	− 21.72	6.35	− 34.25	− 9.19	< 0.001
		Teacher shortage	4.11	4.56	− 4.89	13.11	0.368
	Moldova	Available Schooling	− 1.72	3.78	− 9.18	5.74	0.649
		Proportion of qualified teachers	41.57	17.24	7.54	75.60	< 0.001
		School type	1.72	38.21	− 73.69	77.12	0.964
		Intercept	461.93	24.74	413.12	510.75	< 0.001
		Immigrant status	8.68	2.28	4.22	13.14	< 0.001
		Gender	− 42.94	0.64	− 44.20	− 41.68	< 0.001
		ESCS	15.80	0.39	15.04	16.55	< 0.001
		Language at home	− 10.41	1.54	− 13.43	− 7.40	< 0.001
		Rural settlement	− 38.49	6.93	− 52.16	− 24.82	< 0.001
		Teacher shortage	0.71	3.50	− 6.20	7.62	0.839
	Russia	Available Schooling	− 2.94	3.58	− 10.01	4.13	0.412
		Proportion of qualified teachers	37.87	24.80	− 11.08	86.81	0.129
		School type	0b	0.00	—	—	
		Intercept	516.53	27.54	462.23	570.84	< 0.001
		Immigrant status	− 6.18	0.13	− 6.43	− 5.92	< 0.001
		Gender	− 40.42	0.12	− 40.66	− 40.18	< 0.001
		ESCS	21.99	0.09	21.82	22.17	< 0.001
		Language at home	− 13.66	0.30	− 14.24	− 13.07	< 0.001
		Rural settlement	− 3.19	6.67	− 16.34	9.96	0.632
		Teacher shortage	− 3.50	2.68	− 8.79	1.79	0.194
	Estonia	Available Schooling	3.70	3.19	− 2.59	9.98	0.247
		Proportion of qualified teachers	37.88	21.90	− 5.31	81.07	0.085
		School type	− 4.95	19.78	− 43.96	34.05	0.803
		Intercept	627.45	28.71	570.88	684.01	< 0.001
		Immigrant status	− 10.51	2.30	− 15.03	− 6.00	< 0.001
		Gender	− 30.73	1.48	− 33.63	− 27.83	< 0.001
		ESCS	17.94	1.02	15.94	19.94	< 0.001
		Language at home	− 46.83	3.40	− 53.48	− 40.17	< 0.001
		Rural settlement	− 7.51	6.35	− 20.02	4.99	0.238
		Teacher shortage	− 3.15	3.24	− 9.54	3.24	0.333
		Available Schooling	5.38	4.04	− 2.60	13.35	0.185

Table A2.1

Year	PS_Only	Parameter	Estimate	SE	95% Confidence Interval		<i>p</i>
					LL	UL	
Georgia		Proportion of qualified teachers	2.82	9.28	– 15.47	21.11	0.761
		School type	– 1.43	9.00	– 19.18	16.31	0.874
		Intercept	519.08	12.87	493.76	544.40	< 0.001
		Immigrant status	– 18.43	2.09	– 22.53	– 14.33	< 0.001
		Gender	– 35.57	0.71	– 36.96	– 34.18	< 0.001
		ESCS	16.73	0.44	15.87	17.58	< 0.001
		Language at home	– 0.46	0.09	– 0.63	– 0.29	< 0.001
		Rural settlement	– 12.87	5.34	– 23.39	– 2.36	< 0.001
		Teacher shortage	– 0.40	0.20	– 0.80	– 0.01	< 0.001
		Available Schooling	– 0.68	3.25	– 7.08	5.72	0.835
Kazakhstan		Proportion of qualified teachers	6.02	6.12	– 6.03	18.07	0.326
		School type	– 20.45	3.97	– 28.26	– 12.63	< 0.001
		Intercept	381.97	13.29	355.86	408.08	< 0.001
		Immigrant status	– 1.97	0.32	– 2.60	– 1.34	< 0.001
		Gender	– 24.01	0.26	– 24.52	– 23.50	< 0.001
		ESCS	6.35	0.17	6.02	6.67	< 0.001
		Language at home	– 0.21	0.04	– 0.29	– 0.13	< 0.001
		Rural settlement	– 34.24	3.78	– 41.66	– 26.82	< 0.001
		Teacher shortage	1.12	1.71	– 2.23	4.47	0.512
		Available Schooling	8.21	2.37	3.56	12.86	< 0.001
Latvia		Proportion of qualified teachers	18.99	5.71	7.78	30.21	< 0.001
		School type	12.22	4.16	4.05	20.40	< 0.001
		Intercept	460.61	30.99	399.63	521.59	< 0.001
		Immigrant status	5.42	2.47	0.58	10.25	< 0.001
		Gender	– 30.96	1.26	– 33.43	– 28.49	< 0.001
		ESCS	13.88	0.85	12.21	15.55	< 0.001
		Language at home	– 0.32	0.17	– 0.65	0.01	0.059
		Rural settlement	– 20.06	5.64	– 31.15	– 8.97	< 0.001
		Teacher shortage	– 0.01	0.42	– 0.84	0.81	0.98
		Available Schooling	– 8.18	4.37	– 16.78	0.43	0.062
Lithuania		Proportion of qualified teachers	2.94	8.00	– 12.80	18.67	0.714
		School type	21.50	10.01	1.81	41.20	< 0.001
		Intercept	630.55	39.32	553.22	707.88	< 0.001
		Immigrant status	– 6.99	3.00	– 12.88	– 1.10	< 0.001
		Gender	– 26.64	0.92	– 28.44	– 24.84	< 0.001
		ESCS	15.15	0.62	13.94	16.36	< 0.001
		Language at home	– 0.68	0.19	– 1.06	– 0.30	< 0.001
		Rural settlement	– 42.67	6.52	– 55.48	– 29.85	< 0.001
		Teacher shortage	0.52	0.53	– 0.53	1.56	0.33
		Available Schooling	5.05	3.83	– 2.48	12.58	0.188
		Proportion of qualified teachers	7.69	24.41	– 40.32	55.69	0.753

Table A2.1

Year	PS_Only	Parameter	Estimate	SE	95% Confidence Interval		<i>p</i>
					LL	UL	
	Moldova	School type	– 43.73	10.70	– 64.79	– 22.68	< 0.001
		Intercept	569.51	39.01	492.71	646.31	< 0.001
		Immigrant status	– 16.98	2.80	– 22.47	– 11.48	< 0.001
		Gender	– 35.96	0.87	– 37.67	– 34.25	< 0.001
		ESCS	24.53	0.55	23.47	25.60	< 0.001
		Language at home	– 0.30	0.02	– 0.34	– 0.26	< 0.001
		Rural settlement	– 34.37	5.37	– 44.95	– 23.79	< 0.001
		Teacher shortage	– 0.10	0.25	– 0.58	0.39	0.702
		Available Schooling	– 5.75	3.00	– 11.65	0.16	0.056
		Proportion of qualified teachers	5.86	6.04	– 6.04	17.76	0.333
	Russia	School type	– 11.67	12.98	– 37.23	13.89	0.369
		Intercept	523.36	9.60	504.45	542.28	< 0.001
		Immigrant status	– 6.23	0.20	– 6.63	– 5.84	< 0.001
		Gender	– 21.77	0.14	– 22.04	– 21.50	< 0.001
		ESCS	14.67	0.10	14.46	14.87	< 0.001
		Language at home	– 0.89	0.02	– 0.93	– 0.86	< 0.001
		Rural settlement	– 22.27	8.28	– 38.58	– 5.96	< 0.001
		Teacher shortage	– 6.99	2.82	– 12.53	– 1.45	< 0.001
		Available Schooling	– 4.36	4.20	– 12.64	3.91	0.3
		Proportion of qualified teachers	4.68	6.58	– 8.28	17.64	0.477

Appendix 3

Significance of Territorial Differences in Reading Test Scores

Table A3.1

Results of Independent-Samples T-Tests

Year	Country	T	Df	<i>p</i>	Av. diff.	95% Ci	
						High	Low
2009	Estonia	13.39	12,976.00	< 0.001	21.23	1.59	18.12
	Georgia	43.99	42,516.00	< 0.001	41.42	0.94	39.57
	Kazakhstan	94.41	250,655.00	< 0.001	34.64	0.37	33.92
	Latvia	31.94	23,360.00	< 0.001	33.63	1.05	31.57
	Lithuania	39.00	40,294.00	< 0.001	37.76	0.97	35.86
	Moldova	76.33	43,193.00	< 0.001	59.50	0.78	57.97
	Russia	164.28	1,290,045.00	< 0.001	30.81	0.19	30.45
2018	Estonia	3.71	11,413.00	< .001	7.38	1.99	3.48
	Georgia	48.37	38,276.00	< 0.001	42.48	0.88	40.76
	Kazakhstan	106.50	212,227.00	< 0.001	36.51	0.34	35.84
	Latvia	21.79	15,205.00	< 0.001	37.81	1.74	34.41
	Lithuania	44.44	24,451.00	< 0.001	61.65	1.39	58.93
	Moldova	63.72	28,250.00	< 0.001	63.62	1.00	61.66
	Russia	200.73	1,191,175.00	< 0.001	46.55	0.23	46.09

Note: The dependent variable is the reading test scores, and the grouping variable is territorial affiliation (city = 0; village = 1).

References

- Alembaeva A. A., Turymbaeva L. A., Kadyrova M. B. (2017) *Aktualnye voprosy podushevogo phinansirovaniya sistemy obrazovaniya v Respublike Kazakhstan* [Actual Issues of Per Capita Financing of the Education System in the Republic of Kazakhstan]. Available at: <http://repository.apa.kz/xmlui/handle/123456789/916> (accessed 20 August 2023).
- Alonso Carmona C., García-Arnau A., Vázquez-Cupeiro M. S. (2023) What is Educational Inequality? Divergences and Continuities in the Major Educational Reforms in Spain. *Education Policy Analysis Archives*, vol. 31. doi:10.14507/epaa.31.8021
- Alonso J. D., Sánchez A. (eds) (2011) *Reforming Education Finance in Transition Countries: Six Case Studies in Per Capita Financing Systems*, Washington, DC: World Bank.
- Amini C., Nivorozhkin E. (2015) The Urban-Rural Divide in Educational Outcomes: Evidence from Russia. *International Journal of Educational Development*, vol. 44, pp. 118–133. doi: 10.1016/j.ijedudev.2015.07.006
- Ayaiz Rather S. (2024) Educational Disparities in Rural Areas: Analyzing Challenges and Developing Strategic Improvements. *International Journal for Multidisciplinary Research*, vol. 6, no 6. doi: 0.36948/ijfmr.2024.v06i06.32532
- Balfour R. J., Mitchell C., Moletsane R. (2008) Troubling Contexts: Toward a Generative Theory of Rurality as Educational Research. *Journal of Rural and Community Development*, vol. 3, no 3, pp. 95–107.
- Bird K., Hulme D., Moore K., Shepherd A. (2002) Chronic Poverty and Remote Rural Areas. *CPRC Working Papers*, no 13, Chronic Poverty Research Centre, University of Birmingham and University of Manchester. doi: 10.2139/ssrn.1754490
- Bochorishvili E., Peranidze N. (2020) *Georgia's Education Sector, Tbilisi, Georgia: Galt & Taggart Industry Overview*.
- Bucaite-Vilke J. (2022) *Social Investment and Territorial Inequalities: Mapping Policies and Services in the Baltic States*, Berlin: Peter Lang International Academic Publishers.
- Bystrova N. P., Bukibayeva G. S. (1988) On the Inequality of Rural Services Provision in the USSR. *Soviet Geography*, vol. 29, no 8, pp. 762–769. doi: 10.1080/00385417.1988.10640746
- Carlsen A. (2020) *Ensuring Lifelong Learning for All in Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan: Country Evidence and Policy Recommendations*, Paris: UNESCO Publishing.
- Caselli F. (2005) Accounting for Cross-Country Income Differences. *Handbook of Economic Growth* (eds. Ph. Aghion, S. Durlauf), Amsterdam, Netherlands: Elsevier, pp. 679–741.
- Chandler M. (2002) Grant Transfers and Financial Supervision in Lithuania. *Delivering Public Services in Cee Countries: Trends and Developments* (eds. J. Finlay, M. Debicki), Proceedings from the Tenth Annual Conference held in Cracow, Poland, April 25–27, Bratislava: NISPAcee, pp. 353–375.

- Chankseliani M. (2017) Charting the Development of Knowledge on Soviet and Ex-Soviet Education through the Pages of Comparative and International Education Journals. *Comparative Education*, vol. 53, no 2, pp. 265–283. doi: [10.1080/03050068.2017.1293407](https://doi.org/10.1080/03050068.2017.1293407)
- Chunling L. (2015) Trends in Educational Inequality in Different Eras (1940–2010): A Re-Examination of Opportunity Inequalities in Urban-Rural Education. *Chinese Education & Society*, vol. 48, no 3, pp. 163–182. doi: [10.1080/10611932.2015.1085772](https://doi.org/10.1080/10611932.2015.1085772)
- Creswell J. W. (1999) Mixed-Method Research: Introduction and Application. *Handbook of Educational Policy: A Volume in Educational Psychology* (ed. G. J. Cizek), Amsterdam, Netherlands: Elsevier, pp. 455–472. doi: [10.1016/b978-012174698-8/50045-x](https://doi.org/10.1016/b978-012174698-8/50045-x)
- Dhaliwal T. K., Bruno P. (2021) The Rural/Nonrural Divide? K–12 District Spending and Implications of Equity-Based School Funding. *AERA Open*, vol. 7, art. 2332858420982549.
- Du Plessis P., Mestry R. (2019) Teachers for Rural Schools — A Challenge for South Africa. *South African Journal of Education*, vol. 39 (Supplement 1), pp. S1–S9. doi: [10.15700/saje.v39ns1a1774](https://doi.org/10.15700/saje.v39ns1a1774)
- Duncan G. J., Murnane R. J. (2011) *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances*, New York: Russell Sage Foundation.
- Eacott S., Freeborn A. (2020) Regional and Rural School Consolidation: A Scoping Study of Research Literature. *International Journal of Educational Management*, vol. 34, no 3, pp. 477–491. doi: [10.1108/IJEM-08-2019-0318](https://doi.org/10.1108/IJEM-08-2019-0318)
- Echazarra A., Radinger T. (2019) Learning in Rural Schools: Insights from PISA, TALIS and the Literature. *OECD Education Working Papers*, no 196. doi: [10.1787/8b1a5cb9-en](https://doi.org/10.1787/8b1a5cb9-en)
- Elliott J., Tudge J. (2013) The Impact of the West on Post-Soviet Russian Education: Change and Resistance to Change. *Western Psychological and Educational Theory in Diverse Contexts* (eds. J. Elliot, E. Grigorenko), London: Routledge, pp. 93–112.
- Entorf H., Minoiu N. (2004) What a Difference Immigration Law Makes: PISA Results, Migration Background, Socioeconomic Status and Social Mobility in Europe and Traditional Countries of Immigration. *Darmstadt Discussion Papers in Economics*, no 128.
- Fazekas M. (2012) School Funding Formulas. *OECD Working Papers*, no 74, Paris: OECD.
- Fernandez-Cano A. (2016) A Methodological Critique of the PISA Evaluations. *Relieve*, vol. 22, no 1, pp. 1–16. doi: [10.7203/relieve.22.1.8806](https://doi.org/10.7203/relieve.22.1.8806)
- Franck E., Nicaise I. (2017) *The Effectiveness of Equity Funding in Education in Western Countries: Literature Review*, report no 2/2017, European Commission.
- Fuchs R. J., Demko G. J. (1979) Geographic Inequality under Socialism. *Annals of the Association of American Geographers*, vol. 69, no 2, pp. 304–318.
- Gerry C., Mickiewicz T. (2007) Inequality, Democracy and Taxation: Lessons from the Post-Communist Transition. *University College London SSEES Working Papers*, no 60. doi: [10.1080/09668130701760356](https://doi.org/10.1080/09668130701760356)

- Giedraitienė E., Kiliuvienė D., Brauckmann S. (2007) Lithuania. *The Education Systems of Europe* (eds. W. Hörner, H. Döbert, B. von Kopp, W. Mitter), Dordrecht: Springer, pp. 451–469.
- Greenough R., Nelson S. R. (2015) Recognizing the Variety of Rural Schools. *Peabody Journal of Education*, vol. 90, no 2, pp. 322–332. doi: [10.1080/0161956X.2015.1022393](https://doi.org/10.1080/0161956X.2015.1022393)
- Grivins M. (2012) Implementation of Per Capita Education Funding in the Baltic States. *Baltic Journal of European Studies*, vol. 2, no 12, pp. 87–108. doi: [10.11590/bjes.2012.2.05](https://doi.org/10.11590/bjes.2012.2.05)
- Gross C., Hadjar A., Zapfe L. (2022) Institutional Characteristics of Educational Systems and Inequalities: Introduction II. *International Journal of Comparative Sociology*, vol. 63, no 1–2, pp. 3–9. doi: [10.1177/00207152211061598](https://doi.org/10.1177/00207152211061598)
- Harris C. E. (2015) Schools that Don't Close: Possible Places and Spaces for Progressive Teaching, Learning, and Research. *Alberta Journal of Educational Research*, vol. 60, no 4, pp. 656–673. doi: [10.11575/ajer.v60i4.55979](https://doi.org/10.11575/ajer.v60i4.55979)
- Hazans M. (2010) Teacher Pay, Class Size and Local Governments: Evidence from the Latvian Reform. *IZA Discussion Papers*, no 5291. Available at: <https://www.econstor.eu/bitstream/10419/51995/1/663224713.pdf> (accessed 20 August 2023).
- Henderson R., Mandalawi S. M. (2024) The Importance of Local Context in a Global World: Three Case Studies from Rural and Remote International Locations. *Australian and International Journal of Rural Education*, vol. 34, no 1, pp. 25–43. doi: [10.47381/ajre.v34i1.468](https://doi.org/10.47381/ajre.v34i1.468)
- Herczynski J. (2003) The Financing of Georgian Education. *Problems of Economic Transition*, vol. 45, no 10, pp. 5–57. doi: [10.1080/10611991.2003.11049800](https://doi.org/10.1080/10611991.2003.11049800)
- Heyneman S. (1998) The Transition from Party/State to Open Democracy: The Role of Education. *International Journal of Educational Development*, vol. 18, no 1, pp. 21–40. doi: [10.1016/S0738-0593\(97\)00039-4](https://doi.org/10.1016/S0738-0593(97)00039-4)
- Hernández-Torrano D. (2018) Urban-Rural Excellence Gaps: Features, Factors, and Implications. *Roeper Review*, vol. 40, no 1, pp. 36–45. doi: [10.1080/02783193.2018.1393610](https://doi.org/10.1080/02783193.2018.1393610)
- Imai K. S., Malaeb B. (2016) *Asia's Rural-Urban Disparity in the Context of Growing Inequality*, Kobe, Japan: Research Institute for Economics and Business Administration, Kobe University.
- Irvin M. J., Byun S. Y., Meece J. L., Farmer T. W., Hutchins B. C. (2012) Educational Barriers of Rural Youth: Relation of Individual and Contextual Difference Variables. *Journal of Career Assessment*, vol. 20, no 1, pp. 71–87.
- Jackson C. K., Johnson R., Persico C. (2014) The Effect of School Finance Reforms on the Distribution of Spending, Academic Achievement, and Adult Outcomes. *NBER Working Paper*, no 20118.
- Janashia S. (2015) The Voucher System in Georgia. *Globalization, Ideology and Politics of Education Reforms* (ed. J. Zajda), Berlin; London: Springer, pp. 107–118.

- Jin H., Jirasavetakul L. B. F., Shang B. (2019) *Improving the Efficiency and Equity of Public Education Spending: The Case of Moldova*, Washington, DC: International Monetary Fund.
- Johnson J., Howley C. B. (2015) Contemporary Federal Education Policy and Rural Schools: A Critical Policy Analysis. *Peabody Journal of Education*, vol. 90, no 2, pp. 224–241. doi: [10.1080/0161956X.2015.1022112](https://doi.org/10.1080/0161956X.2015.1022112)
- Khavenson T., Carnoy M. (2016) The Unintended and Intended Academic Consequences of Educational Reforms: The Cases of Ex-Soviet Estonia, Latvia and Russia. *Oxford Review of Education*, vol. 42, no 2, pp. 178–199. doi: [10.1080/03054985.2016.1157063](https://doi.org/10.1080/03054985.2016.1157063)
- Kitsing M., Kukemelk H. (2020) Estonia: School Governance in Estonia: Turnaround from Order-Oriented to Inclusive and Evidence-Based Governance. *Educational Authorities and the Schools: Organisation and Impact in 20 States* (eds. H. Ärlestig, O. Johansson), vol. 13, Cham: Springer, pp. 131–150.
- Kline J., White S., Lock G. (2013) The Rural Practicum: Preparing a Quality Teacher Workforce for Rural and Regional Australia. *Journal of Research in Rural Education*, vol. 28, no 3, pp. 1–13.
- Klyachko T. L. (2014) Normativnoe podushevoe phinansirovanie: zamysly, resheniya i efekty [Normative Per Capita Financing: Intentions, Solutions and Effects]. *Zhurnal rukovoditelya upravleniya obrazovaniem*, no 3, pp. 9–14 (in Russian).
- Koroleva I., Mierina I., Karklina I. (2017) Small Rural Schools on the Edge of Survival: Comparative Assessment of Stakeholders' Perspectives in Latvia and Norway. *Journal of Advances in Humanities and Social Sciences*, vol. 3, no 4, pp. 214–225.
- Kosaretsky S., Froumin I. (eds) (2022) *Rossiyskaya shkola: nachalo XXI veka* [Russian Schools: The Early 21st Century], Moscow: HSE Publishing House. doi: [10.17323/978-5-7598-2445-9](https://doi.org/10.17323/978-5-7598-2445-9) (in Russian).
- Krasnopjorovs O. (2019) Why is Education Performance So Different Across Latvian Schools? *Economics of Transition and Institutional Change*, vol. 27, no 4, pp. 971–987. doi: [10.1111/ecot.12227](https://doi.org/10.1111/ecot.12227)
- Kryst E. L., Kotok S., Bodovski K. (2015) Rural/Urban Disparities in Science Achievement in Post-Socialist Countries: The Evolving Influence of Socioeconomic Status. *Global Education Review*, vol. 2, no 4, pp. 60–77.
- Kutsyuruba B. (2017) Using Document Analysis Methodology to Explore Educational Reforms and Policy Changes in Ex-Soviet Ukraine. *Reimagining Utopias: Theory and Method for Educational Research in Post-Socialist Contexts* (eds. I. Silova, N. Sobe, A. Korzh, S. Kovalchuk), Rotterdam: SensePublishers, pp.199–214.
- Kuzmenko T., Liakh V., Dmytrenko A. (2018) Improvement of Functional Planning Organisation of Rural Settlements in Suburban Zones. *International Journal of Engineering and Technology*, vol. 7, no 3, pp. 626–630. doi: [10.14419/ijet.v7i3.2.14603](https://doi.org/10.14419/ijet.v7i3.2.14603)
- Levacic R. (2014) Using Quantitative Data in World Bank Per-Student Funding Reform Projects: Data, Designs and Dilemmas in Transition Countries. *Comparative Education*, vol. 50, no 3, pp. 340–356. doi: [10.1080/03050068.2014.921373](https://doi.org/10.1080/03050068.2014.921373)

- Li R. R., Kitchen H., George B., Richardson M., Fordham E. (2019) *OECD Reviews of Evaluation and Assessment in Education: Georgia*, Paris: OECD Publishing. doi: [10.1787/94dc370e-en](https://doi.org/10.1787/94dc370e-en)
- Lichter D., Schafft K. (2016) People and Places Left Behind: Rural Poverty in the New Century. *The Oxford Handbook of the Social Science of Poverty* (eds. D. Brady, L. M. Burton), Oxford: Oxford University Press, pp. 317–340. doi: [0.1093/oxfordhb/9780199914050.013.15](https://doi.org/0.1093/oxfordhb/9780199914050.013.15)
- Maglakelidze S. (2011) *Education Reform and School Funding: An Analysis of the Georgian Experience*. Unpublished. Available at: <https://files.eric.ed.gov/fulltext/ED515551.pdf> (accessed 20 October 2023).
- Mhamed A. A. S., Winter L., Kasa R., Qanay Q., Zhontayeva Zh., Aringazina L. (2023) New Ways of Financing Schools: Per-Capita Funding. *Mapping Educational Change in Kazakhstan* (eds. C. McLaughlin, L. Winter, N. Yakavets), Cambridge University Press, pp. 137–150. doi: [10.1017/9781009070515.012](https://doi.org/10.1017/9781009070515.012)
- Milanovic B. (2013) Global Income Inequality in Numbers: In History and Now. *Global Policy*, vol. 4, no 2, pp. 198–208. doi: [10.1111/1758-5899.12032](https://doi.org/10.1111/1758-5899.12032)
- Monk D. H. (2007) Recruiting and Retaining High-Quality Teachers in Rural Areas. *The Future of Children*, vol. 17, no 1, pp. 155–174. doi: [10.1353/foc.2007.0009](https://doi.org/10.1353/foc.2007.0009)
- Moulton J. (2001) *Improving Education in Rural Areas: Guidance for Rural Development Specialists*, Washington, DC: World Bank.
- Müller W., Shavit Y. (1998) The Institutional Embeddedness of the Stratification Process: A Comparative Study of Qualifications and Occupations in Thirteen Countries. *From School to Work* (eds. Y. Shavit, W. Müller), Oxford: Clarendon Press, pp. 1–48.
- Nefedova T. G., Slepukhina I. L., Brade I. (2016) Migration Attractiveness of Cities in the Ex-Soviet Space: A Case Study of Russia, Ukraine, and Belarus. *Regional Research of Russia*, vol. 6, pp. 131–143. doi: [10.1134/S2079970516020088](https://doi.org/10.1134/S2079970516020088)
- North D. C. (1990) *Institutions, Institutional Change and Economic Performance*, Cambridge: Cambridge University Press.
- Nyoni M., Nyoni T., Bonga W. G. (2017) Factors Affecting Students' Academic Achievement in Rural Secondary Schools of Zimbabwe: A Case Study of Marimasimbe Secondary School. *Journal of Economics and Finance (DRJ-JEF)*, vol. 2, no 3, pp. 1–15.
- OECD (2016a) *PISA 2015 Results (Volume I): Excellence and Equity in Education*, Paris: OECD Publishing. doi: [10.1787/9789264266490-en](https://doi.org/10.1787/9789264266490-en)
- OECD (2016b) *PISA 2015 Results (Volume II): Policies and Practices for Successful Schools*, Paris: OECD Publishing. doi: [10.1787/9789264267510-en](https://doi.org/10.1787/9789264267510-en)
- OECD (2017) *The Funding of School Education: Connecting Resources and Learning*, Paris: OECD Publishing. doi: [10.1787/9789264276147-en](https://doi.org/10.1787/9789264276147-en)
- OECD (2021a) *Delivering Quality Education and Health Care to All: Preparing Regions for Demographic Change*, Paris: OECD Publishing. doi: [10.1787/83025c02-en](https://doi.org/10.1787/83025c02-en)

- OECD (2021b) Towards Equity in School Funding Policies. *OECD Education Policy Perspectives*, no 41. doi: [10.1787/6a3d127a-en](https://doi.org/10.1787/6a3d127a-en)
- Olefir A., Stöhr T., Coupe T., Gremalschi A. (2015) Student Performance and Attendance in Moldova from a Socioeconomic Perspective. *SSRN*. Available at: <https://ssrn.com/abstract=3074818> or <http://dx.doi.org/10.2139/ssrn.3074818> (accessed 20 October 2023).
- Orivel F. (1998) *Cost and Finance of Education in Georgia*, Washington, DC: World Bank.
- Papay J. P., Murnane R. J., Willett J. B. (2015) Income-Based Inequality in Educational Outcomes: Learning from State Longitudinal Data Systems. *Educational Evaluation and Policy Analysis*, vol. 37, no 1, pp. 29–52. doi: [10.3102/0162373715576364](https://doi.org/10.3102/0162373715576364).
- Partridge M. D., Olfert M. R. (2009) Dissension in the Countryside: Bridging the Rural-Urban Divide with a New Rural Policy. *Globalization and the Rural-Urban Divide* (eds. M. Gopinath, H. Kim), Seoul: Seoul National University Press.
- Popa A., Oprunenco A., Lupusor A., Prohnitchi V. (2011) *Relationship between Human Capital Development and Equity in the Republic of Moldova*, Torino: European Training Foundation.
- Roscigno V. J., Crowle M. L. (2001) Rurality, Institutional Disadvantage, and Achievement/Attainment. *Rural Sociology*, vol. 66, no 2, pp. 268–292. doi: [10.1111/J.1549-0831.2001.TB00067.X](https://doi.org/10.1111/J.1549-0831.2001.TB00067.X)
- Rosenberg L., Christianson M. D., Hague Angus M. (2015) Improvement Efforts in Rural Schools: Experiences of Nine Schools Receiving Improvement Grants. *Peabody Journal of Education*, vol. 90, no 2, pp. 194–210. doi: [10.1080/0161956X.2015.1022109](https://doi.org/10.1080/0161956X.2015.1022109)
- Sakellariou C. (2017) Private or Public School Advantage? Evidence from 40 Countries Using PISA 2012-Mathematics. *Applied Economics*, vol. 49, no 29, pp. 582–598. doi: [10.12681/elrie.820](https://doi.org/10.12681/elrie.820)
- Sjøberg S. (2015) PISA and Global Educational Governance: A Critique of the Project, Its Uses and Implications. *Eurasia Journal of Mathematics, Science and Technology Education*, vol. 11, no 1, pp. 111–127. doi: [10.12973/eurasia.2015.1310a](https://doi.org/10.12973/eurasia.2015.1310a)
- Silova I. (2002) The Manipulated Consensus: Globalization, Local Agency, and Cultural Legacies in Ex-Soviet Education Reform. *European Educational Research Journal*, vol. 1, no 2, pp. 308–330. doi: [10.2304/eeerj.2002.1.2.7](https://doi.org/10.2304/eeerj.2002.1.2.7)
- Silova I. (2009) Varieties of Educational Transformation: The Post-Socialist States of Central/Southeastern Europe and the former Soviet Union. *International Handbook of Comparative Education* (eds. R. Cowen, A. M. Kazamias), Dordrecht: Springer, pp. 295–320.
- Silova I., Johnson M. S., Heyneman S. P. (2007) Education and the Crisis of Social Cohesion in Azerbaijan and Central Asia. *Comparative Education Review*, vol. 51, no 2, pp. 159–180. doi: [10.1086/512022](https://doi.org/10.1086/512022)
- Simai M. (2006) *Poverty and inequality in Eastern Europe and the CIS transition economies*, New York: United Nations, DESA.
- Smith G. (2024) *The Post-Soviet States: Mapping the Politics of Transition*, London: Taylor & Francis.

- Sodnomova S. K. (2018) Otsenka vnedreniya normativno-podushhevogo finansirovaniya na primere uchrezhdenii obrazovaniya [Evaluation of the Implementation of Normative Per Capita Financing on the Example of Educational Institutions]. *World of Economics and Management = Mir ekonomiki i upravleniya*, vol. 18, no 4, pp. 101–111 (in Russian).
- Šūpule I., Søholt S. (2019) Rural Municipalities and Change in Local School Structure: Comparing Room for Manoeuvre among Rural Municipalities in Latvia and Norway. *Scandinavian Journal of Educational Research*, vol. 63, no 7, pp. 1070–1085. doi: [10.1080/00313831.2018.1476916](https://doi.org/10.1080/00313831.2018.1476916)
- Tabatadze S., Gorgadze N. (2017) School Voucher Funding System of Post-Soviet Georgia: From Lack of Funding to Lack of Deliverables. *Journal of School Choice*, vol. 12, no 2, pp. 271–302. doi: [10.1080/15582159.2017.1408000](https://doi.org/10.1080/15582159.2017.1408000)
- Thorez J. (2014) The Post-Soviet Space between North and South: Discontinuities, Disparities and Migrations. *Development in Central Asia and the Caucasus* (eds. S. Hohmann, C. Mouradian, S. Serrano, J. Thorez), London: I. B. Tauris, pp. 215–241.
- Tinkham J. (2014) We're Small Enough to Close but Big Enough to Divide: The Complexities of the Nova Scotia School Review Process. *Alberta Journal of Educational Research*, vol. 60, no 4, pp. 726–740.
- Titma M., Saar E. (1995) Regional Differences in Soviet Secondary Education. *European Sociological Review*, vol. 11, no 1, pp. 37–58. doi: [10.1093/oxfordjournals.esr.a036348](https://doi.org/10.1093/oxfordjournals.esr.a036348)
- Titma M., Tuma N. B., Roosma K. (2003) Education as a Factor in Intergenerational Mobility in Soviet Society. *European Sociological Review*, vol. 19, no 3, pp. 281–297. doi: [10.1093/esr/19.3.281](https://doi.org/10.1093/esr/19.3.281)
- Tūna A. (2015) Development of the School as Multidimensional Community Resource in Latvia: Opportunities and Challenges. *SOCIETY. INTEGRATION. EDUCATION*. Proceedings of the International Scientific Conference, May 23–24, 2014, vol. 1, Rēzekne: Rezekne Academy of Technologies, pp. 496–504.
- UNICEF (2007) *Education for Some More than Others? A Regional Study on Education in Central and Eastern Europe and the CIS*, Geneva: UNICEF Regional Office for CEE/CIS.
- Van de Werfhorst H. G., Mijs J. J. (2010) Achievement Inequality and the Institutional Structure of Educational Systems: A Comparative Perspective. *Annual Review of Sociology*, vol. 36, pp. 407–428. doi: [10.1146/annurev.soc.012809.102538](https://doi.org/10.1146/annurev.soc.012809.102538)
- Vethlehemsky A. (2009) Dengi sleduyut za uchenikom? [Does Money Follow the Student?]. *Narodnoe obrazovanie*, no 10, pp. 151–157 (in Russian).
- Wegren S. (2014) Rural Inequality in Ex-Soviet Russia. *Problems of Post-Communism*, vol. 61, pp. 52–64. doi: [10.2753/PPC1075-8216610104](https://doi.org/10.2753/PPC1075-8216610104)
- Welch A., Helme S., Lamb S. (2007) Rurality and Inequality in Education: The Australian Experience. *International Studies in Educational Inequality, Theory and Policy* (eds. R. Teese, S. Lamb, M. Duru-Bellat, S. Helme), Dordrecht: Springer, pp. 602–624.
- World Bank (2023) *LAC Equity Lab: A Platform for Poverty and Inequality Analysis*. Available at: <https://www.worldbank.org/en/topic/poverty/lac-equity-lab1> (accessed 20 August 2023).

World Bank Group (2018) *Moldova Preschool and General Education: Transitioning to a Decentralized Service Delivery Model*, Washington, DC: World Bank.

Xu R., Yue W., Wei F., Yang G., Yi C., Pan K. (2022) Inequality of Public Facilities Between Urban and Rural Areas and Its Driving Factors in Ten Cities of China. *Scientific Reports*, vol. 12: art. 13244. doi: [10.1038/s41598-022-17569-2](https://doi.org/10.1038/s41598-022-17569-2)

Yakovets N. (2014) Educational Reform in Kazakhstan: The First Decade of Independence. *Educational Reform and Internationalization: The Case of School Reform in Kazakhstan* (ed. D. Bridges), Cambridge, MA: Cambridge University Press, pp. 1–27.

Yastrebov G. (2022) Revisiting the Historical Trend of Educational Stratification in Soviet and Post-Soviet Russia. *Research in Social Stratification and Mobility*, vol. 77, art. 100662. doi: [10.1016/j.rssm.2021.100662](https://doi.org/10.1016/j.rssm.2021.100662)

Young A. (2013) Inequality, the Urban-Rural Gap, and Migration. *Quarterly Journal of Economics*, vol. 128, no 4, pp. 1727–1785. doi: [10.1093/qje/qjt025](https://doi.org/10.1093/qje/qjt025)

Zajda J. I. (2014) *Education in the USSR: International Studies in Education and Social Change*, Oxford; New York; Paris; Toronto; Sydney; Frankfurt: Pergamon Press.

Zhao Y. (2020) Two Decades of Havoc: A Synthesis of Criticism against PISA. *Journal of Educational Change*, vol. 21, no 2, pp. 245–266. doi: [10.1007/s10833-019-09367-x](https://doi.org/10.1007/s10833-019-09367-x)

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