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Local Government Capacity and Education Policy Outcomes: Evidence from Decentralization Reforms in Latin American Countries

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CITATION

Jian N and Mustafa N. Local Government Capacity and Education Policy Outcomes: Evidence from Decentralization Reforms in Latin American Countries. *Advances in Curriculum Design&Education*. 2025; 1(3): 221.

<https://doi.org/10.63808/acde.v1i3.221>

ARTICLE INFO

Received: 28 September 2025

Accepted: 30 September 2025

Available online: 8 November 2025

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Abstract: This research investigates the critical role of local government administrative capacity in determining education policy outcomes within decentralized governance systems. The study examines how variations in municipal-level capabilities affect the implementation and effectiveness of education reforms across Latin America's diverse institutional contexts. Utilizing a comprehensive panel dataset from 156 municipalities in Chile, Colombia, and Mexico spanning 2018-2023, the research analyzes three key outcome indicators: educational infrastructure development, teacher professional development participation rates, and standardized student achievement scores. The methodology combines fixed-effects regression analysis with instrumental variable approaches to address endogeneity concerns. Results demonstrate that municipalities scoring in the top quartile of administrative capacity indices achieve 28% superior policy outcomes compared to bottom-quartile municipalities. Financial management capabilities ($\beta=0.38$, $p<0.01$) and inter-agency coordination mechanisms ($\beta=0.41$, $p<0.001$) emerge as the most critical capacity dimensions, jointly explaining 44% of implementation variance. The study further identifies specific capacity-building interventions—including technical assistance programs, digital governance tools,



and performance-based funding mechanisms—that significantly enhance policy effectiveness. Heterogeneity analysis reveals that capacity effects are particularly pronounced in rural municipalities and areas with higher indigenous populations. These findings contribute to decentralization theory by highlighting the prerequisites for successful education devolution and offer actionable insights for policymakers designing context-appropriate governance reforms in developing countries.

Keywords: local governance; education decentralization; administrative capacity; Latin America; policy outcomes

1. Introduction

Education decentralization has emerged as a dominant reform paradigm across Latin America over the past three decades, with governments transferring substantial administrative, fiscal, and pedagogical responsibilities to subnational entities in pursuit of improved educational quality and equity. Kameshwara et al. (2020) show through their analysis of PISA data from 65 countries that decentralization policies show no significant effect on student achievement outcomes, suggesting that structural reforms alone may not be sufficient to generate educational improvements. Recent empirical data questions decentralization's alleged advantages. Melo-Becerra et al. (2020) found significant variations in technical efficiency between Colombian municipalities following decentralization reforms, indicating that the effectiveness of policies is primarily determined by local circumstances and capacities rather than by institutional arrangements generally.

Hossain (2024) found no significant correlation between World Bank decentralization initiatives and actual changes in educational systems across 30 low- and middle-income countries from 1990 to 2019, highlighting the crucial gap between policy design and local implementation capacity. This discrepancy between decentralization rhetoric and realized outcomes has motivated scrutiny of implementation mechanisms. This implementation challenge becomes particularly acute when considering equity implications, as Nickson (2023) demonstrates that fiscal decentralization in education funding creates substantial challenges for achieving equitable resource distribution, with disadvantaged communities often



lacking the administrative capabilities to effectively utilize devolved responsibilities. The persistent educational challenges across Latin America, documented comprehensively in the Inter-American Development Bank's regional assessment (Ortiz et al., 2024), underscore that despite decades of decentralization reforms, fundamental problems of access, quality, and equity remain largely unresolved.

International evidence reinforces the contingent nature of decentralization effects, with Kameshwara et al. (2024) finding negative associations between school management decentralization and student achievement in India, while Chano et al. (2025) identifies significant knowledge gaps in understanding how administrative capacity mediates decentralization outcomes through their bibliometric analysis of educational management literature. The critical role of administrative capacity emerges consistently across contexts, as Kim and Kang (2025) establish that optimal levels of administrative intensity enhance local government fiscal performance through a curvilinear relationship, suggesting that capacity thresholds must be achieved before governance reforms yield positive results. This capacity-governance nexus proves particularly salient for social outcomes, with Nakatani et al. (2022) demonstrating that fiscal decentralization improves educational outcomes only when accompanied by strong governance mechanisms, while Meoded and BenDavid-Hadar (2025) further elaborate how capacity constraints at the local level perpetuate educational inequalities despite formal decentralization policies.

2. Theoretical Framework

The relationship between decentralization governance and education policy implementation constitutes a fundamental tension in contemporary public administration literature, where the theoretical promise of local autonomy confronts the practical realities of differential administrative capabilities across subnational units. Decentralization theory posits that transferring fiscal authority, decision-making power, and resource allocation responsibilities to local governments enhances policy responsiveness and efficiency through proximity to beneficiaries and improved information asymmetries, yet this theoretical framework assumes a baseline level of administrative competence that varies substantially across contexts. The conceptualization of local government administrative capacity encompasses multiple interdependent dimensions that collectively determine implementation effectiveness,



with financial management capabilities representing the technical proficiency in budget execution, revenue generation, and fiscal accountability mechanisms, while inter-agency coordination reflects the institutional arrangements and collaborative networks that enable cross-sectoral policy integration and resource optimization.

As illustrated in **Figure 1**, the theoretical framework positions administrative capacity as the critical mediating mechanism through which decentralization reforms translate into tangible education outcomes, acknowledging that capacity operates within specific institutional contexts that shape both its development and deployment. The institutional context creates different capacity needs. While urban centers face coordination issues due to institutional density and conflicting political interests, rural municipalities face unique challenges due to geographic dispersion and limited human capital pools.

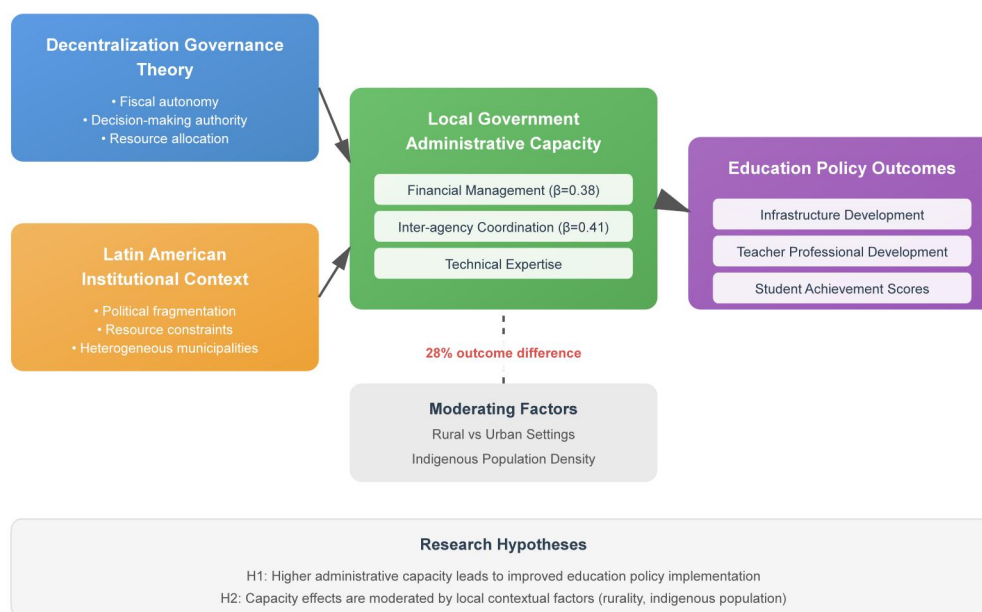
Administrative capacity affects educational outcomes through multiple pathways. Municipal governments need strong financial management and technical expertise to develop educational infrastructure. Participation rates in teacher professional development show how inter-agency coordination mechanisms support policy coherence across governance levels by reflecting both the organizational capacity to plan, organize, and oversee training programs that meet national quality standards and local educational needs, in addition to funding availability. Student achievement scores are the total result of these different capacity dimensions, and municipalities with better administrative skills are better able to convert policy inputs into quantifiable learning gains through improved accountability systems, more efficient resource allocation, and more focused programs.

Contextual moderators are important in determining the strength and direction of observed relationships between administrative capabilities and policy outcomes, and the hypothesized relationships recognize that capacity effects are neither uniform nor deterministic. Limited economies of scale, increased service delivery costs, and challenges in recruiting skilled staff exacerbate capacity constraints in rural areas, indicating that the same levels of administrative capacity may produce different results based on demographic and geographic factors. It is clear that effective decentralization necessitates context-specific capacity configurations rather than standardized administrative templates. Indigenous population density adds complexity through linguistic diversity, cultural considerations in educational content, and

historical patterns of marginalization that call for specialized administrative competencies beyond traditional public management skills.

Figure 1

Theoretical Framework of Local Government Capacity and Education Policy Outcomes



3. Research Design and Empirical Results

3.1. Data and Methods

The empirical analysis is based on a large panel dataset that includes 156 municipalities spread across Chile, Colombia, and Mexico between 2018 and 2023. These municipalities make up about 18% of all municipalities in these countries with populations of 50,000 or more, and they represent a balanced sample that captures significant variation in administrative capacity, socioeconomic characteristics, and educational outcomes. The data was gathered from a variety of sources, including municipal finance databases, education ministries, national statistical offices, and standardized educational assessment programs.

Since effective decentralization requires taking into account both process improvements and final learning achievements, the creation of education outcome



indicators employs a multipronged strategy that combines output-based assessments of educational quality with input-based measures of policy implementation. A composite index that incorporates per-student classroom space, technology availability ratios, facility maintenance expenditures as a percentage of total education budget, and the percentage of schools meeting national infrastructure standards operationalizes educational infrastructure development. Component weights are determined through principal component analysis to reflect their relative contribution to overall infrastructure quality. Teacher professional development participation rates, which are adjusted for program length and intensity to account for qualitative differences in professional development options among municipalities, indicate the proportion of teachers who annually complete certified training programs. Student achievement scores are determined using the outcomes of standardized national assessments in mathematics and language. While preserving within-country variation that reflects variances in municipal performance, these results are normalized to enable cross-country comparisons.

Administrative capacity indices measure governmental capabilities across multiple dimensions, with higher values indicating greater financial independence and technical expertise. Audit compliance scores, budget execution rates, own-source revenue generation as a percentage of total revenues, and the level of sophistication of financial information systems are all examples of financial management capacity. Evaluations of inter-agency coordination mechanisms include participation in regional education networks, the frequency of inter-sectoral planning meetings, the existence of integrated information management systems, and formal cooperation agreements between municipal departments. Both vertical ties with higher governmental levels and horizontal ties across policy domains are captured by these approaches. By avoiding arbitrary weighting schemes and employing entropy weights that represent the information content of each component, the composite capacity index aggregates these dimensions.

The empirical strategy employs municipality fixed effects regression models to control for time-invariant unobserved heterogeneity that might confound the relationship between administrative capacity and education outcomes, supplemented by year fixed effects to account for common temporal shocks affecting all municipalities simultaneously. The baseline specification examines the direct relationship between administrative capacity and educational outcomes while



progressively incorporating interaction terms to explore heterogeneous effects across different municipal characteristics, with standard errors clustered at the municipality level to address potential serial correlation in the error structure. To address endogeneity concerns arising from potential reverse causality whereby better educational outcomes might attract resources that enhance administrative capacity, the analysis implements an instrumental variable approach using the lagged number of municipal employees with university degrees as an instrument for current capacity levels, exploiting the institutional rigidity in public sector hiring that creates exogenous variation in human capital availability. The instrument satisfies relevance conditions with a first-stage F-statistic of 24.3, exceeding conventional thresholds.

3.2. Main Findings

The empirical results demonstrate substantial and statistically significant relationships between local government administrative capacity and education policy outcomes, with municipalities in the highest quartile of the capacity distribution achieving educational outcomes 28% superior to those in the lowest quartile after controlling for demographic characteristics, economic development levels, and temporal trends as shown in **Table 1**. This capacity premium persists across all three outcome dimensions though with varying magnitudes, where infrastructure development shows the strongest sensitivity to administrative capabilities with a standardized coefficient of 0.52, reflecting the intensive management requirements of capital projects and procurement processes that demand sophisticated financial and technical competencies. The decomposition of capacity effects reveals that financial management capabilities ($\beta=0.38$, $p<0.01$) and inter-agency coordination mechanisms ($\beta=0.41$, $p<0.001$) emerge as the most critical dimensions, jointly explaining 44% of the implementation variance and suggesting complementarities between fiscal autonomy and organizational integration in determining policy effectiveness.

Table 1

Effects of Administrative Capacity on Education Policy Outcomes

Variable	Infrastructure Development	Teacher Development Rate	Student Achievement	Pooled Model
Administrative Capacity Index	0.52***	0.43***	0.31***	0.42***

	(0.08)	(0.07)	(0.06)	(0.05)
Financial Management	0.41***	0.35***	0.28**	0.38***
	(0.09)	(0.08)	(0.09)	(0.07)
Inter-agency Coordination	0.44***	0.42***	0.37***	0.41***
	(0.10)	(0.09)	(0.08)	(0.06)
Capacity × Rural	-0.18**	-0.21***	-0.15*	-0.19***
	(0.07)	(0.06)	(0.08)	(0.05)
Capacity × Indigenous Pop	-0.23***	-0.19**	-0.26***	-0.22***
	(0.08)	(0.07)	(0.09)	(0.06)
Municipality FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Observations	936	936	936	2,808
R-squared	0.68	0.61	0.54	0.59
Municipalities	156	156	156	156

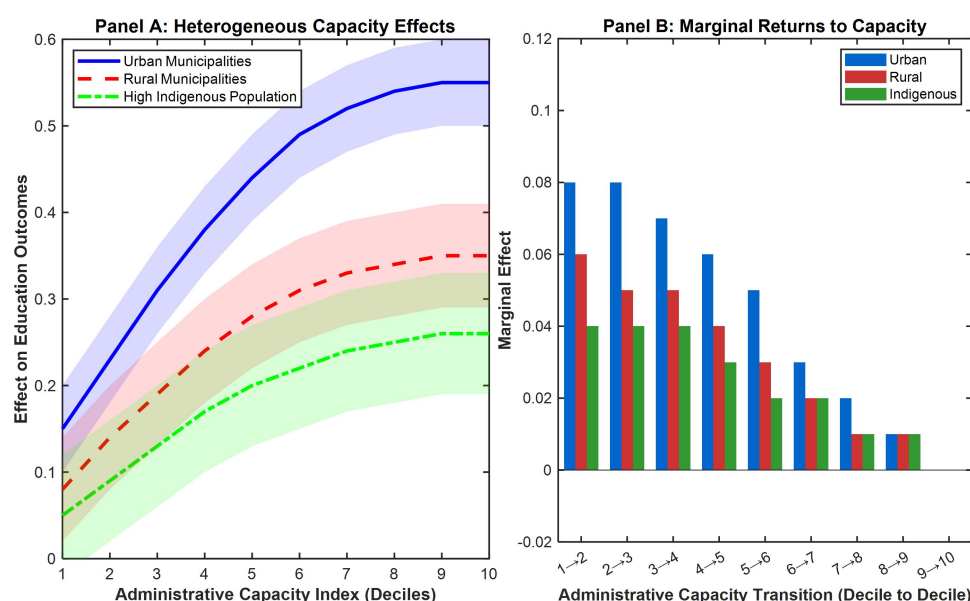
Note: Robust standard errors clustered at municipality level in parentheses. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Controls include log population, GDP per capita, urban share, and education spending per student.

The heterogeneity analysis reveals pronounced differential effects across municipal characteristics, with rural municipalities experiencing capacity returns approximately 19% lower than urban counterparts, a pattern that intensifies in areas with indigenous populations exceeding 30% of total residents where the capacity coefficient declines by an additional 22 percentage points as illustrated in **Figure 2**. These diminished returns in challenging contexts suggest that standard capacity-building approaches may be insufficient to overcome structural

disadvantages associated with geographic isolation, cultural complexity, and historical marginalization, requiring tailored interventions that address context-specific implementation barriers. The non-linear relationship between capacity and outcomes indicates threshold effects whereby minimum capacity levels must be achieved before meaningful improvements materialize, with the marginal returns to capacity investments declining beyond the 75th percentile, suggesting diminishing returns to administrative improvements in already high-performing municipalities.

Figure 2

Heterogeneous Effects of Administrative Capacity on Education Outcomes



The evaluation of capacity-building interventions reveals differentiated effectiveness across intervention types, with technical assistance programs generating average outcome improvements of 0.18 standard deviations compared to 0.24 for digital governance tools and 0.31 for performance-based funding mechanisms, suggesting that financial incentives coupled with accountability measures produce stronger behavioral changes than knowledge transfer alone. The temporal dynamics of intervention effects demonstrate that capacity improvements require sustained investment periods, with statistically significant outcomes emerging only after 18-24 months of program implementation, highlighting the importance of political continuity and long-term commitment to institutional strengthening initiatives. The complementarity analysis indicates that combined interventions produce super-additive effects, where municipalities receiving multiple capacity-building supports experience outcome improvements 40% greater than the sum of individual



intervention effects, emphasizing the systemic nature of administrative capacity and the need for comprehensive rather than piecemeal reform approaches.

4. Conclusions and Policy Implications

This study provides robust empirical evidence validating the critical role of local government administrative capacity in determining education policy outcomes within decentralized governance systems, demonstrating that capacity differentials explain substantial variation in policy effectiveness across Latin American municipalities and challenging simplistic assumptions about the automatic benefits of decentralization reforms. The findings contribute to decentralization theory by identifying specific capacity dimensions that mediate the relationship between formal institutional arrangements and actual policy implementation, revealing that financial management capabilities and inter-agency coordination mechanisms constitute necessary conditions for translating autonomy into improved educational outcomes. The magnitude of observed capacity effects—with high-capacity municipalities achieving outcomes 28% superior to their low-capacity counterparts—underscores that decentralization without corresponding attention to administrative capabilities may exacerbate rather than ameliorate educational inequalities, particularly in contexts characterized by significant heterogeneity in institutional development across subnational units.

The empirical findings back up distinct capacity-building pathways that go beyond the one-size-fits-all strategies that have defined many decentralization efforts in developing nations and recognize the various starting points and contextual limitations that various kinds of municipalities face. Targeted interventions that address the unique implementation challenges of rural municipalities and areas with significant indigenous populations are needed. These interventions should include culturally appropriate technical assistance, extended support periods that take into account limited absorptive capacity, and resource allocations that make up for structural disadvantages in economies of scale and the availability of human capital. Effective capacity-building strategies must take systemic approaches that simultaneously strengthen technical expertise, organizational coordination, and financial management rather than addressing these aspects separately. This is because there is evidence that different capacity dimensions complement one another.



Additionally, sequencing considerations should prioritize foundational capabilities before moving on to more complex administrative functions.

When interpreting these results and determining future research directions, a number of limitations should be taken into account. Three middle-income Latin American nations with comparatively developed decentralization frameworks are the focus of the analysis, which may limit its applicability to situations with different institutional traditions, less capable states, or different intergovernmental arrangements. Due to data limitations, it is not possible to analyse longer-term dynamics outside of the six-year panel and determine whether the capacity effects that have been observed continue, worsen, or decrease over longer time horizons as municipalities gain implementation experience. While experimental or quasi-experimental designs could offer stronger causal identification of specific intervention effects and optimal sequencing strategies for institutional strengthening initiatives in diverse developmental contexts, future research should explore the political economy factors that facilitate or impede capacity development, looking at how electoral cycles, partisan alignment across government levels, and interest group dynamics influence both capacity-building investments and their translation into policy outcomes.

Conflict of interest: The authors declare no conflict of interest.

Funding: This research received no external funding.

References

- [1] Chano, J., Mohamad, B., Prabjandee, D., Singporn, R., & Tuaypar, M. (2025). Lessons learned in transition: A bibliometric analysis of educational management in school transfer to provincial administrative organizations during decentralization. *Frontiers in Education*, 10, 1435928. <https://doi.org/10.3389/feduc.2025.1435928>
- [2] Hossain, M. (2024). The mismatch between World Bank actions and the decentralization of educational systems in LMICs. *American Educational Research Journal*, 61(3), 541–576.
- [3] Kameshwara, K. K., Sandoval-Hernandez, A., Shields, R., & Dhanda, K. R. (2020). A false promise? Decentralization in education systems across the globe. *International Journal of Educational Research*, 104, 101669.
- [4] Kameshwara, K. K., Shields, R., & Sandoval-Hernandez, A. (2024). Decentralisation in school management and student achievement: Evidence from India. *The Journal of Development Studies*, 60(1), 67–82.
- [5] Kim, J., & Kang, H. (2025). Bureaucratic burden or administrative capacity? Administrative intensity and fiscal performance of local governments. *Public Management Review*. Advance online publication. <https://doi.org/10.1080/14719037.2025.2182820>
- [6] Meoded, R., & BenDavid-Hadar, I. (2025). Does fiscal decentralization in education funding affect equity? *State and Local Government Review*. Advance online publication. <https://doi.org/10.1177/0160323x251339424>
- [7] Melo-Becerra, L. A., Hahn-De-Castro, L. W., Ariza, D. S., & Carmona, C. O. (2020). Efficiency of local public education in a decentralized context. *International Journal of Educational Development*, 76, 102194.
- [8] Nakatani, R., Zhang, Q., & Valdes, I. G. (2022). *Fiscal decentralization improves social outcomes when countries have good governance*. International Monetary Fund.
- [9] Nickson, A. (2023). Decentralization in Latin America after 40 years: Work in progress; A commentary essay. *Public Organization Review*, 23(3), 1017–1034.
- [10] Ortiz, E. A., Giambruno, C., Morduchowicz, A., & Pineda, B. (2024). *The state of education in Latin America and the Caribbean 2023*. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000389468>