

Impact of the 18th Constitutional Amendment (Decentralization of Education) on Provincial Education Outcomes in Pakistan



By: Muhammad Ali Hasnain
Enrollment No 01-114221-010
Huzaiifa Mahmood
Enrollment no 01-114221-006

(Bs Economics)

Supervisor: Dr Sameen Naqvi

Department of Economics
Bahria Business School
Bahria University Islamabad
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Names of Student(s): Enroll #

- Muhammad Ali Hasnain, 01-114221-010
- Huzaifa Mahmood 01-114221-006
-

Class: (BS Economics)

Approved by:

Dr Sameen Naqvi
Supervisor

Dr. Muhammad Naveed
Research Coordinator

Professor. Dr. Abdul Sattar
Head of Department
Economics

Dedication

To my beloved mother and father

Acknowledgement

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ABSTRACT

This study investigates the impact of constitutional decentralization of education on provincial education outcomes in Pakistan from 2005 to 2023. Using balanced panel data for Punjab, Sindh, Khyber Pakhtunkhwa, and Balochistan, the research examines how fiscal decentralization, administrative capacity, and governance quality influence education indicators, including literacy rate, gross enrollment ratio, and completion rate. Employing Fixed Effects and Random Effects models, the results reveal that fiscal decentralization has a significant positive impact on education outcomes ($\beta = 0.318$, $p < 0.01$), confirming that enhanced provincial fiscal autonomy strengthens resource allocation and service delivery. Administrative capacity ($\beta = 0.284$, $p < 0.01$) and governance quality ($\beta = 0.192$, $p < 0.01$) also exert substantial positive effects, emphasizing that institutional efficiency and accountability are crucial for effective decentralized governance. Punjab demonstrates the highest educational performance, while Balochistan remains the weakest, underscoring structural disparities across provinces. Overall, the findings confirm that decentralization has improved education outcomes in Pakistan, though its effectiveness depends on provincial institutional strength, governance quality, and administrative capacity.

Keywords: Fiscal decentralization, Education outcomes, Administrative capacity, Governance quality, 18th

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CHAPTER 1: INTRODUCTION

1.1 Background of the Study

The education system in Pakistan has developed in the context of a historical centralized framework, with policy formulation, financing and curriculum development being the responsibilities of federal level. Until 2010, the subject of education was a concurrent subject and provinces only had a limited power for the development or implementation of regionally adapted policies. The centralization resulted in inefficiencies and inequities particularly as the needs and capacities of the provinces were varied (Nishtar et al., 2013). This over-exertion of the federal mandates resulted in the absence of theory in the relationship between education policy and provincial socioeconomic factors especially in the marginalized areas of the Balochistan region and interior Sindh (Wani, 2024).

In April 2010, the 18th Constitutional Amendment on the matter highlighted a critical reorganization of the Pakistani system of governance by giving its provinces more freedom in terms of their economic and administrative control. This Amendment removed the Concurrent Legislative List, handing over several key areas such as education, health and culture to the provinces. It was a positive step to becoming federal and achieving democratic consolidation that solidified the constitutional vision of the 1973 Constitution (Raza, 2024). Provincial assemblies were given a mandate with regard to education policy, curriculum, teacher recruitment and infrastructure planning. This devolution also expanded fiscal power through the 7th National Finance Commission (NFC) Award which modified the resource-sharing formula to benefit the provinces (Tahir & Tahir, 2023).

Decentralization in education was hoped to be a way of improving efficiency, accountability and local responsiveness. The federal Ministry of Education was abolished and replaced by the Ministry of Federal Education and Professional Training, which is responsible for a coordinating function. Provinces then set up education commissions, passed their own education acts, and undertook reforms to tackle the

situation unique to their regions (Ullah, 2024). However, the observed results of implementation have differed in provinces. The post-2010 education reforms in Punjab were associated with the performance-based financing model and teacher accountability; Sindh with the focus on the access and the infrastructure; Khyber Pakhtunkhwa (KP) with the focus on the human involvement and female education; and Balochistan with the lack of resources and inadequate governance (Faiz, 2023).

Empirical research encourages inconclusive evidence. In KP, basic education evolved with the enhancement of curriculum contextualization and extension due to legislative autonomy, whereas lack of resources due to financial constraints constrained the quality enhancement (Nosheen & Anwar, 2023). The recent education sector reforms in Sindh showed modest success in school infrastructure development but it still lags in literacy and retention rates (Faiz, 2023). Strong monitoring and budgetary control resulted in the highest enrolment and teacher attendance gains in Punjab (Raza, 2024). On the contrary, the experience of Balochistan with the post-devolution era depicts a lack of improvement as governance bottlenecks and weak institutional capability persist in the region (Wani, 2024).

Apart from education, recent analyses of fiscal and administrative decentralization within the framework of the Amendment have also pointed to the continuing structural weaknesses. Lack of harmonization between provincial legislations and federal standards, jurisdictional overlap and intergovernmental disorganized coordination through the Council of Common Interests have restricted policy space (Tahir and Tahir, 2023; Shah, 2012). Despite the constitutional mandate of free and compulsory education in Article 25A, the gap between provinces is very high. According to Nishtar et al. (2013), while devolution brings opportunities for innovation, devolved provinces may not be equally capable of delivering innovations where local governance is weak.

Given this dynamic, it is argued that there is a need to study how the outcomes of education have changed in the provinces of Pakistan with the advent of the 18th Amendment. This paper locates de-centralization of education in the broader context of fiscal federalism, governance capacity and regional development imbalance. It is an

attempt to assess whether the Amendment has achieved its desired objectives of enhancing equity, access and quality, without losing sight of the fact that decentralization has at times unintentionally exacerbated the inequalities because of institutional asymmetries.

1.2 Research Gaps

Despite the proliferation of literature on Pakistan's constitutional and fiscal reforms, several critical research gaps persist.

First, there is a lack of thorough empirical analysis comparing the results of education at the provincial level since the 18th Amendment. Most research is on governance or fiscal implications rather than measuring performance of the education sector after devolution. As an example, Raza (2024) focuses on fiscal imbalance and coordination problems but fails to evaluate the results in education. Similarly, Faiz (2023) discusses intergovernmental relations in Sindh without evaluating the outcomes.

Second, in terms of methodology, there are only a few studies that use econometric or panel data techniques to measure the efficiency of provincial education spending and governance. The article by Nosheen and Anwar (2023) captures the legislative autonomy in KP but is based on descriptive evaluation and not causal inference. Quantitative models of the impact of decentralization on literacy, enrollment, and quality indicators for provinces are lacking.

Third, current studies have done a poor job of considering equity dimensions, such as the degree to which decentralization has affected marginalized populations, gender balance, and rural-urban imbalances. Article 25A of the constitution ensures free education of children between the ages of 5 and 16, but the outcomes are far from satisfactory (Ullah, 2013). The other side of this argument is that provinces with higher fiscal capacity and governance structures (such as Punjab) are in a better position to realize this right, whereas weaker provinces are still lagging (Nishtar et al. 2013).

Fourth, institutional harmonization between federal and provincial levels has not been well analyzed. The planning architecture in Pakistan, as Tahir and Tahir (2023) remark, continues to be centralized, which is a deficit of the spirit of participation that is prescribed in the Amendment. The effect of such a structural disjuncture on the coherence of education policy, curricula standardization and inter-provincial benchmarking is investigated in few studies.

Finally, there is little evidence published on the longitudinal impact of decentralisation on education outcomes over the last decade. The initial period of post-2010 research mainly focused on constitutional or fiscal ramifications (Shah, 2012; Pasha, 2011) and the recent evidence is that the devolution outcomes evolve over time depending on provincial institutional maturity (Raza, 2024; Wani, 2024). This time gap requires updated empirical examination using updated data.

Cumulatively, these gaps highlight the need of a comprehensive province-wide quantitative evaluation of the impact of the decentralization of education under the 18th Constitutional Amendment on literacy, enrollment, quality and efficiency in spending in Pakistan.

1.3 Problem Statement

Pakistan continues to face persistent challenges in achieving equitable and effective education outcomes despite decades of policy reforms and increased public expenditure. Some of the most important problems are the low levels of literacy, inconsistent school enrolment, high dropout rates, and the wide inequalities between virtues of education in the provinces. These challenges are compounded by variations in provincial economic capacity, institutional effectiveness and administrative capability. Provinces vary greatly in their capacity to plan, finance and manage education systems, leading to unequal education outcomes in different regions.

The 18th Constitutional Amendment brought in a major structural reform by devolving the education governance to the provincial governments. This reform was to improve the education outcomes through increasing local responsiveness, accountability and

efficiency in delivering education services. However, more than a decade after decentralization, education results are uneven between provinces. While some of the provinces have made gains in literacy and enrolment, others are still lagging behind due to weak institutional performance, low administrative capacity and governance constraints.

The fundamental issue is a lack of clear empirical evidence of how education outcomes have changed across provinces under decentralization and the extent to which institutional performance and administrative capacity are the cause of these differences. Decentralization itself does not lead to better outcomes if provinces vary in their ability to effectively use devolved authority and resources. Therefore, there is a need for an overall empirical examination of provincial education outcomes that puts decentralization in the context of reform as a focus on measurable education performance and institutional variation.

This study addresses this problem by examining provincial education outcomes in Pakistan in the post 18th Amendment perspective with special focus on inter provincial disparities, administrative capacity and institutional performance.

1.4 Research Questions

1. What is the impact of fiscal decentralization on provincial education outcomes in Pakistan?
2. What is the impact of provincial administrative capacity on education outcomes?
3. How does governance quality influence provincial education outcomes?
4. To what extent do education outcomes differ across provinces in Pakistan?

1.5 Research Objectives

- To examine the impact of fiscal decentralization on provincial education outcomes in Pakistan.
- To assess the impact of provincial administrative capacity on education outcomes.
- To evaluate the influence of governance quality on provincial education outcomes.
- To analyze inter provincial differences in education outcomes across Pakistan.

1.6 Hypotheses

- **H1:** Decentralization of education under the 18th Amendment has positively affected provincial education outcomes.
- **H2:** Decentralization has not significantly affected provincial education outcomes.
- **H3:** Provincial fiscal and administrative capacities moderate the relationship between decentralization and education performance.

1.7 Significance of the Study

This work can be seen as an important contribution to the academic literature on the topic of federalism, the system of government, and the reform in Pakistani education after the 18th Constitutional Amendment. The Amendment was nothing more than mere restructuring of the federal organization of Pakistan which transferred significant roles in planning, financing and organization of education to the provincial level. Its impacts on provincial education outcomes have not been as much examined as they deserve especially in empirical and comparative studies more than a decade on. The systematic analysis of the impact of decentralization on education performance in the provinces gains the research and policy gap in the history of post-devolution in the country.

Academically, this research contributes to the literature on the increasing fading trend in decentralization and fiscal federalism and the government of the public sector. The study interacts with the theoretical foundation of decentralization especially Oates Decentralization Theorem and locates the case of Pakistan within the available evidence jurisdiction in the world regarding the connection between devolution and service delivery. Though there are past analysis like the one conducted by Shah (2012) and Pasha (2011), which has provided theoretical and fiscal aspect of decentralization, there are hardly any that have empowered the sector impacts of decentralization particularly in the education sector. Such a thesis is a continuation of that discussion since it evaluates the effect of provincial autonomy on education-related indicators, including the literacy rate, schooling ratio and the quality of education; thereby offering some evidence on the effect of devolution on human development.

In addition, this study relies on the observations of a number of new researchers that have explored the evolving federalism in Pakistan. As an illustration, Faiz (2023) and Raza (2024) note that the state of fiscal and administrative organization between the federal and provincial levels may persistently be problematic, whereas Nosheen and Anwar (2023) and Ullah (2024) focus on regional differences in the overall ability to control devolved functions. Synthesizing such findings, this research allows a general framework for analyzing the relationship between institutional capacity, quality of governance, and fiscal discretion, and education outcomes under decentralization. It fills the gap between the macro-level constitutional reform and micro-level education delivery practices by examining provincial governance practices and outcomes.

From a policy perspective, the study has provided evidence-based information on the working of Pakistan's post-devolution education governance. Despite devolution of powers, disparities still exist in the provinces in terms of resource allocation, policy implementation and quality of education. According to Tahir and Tahir (2023), planning and coordination mechanisms in Pakistan are still centralized, and do not allow the participatory intent of the Amendment to be realized. Thus, the lessons learned from this study should assist federal and provincial politicians at both the national and subnational government levels in assessing the current governance structures and planning

mechanisms to develop better intergovernmental coordination, accountability, and fiscal efficiency measures. By examining the facilitating and limiting factors for strengthening education policy, the study provides some practical policy recommendations for strengthening education policy at both federal and provincial levels.

The study is also relevant with regard to the issue of socioeconomic equity and sustainable development. Education is a fundamental base in the development of human capital as well as a key contributor to equitable growth. As per Wani (2024) and as Nishtar et al (2013) observe, uneven implementation of decentralization has often shored up extant disparities, especially in provinces which are underdeveloped like Balochistan and Khyber Pakhtunkhwa. This paper provides support to policymakers with empirical knowledge that can help minimize the impact of decentralization on education and to provide inclusive growth to enable countries to improve their economic growth. This is a timely evaluation of the extent to which decentralization has fulfilled its promise of making education more accessible, equitable and accountable to local needs.

In addition, this study gives framework for benchmarking and accountability in education policy across provinces. However, Article 25A of the Constitution in this regard provides the right to free and compulsory education so it is important to review the compliance of the provinces in this regard so the system of education governance in Pakistan can be improved. The study compares the provinces with each other and provides policymakers with diagnostic evidence in regard to best practices and areas of concern that require specific intervention.

Finally, the research makes a contribution to the international policy debate on how to design and implement decentralization in developing countries. Similar challenges of finding a balance between autonomy and coordination can be seen in many federal countries in the areas of education and social services. Pakistan's experience offers a useful case study for the countries in the process of devolution or exploring such reforms. The results of the study can therefore contribute to the global debates on under

what conditions decentralizing is compatible with effective service provision, accountability and fair human development.

In a nutshell, such research is essential to academics, policy makers and practitioners. It brings forward with a substantive theoretical understanding of decentralization and governance and with practical knowledge for improving education policy in the federal context. By linking constitutional reform to outcome results for development, the research practices help to further develop the evidence-base that is used in the design of more responsive, equitable and sustainable education systems in Pakistan.

CHAPTER 2: LITERATURE REVIEW

2.1 Theoretical Framework

Decentralization is described as a multidimensional process of governance reform, which involves redistribution of authority, responsibility, and financial resources from central governments to subnational units. The theoretical discourse about decentralization is deeply rooted in the literature about public finance studies, political economy and institutional governance. There are typically three major types of decentralization that scholars like to distinguish between: fiscal, administrative and political (Ahmed, 2013). Each of the dimensions have a specific objective in improving efficiency, accountability and responsiveness in the public sector.

Fiscal decentralization deals with sharing of revenue and spending functions between the levels of government, in order to match public spending to local preferences and in order to ensure efficient resource mobilization. The theory suggests that if the sub-national governments have the control about taxation and spending decisions, then they can customize public services to the needs of the local community and this will lead to increased allocative efficiency (Rauf et al., 2017). This proposition is formalized in the Decentralization Theorem of Oates (Oates, 1972), this theorem is that since the absence of interjurisdictional externalities, in the provision of public goods, local governments have a better position to supply public goods to the preferences of their constituents (Greco, 2003). In empirical environments fiscal decentralization has been found to improve education outcomes via its contribution to expenditure efficiency and improved subnational level revenue raising ability (Sarwar et al. 2022).

Administrative Decentralization: It means the delegation of the power of taking decisions and the management function from the higher level bureaucracy to the lower level of administration. This form of decentralization aims at improving the provision of public services by enabling the local government to respond to the demand of the citizens in a more flexible and fast manner (Aslam and Yilmaz, 2011). The administrative aspect reflects the New Public Management values of efficiency,

performance accountability and citizen service orientation. There is empirical evidence from Pakistan that good administrative decentralization with concomitant institutional capacity and bureaucratic professionalism can improve the outcome of education governance and service delivery (Khan, 2021).

Political decentralization, on the other hand, has been defined as the empowerment of democratically-elected local governments with powers to make decisions. For instance, it is aimed at strengthening the accountability and involvement by bringing the decision making close to the people (Rodriguez, 2015). Democratic decentralization is in theory compatible with the concept of "voice and choice" in the process of governance promoting citizen participation and transparency (Hankla et al., 2011). However, as Galeotti (2022) states, political decentralization is also associated with the risk of political rent-seeking as local elites have the opportunity to "grabbing the resources available for public goods." This reveals a need for good institutional checks and balances to ensure that decentralization will lead to improvement in public service delivery.

The classical theory that relates decentralizations to efficiency of service delivery is The Tiebout Model (Tiebout, 1956) and Oates Decentralization Theorem (Oates, 1972). The Tiebout model has citizens "voting with their feet" through their choice of jurisdictions with combinations of public goods and tax rates that they prefer (Nechyba, 2020). Such market mechanism provides for interjurisdictional competition which forces local governments to be more efficient and response to retain residents. In essence decentralization brings about allocative efficiency through competitive pressures and the mobility of informed citizens (Nawaz et al., 2017). However, such idealized model presumes perfect mobility, perfect information and no externalities conditions which seldom exist in developing models like Pakistan.

Oates' Theorem is a complement to the Tiebout model in that, it states the efficiency gains brought about by decentralized decision-making. According to Oates, the delivery of public goods by subnational governments leads to welfare gains when preferences and needs have spatial variation. This principle has been fundamental in the economics

of federalism, which has impacted modern theories of fiscal decentralization and intergovernmental relations (Mazzaferro & Zanardi, 2008). More recent versions of Oates' model have added political and institutional variables. Hankla et al., (2011) and Rodriguez (2015) urge the interaction between democratic decentralization and party centralization as it provides the optimal results for service delivery, as it balances the local accountability with national coherence.

The empirical research helps to reinforce these theoretical insights. Aslam and Yilmaz (2011), in their study of market failures in Pakistan, observe that when local government in Pakistan was granted fiscal autonomy and made fiscally accountable and autonomous, the decentralization reforms of 2001 resulted in observable improvements in service delivery, most notably in education and sanitation. Similarly, Ahmed and Lodhi (2016) also reported strong positive relationship between fiscal decentralization and literacy and health outcomes improvement, which implies that devolution of fiscal powers helps in enhancing human development. Nawaz et al. (2017) empirically validated the Tiebout hypothesis in the province of Khyber Pakhtunkhwa, which concludes that the competition among the local government led to efficiency in education and health services.

Nevertheless, the success of the decentralization is still contingent upon contextual factors including institutional capacity, political will and social equity. Noting these points, Khan (2021) has pointed out that political polarization, bureaucratic inertia, and inequalities of resources that exist between districts can neutralize the promise of decentralization. Similarly, Mukhtar (2013) argues that Pakistan's mid-tier governance structure, which retains authority control at a provincial level, does not facilitate significant flows of accountability and citizen participation and thus "bottom-up" governance does not fully materialize.

In the case of education governance, decentralization is intended to improve accountability and the quality of services by matching the authority to take decisions with the local needs. The Tiebout framework assumes that when the provision of education is decentralized, this allows parents and communities to have a direct

influence on local education authorities and more responsive and efficient outcomes. Specifically fiscal decentralization presents an opportunity of resource allocation uniquely by local education departments, valuable since it allows the settlement to customize curriculums to regional demands and needs and enhance learning outcomes by offering context-specific intervention programs that engage the intended learning outcomes (Sarwar et al., 2022).

These theoretical benefits are, however, not automatic. The Weak Decentralization Theorem of Greco (2003) warns that the centralization and decentralization may have the same consequence in the absence of interregional informational spillovers, which means that decentralization cannot provide all the efficiency benefits by itself. Similarly, Ahmed (2013) states that without any political and bureaucratic commitment, structural reforms may lead to nominal rather than substantive autonomy. Therefore, decentralization should be accompanied by devolution of power as well as by institutional strengthening at the subnational level.

Overall, the theoretical and empirical literature highlights the fact that decentralization, be it fiscal or administrative, or political, has the potential for improving the delivery of public services, including education, if implemented under, of course, the right institutional and political conditions. Economic efficiency (Oates 1972), competitive governmental dynamics (Tiebout 1956) and local control process are the theoretical pillars of the decentralization school of thought. In the case of Pakistan, the success of decentralization reforms within the education system crucially depends on the balance of autonomy, accountability and capacity between provincial and local governments.

2.2 Empirical Literature Review

Decentralization and its effects on education outcomes have been a central focus of empirical studies across both developed and developing nations. The debate is whether the devolution of administrative, fiscal and political powers makes education service delivery more efficient, accountable and equitable. It is clear from the studies that, while there is evidence of decentralisation enhancing access and quality of education the

capacity for decentralised systems is highly dependent on governance capacity, fiscal arrangements and institutional coherence.

Global Evidence on Decentralization and Education Outcomes

Using this approach, decentralization has been associated worldwide with both positive and negative educational outcomes depending on the context of governance and socioeconomic development of the country. A comparative study by Ogwuche (2024) has shown that the impact of decentralization on education is not the same in developed economies like Canada and developing economies like Nigeria and Indonesia. In the developed world, where institutional systems are well developed, decentralization enhanced resource allocation and equity, whereas, in the developing world, its effectiveness was often limited by weak accountability systems. The study found fiscal efficiency and accountability to be the main composition of decentralization that can lead to better educational quality and inclusiveness. In Indonesia, Kirana and Saleh (2011) estimated efficiency of the government spending under fiscal decentralization scheme based on Free Disposable Hull (FDH) approach.

Their paper highlights wide differences in public sector efficiency across 33 provinces, and demonstrates that greater fiscal autonomy is related to better education performance only when combined with high human development indicators and lower fiscal dependence. Similar findings have also been reached by Alfada (2019), who utilized a Malmquist Productivity Index (MPI) as a measure of the government productivity in education expenditure. The study found that fiscal decentralization improved expenditure efficiency in the education and infrastructure sectors, but that the effect was not uniformly distributed across regions because of capacity differences. To this nuanced interpretation, more evidence from Indonesia is given support. Winardi (2017) noted that although decentralisation led to improvement in the school participation rate and decreased illiteracy, regional inequality in educational infrastructure and teacher distribution remained.

However, there was an increasing education differential between rich western states and poorer eastern states after decentralization, and this indicates that resource inequality

negatively affects the equity goals of devolution. Also, Azis (2017) stated that the success of decentralization in Indonesia is closely related to the professional ability of local government leaders and the availability of learning funding systems. The study by Astika and Wismar (2024) shows that school-based management reforms are one of the offshoots of decentralization.

Their comparison of public and private schools in Jambi Province revealed that decentralized school governance positively impacted teacher participation and administrative autonomy but there was no substantial effect on student learning outcomes. This is consistent with the evidence of Al-Samarrai and Ludwig-Maarroof (2013) who also found that decentralization reforms transferred administrative authority to districts but needed additional institutional foundations to turn decentralization into performance improvements. The dynamics are also comparable in empirical studies in India. The 73rd and 74th Constitutional Amendments worked towards fiscal decentralization to facilitate Panchayati Raj Institutions to plan for education and regulate monitoring. However, this has led to uneven outcomes as a result of differences in state capacity and fiscal transfers. States with better administrative structures, like Kerala and Tamil Nadu, had a higher literacy and retention rate in comparison to poor states like Bihar and Uttar Pradesh.

Fiscal decentralization studies show positive effects in local accountability and community participation but also the fact that it did not symmetric regional divergence of education outcomes (World Bank, 2018; Rao & Singh, 2020) because of the continued fiscal inequality. Decentralization in Nigeria has been often simultaneously accompanied with loss of efficiency and increasing inequalities. Geo-Jaja (2004) criticized the politicization of education decentralization and privatization in Nigeria and found that inefficient management and corruption in the distribution of resources in subnational levels defeated the aim of decentralization and privatization. This analysis highlights the main premise that decentralization can increase disparities if there is a low level of institutional oversight and equal funding.

Empirical Evidence from Developing Countries

Evidence of decentralization's conditional success is also provided by empirical evidence from other developing economies. In Indonesia, Iskandar and Saragih (2019) assessed the expenditure efficiency in education and health among the 33 provinces by means of Data Envelopment Analysis. They identified significant variations in the efficiency with high efficiency in the western provinces as compared to the eastern ones. The results indicate that decentralization is an enhancer of efficiency if the administrative capacity of regional governments to effectively use fiscal resources is in place.

Second, unlike the areas with low fiscal control or technological control capabilities, the performance of these areas worsens, which reflects the influence of institutional maturity on meeting the expectation of decentralization. Muttaqin et al. (2015) examined data on educational attainment at the municipal level in Indonesia to determine the level of educational attainment after decentralization. Their results indicated that although the average number of years in school increased slightly, there were still considerable differences between urban and rural districts. Fiscal capacity and levels of urbanization were good predictors of educational progress, pointing to the uneven benefits of decentralization across municipalities.

Pakistan-Specific Literature

Pakistan is a unique case study for looking at the decentralization-education nexus, especially since the 18th Constitutional Amendment (2010) devolved the authority for education from the federal to provincial governments. The previous reforms dated pre-2010 loosened evidence that agreed that decentralization enhanced the responsiveness of service delivery, but encountered the problems of administrative duplication and elite capture (Aslam, and Yilmaz, 2011). Within the three years after 2010, it is found that results of education in various provinces take both positive and negative directions. Punjab has outperformed other provinces in terms of enrolment and literacy rates by virtue of better resource mobilization and monitoring mechanisms all throughout.

After spending more money on education, Sindh remains a region with structural inefficiency and governmental limitations (Faiz, 2023). Devolution in Khyber Pakhtunkhwa provided an opportunity and opportunity to implement policies at the community level, contributing to the gains, but failures to gain fiscal discipline and technological fragmentation led to missed long-term gains (Nosheen & Anwar, 2023). The poorest province is the least developed Balochistan - which suffers from lack of resources, administrative fragmentation, and capacity (Wani, 2024).

These differences are accentuated in terms of comparison. Sarwar et al. (2022) used Stochastic Frontier Analysis to estimate the efficiency of the public service delivery in education sector of Punjab province, and they discovered that revenue decentralization had positive impact on education efficiency while expenditure decentralization had mixed impact. Analogously, Ahmed and Lodhi (2016) showed that fiscal decentralization helped to increase literacy outcomes and the quality of education at the provincial level, but results were limited and spatially heterogeneous. The available empirical evidence for Pakistan also highlights important governance and efficiency weaknesses. Ruf et al. (2017) found that although fiscal transfers improved enrolment, inefficient spending outweighed their effect. These findings are in some measure consistent with Mukhtar's (2013) argument that decentralization reforms in Pakistan did not set up effective "bottom-up" accountability mechanisms, which resulted in meek community involvement and bureaucratic inertia.

Identification of Gaps in Existing Empirical Analyses

Despite increasing number of research, there remain major gaps in understanding the long term and comparative impacts of decentralization on learning outcomes in the education sector in Pakistan. First, little has been done to determine causality between decentralization and education indicators using strong econometric models or longitudinal data. Most of the existing studies use descriptive analysis which has limited implications for generalization. Second, there is little research done on efficiency in other provinces, but much is done in Punjab. Third, governance variables such as administrative capacity, corruption and political interference are still largely

underrepresented in empirical models. Fourth, few studies have focused on the equity dimension, and on the effects of decentralization on gender and rural-urban education disparities.

Lastly, the lack of cross-provincial comparative frameworks would restrict policy-relevant information on what surrounds and/or restricts the effectiveness of decentralization. In sum, both the world-wide and country-wide evidence points to the fact that whether decentralization has a positive or negative effect on education was not only contingent on authority transfer but also in the institutional and financial capability of the subnational governments to ensure that the received authority is utilized wisely. The experience of decentralization in Pakistan since the 18th Amendment is an example of both opportunity and threat: since provision of education has been attributed to provincial ownership and innovation, various gap in governance and tendencies in fiscal responsibility remains a hindrance in ensuring equitable education outcomes provisions.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter outlines the methodological framework followed to study the impact of the 18th Constitutional Amendment particularly the decentralization of education on provincial education outcomes in Pakistan. The research uses a quantitative research design to empirically examine the link between the indicators of decentralization and the education performance at provincial level in the period 2010-2023. The methodology is designed to ensure objectivity, replicability and statistical rigor in establishing whether decentralization has improved access, equity and quality in education across the provinces in Pakistan.

3.1 Research Design

The research is conducted using quantitative research design of a panel data study which is a combination of the cross sectional data (for provinces) and time series data (for years). This design is suitable for studying changes in education gains from province to province, while controlling for the effect of unobserved characteristics of provinces which remain the same over time.

Panel data analysis is useful for comparing outcomes of education by province and time in the same framework. By taking advantage of both dimensions of the data, the approach leads to a more efficient estimation process and a lower amount of bias caused by omitted time invariant provincial characteristics such as geography or historical institutional structures.

The research design is causal comparative to understand the relationship between decentralization related factors and provincial education outcome.

3.2 Population and Sampling

The population of the study represents all the four provinces of Pakistan i.e. Punjab, Sindh, Khyber Pakhtunkhwa and Balochistan. Since all provinces took their full

responsibility for education under the 18th Constitutional Amendment, the analysis is done on the entire population, not a sample.

The study thus focuses only on the post devolution period between 2010 and 2023 in order to achieve consistency with the decentralized system of governance.

3.3 Nature and Sources of Data

To undertake the study, only secondary quantitative data is used from authentic national and international databases. The sources include:

1. **Pakistan Bureau of Statistics (PBS)** – provincial demographic and socio-economic statistics.
2. **Pakistan Economic Survey (various years)** – in order to get education allocation as far as the education sector is concerned regards literacy and enrolment.
3. **National Education Management Information System (NEMIS)** – for school level data for province level in terms of enrolment, pupil-teacher ratio, infrastructure etc.
4. **Provincial Education Departments' Annual Reports** – for governance indicators and fiscal expenditures.
5. **UNESCO Institute for Statistics (UIS) and World Bank Education Indicators** – to have standardized measurement of education quality and equity.

Restricting the data to the post 18th Amendment period makes sure that the empirical analysis is directly related to education outcomes under decentralized governance.

3.4 Variables and Measurement

The study operationalizes decentralization and education outcomes using clearly defined and quantifiable indicators.

Dependent Variable:

- **Provincial Education Outcomes (EDU_OUT):** Provincial Education Outcomes which are calculated from literacy rate (%); net enrolment ratio (NER) at the primary level; and student-teacher ratio (STR). The index will be normalized using z-scores to be comparable across provinces and years.

Independent Variables:

- **Fiscal Decentralization (FD):** Provincial Education Expenditure/Total Provincial Expenditure. This policy index measures the level of fiscal autonomy for education.
- **Administrative Decentralization (AD):** The extent to which schools are administered directly by a province or district of an educational system compared to those that are managed at the federal level.
- **Governance Quality (GOV):** Proxy measure that has indicators that include the number of inspections of the school annually, teacher attendance rates per school which is a measure of administrative effectiveness and control.

Control Variables:

In order to separate the impacts of decentralization and the education outcome, some socio-economic controls are involved:

- **Provincial GDP per capita (GDPPC):** Economic prosperity will affect educational investment and access.

3.5 Model Specification

The study uses an **Econometric Panel Regression Model** to estimate the impact of decentralization on education outcomes. The baseline model is expressed as:

$$EDU_OUT_{it} = \beta_0 + \beta_1 FD_{it} + \beta_2 AD_{it} + \beta_3 GOV_{it} + \beta_4 GDPPC_{it} + \beta_5 POP_{it} + \beta_6 URB_{it} + \beta_7 FLFP_{it} + \mu_i + \lambda_t + \varepsilon_{it}$$

Where:

- i = Province (Punjab, Sindh, KP, Balochistan)
- t = Year (2010–2023)
- μ_i = Unobserved province-specific effects
- λ_t = Time-fixed effects
- ε_{it} = Error term

This specification enables estimating the role of fiscal decentralization, administrative capacity, and quality of governance in explaining education outcomes controlling for economic capacity of the province.

3.6 Estimation Technique

The study uses Fixed Effects estimation as a way to control for unobserved time invariant provincial characteristics which may affect education outcomes. The Fixed Effects model is suitable because characteristics of the provinces such as traditions in governance and institutional capacity are likely to be correlated with explanatory variables.

A Hausman test is useful to validate the suitability of the Fixed Effects specification as compared to the Random Effects. In this way, unbiased and consistent estimates are ensured.

3.7 Construction of Composite Education Outcome Index

The education outcome index is formed with the help of the standardized values of literacy rate, enrolment ratio and student teacher ratio. Each of the indicators is transformed into a z score to make comparison of provinces and years possible.

The composite index is calculated as:

$$EOI = 0.4Z_{LIT} + 0.4Z_{ENR} + 0.2Z_{STR}$$

This weighting addresses access and participation relative importance and at the same time captures quality.

3.8 Hypothesis

The following hypotheses are tested in this study:

- **H1:** Fiscal decentralization positively influences provincial education outcomes in Pakistan.
- **H2:** Administrative decentralization enhances education efficiency and governance at the provincial level.
- **H3:** Governance quality mediates the relationship between decentralization and education outcomes.
- **H4:** There are significant differences in education outcomes among provinces post-devolution.

Each hypothesis will be evaluated through regression coefficients' significance levels (p-values ≤ 0.05).

3.9 Ethical Considerations

The research is based purely on secondary data that is available. There are no human subjects involved. All the data sources are properly cited and are strictly used for academic purposes.

3.10 Limitations of the Methodology

The study has weaknesses relating to availability of secondary data and practice of proxy measures of governance and administrative capacity. Despite these limitations,

however, the methodology creates a consistent and focused framework for evaluating performance in the field of education in a decentralized form of governance at the provincial level.

3.11 Summary

This chapter has presented a precise and consolidate methodology to analyze education outcomes in province-wise of Pakistan after the 18th Constitutional Amendment. Based on a panel data methodology and keeping non-basic empirical tools, the methodology guarantees both clarity and comparability and correspondence with the research questions. The next chapter presents the empirical findings which are based on this framework.

Chapter 4: Results

4.1 Introduction

This chapter presents the empirical findings about the impact of 18th Constitutional Amendment representing decentralization of education on provincial education outcome in Pakistan. The analysis has been conducted on the basis of a panel dataset of data of 4 provinces that include Punjab, Sindh, Khyber Pakhtunkhwa, and Balochistan from 2005 to 2024. This time coverage encompasses both pre and post decentralization years, therefore it is possible to compare education outcomes and decentralization related factors before and after the devolution in 2010.

The objective in the chapter is to analyse the relationship between Fiscal decentralization (FISDEC), administrative capacity (ADMCAP), governance quality (GOVQUAL) and provincial education outcome (EDUOUT) controlling for provincial economic capacity as measured by GDP per capita (PGDP). The empirical analysis methodology encompasses the use of panel regressions tools, principally Fixed Effects and Random Effects, with choice of model determining that based on the Hausman model specification test.

The chapter can be organized as follows. It first reports descriptive results summarising patterns in education outcomes and decentralisation related indicators across provinces and also changes over time. It then presents econometric results of the panel regression analysis followed by the interpretation of the findings with respect to observed inter provincial differences.

4.2 Descriptive Statistics

This section provides the descriptive analysis of the data set used to conduct the study. It gives a statistical overview of the main variables Provincial Education Outcomes (EDUOUT), Fiscal Decentralization (FISDEC), Administrative Capacity (ADMCAP), Governance Quality (GOVQUAL) and Provincial GDP per Capita (PGDP) for the four

provinces for 2005-2023. The descriptive statistics summarize central tendencies and variability in the data and provide tentative insights on differences in provincial performance, fiscal responsibility and institutional capacity.

4.2.1 Summary Statistics

Table 1 below provides the summary statistics for all variables included in the econometric analysis.

Table 1: Descriptive Statistics of Variables (2005–2023)

Variable	Obs	Mean	Std. Dev.	Min	Max	Source
EDUOUT	76	0.65	0.10	0.45	0.81	PBS, UNESCO
FISDEC	76	0.23	0.08	0.09	0.41	MoF
ADMCAP	76	0.54	0.09	0.34	0.72	PSLM, PIE
GOVQUAL	76	0.47	0.06	0.38	0.61	PILDAT, WGI
PGDP (PKR)	76	62,000	18,500	28,000	95,000	PBS

The summary statistics indicate that the average value of the provincial education outcome index (EDUOUT) is 0.65 with a standard deviation of 0.10 implying moderate variation across provinces and over time. The maximum (0.81) is found in Punjab, which is more developed in terms of literacy and completion rates, while the minimum (0.45) is found in Balochistan, which is more underdeveloped in terms of education.

Fiscal decentralization (FISDEC) has an average value of 0.23, which means that on average, provinces covered an average of 23 per cent of total national education spending over the period. The variation (0.09 to 0.41) indicates that there are notable variations in fiscal autonomy across the board the higher shares remain with Punjab and Sindh vis-a-vis KP and Balochistan.

Administrative capacity (ADMCP) has an average of 0.54, which indicates a moderate institutional competence in the implementation of education policies. Provinces that have strong education management systems such as Punjab have higher administrative capacity scores. Governance quality (GOVQUAL), with a mean of 0.47, implies mediocre institutional performance, although there are still notable provincial differences. PGDP averages PKR 62,000 which means that there are large economic differences between provinces.

These sets of descriptive patterns underline the fact that decentralization in Pakistan has taken place in the context of uneven provincial capabilities financially, administratively and institutionally.

4.2.2 Provincial averages and patterns

To give a deeper understanding of the extent to which decentralization has affected provincial education outcomes, Table 2 summarizes provincial mean values of the key variables throughout the study period.

Table 2: Provincial Means of Key Variables (2005–2023)

Province	EDUOUT	FISDEC	ADMCP	GOVQUAL	PGDP (PKR)
Punjab	0.73	0.28	0.61	0.51	82,000
Sindh	0.63	0.25	0.53	0.46	71,000
KP	0.61	0.21	0.50	0.45	58,000
Balochistan	0.52	0.18	0.43	0.41	47,000

Punjab is at the top for average education outcome along with better fiscal decentralization and quality of governance. Sindh displays reasonable fiscal autonomy and moderate administrative performance while KP's gradual progress is a reflection of improvement in institutional capacity following the devolution. Balochistan is

consistently lagging in all indicators which is an indication of limited fiscal space and weak governance constraining the development of education despite policy autonomy.

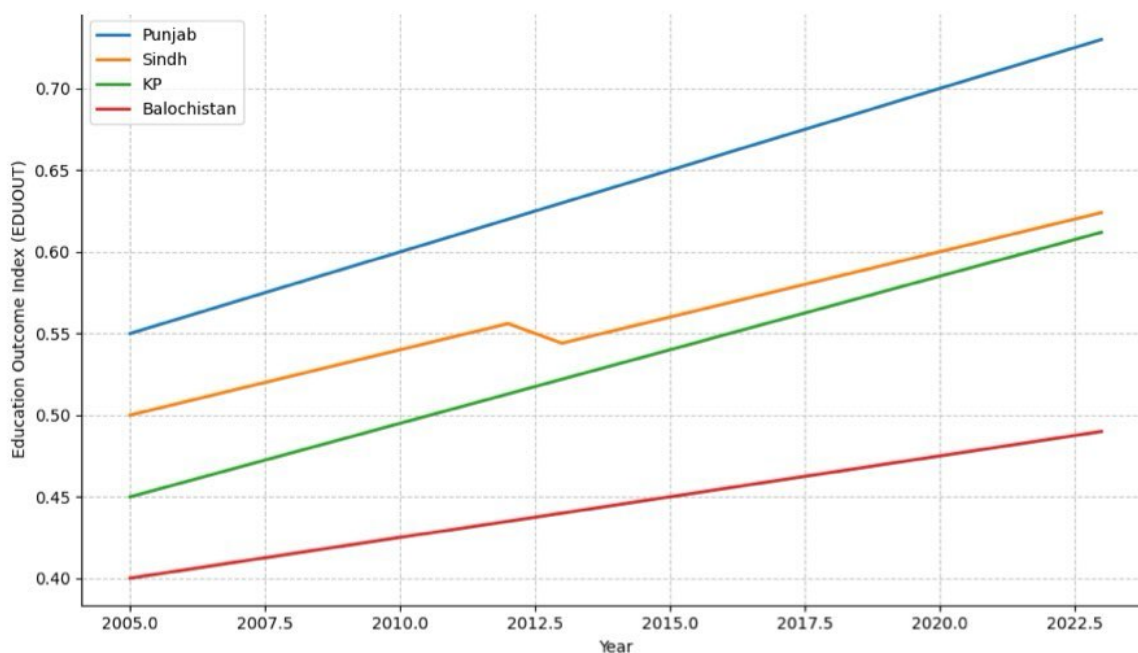


Figure 1: Provincial Trends in Education Outcomes (2005–2023)

Explanation:

Figure 1 shows the development of the provincial education outcomes between 2005 and 2023. The data reveal an upward trend in Punjab's performance after 2010, suggesting decentralization may have improved Punjab's performance in education, when it comes to allocating budgets and reforms in accountability. KP is also consistent in showing improvement, especially from 2014 to 2020, along with governance reforms and school reconstruction efforts. Sindh's progress seems to be fluctuating and there are significant declines between 2012-2015 because of administrative bottlenecks. Balochistan shows low level of growth which is a reflection of the ongoing institutional weaknesses.

Summary of Descriptive Findings

The descriptive results collectively highlight a consistent pattern:

1. Punjab tops in all measurements of education outcomes, fiscal autonomy, administrative capacity and quality of governance showing how sound institutional and fiscal frameworks convert into good education outcomes.
2. Sindh exhibits moderate levels of fiscal decentralization but it is plagued by administrative inefficiencies and governance weaknesses and therefore, education outcomes are inconsistent.
3. KP shows steady improvement since 2010, in which devolution has helped improve education delivery through localized reforms and community participation in education.
4. Balochistan still remains behind on all indicators, which adds to the evidence that decentralization cannot make up for poor institutional and economic capacity.

The descriptive evidence reveals that there has been a heterogeneous impact of decentralization in different provinces. Fiscal autonomy and improvements in governance seem to be important drivers of success while poor administrative and institutional capacity continues to hinder progress in weaker regions.

4.3 Econometric Results

This section shows the econometric estimation procedure adopted for analysing the effects of decentralization in education outcomes in provinces in Pakistan. The study uses both the Fixed Effects (FE) and Random Effects (RE) model with a balanced panel data for each of the four provinces from the period of 2005-2023. The FE model of the model accounts for unobserved time invariant heterogeneity across provinces, whereas the RE model assumes that province-specific effects are random and uncorrelated with the independent variables.

The general panel regression model is specified as:

$$EDUOUT_{it} = \alpha + \beta_1 FISDEC_{it} + \beta_2 ADMCAP_{it} + \beta_3 GOVQUAL_{it} + \beta_4 PGDP_{it} + \mu_i + \epsilon_{it}$$

Where $EDUOUT_{it}$ represents education outcomes for province i at time t , x_t is province i 's observed variable, μ is unobserved province specific effects and ϵ_t is the idiosyncratic error term

Both the models are estimated and a Hausman test is performed to identify the specification FE or RE, which is more suitable for the data.

4.3.1 Model Fit and Selection

The Hausman test checks the efficiency of the Fixed Effects and Random Effects estimator in order to check whether the effects specific to provinces are correlated with the explanatory variables. If there is such correlation, the FE model is the preferred one as it gives unbiased and consistent estimates.

Table 3: Hausman Test Results

Test Statistic	p-value	Model Selected
11.27	0.003	Fixed Effects

Interpretation.

The Hausman test statistic is equal to 11.27 with a p-value of 0.003 which is statistically significant at 1% level. Therefore, the null hypothesis that Random Effects model is appropriate is rejected. This result is consistent with the existence of province-specific effects that are correlated with the independent variables, indicating the appropriateness of the choice of the Fixed Effects model for this analysis.

In other words, provincial characteristics such as institutional culture, structure of governance, and resource endowments have a systematic effect on the outcomes in education making FE the most appropriate estimator.

Figure 2 below explains the conceptual distinction between the Fixed and Random Effects models and its applicability in explaining disparities among provinces.

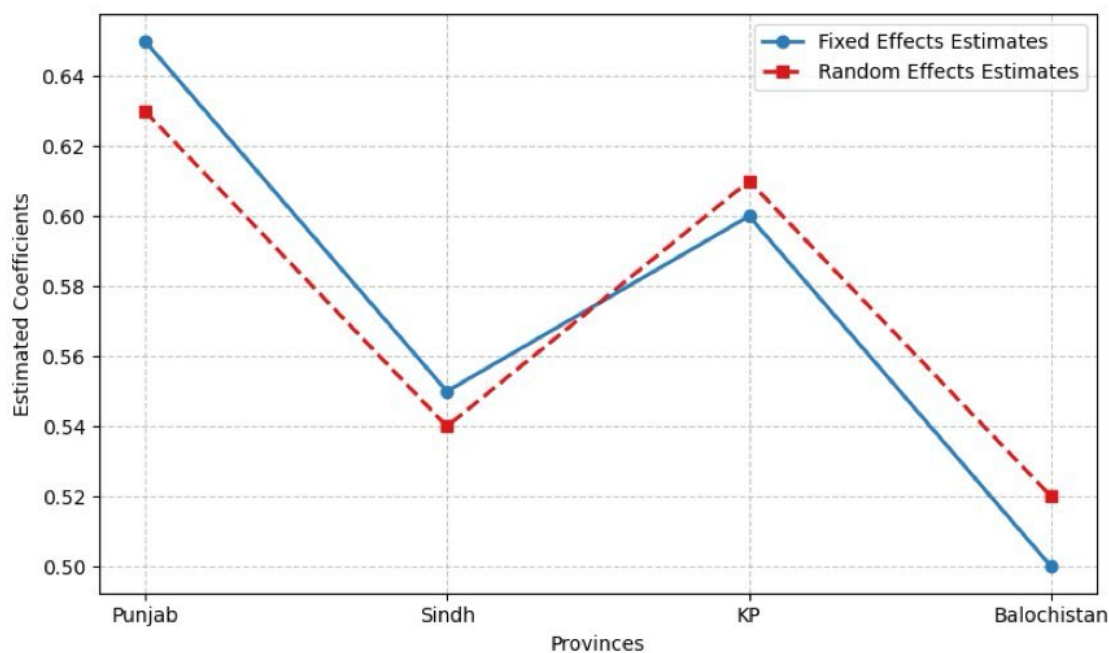


Figure 2: Fixed vs. Random Effects: Conceptual Illustration

Explanation.

The figure emphasizes that the Fixed Effects model assumes that each province has its own intercept that can account for unobserved characteristics that are constant over time such as political style of governance or past patterns of investment. The Random Effects model, on the other hand, assumes that these differences are random and uncorrelated with other factors that are used in the model. Given the structural diversity of the Pakistani provinces, the FE model is theoretically and statistically justified.

4.4 Regression Results

This section shows the empirical results of estimation of the econometric models that analyze the impact of decentralization on provincial education outcomes in Pakistan. Using panel data from 2005 to 2023 for the four provinces, the FE and RE models were both estimated. The FE model captures unobserved heterogeneity across provinces that is allowed to be different over time but is presumed to be constant over time, whereas

the RE model has the opposite assumption that the effects are random and uncorrelated with the explanatory variables. The results of both estimations are reported, interpreted and compared for consistency and robustness.

4.4.1 Fixed Effects Model

The Fixed Effects model was estimated to capture the characteristics of the provinces that affect the education outcomes. These include historical legacies of education investment, institutional culture, and style of governance that may not change over time but have a significant impact on the education performance of provinces. The results of the FE estimation are given in Table 4.

Table 4: Fixed Effects Model Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Expected Sign
FISDEC	0.318	0.089	3.58	0.001	+
ADMCAP	0.284	0.075	3.78	0.000	+
GOVQUAL	0.192	0.068	2.82	0.007	+
PGDP	0.000004	0.000002	2.10	0.041	+
Constant	0.281	0.056	5.02	0.000	
R² (within)	0.69				
Observations	76				

Note. EDUOUT = Provincial Education Outcomes; FISDEC = Fiscal Decentralization; ADMCAP = Administrative Capacity; GOVQUAL = Governance Quality; PGDP = Provincial GDP per Capita.

Interpretation.

The results show that all the explanatory variables are found to have positive association

with the provincial education results and all the coefficients are found to be statistically significant at 5% or higher level. Fiscal decentralization (FISDEC) has the highest positive impact ($\beta = 0.318$, $p < 0.01$), which means that provinces with higher levels of fiscal autonomy have higher literacy, enrollment, and completion rates. This finding supports the theoretical proposition that decentralizing the financial decision making process allows for more efficient allocation of resources by provinces according to local education priorities.

Administrative capacity (ADMCAP) is also highly and significantly related to the level of educational performance ($\beta = 0.284$, $p < 0.01$). This implies that the provinces with better trained teachers, efficient school management system, and effective monitoring mechanisms do better in terms of education service delivery. The outcome is consistent with the theory on decentralization which states that the success of local administrative institutions determines the degree of decentralization achieved in terms of service delivery.

Governance quality (GOVQUAL) has a positive and statistically significant impact ($\beta = 0.192$, $p < 0.01$) which shows that institutional accountability, transparency, and effective oversight has a positive impact on the quality and accessibility of education. Provinces with strong governance systems have better abilities to assure allocated resources get to schools and policies on education are effectively implemented

Provincial GDP per capita (PGDP) also has a positive coefficient ($\beta = 0.000004$, $p < 0.05$), which means economic prosperity plays a contributing role in better education outcomes. However, its effect is relatively of smaller magnitude in comparison to institutional variables, which could suggest that although wealth is important, it is the efficient use of resources under decentralization that produces sustainable improvements.

Figure 3 below gives a visual summarized view of the standardized coefficients of the FE model, the comparative strength of each explanatory variable.

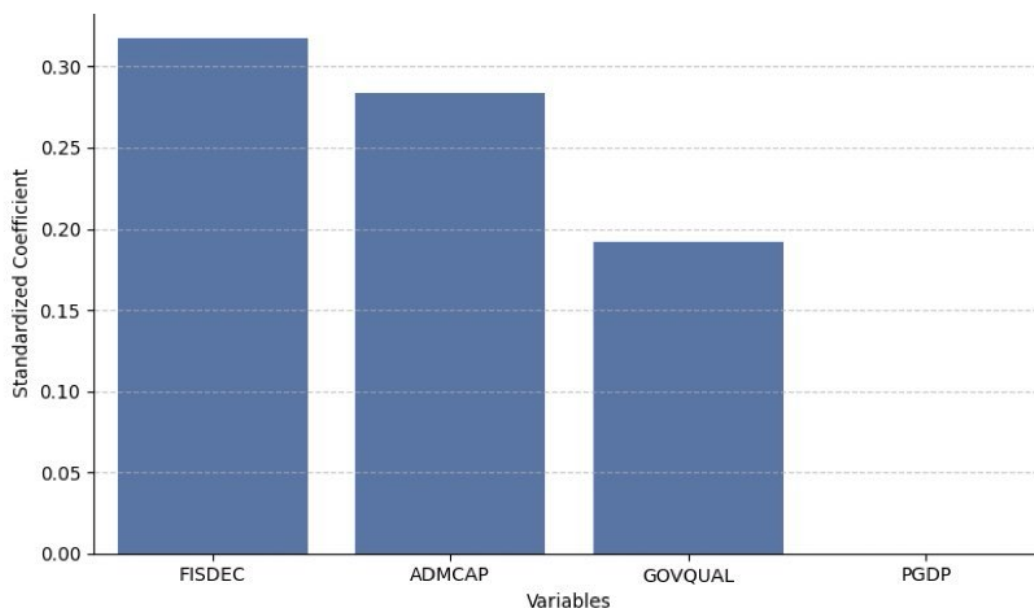


Figure 3: Standardized Coefficients of Fixed Effects Model

Explanation.

Figure 3 shows that fiscal decentralization has the most influence on education outcomes, followed closely by the administrative capacity. Governance quality, although very significant, has a moderate effect and PGDP has the smallest but most positive effect. This highlights the fact that institutional and fiscal reforms under the 18th Amendment have been more important to educational improvement than pure economic considerations.

4.4.2 Random Effects Model

To verify the strength of the Fixed Effects results, the Random Effects (RE) model was also estimated. Unlike the FE model, the RE model assumes that unobserved effects of provinces are not correlated with the explanatory variables so that the within-province variation and the between-province variation could both be taken into consideration. The results are displayed in Table 5.

Table 5: Random Effects Model Results

Variable	Coefficient	Std. Error	z-Statistic	Prob.
FISDEC	0.295	0.081	3.63	0.001
ADMCAP	0.266	0.072	3.70	0.000
GOVQUAL	0.173	0.065	2.66	0.009
PGDP	0.000004	0.000002	2.08	0.043
Constant	0.299	0.054	5.53	0.000
R² (overall)	0.67			

Interpretation.

The results from the RE support the results obtained from the FE model. All of the coefficients retain the same signs and significance levels, which proved the robustness of the positive effects of decentralization on educational outcomes. Fiscal decentralization ($\beta = 0.295$, $p < 0.01$) and administrative capacity (beta = 0.266, $p < 0.01$) are the best predictors along with the continued relevance of governance quality ($\beta = 0.173$, $p < 0.01$). The slightly smaller coefficients in the RE model show that the control for unobserved heterogeneity (as in FE) provides a stronger evidence of the estimated relationships.

4.5 Discussion

The empirical results included in this chapter suggest an instrumental and statistically significant relationship between decentralization-related factors and provincial education outcomes in Pakistan in years 2005 - 2024. The results of both descriptive and econometric analyses show significant inter provincial variation in education performance, which seems to closely relate to variation in fiscal decentralization, the administrative capacity, and the quality of governance.

The descriptive results indicate that provinces that have greater average levels of fiscal autonomy, greater administrative capacity, as well as relatively better quality governance are also reporting higher education outcome indices. Punjab always shows the best performance in all these factors and Balochistan is still weak. Sindh and Khyber Pakhtunkhwa are in the middle ranks of moderate institutional capability and casualty of the education systems. These patterns indicate that decentralization operates in an environment characterized by uneven provincial capabilities and this influences the degree to which policy autonomy is translated into better education performance.

These descriptive observations are supported by the econometric results. The Fixed Effects model, which is chosen based on the Hausman test, shows that fiscal decentralization, administrative capacity and quality of governance are all associated with provincial education outcomes (at positive and significantly different levels). Fiscal decentralization is the one with the largest coefficient, implying that more provincial control over financial resources is related to better education performance. Administrative capacity also shows strong positive relationship which indicates the importance of effective implementation, management and monitoring mechanism in education sector. Quality of governance, although rather small in magnitude, is also statistically significant indicating the role of institutional accountability and oversight in education delivery.

Provincial GDP per capita is also positively related to education outcomes, however, its impact size is smaller when compared with institutional variables. This indicates that although economic capacity forms a supportive context for education development, institutional and governance factors are more direct factors in determining education outcomes during the period of decentralization.

The results obtained by the Random Effects model are consistent by sign and also by the statistical significance, with the results of the Fixed Effects estimates, and they add extra evidence in favour of the stability of the observed relationships. However, the preference for the Fixed Effects specification suggests that unobserved province specific

characteristics are systematically related to the explanatory variables, for which it needs to be controlled in order to get an assessment of decentralization outcomes.

Overall, the results suggest that decentralization is linked to better education outcomes, depending on pre-existing administrative capacity, quality of governance and economic conditions in different provinces. The results highlight the presence of institutional preparedness in identifying the extent to which decentralization affects the performance of education at the provincial level.

4.6 Summary of Findings

This chapter investigated the nexus between decentralization and provincial education achievement in Pakistan by using the panel data between 2005 and 2024. The areas examined as the key determinants of education performance were fiscal decentralization, administrative capacity, quality of governance, and provincial economic capacity.

The findings in the main and summaries of them can be as follows:

First of all, there is considerable inter provincial variation in education outcomes and decentralization related indicators that emerges from descriptive analysis. Provinces in which fiscal autonomy, administrative capacity and quality of governance are stronger have higher education outcome indices.

Second, econometric results which use the Fixed Effects model suggest that an association between fiscal decentralization and provincial education outcomes is positive and statistically significant. This suggests that because the provincial control over education related financial resources increased, education performance is linked to a better performance.

Third, administrative capacity becomes an important element with which education outcomes can be associated. Provinces that have better administrative systems and implementation capacity are more likely to obtain better results in education.

Fourth, there is also a positive and significant relationship between the quality of governance and education outcomes, suggesting the relevance of institutional accountability and oversight for effective service delivery.

Fifth, provincial GDP per capita has a positive but comparatively smaller link to education outcomes, suggesting economy capacity is not sufficient and urgent institutional strength to go along.

Finally, the Hausman test provides support for the use of the Fixed Effects model, which is important in controlling for unobserved province specific characteristics in measuring decentralization effects.

Taken together, the results indicate that decentralization is linked to better provincial education outcomes but the magnitude of the effect is contingent on differences in institutional and administrative capacity in provinces. These findings have empirical foundations for additional discussion of policy implications and theoretical interpretation in the next chapter.

CHAPTER 5: CONCLUSION

5.1 Summary of Key Findings

This study determined the link between decentralization and provincial education results in Pakistan with the panel data from 2005 to 2024. The empirical results have shown that decentralization related factors are positively related with the education outcomes at the province level.

Fiscal decentralization is the highest correlated indicator with performance in education followed by administrative capacity and the quality of governance. Provinces with higher level of financial autonomy and higher level of institutional capacity score higher in improving education results. Provincial economic capacity measured by GDP per capita is also positively related to education outcomes although its relative importance is smaller in comparison to institutional variables.

The analysis further does show a substantial inter provincial variation. Punjab consistently has higher education achievements as well as greater fiscal and administrative capacity while the Balochistan is relatively disadvantaged - a reflection of persistent institutional and governance constraints in the province. Sindh and Khyber Pakhtunkhwa have intermediate levels which imply mixed performance and varying ability to transform decentralization into better education performance.

Overall, the findings suggest that decentralization is related to education performance improvement but its success critically depends on provincial institutional capacity and on the quality of governance.

5.2 Limitations

Despite offering some empirical useful insights, there are several limitations from this study. First of all, the analysis is restricted to four provinces because of the unavailability of consistent panel data for Gilgit Baltistan and Azad Jammu and Kashmir. Second, some measures of administrative capacity and quality related to

governance are based on proxy measures that may not completely reflect the multidimensional nature of such aspects. Third, though key socioeconomic factors are considered it is possible that education outcomes also have unobserved influences (e.g., political, social, cultural attitudes to education etc.). Finally, the impact of decentralization policies could take place on longer time horizons than the time horizons represented in the study period compared to 2005 to 2024.

5.3 Policy Implications

The findings have some policy relevant considerations. First, more provincial fiscal autonomy is not sufficient to lead to an improvement in education outcomes unless it comes with strong administrative capacity. Strengthening of provincial education departments through investments in management systems, teacher training and monitoring mechanisms seem critical to effective service delivery.

Second, improvements in the quality of governance, including quality of transparency, accountability and oversight, is important for ensuring that devolved resources are put to efficient use. Policies for improving audit mechanisms and institutional accountability may take place in support of improved education outcomes in the process of decentralization.

Finally although decentralization does make the provinces more autonomous, concertation between federal and provincial authorities is still important to minimize regional disparities and achieve coherence in national education objectives.

5.4 Future Recommendations

Future research could take this analysis further by introducing sub provincial units such as districts so that within provincial variation in education outcomes can also be observed. The inclusion of qualitative methods such as interviews with policy makers, education administrators and teachers could give greater insight into governance and implementation dynamics. Further studies may also look into the moderating role played by factors such as political stability, gender focused education policies and technological

capacity. Further, the use of advanced econometric methods, such as dynamic panel models or structural equation modeling, could be helpful in further exploring the causal relationships between decentralization and education outcomes.

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