UNLOCKING SYNERGIES THROUGH PUBLIC VALUE CO-CREATION: A HOLISTIC EXAMINATION OF PUBLIC-PRIVATE PARTNERSHIPS IN PUNJAB'S EDUCATIONAL LANDSCAPE

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ABSTRACT

This study evaluates the effectiveness of Public-Private Partnerships (PPPs) in addressing educational challenges in Punjab, Pakistan, focusing on access, equity, and quality. Despite Punjab's leadership in PPP-based reforms, over 7.8 million children remain out of school, and disparities in learning outcomes persist, particularly among marginalized groups. The study uses a mixed-methods approach, including qualitative data from interviews and focus group discussions, and quantitative analysis of enrolment trends and student performance. Findings indicate that while PPP initiatives, such as those by the Punjab Education Foundation (PEF) and Punjab Education Initiative Management Authority (PEIMA), have increased enrolments and achieved cost-effective outcomes in education, challenges related to equity, quality, and systemic inefficiencies remain significant. Issues of overcrowding, limited teacher qualifications, and rigid monitoring processes hinder progress, while gaps in stakeholder trust and communication exacerbate operational challenges. The study highlights the need for targeted interventions, such as establishment of new schools, revision of quality assessment criteria, minimum compensation package of teachers, community engagement, parental involvement, and technology integration, to improve outcomes. Ultimately, the findings underscore the importance of comprehensive reforms in governance and resource allocation to ensure that PPPs foster inclusive, high-quality education for all students in Punjab.

Keywords: PPP, Punjab, co-creation, PEF, PEIMA, educational outcomes

PREFACE

This study evaluates the effectiveness of key PPP initiatives, such as those by the Punjab Education Foundation (PEF) and Punjab Education Initiative Management Authority (PEIMA), using a mixed-methods approach. It integrates qualitative insights from interviews and focus group discussions with quantitative analyses of enrolment trends and student performance. While PPPs have increased enrolments and achieved cost-effective outcomes, challenges such as systemic inefficiencies, equity concerns, overcrowding, and inadequate teacher qualifications continue to hinder progress. This research aims to inform education policy and practice, contributing to the pursuit of inclusive, high-quality education in Punjab and beyond.

This research would not have been possible without the invaluable support and cooperation of various organizations and individuals.

We extend my heartfelt gratitude to the management of School Education Department, PEF, and PEIMA for their collaboration and support. Their willingness to facilitate interviews with their officials and assistance in connecting us with partner schools was crucial to this study's success.

Special thanks are due to the principals of partner schools, who warmly welcomed us, shared detailed insights, and provided access to their schools, teachers, students, and parents. Their cooperation and openness during school visits were instrumental in gathering comprehensive data for this research.

Finally, the hard work, dedication, and sincere efforts of our Research Associate, Nida Siddique, are highly acknowledged and deeply appreciated. Her contributions throughout this study have been invaluable and truly worthy of commendation.

The contributions of all these organizations and individuals was pivotal in ensuring the successful completion of this study, and we are sincerely grateful for their invaluable support.

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ABBREVIATIONS

ADB	Asian Development Bank
CARE	Cooperative for Assistance and Relief Everywhere
CPDP	Continuous Professional Development Program
EFA	Education for All
EVS	Education Voucher Scheme
EMO	Education Management Organization
FAS	Foundation Assisted Schools
FGD	Focus Group Discussion
IORs	Inter-Organizational Relationships
LFPS	Low-fee private schools
MDGs	Millennium Development Goals
NADRA	National Database and Registration Authority
NSP	New School Programme
OSC	Out of School Children
PEF	Punjab Education Fund
PEIMA	Punjab Education Initiatives Management Authority
PSSP	Public-School Support Scheme
PPPs	Public-private partnerships
QAT	Quality Assurance Test
SSC	Secondary School Certificate
SDL	Service-dominant logic
SDGs	Sustainable Development Goals
TNA	Training Needs Analysis
USAID	United States Agency for International Aid

INTRODUCTION

1.1. Background and Context of the Study

Public-private partnerships (PPPs) in education have gained global attention as a promising solution to address educational challenges (Ansari, 2024). These partnerships involve contractual arrangements where the private sector delivers educational services to the government, assuming responsibility for service delivery and risk-sharing, while the government ensures financing and upholds social values such as compassion and social cohesion (Robertson & Verger, 2012; Rind, 2022). PPPs are typically viewed as an instrument for combining public and private resources, including expertise and knowledge (Ma et al., 2022; Bovaird, 2004) and justified by the possibility of generating "synergy," or what Huxham (2003) terms collaborative advantage. The goal of partnership work is frequently seen as achieving these synergies (Skelcher & Sullivan, 2008; Brinkerhoff & Brinkerhoff, 2011). Such synergies are conceptualized as co-creation of public service value whereby several actors share and integrate their resources in the service ecosystem (Ansell & Torfing, 2021; Osborne, 2018; Osborne, et al., 2022; Petrescu, 2019). Co-creation is a collaborative process where governments, private organizations, and citizens pool resources to develop innovative solutions for better service delivery. It shifts responsibility from public organizations alone to include private and non-profit sectors, as well as users, in designing and delivering services (Osborne, et al., 2022). User involvement is crucial, as meaningful value cannot be achieved without their participation.

The use of PPPs enhances the opportunity of added value of services through meaningful collaboration between public and private sector. In education, this process enables the private sector to bring innovative teaching methods and technology, easing the public education sector's burden and providing quality education, especially in underserved areas (Al Haddar et al., 2023). However, the interaction of diverse stakeholders does not always guarantee the creation of public value. For example, PPPs in low-income countries often prioritize donor agendas over local needs, undermining national sovereignty (Robertson & Verger, 2012). In Pakistan, such projects face criticism for imposing global standards that ignore local contexts (Rind & Shah, 2022), marginalizing less powerful stakeholders and limiting inclusive collaboration. Ansari (2020) highlights "cream skimming" in PPP schools, where easier-to-educate students are favoured, excluding marginalized children. Similarly, Aslam & Kingston (2021) note that hidden costs often make these schools inaccessible to the poorest, undermining their purpose.

Such barriers to collaboration not only hinder the co-creation of value-added services but can also lead to *co-destruction* of service value (Cui & Osborne, 2022; 2023; Engen et al., 2021). Co-destruction occurs when interactions among stake holders result in reduced or negative value instead of improvements (Echeverri & Skålén, 2011; Smith, 2013). For example, poor communication, conflicting goals, or unequal power dynamics can diminish the effectiveness of partnerships. Therefore, it is essential to explore how stakeholders exchange resources—such as finances, technical expertise, infrastructure, and human resources—to foster positive collaboration and co-create value. Understanding inter-organizational relationships and the involvement of service users is crucial for evaluating the effectiveness of PPPs, an area that has been under-researched.

In the context of educational PPPs in Pakistan, although several studies have captured the educational outcomes of PPPs (Ansari, 2024; Khalid & Tadesee, 2024; Rind, 2022; Siddiqui & Channa, 2021) but the researchers have majorly focused on quantitative determinants, whereas, deeper exploration through qualitative analysis is much warranted (Khalid & Tadesee, 2024; Rind & Malik, 2024). In particular, their governance mechanism, inter-organizational relations and role of wider stakeholders (including the service users) in creation of value-added services is less explored domain. This gap calls for deeper exploration and research into the practical implementation and outcomes of PPPs in Pakistan's educational landscape (Naveed, 2013; Alam & Mohanty, 2023; Arshad & Doger, 2022).

1.2. Problem Statement

Despite significant efforts to reform education through Public-Private Partnerships (PPPs), Pakistan remains home to the world's second-largest population of out-of-school children (OSC), with approximately 26.2 million children aged 6–16 not enrolled in school (UNESCO, 2021; PBS, 2023). Punjab, a leader in PPP-based educational reforms, still struggles with 7.83 million OSC with 16% never attended formal education (Akram, 2024) reflecting persistent challenges in access, equity, and learning quality. Issues such as inadequate infrastructure, high dropout rates, and poor learning outcomes, especially for girls and rural children, continue to undermine progress (Arshad & Doger, 2022; Pasha, 2024). These challenges erode parental confidence in education's value, and Pakistan consistently fails to meet its Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs), including achieving universal primary enrolment and 88% literacy (GOP, 2014; Pasha, 2024). Despite Punjab Education Foundation (PEF) initiatives, such as the Foundation Assisted Schools (FAS), Education Voucher Scheme (EVS), and New School Program (NSP), as well as efforts by the Punjab Education Initiative Management Authority (PEIMA), key gaps in achieving holistic educational outcomes persist. This raises the critical question of whether PPP initiatives effectively address the enrolment crisis, particularly for marginalized children, and whether they ensure meaningful learning outcomes.

To address these gaps, a comprehensive evaluation of PPPs is necessary, focusing on stakeholder engagement, co-creation dynamics, and their impact on access, quality, and equity. Tailored assessments and deeper exploration are essential to determine whether PPP reforms in Punjab can effectively address educational disparities and foster holistic development (Ali et al., 2020; Ahmad et al., 2023).

1.3. Scope of the Study

This study focuses on evaluating the role of PPPs in addressing educational challenges in Punjab, specifically their impact on improving access, equity, and quality in education. It examines the effectiveness of initiatives like PEF programs and PEIMA interventions in bridging educational disparities and enhancing learning outcomes. The study also explores broader systemic issues, such as stakeholder engagement, co-creation dynamics, and their influence on overcoming barriers to education, particularly for marginalized groups. By addressing these areas, the study seeks to provide a holistic assessment of PPP initiatives in Punjab's education system.

1.4. Research Objectives

Following are the specific objectives of the study:

1. Assess the quality of education delivered through the mode of PPPs in the province of Punjab
2. Examine the effectiveness of educational PPPs for addressing equity challenges in provision of education to marginalized communities in the province of Punjab.
3. Explore how PPPs can address the challenge of enrolment crises (access of education to marginalized/underserved populations) in Punjab.
4. Identify best practices and key success factors for value co-creation through PPPs in education.
5. Explore the challenges and limitations associated with implementing PPPs initiatives in the education sector.

To address these objectives, the study used case-study design with mixed-methods research including multiple sources of qualitative data (interviews, focus-group discussions (FGDs), policy reports etc.) and quantitative data (student's results, enrolment trends etc.). Qualitative data is analysed through thematic analysis using NVivo and quantitative data is analysed through t-test and trend analysis using SPSS.

LITERATURE REVIEW

2.1. Public Private Partnership in Education Sector

The United Nations (UN) established Education for All (EFA) and universal primary education in the 1990s, promoting Public-Private Partnerships (PPPs) to achieve 100% primary school enrollment by 2030, with UN-supported bodies funding PPP initiatives for governments and NGOs (UNDP, 2015). The commercial sector, non-profits, and charitable organizations were engaged to promote equal access to education through PPPs (UNICEF & ADB, 2011). PPPs are seen as key to addressing inefficiencies and inequality in the public sector, alleviating issues such as weak leadership, resource shortages, and bureaucratic hurdles in public schools (Gideon & Unterhalter, 2017; Mgaiwa & Poncian, 2016; Ahmed et al., 2023). This model is rapidly expanding across both developed and developing nations (Verger, 2012). International organizations like the World Bank and Asian Development Bank (ADB), along with bilateral partners such as USAID, have played a significant role in financing and driving educational reforms through private sector participation.

In Pakistan, approximately 20 percent of the entire educational budget has been of this funding (Burki et al., 2005). The amalgamation of resources, expertise, and a shared commitment to educational advancement signifies a unique model of PPPs. This model encapsulates the collaborative spirit between NGOs and public-sector entities, pooling their strengths to create sustainable and impactful educational transformations within these adopted institutions. Through this concerted effort, the aim is to foster an environment conducive to holistic development and improved learning outcomes for the students attending these schools (Barrera-Osorio et al., 2022; Irfan, 2015).

2.2. PPPs in the Education Sector in Punjab: Role, Success and Challenges

The 18th Constitutional Amendment of 2010 in Pakistan shifted the responsibility of provision of education to provincial governments. This reform brought in a new education policy framework that mandated the state to ensure free, compulsory and high-quality education for individuals aged 5 to 16.

The elevation of Pakistan, particularly its Punjab province, as a pioneering example in steering public resources toward low-fee private schools (LFPS) for education provision has drawn attention in South Asia (Zancajo et al., 2021). The government's active involvement, especially in Punjab, directing resources to LFPS has been notable and received global recognition (Thakore, 2004).

Punjab's education PPPs have progressed through three distinct phases. The initiation phase (*1991–2004*) began with the establishment of the PEF in 1991. In 2004, the Punjab government unveiled a policy halting the establishment of new government-run schools, pivoting instead toward school expansion via PPPs (Muralidharan, 2007) facilitated by PEF. During this phase, PEF introduced the FAS program to provide free education by financially supporting partner schools to meet quality standards (Malik, 2010; Khan & Jamil, 2022). The expansion phase (2004–2018) saw further innovations, including the EVS in 2006, which empowered impoverished families to send their children to private schools using vouchers (Ansari, 2012). Additionally, the NSP, launched in 2007, facilitated entrepreneurs in establishing private schools in underserved areas, significantly increasing enrollment in marginalized communities (Arshad & Doger, 2022). The specialization

phase (2018–present) marked the creation of the PEIMA to focus on public school reforms through the Punjab School Support Program (PSSP). Under this initiative, poorly performing public schools were transferred to private organizations for better management. This allowed PEF to concentrate on private sector collaborations while PEIMA addressed public school needs, providing a more targeted approach to education reform (Chaudhry & Tajwar, 2021; Khan & Jamil, 2023). Despite these advancements, challenges related to sustainability, equity, access, and quality remain (Ansari, 2021).

2.3. Value Co-creation in Public-Private Partnership: Conceptual Framework

PPPs seek to give everyone access to high-quality education by occupying a special place at the nexus of the public interest and private sector efficiency. However, a significant question remains: do PPPs effectively promote fairness in education? This study takes the governance perspective of the partnership model to determine this effectiveness. This study assesses whether the interorganizational relations and governance structure can create some value through the collaborative efforts of the public and private partners and how the value can be translated into positive education outcomes such as enhanced access, equity and quality of education.

2.3.1. Role of Inter-organizational Relations

It can be asserted that by fostering strong interorganizational relations (IORs), stakeholders in PPPs can leverage their diverse expertise and resources to co-create innovative solutions. This collaboration allows for the exchange of ideas, knowledge, and best practices, leading to more effective strategies and interventions in education (Steijn et al., 2011).

IOR can be further elaborated in different forms. According to Brinkerhoff & Brinkerhoff (2011), IORs are categorized as contracting, extension, and partnership based on the level of organizational identity and mutuality. According to Irfan (2015), there can be four forms of IORs that can be assessed through the nature of the relationships between the parties: Collaborative IORs, Contractual IORs, Cooperative IORs, and Conflictual IORs. Since PPP arrangements presume the collaboration between the parties, this study conceptualizes the IOR between the partnerships on the collaborative continuum (ranging from collaboration to conflictual). The type of IOR vary according to the level of collaboration both parties have.

2.3.2. Role of Governance Structure

In addition to IOR, the governance structure of PPPs also plays a critical role in shaping educational outcomes (Kim, 2016). A well-designed governance structure ensures clear roles, responsibilities, and decision-making processes, promoting accountability and alignment of goals among partners (Panda, 2015). These structures define the distribution of power, responsibilities, and accountability among the partners, which in turn influence the decision-making processes and implementation strategies. The choice of governance structure can vary depending on the context and goals of the partnership (Steijn et al., 2011) and can have varying impacts on educational outcomes. For instance, partnerships with a principal-agent relationship and strong contractual ties, such as the UK PFI partnerships in the education sector, may prioritize efficiency and cost-effectiveness but may limit flexibility and innovation (Kim, 2016).

The governance structure also involves establishing mechanisms for conflict resolution, monitoring the progress of initiatives, and ensuring transparency and accountability in decision-making processes. The effectiveness of governance structures is central to fostering a shared vision and maintaining alignment of goals among partners.

PPPs' outcomes stem from joint planning, shared decision-making, and coordinated actions leveraging the strengths of each partner (Eriksson et al., 2020; Lapuente & Van de Walle, 2020; Waldorff et al., 2014). Additionally, PPPs foster a networked educational ecosystem where stakeholders collaborate and share knowledge to drive continuous improvement in education (Könings et al., 2021; Kušljić & Marenjak, 2011; Sicilia et al., 2016). However, the success of these partnerships' hinges on the commitment and active participation of all stakeholders, including educational leaders, government officials, community organizations, and private businesses.

2.4. Value Co-Creation through PPPs

Originally introduced in the private sector by Prahalad & Ramaswamy (2004), co-creation is conceptualized as the process where companies engage with stakeholders to collaboratively produce value-added products, services, and experiences. Later, Vargo & Lusch (2004) presented the service-dominant logic (SDL) extending the concept of value from product-centred to service-centred view.

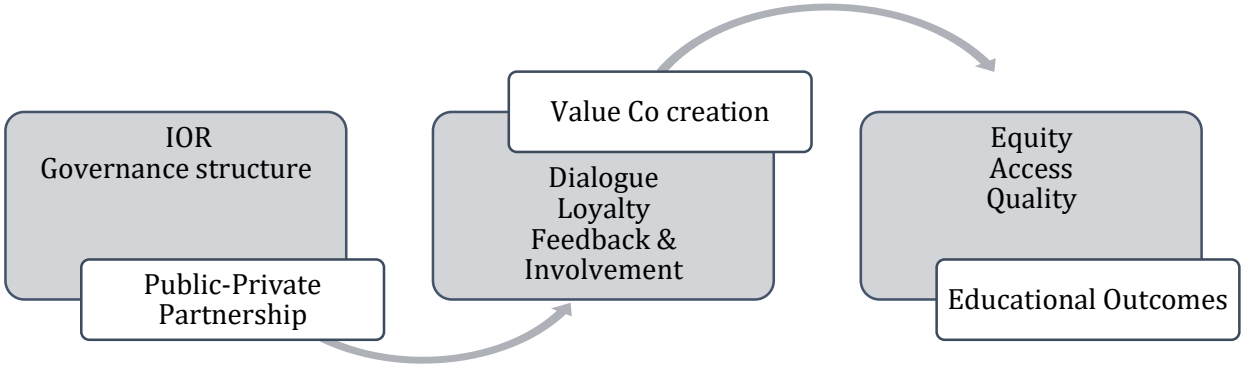
In public management, public service logic (PSL) perspective emphasises co-creation that focuses on integrating resources between public service organizations (PSOs) and their users (Osborne, 2018; Osborne et al., 2013). PSL represents a significant shift in the understanding of value creation within public services. Traditionally, value creation was seen as a one-to-one relationship between the service provider and the user. PSL, however, broadens this perspective to recognize that value is co-created by multiple interconnected actors. These actors, including PSOs, users, and other stakeholders, integrate their resources within the broader public service ecosystem (Osborne et al., 2022). PSL shifts the perspective of value creation from a simple, one-on-one interaction to a broader network where multiple actors collaboratively integrate resources (Osborne et al., 2022; Petrescu, 2019; Trischler & Charles, 2019).

This study argues that understanding these inter-organizational relationships is essential, as they highlight the interconnected and collaborative nature of PPPs. Notably, dynamic interactions among stakeholders do not always result in co-creation; they can lead to service value co-destruction, reducing value for one or more parties involved in the process (Cui & Osborne, 2022 and 2023; Engen et al., 2021; Echeverri & Skålén, 2011; Smith, 2013).

The concept of co-creation/co-destruction is very pertinent for delivering education through PPPs that involve collaboration between government bodies and private entities (non-profits, private schools, NGOs, and private-sector companies). By leveraging PSL, we can see that the value in these partnerships is not delivered solely by one party but co-created through the active participation of multiple stakeholders: the government, private providers, educators, students, parents, and communities. This process forms interconnected service ecosystems focused on stability, well-being, sustainability and survival (Lusch et al., 2016). This study positions value co-creation as a mediator linking the IOR, governance structure, and PPPs educational outcomes. Educational leaders and stakeholders in PPPs can enhance decision-making, align goals, optimize resource allocation, and achieve better educational outcomes through effective inter-organizational relations and governance structures

(Bridwell-Mitchell & Sherer, 2017; Kapucu et al., 2010). These improvements contribute to value co-creation, which enhances educational outcomes such access, equity and quality of education. Figure 1 depicts the conceptual framework of the study.

Figure 1: Co-creation of Public Service Value through PPPs: Conceptual Framework



RESEARCH METHODOLOGY

3.1. Mixed Method Case Study Research Design

The research utilized case study design with convergent parallel mixed method approach. The case study design was required for in-depth exploration of the phenomenon remailing in real life context while the mixed methods allowed a holistic examination of the phenomenon. Following Yin (2018), this study used multiple sources of data combining the qualitative data sources (semi-structured interviews, FDGs, observation, policy documents/company reports) and quantitative data sources (students' assessment results, enrolment trends, enrolment of marginalized groups etc.). The purpose of a convergent mixed methods design was to collect both quantitative and qualitative data, merge the data, and use the results to understand the research problem. Basic rationale for this design was that one data collection form supplied strengths to offset the weaknesses of the other form, and that a more complete understanding of a research problem resulted from collecting both quantitative and qualitative data. For example, quantitative scores provided strengths to offset the weaknesses of qualitative documents from a few people. Alternatively, qualitative data offered strength to quantitative data that did not adequately provide detailed information about the contextual factors.

3.2. Case Selection

Two PPPs in Punjab were taken as unit of analysis including PEF and PEIMA. Both PPPs were operating with large network of schools in the province of Punjab. Therefore, these two PPPs serves as typical cases to represent the educational PPPs in Punjab.

3.3. Sampling Strategy

The sample included diverse stakeholders including students, parents, teachers, school administrators, PPP management, and government officials. A multi-stage sampling technique was employed to ensure representation from various regions, and various program types of PEF and PEIMA. The sample included two districts from each region, ensuring representation from North, South, and Central Punjab. 5-7 schools are reached in each district covering PEF-EVS program, PEF-FAS program and PEIMA. In each school, interviews were conducted with the principals. Moreover, FDGs were conducted with the group of teachers, students, parents, and community. Additionally, a survey (with open-ended questions) was administered to have extensive coverage of the views of the teachers about the teaching methodologies, quality of education and school facilities. Purposive and convenience sampling techniques were used to select the respondents. Purposive sampling was used to ensure the representation and coverage of various programs of PEF and PEIMA in the sample. Moreover, purposive sampling ensured the inclusion and representation of diverse stakeholders in the sample (such as PPPs management, school administration, teachers, students, parents, community members). Convenience sampling was used to access the FGD and survey respondents. Given that convenience and access guided respondent selection, the sampling strategy prioritized availability of the respondents while ensuring diversity across the various school/program types of PPPs.

The samples size was determined based on reaching the saturation point, a recognized criterion in qualitative research which indicated that no new information was being uncovered from additional

data collection (Saunders, et al., 2018; Guest, et al., 2020). Quantitative data was collected from student's results in Secondary School Certificate (SSC) of PEF and Government schools, Grade 5 results of PEF, PEIMA and SED schools under Large Scale Assessments (LSA), and students' enrolment statistics. This dual approach ensures that both qualitative and quantitative aspects of the study are adequately addressed, with appropriate sample sizes for each method.

Table 1 provides the detail of data collection techniques, and the data sources/respondents.

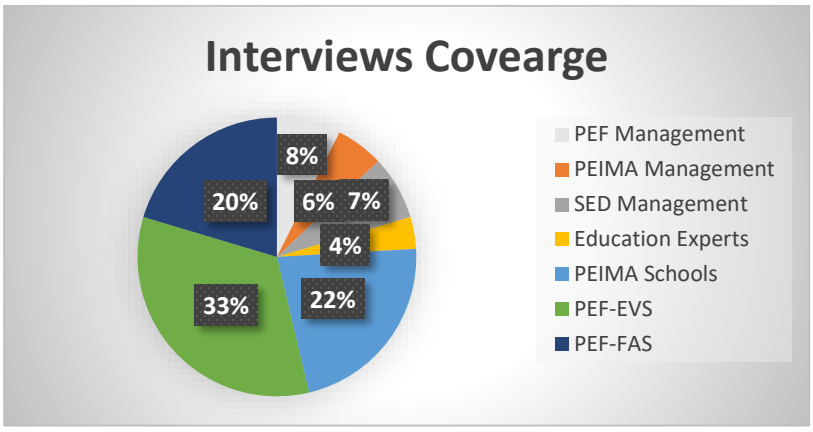
Table 1: Sampling Strategies, Data Collection Techniques, and Data Sources

Selection of cases, districts, and schools		
Case Selection	PEF and PEIMA	Purposive sampling
Districts Selection	Central Punjab: Lahore and Faisal Abad South Punjab: DG Khan and Multan North Punjab: Rawalpindi and Sargodha	Purposive sampling
Schools Selection	5-7 Schools from each district with the coverage of PEF-FAS schools, PEF-EVS schools, and PEIMA Schools	Purposive sampling
Date collection techniques and sources		
Interviews at policy level	1 Representatives from local governments 1 Independent education experts	Purposive sampling
Interviews with PPP management	4 interviews with managing team of PEF 3 interviews with managing team of PEIMA 4 interviews with officials in School Education Department (SED)	Purposive sampling
Interviews with School administration	5-7 School administrators/principals in each of the 6 districts with the coverage of PEF and PEIMA schools.	Convenience sampling
FGD (7-8 participants in each FDG)	3 parents focused groups (2 representing PEF and 1 representing PEIMA) 3 students focused groups; (2 representing PEF and 1 representing PEIMA) 4 teacher focused groups (2 representing PEF, 2 representing PEIMA) 3 community focused group (from marginalized/ low-income population)	Convenience sampling
Survey questionnaire (open-ended)	5-8 responses from each school visited (filled by teachers) with the coverage of 35-40 responses from each district.)	Convenience sampling
Quantitative Data	- SSC results (for the year 2023) of the PEF schools and Government Schools located in the same geographical area - LSA Grade 5 results of PEF, PEIMA, and SED Schools for 2021, 2022 & 2024 - Enrolments trends in PEF, PEIMA and Government Schools	
Documents/ secondary sources from field	- Policy documents - Government archives - School reports - PPP annual reports/ other publications - School brochures/marketing material etc.	

Figure 2 shows interviews with various stakeholders, while Figure 3 details district-wise coverage of schools under PEF and PEIMA. A total of 41 schools were visited. Figure 4 displays data from 244

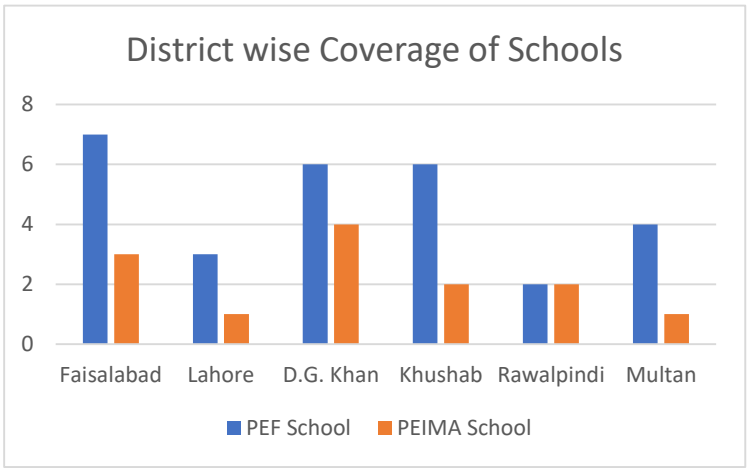
open-ended questionnaires, and Figure 5 illustrates the number of FDGs conducted. Further details are in Appendix A.

Figure 2: Interview Coverage



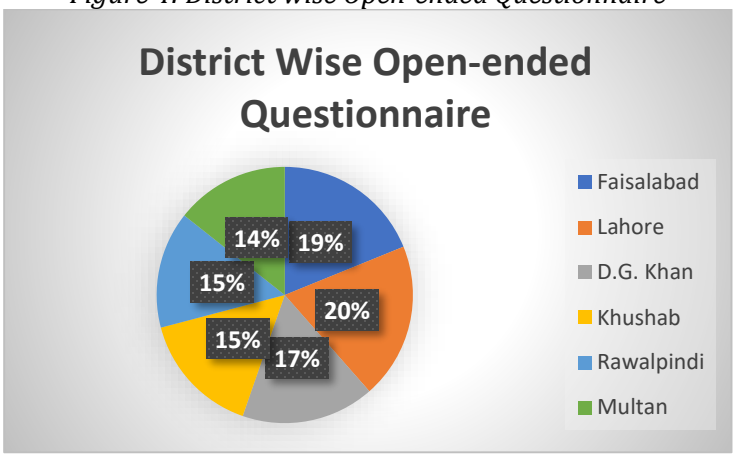
Source: Authors compilations.

Figure 3: District wise Coverage of Schools



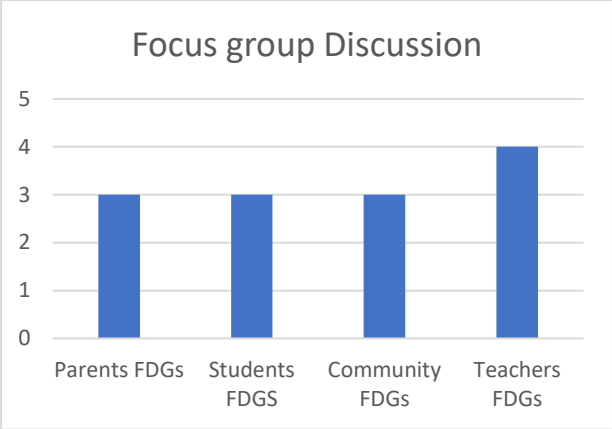
Source: Authors compilations.

Figure 4: District wise Open-ended Questionnaire



Source: Authors compilations.

Figure 5: Focus Group Discussions



Source: Authors compilations.

3.4. Data Analysis

Interviews and FDGs were transcribed and analysed using thematic analysis with NVivo 14.0 software. Themes and patterns were identified to explore the relationships qualitatively, about the IOR, governance structure, co-creation and educational outcomes. The open-ended questions in survey data further enriched the thematic analysis. In Appendix, table 5 presents the details of the reference code under the coding and sub-coding in NVivo.

In quantitative analysis, SSC data sets were analysed for academic achievement differences between PEF's selected schools and other government schools in the same geographical location. Enrolment trends were analysed to assess the access of education. Presence and performance of marginalized groups were analysed to assess the equity of education. The quantitative analysis was used to offset the weakness of the generalizability of the findings from qualitative study. On the other hand, qualitative data analysis provided rich descriptions of the findings. Thus, both methods complemented each other.

3.5. Description of Constructs/Variables

Table 5 in Appendix provides the operational definitions of the variables.

3.6. Data Authenticity

To enhance the authenticity of the qualitative data, each transcription was assigned a unique code that enabled the mapping of the quotes in the transcriptions. At the same time, the anonymity of the respondent was also ensured. The codes are assigned based on a combination of abbreviations representing the district and the type of institution, as well as a unique identifier. For example, the reference of "PEF-FPR-03" represents PPP (PEF), Faisalabad district (F), principal (PR) and the number of interview (03). This coding system ensured that each school's district, role, and unique identity were clearly represented.

3.8. Quality Checks

The study used inter-coder reliability checks to enhance the credibility of the qualitative data analysis. The concepts were operationalized, and an interview guide was prepared for the data collection. Moreover, a theoretical framework was conceptualised considering the comprehensive literature review. Both the theoretical framework and interview guide provided the baseline for the first level coding. During first level coding, coders were given extensive training about the preconception codes and the emerging codes from the data. The training proved useful as coders interpreted and labelled the data unanimously. Moreover, the transcriptions were done by another coder so that any anomaly could be checked and corrected.

3.9. Ethical Considerations

Respondents were granted *informed consent*, with clear communication about the study's purpose and their rights. To ensure *confidentiality and anonymity*, transcriptions were coded and anonymized for use in research reports and publications. For the *protection of vulnerable groups*, the researcher ensured that the study did not cause harm or exploitation to vulnerable individuals or marginalized communities. Appropriate *data security measures* were implemented to protect sensitive information collected during the research, including secure storage protocols.

CASE DESCRIPTION

Two cases, PEF and PEIMA, were selected as representative cases of PPPs in Punjab.

4.1. Punjab Education Fund (PEF)

PEF*, established in 1991 and restructured under the Punjab Education Foundation Act 2004 (amended in 2016), is an independent statutory organization.* PEF operates three key programs:

1. FAS: FAS enhances educational access in underprivileged districts of Punjab through PPPs. Over 1.77 million children are enrolled in 3,500 partner schools under FAS program.
2. NSP: New schools are established in rural villages prioritizing areas with no schools for at least 350 children. Local entrepreneurs and education stakeholders are encouraged to run these schools, which must meet minimum requirements (e.g., two classrooms, two teachers, a toilet, and drinking water) (PEF, 2018).
3. EVS: Introduced in 2006, EVS removes financial barriers to education by providing vouchers to low-income families, encouraging them to send children aged 5-16 to school instead of work. By offering direct financial support, this program addresses child labour issues and enables families to prioritize education over earning (PEF, 2015).

Through these programs, PEF strengthens educational opportunities and fosters socio-economic development in Punjab.

4.2. Punjab Education Initiatives Management Authority (PEIMA)

Established in 2018, PEIMA aims to implement education reforms in non-performing government schools. Government Primary Schools previously managed by PEF under PSSP were rebranded under PEIMA, which in 2021 managed 4,277 schools and provided free education to 635,000 students (PEIMA, 2024). Open to private entities, NGOs, and PEF partners, PEIMA addresses issues like low performance, staff shortages, and declining enrolment. It enhances literacy and learning outcomes by improving teaching quality, boosting enrolment, reducing dropout rates, and contributing to Punjab's overall literacy rate (Javed et al., 2012; Khan & Jamil, 2023; Hussain et al., 2022).

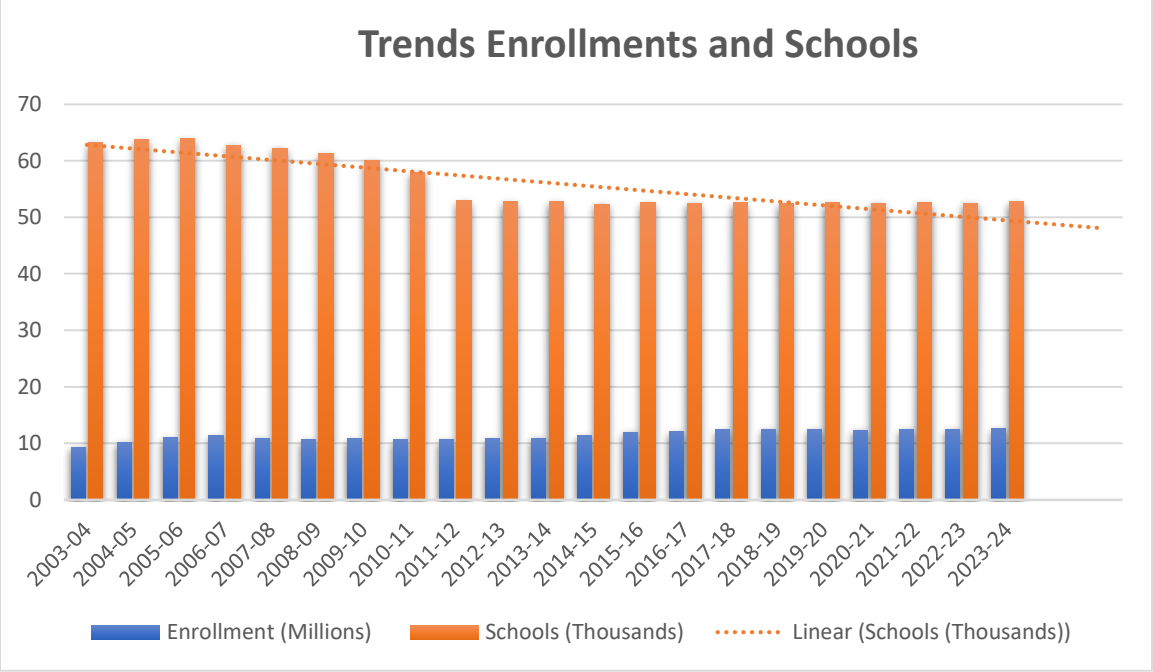
FINDINGS

Data was analysed through the process of first level coding, second level categorizations and then generating themes. The first level coding assigned meanings to the data. These codes were merged into meaningful categories in the second phase. The categories were further merged to generate themes. In each theme, the qualitative and quantitative data is triangulated for the comprehensive analysis. Appendix A provides the detail of reference quotes, under each category of codes.

5.1. Access to Education

Using quantitative data, access is measured through the number of schools and enrolment data shown in Figure 6. There is a stagnant trend in number of SED schools from 2018 to 2024. The chart presents data on school enrolment and the number of schools over several academic years, from 2003-04 to 2023-24. The enrolment appears to peak around 2004-05 and gradually declines in subsequent years. The most recent years show a moderate level, indicating a potential stabilizing trend after the initial drop. The number of schools remains relatively stable with slight increases and decreases but does not experience dramatic changes. The dotted linear line for schools indicates a linear trend over time, suggesting that while there might be fluctuations in the number of schools, the overall trend appears to be stable overtime. This could suggest that the existing infrastructure is either sufficient or not expanding in line with past enrolment levels.

Figure 6: Trends Enrollments and Schools, 2023-24

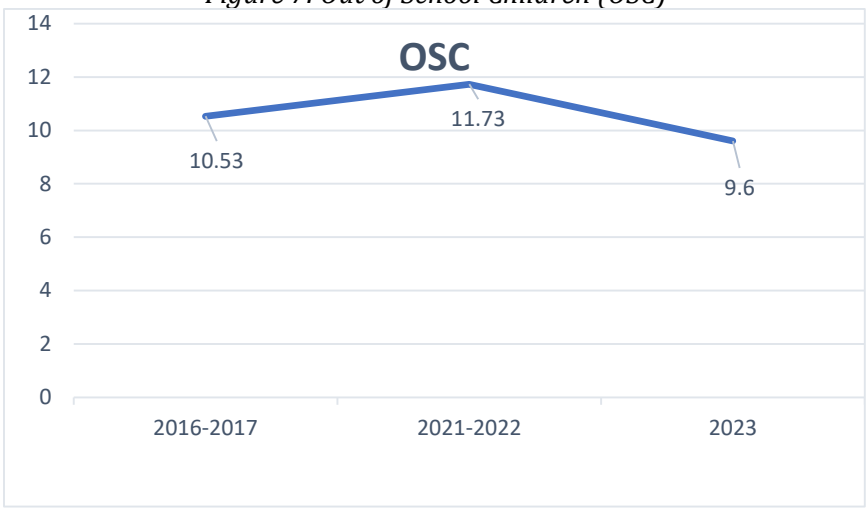


Source: Annual School Census 2023-2024

On the other hand, the percentage of OSC in Pakistan has decreased from 44% in 2016-17 to 39% in 2021-22 as depicted in Figure 7. Despite this decrease in percentage, the absolute number of OSC has gone up from 22.02 million in 2016-17 to 26.21 million in 2021-22. This is primarily attributed to

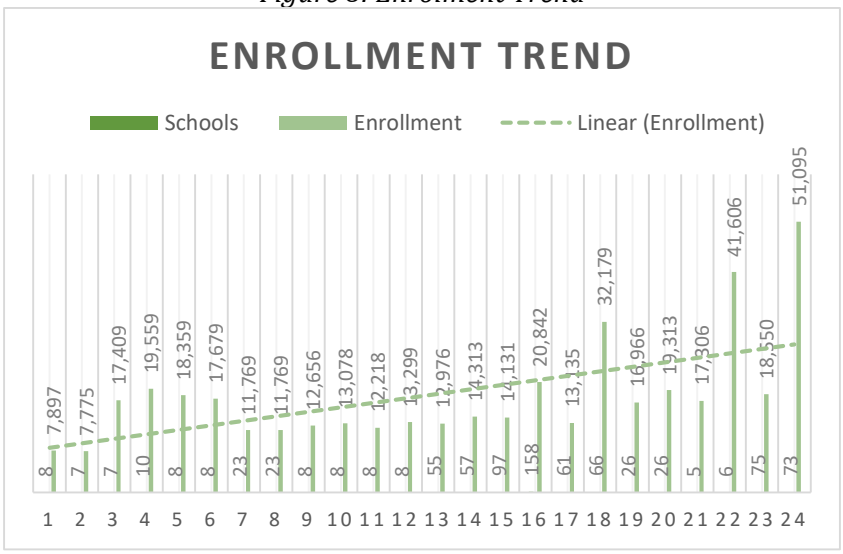
the population increasing at a higher rate compared to the rate of decrease in OSC. Decrease in OSC, whereas increase in student's enrolment indicates that PPPs have increased the access of education in the year 2023 as compared to 2016.

Figure 7: Out of School Children (OSC)



Source: Pakistan Education Statistics (2016-2017, 2021-2022, 2023)

Figure 8: Enrolment Trend



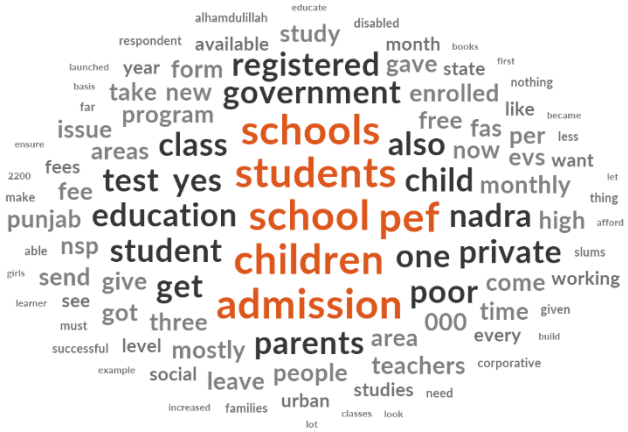
Source: Annual School Census 2023-2024

Figure 8 shows signs of increased students' enrolment in Punjab, and it also underscores the importance of ongoing efforts of PPPs to increase access of education.

The findings from quantitative data are further strengthened by qualitative data. Interviews reveal that although PPPs are playing a positive role to increase the access of education in Punjab, however, it is heavily influenced by community involvement and socioeconomic factors. Schools run by PEF and PEIMA, are providing free education to a large number of kids who are unable to pay for schooling. With initiatives like the NSP and the EVS, which target rural and urban slums, respectively, PEF has made substantial strides in increasing access to education. The coding of access is shown in

Figure 9 as a world cloud, retrieved through Nvivo-14, Furthermore, the codes were merged into five major categories related to access of education shown in Figure 10.

Figure 9: Access Word Cloud



PEF programs improve education access through targeted initiatives catering to diverse needs. As a one respondent explained:

“FAS is very successful in both the rural and urban areas. EVS is very successful in urban slums. NSP is in the rural areas where there is a need for school. All three have its own dynamics” (PEF-DD-18).

Programs like Ehsaas also support poor families, incentivising them to send their children to school (PEF-FPR-01). Moreover, urban slums benefit significantly from the EVS program, which targets marginalized areas. However, socio-economic challenges persist. A principal in Lahore observed, “Families facing financial issues cannot afford education, and many children balance school with labor to support their families” (PEF-FPR-01). Documentation issues, such as the lack of a B-form from NADRA, further limit access. One respondent explained:

“A divorced mother in my vicinity could not get her children’s B-forms, so they were unable to study in a PEF school” (PEF-LPR-11).

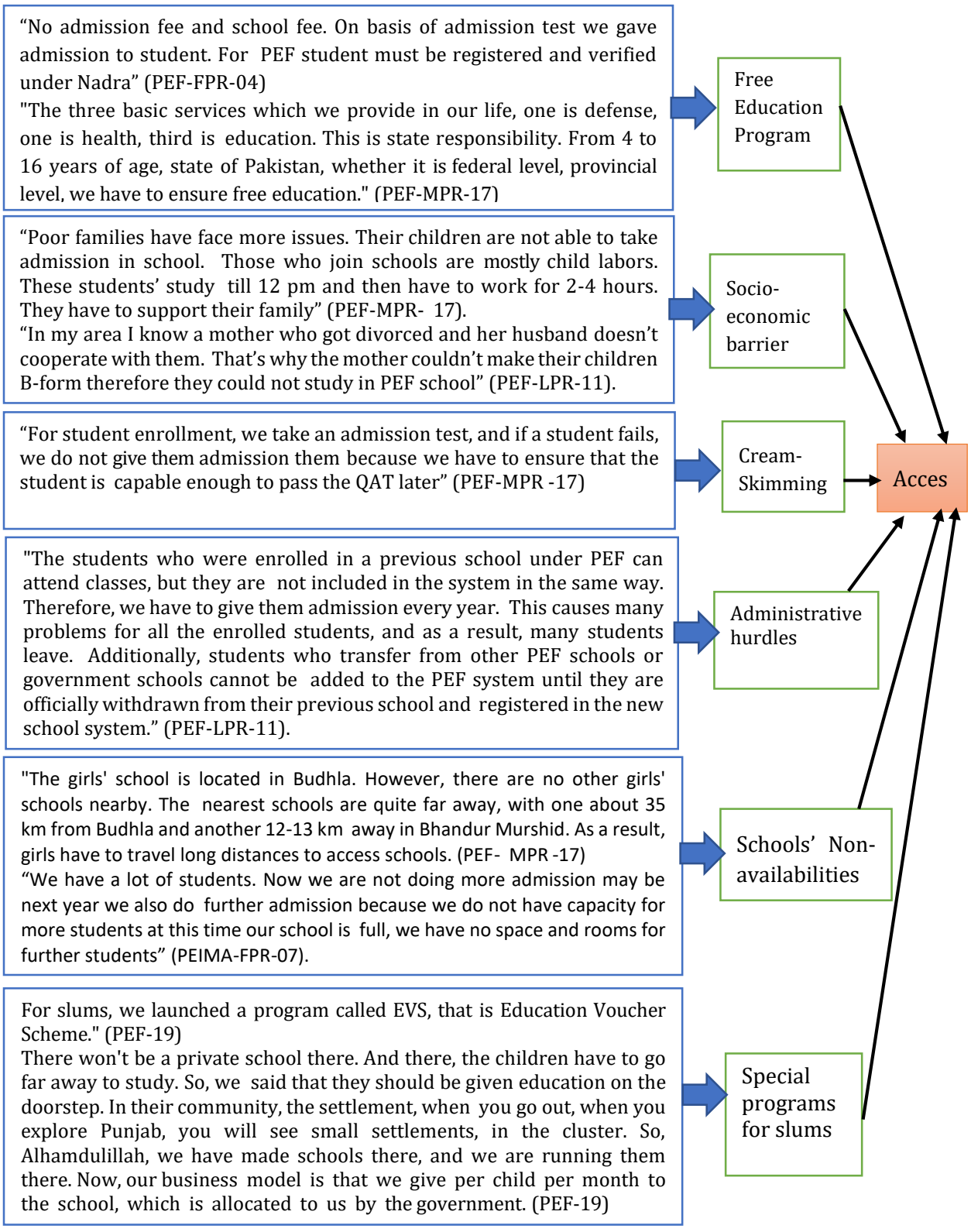
Cream skimming practices in form of admission tests also act as barriers for underprivileged students. “We take an admission test, and if a student fails, we do not admit them. However, we ensure they can pass the QAT later,” said a respondent (PEF-MPR-17). This practice excludes students with potential who may not perform well on standardized tests due to limited preparation opportunities.

Girls' access to education is hindered by the lack of nearby schools. A respondent highlighted, “There are no girls' schools within a reasonable distance, with one 35 km from Budhla and another 12-13 km away in Bhandur Murshid” (PEF-MPR-17). Overcrowding in existing schools further exacerbates the issue. “We cannot admit more students this year as the school is at full capacity,” shared a principal (PEIMA-FPR-07).

Student transfers between PEF schools face significant challenges. “Students transferring from other PEF or government schools cannot be added to the system until officially withdrawn from their previous school. This delay causes instability, and many students leave,” explained a respondent

(PEF-LPR-11). Unregistered students face yearly re-admissions, creating uncertainty and dropout risks.

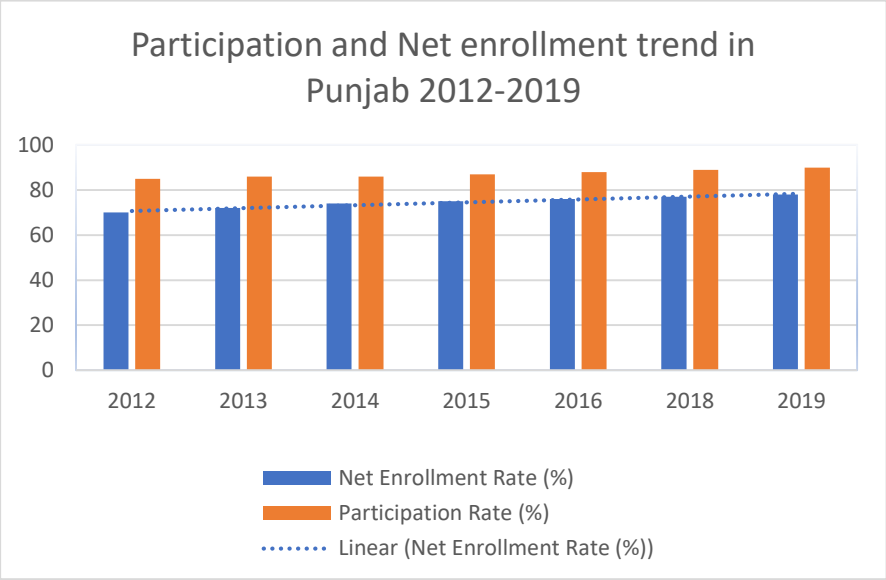
Figure 10: Access Coding Process



5.2. Equity in Education

Figure 11 depicts the participation and net-enrolment trends in Punjab for the years 2012-2019.

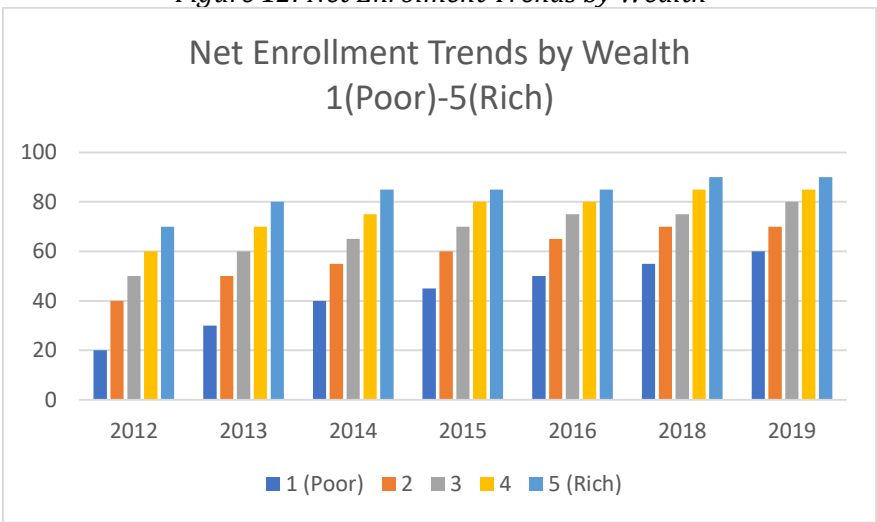
Figure 11: Participation and Net-Enrolment Trends



Source: Pakistan Education Statistics 2023

Figure 11 highlights equity concerns in education, showing that net enrolment rates (blue) are consistently lower than participation rates (orange) over the years. This gap indicates that while many children begin schooling, significant numbers fail to transition to enrolled status, likely due to economic, social, or systemic barriers affecting marginalized groups. Despite an upward trend in both metrics from 2012 to 2019, the persistently lower enrolment underscores inequities in access and retention, particularly for disadvantaged students. Bridging this gap is crucial to ensuring inclusive and equitable education in Punjab.

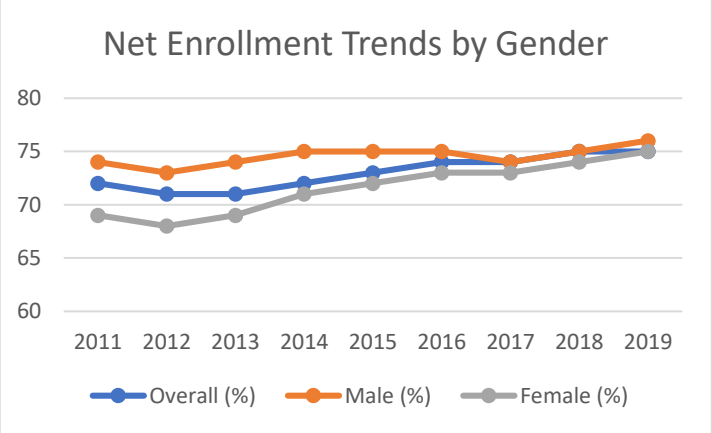
Figure 12: Net Enrolment Trends by Wealth



Source: Pakistan Education Statistics 2023

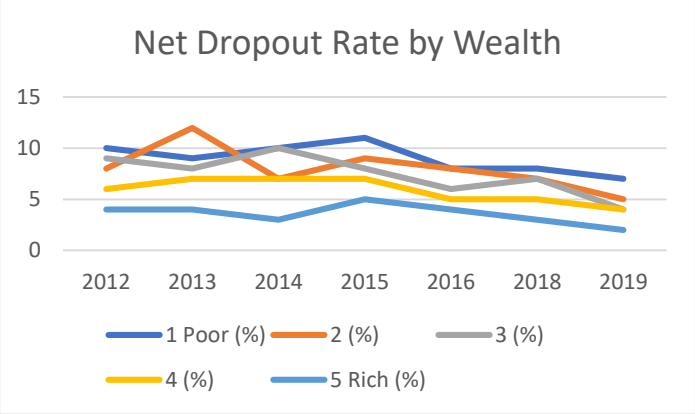
Figure 12 shows that wealthier groups (4 and 5) have significantly higher net enrolment rates than the poorest group (category 1), underscoring systemic inequities in educational access. In 2019, enrolment in category 5 approaches 90%, while category 1 remains much lower, reflecting barriers such as financial constraints and limited resources for the poorest. Figure 13 reveals a consistent gender disparity in enrolment, with males (orange) outperforming females (grey) from 2011 to 2019. While enrolment rates for both genders have increased, the persistent gap highlights cultural, economic, and systemic barriers affecting female education. Figure 14 underscores significant inequities in educational retention across wealth categories from 2012 to 2019. The data reveals that poorer students (category 1, in blue) consistently exhibit the highest dropout rates, peaking around 12%, which highlights the systemic barriers they face in continuing their education. In contrast, students from wealthier backgrounds (categories 4 and 5, in yellow and grey) show notably lower dropout rates, indicating better support systems and resources that facilitate their educational persistence.

Figure 13: Net Enrolment Trends by Gender



Source: Pakistan Education Statistics 2023

Figure 14: Net Dropout Rates by Wealth



Source: Pakistan Education Statistics 2023

From analysis of qualitative data, the study found that equity of education is plagued by formidable obstacles. Figures 15 and 16 show NVivo outputs on word cloud and coding process respectively. The data revealed that Schools are working towards educational equity, but a diverse strategy is needed to address it comprehensively.

Figure 15: Equity Word Cloud

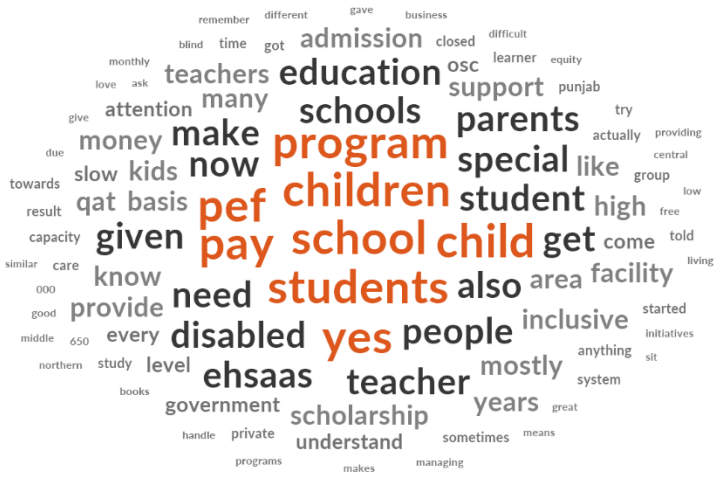
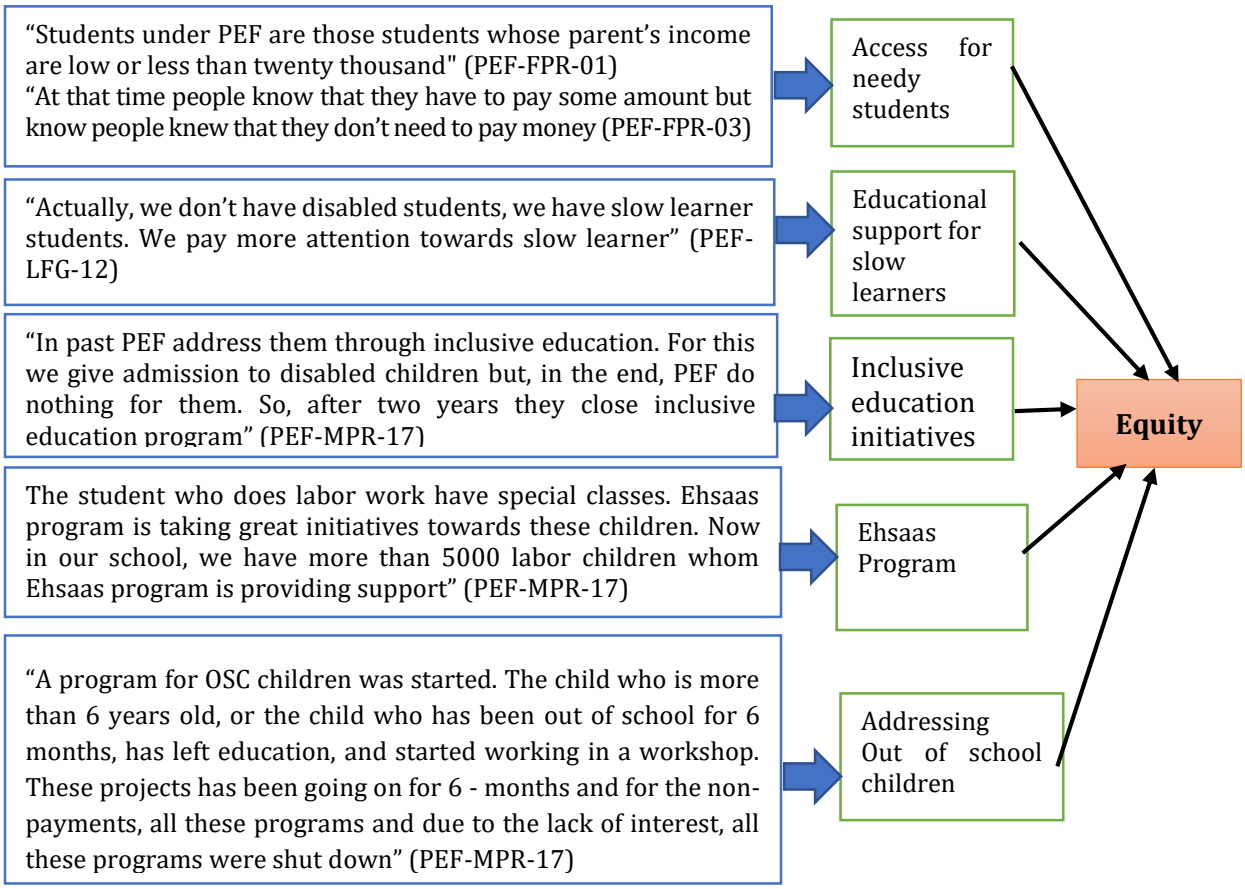


Figure 16: Equity Coding Process



5.2.1 Access for Underprivileged Students

A respondent in PEF's school explained: "the children in this area are mostly poor. It's a very expensive area. These kids are very hard working. In this school students who are enrolled under PEF are those students whose parent's income are less than twenty thousand. These parents are mostly from labour profession" (PEF-FPR-01). Now everyone is aware of PEF and PEIMA programs, which allow more access of the students. When educational hurdles related to finances are removed, education becomes more accessible.

5.2.2 Educational Support Systems for Slow Learners

During school visits, it was observed that only a few of the 41 schools visited accommodated slow learners or students with special needs. For instance, one school had a visually impaired student with vision in only one eye, facing challenges with depth perception and reading speed, while another student with a skin condition struggled with social anxiety. Teachers made extra efforts to prepare such students for QAT. However, most schools lacked resources to support slow learners. As one respondent noted, "We are under tremendous pressure to complete the syllabus, and handling

students with mental health issues is very challenging (PEF-LFG-12)". Principals suggested separate QAT passing criteria for slow learners, highlighting that current criterion push schools to exclude or remove such students to maintain performance standards.

5.2.3 Inclusive Education Initiatives

The analysis highlights the urgent need for systemic support and government policies to address the unique needs of students with disabilities. Equity requires adequate resources for schools to cater effectively to all students. While PEF introduced inclusive education initiatives, these efforts failed due to poor implementation and lack of support. As one respondent noted, "PEF told us they would install facilities like commodes in washrooms and slides, so we admitted disabled children, but in the end, PEF did nothing, and the program closed after two years" (PEF-MPR-17).

A PEIMA respondent emphasized, "Our school does not have any students with disabilities because we lack the resources and facilities needed to support them" (PEIMA-FPR-07). Another explained, "Handling disabled students becomes a separate project. Who will teach them?" (PEIMA-FPR-07). Only one out of 41 schools visited admitted disabled children on its initiative, with most schools citing constraints such as lack of resources, specialized staff, and pressure from QAT testing. A respondent reflected, "Students with physical disabilities have high challenges, and without government support for schools and parents, they cannot progress" (PEIMA-FPR-07). In its current state, the system overwhelmingly favours "normal" students, leaving those with special needs excluded.

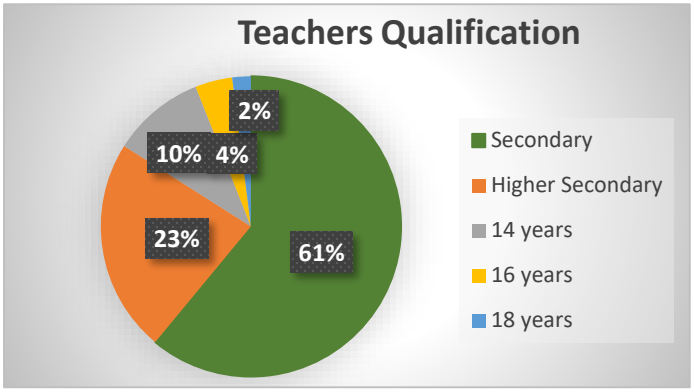
5.2.4 Addressing Out-of-School Children

Several obstacles must be overcome in order to address the problem of OSC, especially when it comes to students who have already laboured. When incorporating OSC into regular classrooms, schools encounter many difficulties. It is hard for these kids to adjust to school since they frequently experience behavioural problems that are linked to their workplaces. As one of the respondents expressed his worries, "The child does not get along with our system. His habits are spoilt. Because of working in the workshop, naturally, he has become stubborn and angry in nature." (PEF-MPR-17). Initiatives designed to assist OSC have been discontinued because of problems with non-payment and a lack of ongoing assistance and funding.

5.3 Quality of Education

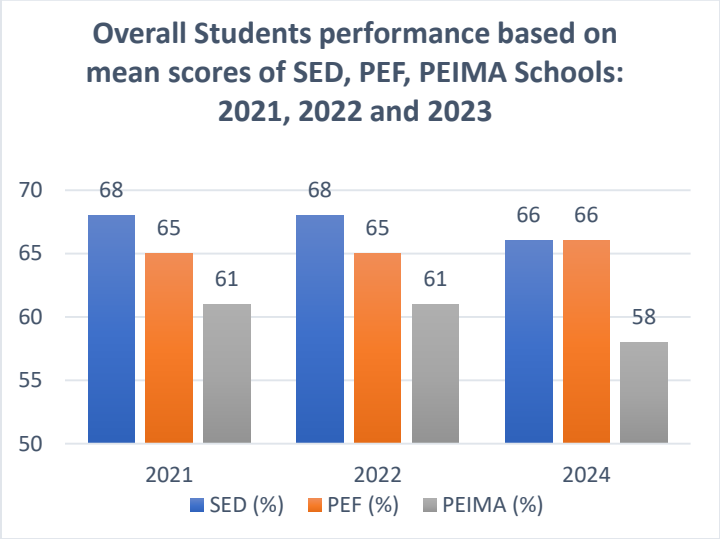
As discussed earlier in Figure 2, the data shows increased enrolment despite a decrease in the number of schools, suggesting larger class sizes in SED and PEF schools, which raises concerns about education quality and individual attention. Teacher qualifications, a key indicator of education quality, reveal that only 1.6% of teachers had 18 years of education, while 84% had less than 14 years of education (Figure 17). This indicates a limited pool of highly qualified teachers and highlights the need for more qualified educators to maintain quality education amid rising enrolment and decreasing school numbers.

Figure 17: Teachers Qualification



Source: Data collected in current study through open-ended survey.

Figure 18: Comparative Analysis of Students' Performance

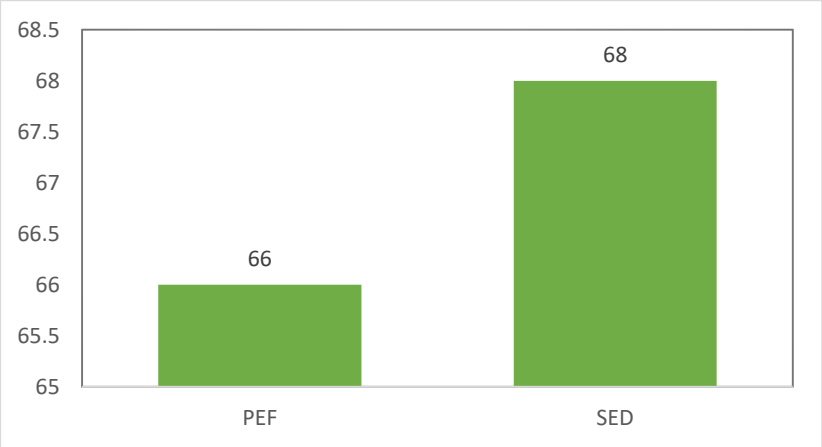


Source: Data compiled from results of 5th Grade from LSA data 2021, 2022 and 2024 conducted by Punjab Examination Commission (PEC).

Figure 18 compares the performance of Grade 5 students in large-scale assessments across PEF, PEIMA, and SED schools. In 2021 and 2022, SED schools outperformed both PEF and PEIMA schools, though the average difference between SED and PEF schools was minimal. By 2024, SED and PEF schools performed equally, while PEIMA schools lagged significantly. The comparable performance of SED and PEF students highlights PEF's efficiency in delivering similar educational outcomes at a much lower cost, despite PEF schools having less qualified teachers compared to government schools.

Figure 19 provides a visual representation of the comparative performance in LSA Grade 8 of PEF and government schools in the year 2022. SED schools tend to slightly outperform PEF schools in LSA Grade 8 in 2022.

Figure 19: Comparative Performance of PEF and SED in Grade 8



Source: Data compiled from results of 8th Grade from Large Scale Assessment Data 2022.

Table 2: T-Test

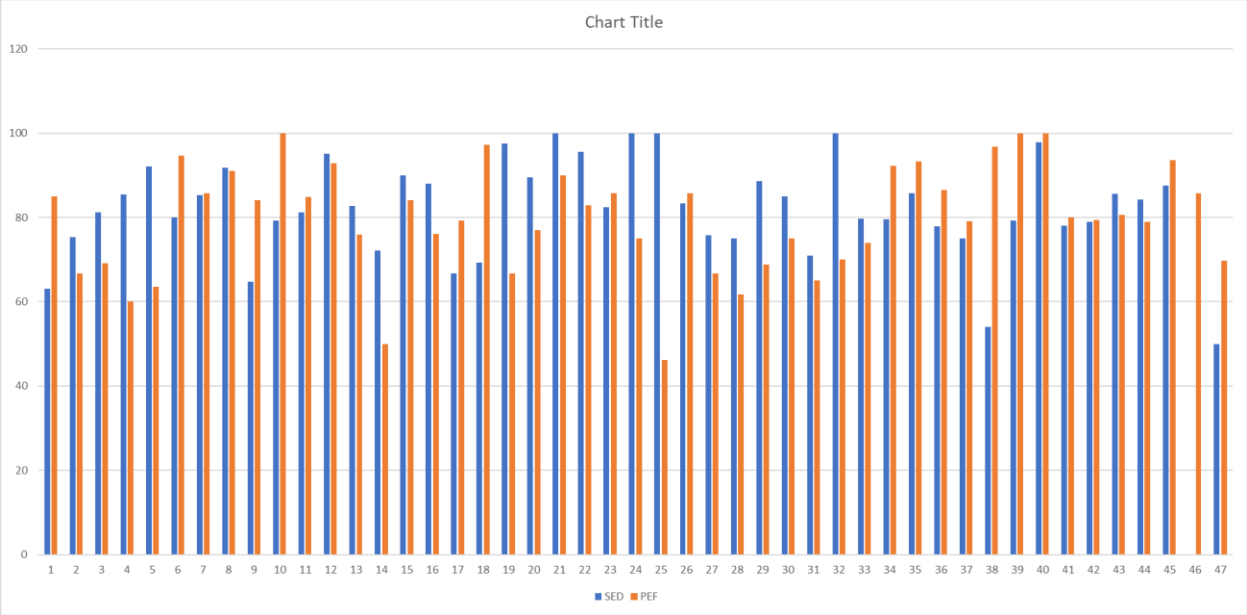
t-Test: Two-Sample Assuming Unequal Variances		
	Govt School	*PEF School*
Mean	76.9352795	81.34766667
Variance	269.2295988	155.7959334
Observations	161	60
Hypothesized Mean Difference	0	
df	138	
t Stat	-2.135595805	
P(T<=t) one-tail	0.017239003	
t Critical one-tail	1.655970382	
P(T<=t) two-tail	0.034478006	
t Critical two-tail	1.977303542	

Source: Sample of 60 PEF schools and 160 Government Schools within the same locality compiled from SSC results (year 2023)

Table 2 provides the results from the two sample T test conducted from the sample collected from SSC data for this project. The sample data indicates that the mean score of students from PEF schools (81.35) is higher than that of students from government schools (76.94). This suggests that students in PEF schools perform better, on average, than those in government schools. The t statistic of -2.14 indicates that the mean of the government school is lower than the mean of the PEF school by this amount in standard error terms. The negative sign indicates that the Government School mean is less than that of the PEF School. The two-tailed p-value of 0.0345 is below the common alpha level of 0.05, suggesting that there is a statistically significant difference between the means of the two groups. Thus, indicating that the mean score of Government schools is significantly lower than PEF schools. Figure 20 serves as a comparative tool to assess the effectiveness of PEF versus SED schools in producing SSC results. provides a comparative trend of SSC results between PEF schools and government schools located in the same locality. This aids in understanding the effectiveness of

different school systems in the vicinity and indicate towards the better educational quality of PEF schools.

Figure 20: Comparative SSC Results



Source: Comparative SSC Results (2023) of sample of PEF schools and SED Schools within the same locality compiled for this project.

The qualitative data revealed that quality of education in PEF and PEIMA schools is rigorously monitored and verified through several mechanisms, including verification, monitoring, and QAT as shown from NVivo results in Figures 21 (word cloud) and 22 (coding of quality in data).

Figure 21: Quality Word Cloud

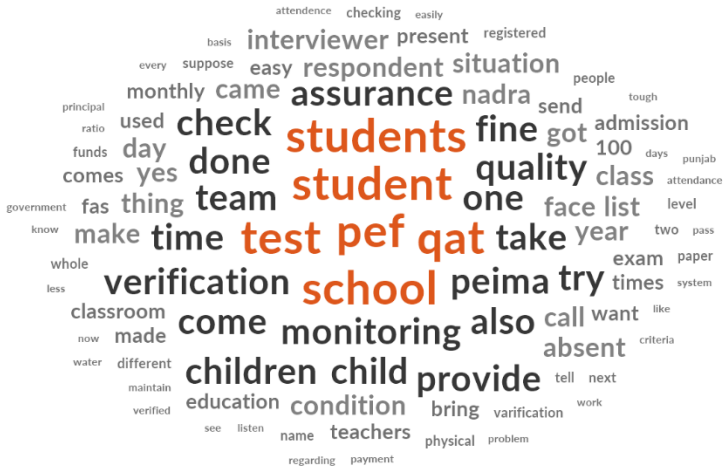
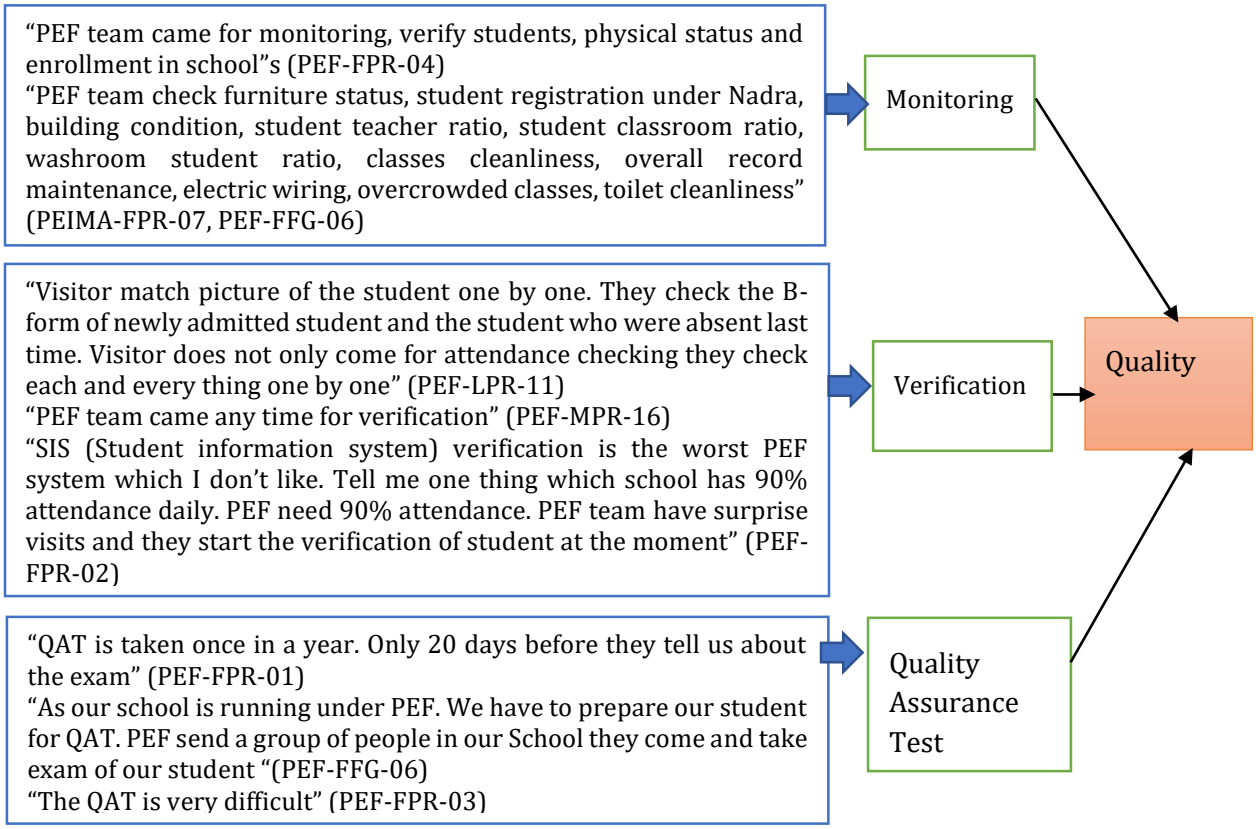


Figure 22: Quality Data Structure



5.3.1. Quality Assurance Test (QAT)

The Quality Assurance Test (QAT) is used by PEF and PEIMA to monitor school performance, with annual student assessments aimed at maintaining educational standards. However, the QAT standards differ between PEIMA and PEF. PEIMA administers subject-specific exams similar to the BISE system, whereas PEF conducts multiple course exams in a single day, selecting students randomly just two weeks prior. Respondents expressed concerns about random student selection. One said, "It depends on our luck. Result comes 100% if an intelligent student comes. If majority of the weak students got selected, then it becomes a challenge for the school" (PEF-FFG-06). The passing criteria for QAT vary, with FAS having the toughest target at 75%. A respondent stated, "If FAS's school is less than 75%, then it will be considered a failure" (PEF-FFG-06). This puts pressure on teachers, who often work late to complete the syllabus. One teacher shared, "Teachers mostly stay in school up to five o'clock to cover the whole syllabus" (PEF-LFG-12).

The QAT is viewed as overly difficult. One respondent noted, "QAT was meant for quality assurance, but it has become a full-fledged examination... all other aspects of education are neglected… We have no time for extra-curricular activities" (PEF-MPR-17). Additionally, a school principal highlighted the issue of reduced school days, saying, "We have hardly 130 working days due to so many off days, making it unrealistic to complete the curriculum effectively" (PEF-MPR-17).

Respondents suggested aligning the QAT with student abilities, reducing the syllabus, and addressing external challenges like limited school days to reduce the burden on both students and schools.

5.3.2. Students' Verification

Monitoring and verification are key to maintaining educational quality in PEF and PEIMA schools. Monthly verification and triannual monitoring ensure compliance with standards. One respondent shared, "We have monitoring three times a year, and monthly verification is done" (PEF-LPR-13). However, many view the process as overly strict, with penalties for minor issues, such as a water cooler left on. PEF monitors visit every 1-2 months to verify student attendance, cleanliness, and infrastructure. Verification includes checking attendance through CNIC data and photographs. A respondent explained, "PEF monitors verify students physically, taking pictures and ensuring their presence" (PEF-MPR-17). Schools strive to follow SOPs and uphold academic standards through routine monitoring, daily documentation, and surprise visits.

5.3.3.Monitoring of Infrastructure Requirements

PEF's monitoring processes ensure high educational and infrastructure standards in partner schools through regular and surprise visits, assessing student verification, attendance, cleanliness, infrastructure, and overcrowding. While these practices ensure quality, they can be challenging for schools due to rigid implementation and penalties for minor infractions. For example, one respondent said, "If there are more than 30 students in a classroom, PEF fines the school, often charging 50,000 or 1 lac" (PEF-FPR-05).

Respondents praised PEF's transparency and integrity, highlighting the absence of corruption. One shared, "You cannot influence the PEF team to take any favour; they are strict about maintaining integrity." When the monitoring team had lunch at a school during a visit, the team was immediately dismissed to prevent any potential bias: "Once the monitoring team had lunch at a school, but after hearing about it, the team was fired to ensure such practices don't happen again" (PEF-FPR-05).

PEF's monitoring teams have contributed positively by ensuring high standards for cleanliness, infrastructure, and teacher-student ratios. One respondent noted, "PEF's visits ensure that schools maintain a minimum standard of infrastructure, which ultimately benefits the students" (PEF-FPR-08). PEF's strict student verification process also ensures transparency and prevents fraud: "PEF's verification process helps ensure transparency in the system, preventing ghost students" (PEF-FFG-06). While payment delays due to incomplete verification pressure schools, they also encourage accurate record-keeping. "PEF only provides funds for students who have been physically verified" (PEF-FPR-04).

However, timing of visits causes stress, particularly during wedding seasons, wheat harvesting, or religious observances. High absenteeism during these periods often results in penalties. One respondent highlighted, "During Muharram, despite most of our students being Shia and observing the day, the PEF team conducted verification" (PEF-MPR-17)

5.4. Inter-Organizational Relations between PPPs and Partner Schools

The relationship between PEF and partner schools, were coded in several categories:

5.4.1. Hierarchical Communication

PEF and PEIMA maintain a hierarchical, top-down relationship with partner schools, where schools must comply with instructions and notifications, with minimal involvement in decision-making. Communication typically flows through principals or school owners, with teachers having limited direct interaction with PEF. Despite regular meetings, schools feel that their concerns are often ignored. One principal noted, "We have meetings with PEF officials regularly, but our concerns, especially about the syllabus and exam schedules, are rarely addressed" (PEF-MPR-15). Efforts to address issues like the stringent QAT and rigid syllabus often lead to no changes.

5.4.2. Dominance and Control

PEF is perceived as the dominant party in the relationship, exerting significant control over school operations. This includes decisions on syllabus, exams, and even operational funds. "PEF has all the control. We have to follow their directives without any say in the matter," (PEF-MPR-15) said a frustrated principal. The principals of the schools feel they have little to no power in decision-making processes, which leads to a weak collaborative spirit.

5.4.3. Operational Frustrations

There are numerous instances of frustration due to delayed payments and fines imposed by PEF, which exacerbate operational difficulties for schools. "The delayed payments and sudden fines make it very hard for us to manage our operations smoothly," (PEF-MPR-01) noted a school administrator. The rigid and sometimes unrealistic expectations of PEF regarding student performance and school operations add to the conflict. Schools feel that their practical challenges are not acknowledged or accommodated. The issues of delayed payments are also reported in the partner schools of PEIMA. The irregular and delayed payments from PEF create significant financial and operational difficulties for schools, affecting their ability to function smoothly. Despite the assurance of per-student funding, schools report delays and inconsistencies in receiving these funds.

5.4.4. Strained Trust

Trust between PEF and the schools is strained. Schools express a lack of trust in PEF's ability to understand and address their practical constraints and operational challenges. One teacher expressed, "There is no trust. We don't believe PEF understands or cares about the difficulties we face daily" (PEF-MPR-15). The late disbursement of funds and fines for non-compliance with strict guidelines contribute to a lack of trust and feelings of insecurity among school administrators.

5.4.5. Perception of Inequality

Schools perceive an inequality in the partnership. The governing PPPs (both PEF and PEIMA) are seen as not treating schools as equal partners, but rather as entities that must comply with its directives without adequate support or consideration of their specific needs. "We are not treated as partners but as entities that must comply with every directive without question," (PEIMA-FPR-07) commented a school principal. The respondents highlighted several concerns that create the perception of inequality of the relations between PPPs and partner schools. Schools express a desire

for more autonomy and authority in managing their operations. They feel that PEF's strict control limits their ability to effectively manage and improve their educational environment.

Hence, the relationship between PPPs and partner schools in Punjab is complex and marked by significant challenges. While there is a framework for coordination, the dominance of PEF and PEIMA, lack of effective collaboration, strained trust, and numerous operational challenges undermine the potential for a truly effective partnership. Schools seek more recognition as equal partners and a more responsive and supportive approach from the governing bodies to address their practical needs and constraints.

5.5. Challenges and Success Factor: Value Creation/Destruction

Data from the interviews reveal a major theme of value destruction and a minor theme of value co-creation. The major codes that emerged for value co-destruction include less parent involvement, minimum involvement of technology, no pedagogical innovation, lack of trust, and conflict between the schools and the governing body.

5.5.1. Less Parent Involvement

The data highlights minimal parental involvement in PEF and PEIMA schools, with many parents showing apathy toward their children's education despite scheduled parent-teacher meetings. One principal remarked:

"They don't look at anything. They have to see that the kids are being taught for free. There are very few people who look at the quality, discipline" (PEF-MPR-15)

This lack of engagement negatively impacts educational outcomes and the value of public-private partnerships. Underlying factors such as socioeconomic challenges, cultural norms, and communication gaps may hinder effective parental involvement. Respondents noted that parents often prioritize personal or family responsibilities over schooling, with one explaining, "Many parents prefer their children to earn for the family rather than attend school." This traditional mindset further exacerbates attendance and engagement issues.

5.5.2.Conflict

The governing bodies, PEF and PEIMA, operate within a hierarchical structure where decisions are made at the top and passed down without consulting school principals. This top-down approach often creates conflicts. One respondent noted, "Conflicts occur frequently due to lack of communication and resource constraints" (PEIMA-KPR-09). Curriculum changes, delays in fund release, and late provision of books exacerbate challenges for principals and teachers in completing the syllabus. Respondents expressed concerns about the difficulty and relevance of the syllabus within the allotted time.

Although governing bodies enforce strict monitoring and control mechanisms to ensure compliance, these conflicts undermine collaboration, leading to "value co-destruction." This results in decreased student learning outcomes (SLOs), inefficient resource use, and a weakened educational ecosystem.

5.5.3. Less use of Technological Innovation

The data highlights a significant aspect of value co-destruction in the public-private partnership (PPP) model in education. While the partnership aims to improve access, curriculum, technology integration, and pedagogical innovation, evidence suggests limited advancements in these areas. Teaching methods remain conventional, with negligible use of technology in education. One principal shared, “We don't have a proper social media platform, website, or portal. I asked teachers to create WhatsApp groups with students, but most couldn’t because parents don’t have smartphones—only basic phones” (PEF-FPR-02).

Respondents also pointed to inadequate facilities, such as laboratories, computer labs, and libraries, further underscoring the missed opportunities for technological and pedagogical improvements within the system.

5.5.4. Lack of Trust the School

One of the most important and substantial components of partnership is trust. One of the important themes that emerged from the data related to value co-destruction is a lack of trust among the parties which is evident from most of the respondents’ interviews:

“We have to face so many difficulties from PEF” (PEF-FPR-01)

Furthermore, there is limited evidence found regarding the improved quality of education in PPP initiatives, particularly in terms of pedagogical innovation and the use of technology. While PPP partnerships may seek to introduce innovative teaching methods and leverage technology to enhance the learning experience, the data indicates that this progress is minimal. This could be due to various reasons, such as limited resources, lack of pedagogical training for teachers, or inadequate infrastructure for implementing technology-driven teaching methods.

5.5.5. Challenges of Marginalized Community

Parents frequently express dissatisfaction with the physical condition of school buildings, insufficient classroom space, and inadequate learning materials like textbooks and technology. Some of the parents in marginalized community indicated towards safety and security concerns about children traveling to and from school, as well as within school premises, are prevalent. Parents worry about the risk of violence or bullying in under-resourced environments. Even when government education is free, parents may face additional costs such as uniforms, transportation, and supplies, which can be burdensome for low-income families.

"The school building is old, with leaking roofs and broken desks. It’s hard for kids to focus on learning in such an environment." (COM-FGD-02)

"I’m scared for my child’s safety. They have to walk through rough neighbourhoods just to get to school. What if something happens to them?" (COM-FGD-03)

5.5.6. Cultural Barriers and Regional Differences

Culture and society attitudes substantially hinder educational prospects, especially for girls. Many rural areas still have high rates of early marriages, especially where females are seen as homemakers

rather than capable of higher education. As a result, families place a higher priority on household duties than education for girls. Such thinking hinders many girls from attending school, especially at high school, and reinforces gender inequality. Such biases are found more prevalent in South Punjab where early marriages are more common. On the other hand, male students drop out of school to work in informal or skill-based jobs in order to support their families. Their access to formal education is weakened by this financial necessity, which prolongs poverty cycles and restricts their opportunities for upward mobility.

Access to education is made more difficult by structural constraints in rural and underdeveloped regions like Dera Ghazi Khan. Since the languages spoken at home may differ from the medium of teaching in schools, language difficulties can make it difficult for students to study properly. Significant difficulties are also presented by transportation difficulties in these areas. The prolonged and risky travels that many kids, particularly girls, must make to get to the closest schools discourage families from making education a top priority. Girls are especially impacted by inadequate infrastructure and inaccessible educational opportunities since they are frequently kept at home because of cultural or safety constraints.

In South Punjab, the effects of flood on educational facilities is also more prominent. Children lack adequate educational facilities as a result of the frequent floods that have ruined classrooms, schools, and learning facilities in areas like Dera Ghazi Khan. In times of crisis, many schools are turned into shelters, which delays instruction. In addition to further isolating communities, damaged roads and bridges prevent access to schools, particularly for girls who already face cultural restrictions. Children are deprived of essential learning opportunities as a result of the weak infrastructure reconstruction, which also prolongs poverty and illiteracy.

5.5.7. Value Addition

Although the data explicitly depicts value co-destruction due to the challenges faced by the school administration and the communication gap between the parties, one of the important themes that emerged from the data is value addition. It is important to note that PPP holds a significant place in the education sector and multiple pieces of evidence from different sources indicate the value addition phenomenon. The value addition can be attributed to the increased access to education for the community, including the marginalized ones.

School administration plays an important role in creating value for the education system. This value creation leads to an improvement in the overall quality of education. The dedication and efforts of the school staff contribute to this value co-creation process.

The value co-creation between the school administration and the staff is evident in the improved quality of education. In other words, the school administration, through its policies, resource allocation, and strategic decisions, creates value that positively impacts the education. This is achieved through the collaborative efforts and dedication of the school staff, who are actively involved in the value co-creation process. School administration has shown an important role in creating value which in turn improves the quality of education. This behaviour can be attributed to the dedication of the school staff in the process and hence value co-creation is evident.

Most of the respondents indicated increased access which is the value of co-creation in the community due to this partnership arrangement. The partnership has provided access to the majority of the community, and schools working under the partnership have not only provided access but have changed the typical percent of the public schools.

A very interesting point identified from the data is that principals of various schools often take on additional responsibilities beyond their traditional role as administrators. They serve as ambassadors for the school, engaging in marketing activities, convincing, and mobilizing the community to prioritize education, which is clearly a sign of value co creation in the data. By taking on these additional roles, principals contribute to the overall value addition in schools. Their efforts in marketing the schools for free help in attracting more students and creating a positive perception of the institution in the community. This, in turn, can increase enrolment rates and improve the financial sustainability of the school.

Furthermore, by convincing and mobilizing the community to prioritize education, principals play a crucial role in creating a supportive environment for learning. They act as change agents, advocating for the importance of education and encouraging community members to actively participate in the education process. This community involvement can lead to increased parent engagement, volunteerism, and other forms of support, all of which enhance the overall quality of education provided.

The involvement of principals in these value-adding activities can also be seen as a form of co-creation. In this case, principals, as well as community members, work together to create an environment conducive to learning and educational success. By actively engaging with the community and involving them in decision-making processes, principals ensure that the needs and preferences of the community are taken into account, resulting in a more inclusive and effective educational experience. Overall, the multiple roles played by principals in marketing the schools, convincing and mobilizing the community, and fostering co-creation contribute to the value addition in schools in the context of PPP education initiatives. Their efforts not only enhance the reputation and financial sustainability of the schools but also create a more supportive and engaging educational environment for students.

Parental involvement plays a crucial role in ensuring the success of educational initiatives. When parents are engaged and actively participate in their children's education, it can lead to better academic outcomes and increased access to educational opportunities. However, the data suggests that in many PPPs initiatives, there is a lack of meaningful parental involvement. This could be due to various factors such as limited awareness, disinterest, or even logistical challenges faced by parents in engaging with the school.

DISCUSSION

This study finds an increase in in the enrolments of PEF and PEIMA schools whereas a linear trend access to education in recent years indicating he PPP arrangements in education have increased the accessibility of education significantly. However, quality and equity remained a big concern through these years.

The findings highlight a mixed impact of PPPs on access to education in Punjab from 2016 to 2023. While the number of schools decreased in both SED (7.8%) and PEF (5.2%), PEIMA exhibited significant growth, increasing its schools from 996 to 4,276. Enrolment trends were more positive, with SED, PEF, and PEIMA reporting increases of 6.5%, 15.4%, and a dramatic jump from 118,296 to 614,166, respectively. Additionally, the percentage of OSC in Pakistan declined from 44% in 2016-17 to 39% in 2021-22, despite the absolute number rising due to population growth. These trends suggest that PPPs have effectively enhanced enrolment and access to education, though challenges persist in addressing the absolute OSC figures and ensuring sustainable expansion.

Though access is improved, the findings reveal persistent equity challenges. Participation rates consistently exceed net enrolment, indicating barriers to retention, particularly among marginalized groups. The quantitative data revealed that wealth and gender disparities are significant, with wealthier groups and males consistently showing higher enrolment and lower dropout rates compared to poorer groups and females. Qualitative data endorsed that systemic obstacle, such as reintegrating OSC and supporting underprivileged students, persist in Punjab.

Retention gaps among disadvantaged groups are mirrored in qualitative findings, revealing limited resources for slow learners. Schools face challenges balancing equity goals with stringent QAT requirements, often side-lining these students. Both datasets highlight systemic failures in supporting students with disabilities. Schools lack resources, and abandoned inclusive education programs leave special needs students without adequate support. To some extent, the programs like EVS and Ehsaas initiative offer financial aid, encouraging school attendance among poor families. However, these financial aids are not widely available that creates hinderance. Moreover, gender disparities remain a significant challenge such as limited availability of girls' schools forces many girls to travel long distances, impacting their access and retention in education. Socioeconomic barriers also persist, with families facing financial difficulties often resorting to child labour to support household incomes. This dual responsibility of school and work affects children's academic performance and retention rate. Reintegration of OSC is hindered by behavioural challenges and inconsistent program funding, as reflected in both data sources, underscoring the need for sustainable initiatives and tailored support. Additionally, administrative hurdles, such as managing student transfers between PEF schools, pose additional complexities. Delays in administrative processes can lead to instability for students, potentially contributing to dropout rates. The findings collectively emphasize the need for systemic reforms, resource enhancement, and targeted interventions to address educational inequities.

These findings resonate with the challenges of slow learners highlighted in literature (Darling-Hammond, 2015). Inclusive education initiatives often fail due to insufficient resources and support, aligning with global findings on the challenges of implementing inclusive education in resource-constrained settings (Azorín & Ainscow, 2020). Addressing the needs of OSC remains problematic,

particularly those with behavioural issues from labour backgrounds, a challenge echoed in broader studies on the reintegration of marginalized children into formal education (UNESCO, 2021). Achieving true educational equity requires comprehensive legislative support, adequate funding, and a steadfast commitment to inclusive practices, ensuring all students receive equal opportunities to succeed (Reardon, 2011).

The study finds that despite a rise in student numbers, there is decrease in the number of schools which raises concerns about overcrowding and reduced individual attention. Teacher qualifications, as shown by the data, are a major factor influencing quality. A significant proportion of teachers (84%) have less than 14 years of education, which limits their ability to meet diverse teaching needs. This shortage of qualified teachers is further compounded by the growing enrolment. The performance comparison of Grade 5 and Grade 8 students (LSA conducted by PEC) across schools shows that PEF schools, despite having less qualified teachers, deliver similar outcomes to government schools at a lower cost, with a noticeable gap between PEF and PEIMA schools. The implementation of QAT, physical verification, and other monitoring mechanisms ensure high educational standards but also impose significant pressures on schools and educators. Strict QAT criteria, especially the 70% passing criteria in PEF's FAS program, force schools to focus primarily on exam preparation, neglecting broader educational goals like creativity and extracurricular activities. Monitoring and verification processes in both PEF and PEIMA schools are strict but often penalize schools for minor infractions, adding to operational stress. Schools are required to document compliance daily, and even minor issues can result in penalties, adding to the administrative burden which is well noted in literature (Patrinos et al., 2009). Despite these challenges, the need for better-qualified teachers, aligned assessments, and more flexible monitoring is evident to improve the overall educational quality and reduce the pressure on schools and teachers.

The study's findings on the inter-organizational relations between PPPs and partner schools in Punjab reveal a complex dynamic that aligns with and diverges from existing literature on PPPs in education. The hierarchical communication between PEF/PEIMA and partner schools, characterized by a top-down approach, is consistent with findings from Barrera-Osorio et al. (2022), who note that many PPPs in education tend to adopt centralized management structures. This top-down approach often leads to schools feeling marginalized in decision-making processes. This hierarchical communication can hinder effective collaboration and responsiveness to on-the-ground challenges, as also noted by Patrinos et al. (2009), who argue that more inclusive communication strategies can improve PPPs effectiveness.

The dominance of PEF over school operations, including decisions on the syllabus, exams, and operational funds, reflects a significant power imbalance. This finding aligns with Verger (2016), who discuss how PPPs can often result in the private or managing entity exerting substantial control, sometimes to the detriment of local autonomy and innovation. The literature suggests that for PPPs to be effective, there needs to be a balance of power that allows for shared decision-making and mutual respect, which is evidently lacking in this context (LaRocque, 2008).

Operational frustrations, (such as delayed payments, fines, delayed and insufficient number of provision of books) exacerbate the challenges faced by partner schools. These frustrations are echoed in the broader literature, where PPPs often struggle with financial sustainability and timely disbursement of funds (Mcloughlin, 2015). Similar issues have been documented in other PPPs

contexts, where financial uncertainties can disrupt educational delivery and affect school performance (Rizvi, 2016). The strained trust between PEF and partner schools, due to perceptions of neglect and inadequate support, aligns with findings from the literature on the importance of trust in PPPs (Khan & Jamil, 2023). Schools expressed a lack of confidence in PEF's understanding of their daily challenges. Trust is a critical component of effective partnerships, and its absence can lead to inefficiencies and dissatisfaction (Linder, 1999).

The perception of inequality in the relationship, where schools feel treated as subordinates rather than equal partners, is a significant barrier to effective collaboration. The literature on PPPs in education, such as the work by Ball (2007), highlights those successful partnerships require recognizing and addressing power asymmetries. The study's finding revealed the imbalance in the inter-organizational relations. For PPPs to foster innovation and improvement in educational outcomes, there needs to be a genuine partnership ethos, as suggested by Davies and Hentschke (2006).

The data analysis on the value addition and value destruction under the PPP's initiatives, revealed that the major themes that emerged from the data was value destruction and, to a lesser extent, value co-creation. The key issues reported included less parental involvement, conflict between schools and governing bodies, the use of technological innovation, and trust. One of the major findings of the study is the minimal involvement of parents in their children's education within PEF and PEIMA schools. Despite the scheduled parent-teacher meetings, many parents remain disengaged and indifferent to the quality of education. This lack of parental involvement is a significant barrier to the success of PPPs in education. According to Barrera-Osorio et al. (2022), active parental engagement is crucial for improving educational outcomes. The data from this study reveal that parents often view education as the sole responsibility of the schools and do not see the value of their involvement, which aligns with findings from the broader literature on the socio-economic barriers and cultural norms that can hinder parental engagement (Rizvi, 2016).

The study also found substantial conflict between the schools and the governing bodies, primarily due to a lack of communication, resource constraints, and bureaucratic inefficiencies. This aligns with Verger (2016), who note that conflicts in PPPs often arise from unclear roles and responsibilities, leading to operational inefficiencies. Respondents highlighted issues such as delayed funds, insufficient resources, and challenges with curriculum changes, which exacerbate these conflicts. Effective communication and resource allocation are critical for the success of PPPs, as they help build trust and cooperation between partners (Khan & Jamil, 2023).

The data indicates a significant gap in the use of technology and pedagogical innovation in PEF and PEIMA schools. The literature suggests that one of the key benefits of PPPs is the potential to introduce modern teaching methods and technological advancements (LaRocque, 2008). However, the findings show that the teaching methods in these schools remain conventional, with negligible use of technology. This lack of technological integration not only limits the quality of education but also fails to meet the evolving needs of students in a digital age. The absence of facilities like computer labs and libraries further hinders the educational experience, highlighting a missed opportunity for value creation through technological innovation.

Trust is a fundamental component of successful partnerships, yet the study reveals a significant lack of trust between the schools and the governing bodies. This mistrust is evident in the complaints about the stringent monitoring and frequent fines imposed by PEF, which schools perceive as punitive rather than supportive. According to Linder (1999), trust is essential for effective collaboration in PPPs, and its absence can lead to inefficiencies and a lack of motivation among partners. The data suggests that building a more transparent and supportive relationship could enhance trust and improve the partnership's overall effectiveness.

Despite the prevalent issues of value destruction, the data also reveal instances of value co-creation, particularly through community engagement and the proactive role of the partner schools to mobilize and reach-out the community to access education. Some respondents noted that local communities emphasize the importance of schooling and encourage school enrolment, even if the quality of education is not a primary concern for parents. This community involvement can be seen as a positive step towards value co-creation, as it reflects a collective acknowledgment of the importance of education. However, to truly realize the benefits of PPPs, this initial engagement needs to be expanded into more active participation and investment in educational quality by both parents and communities. Implement more targeted outreach programs and scholarships to increase enrolment from marginalised groups, in particular, girls, minorities, and children with disabilities.

Overall, while the study highlights significant challenges within PPPs education initiatives, it also identifies pathways for improvement through targeted interventions and strategic enhancements in governance, community engagement, and technological integration. Addressing these issues could lead to more sustainable and impactful educational outcomes in PPPs schools.

CONCLUSIONS

In conclusion, this study highlights the significant progress made by PPPs in increasing access to education in Punjab from 2016 to 2023, particularly through the growth in enrolments in PEF and PEIMA schools. PEF schools are giving similar student's performance as compared to government schools in Grade 5 and Grade 8 results, whereas outperform government schools in Secondary School Certificate (SSC) results, which is encouraging given their significantly lower per-child cost. This suggests that PPPs are achieving better outcomes more efficiently. While enrolment trends have shown promising improvements, with notable reductions in OSC, challenges related to equity and quality persist. Disparities based on wealth, gender, and special needs remain substantial, and systemic obstacles to retention, particularly among marginalized groups, continue to hinder progress. The study also identifies the negative impact of overcrowding, inadequate teacher qualifications, and rigid monitoring processes, which compromise educational quality and create operational pressures on schools. Additionally, issues of trust, communication, and resource constraints between PPP governing bodies and partner schools exacerbate these challenges, limiting the potential for value co-creation. Despite these hurdles, the study suggests that targeted interventions, such as enhancing community engagement, increasing parental involvement, and integrating technology, could improve both access and quality in PPP schools. The criteria for quality assessment also need reconsideration. Ultimately, the findings call for comprehensive reforms in governance, resource allocation, and inclusive practices to ensure that PPPs contribute to equitable and high-quality education for all students in Punjab.

The study focuses on PPP schools in Punjab, which may not fully represent the educational challenges and impacts in other regions of Pakistan. This limits the generalizability of the findings to the broader national context. The study relies on data from available records and reports from PEF, PEIMA, and other educational bodies, which may be incomplete or subject to bias. The equity statistics were found till the year 2019, which do not depict the recent trends. The qualitative data collected through interviews or FGD may be subject to social desirability bias, where respondents may provide answers, they believe are expected or preferred by the interviewer, rather than their true experiences.

POLICY IMPLICATIONS AND RECOMMENDATIONS

The key public policy relevance points of the study include:

Address the Shortage of School Facilities

The government policy is majorly focused on shifting the non-performing public schools to PEIMA, whereas the enhancement in the current infrastructure and establishment of new schools has not received much attention. The schools are overcrowded and working with full capacity and the current numbers of schools cannot handle enrolment crises.

Action steps:

- Government needs to increase the number of PEF schools, particularly in EVS and NPS programs to cater marginalized and under-privileged population.
- The strategy of shifting non-performing schools to PEIMA should be continued.
- The infrastructure of current schools should be enhanced to accommodate more students.

Enhancing Inclusivity in Education

PEF and PEIMA should mandate that schools reserve a specific quota (e.g., 10%) for marginalized students, including those from low-income backgrounds, and disabled. Redesign the admission criteria to focus on a mix of performance potential, socio-economic background, and special needs, rather than solely on performance metrics.

Action Steps:

- PPP management should conduct equity audits annually to evaluate the implementation of inclusivity quota.
- PPP management should allocate budget for infrastructure catering to marginalized groups (e.g., ramps, special classrooms, assistive technologies, and provision of tools such as audio-visual aids and wheelchairs).
- PPP management should develop and monitor separate attendance and QAT performance criteria for marginalized and disabled students.
- PPP schools should not restrict the school's entry through admission tests.

Improving Teacher Qualifications and Compensation

Teacher qualifications and expertise are critical areas for improvement in PEF and PEIMA schools. Currently, most teachers have only a matriculation or intermediate qualification, and their pay is below Pakistan's minimum wage, raising serious concerns about the quality of education in these institutions.

Action Steps:

- PPP management should raise the minimum qualification for teachers in PPP schools to at least a bachelor's degree in education or a related field.
- Government should ensure that teacher salaries should be aligned with Pakistan's minimum wage.

- PPP management should implement teacher training programs focusing on modern pedagogical techniques, digital literacy, and inclusive education practices.
- Establish a teacher certification process to ensure quality standards.

Holistic Definition of Quality Education

Currently PEF and PEIMA has too much focus on student's grades and school enrolment. They need to incorporate factors like teacher qualifications, student engagement, and extracurricular activities in the quality metrics of PPP schools. Currently, creativity and critical thinking are largely absent in schools. Exams prioritize rote memorization over critical analysis, and teachers focus primarily on completing the syllabus, leaving little room for extracurricular activities.

Action steps:

- PPP should develop a balanced QAT that evaluates not just academic outcomes but also holistic growth of students.
- PPP should provide separate funds to schools for extracurricular activities such as art, music, and sports.

Revision in Per-child Fee

The current fee (RS.650 per primary student) is too low to provide quality education. Per child fee need to be enhanced considering the inflation rate in the economy.

Action Steps:

- Government should increase the budget of PEF and PEIMA
- PPP management should increase per child fee based on realistic calculation.
- PPP schools should enhance the compensation of teachers.

Strengthening Partnerships and Trust

The relationships between PPPs and partner schools are largely strained, conflictual, bureaucratic and lacks trust. Representation of partner schools in policy matters is largely absent.

Action steps:

- PPP management should establish bi-annual forums for stakeholder feedback and collaboration.
- Appoint a dedicated liaison officer for every cluster of PPP school to address grievances and foster trust.

Parental Awareness and Community Engagement

Parents are largely ignorant and less concerned about the quality of education provided to their children. PPP schools can play a major role in reaching out the parents and community to enhance awareness of education and the importance of their involvement.

Action steps:

- PPP management and PPP schools should organize community events and workshops to educate parents on the value of quality education.
- Develop parent-teacher committees to bridge the communication gap and encourage parental involvement.

Investment in Technological Infrastructure

Schools lag in use of technological innovation in teaching methodologies. Schools need to introduce technology-based learning tools, such as smartboards, and online resources.

Action steps:

- Allocate a dedicated budget for purchasing and maintaining technological equipment.
- Conduct teacher training programs on the integration of technology in classrooms.

PEF and PEIMA school teachers should be included in the Prime Minister's laptop distribution scheme.

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APPENDIX

Table 3: Respondents Detail

Organization	District	Governing Body	Respondent
Al Farman Grammar Model School	Faisalabad	PEF-EVS	Principal
Hafiz Public School	Faisalabad	PEF-FAS	Principal
Al Haseeb Grammar School	Faisalabad	PEF-EVS	Principal
Govt. Girls Primary School	Faisalabad	PEIMA	Principal
GPS American Mission	Faisalabad	PEIMA	Principal
GGPS Nayyar	Faisalabad	PEIMA	Principal
Noor-ul-Huda Educational System	Faisalabad	PEF-EVS	Principal
M.A. public Middle School	Faisalabad	PEF-EVS	Principal
Al Faisal Science Model High School	Faisalabad	PEF-FAS	Principal
AL Quran Public High School	Faisalabad	PEF-EVS	Principal
Govt. Middle School Mazar Baba Rehmat Shah	Lahore	PEIMA	Principal
Minhaj Model High School	Lahore	PEF-EVS	Principal
Iqra Bahar E Madina Islamic School System	Lahore	PEF-FAS	Principal
Oxford Scholar School	Lahore	PEF-EVS	Principal
Madina-Tul-Ilm Education High School System	Multan	PEF-EVS	Principal
Iqbal Model Girls High Secondary School	Multan	PEF-FAS	Principal
Iqbal Model Boys High Secondary School	Multan	PEF-FAS	Principal
Al Noor Girls School	Multan	PEF-FAS	Principal
Al Noor Boys School	Multan	PEF-FAS	Principal
GPS Ramzan Awan Wala	Khushab	PEIMA	Principal
GPS Feroz Wala	Khushab	PEIMA	Principal
Radient Way model school	Sargodha	PEF-FAS	Principal
Pilot High School	Sargodha	PEF-FAS	Principal
Iqra Scholar Movement	Sargodha	PEF-EVS	Principal
Moon Star public High School	Sargodha	PEF-EVS	Principal
Qaed Academy	Sargodha	PEF-EVS	Principal
Zain Public Middle high School	Khushab	PEF-EVS	Principal
Schanze Girls High School	D.G. Khan	PEF-EVS	Principal
Schanze Girls High School	D.G. Khan	PEF-EVS	Principal
Fida Shaheed Grammer High School	D.G. Khan	PEF-FAS	Principal
Government primary school Mohley wala	D.G. Khan	PEIMA	Principal
Government primary school dodey wala	D.G. Khan	PEIMA	Principal
Al Rehman Education Inn	D.G. Khan	PEF-EVS	Principal
GPS Basti Hote	D.G. Khan	PEIMA	Principal
Adil Pubic Middle School	D.G. Khan	PEF-EVS	Principal
Government Middle school Dody wala	D.G. Khan	PEIMA	Principal
Khursheed Public High school	D.G. Khan	PEF-FAS	Principal
Asif Grammer Public School	Rawalpindi	PEF-EVS	Principal
SARWAR SHAHEED ELEMENTARY SCHOOL	Rawalpindi	PEF-EVS	Principal
GPS Bimla Kaniat	Rawalpindi	PEIMA	Principal
GPS Galli	Rawalpindi	PEIMA	Principal
PEIMA	Lahore	PEIMA	Union Council Head
PEIMA	Lahore	PEIMA	Section Officer (QAT)
PEIMA	Lahore	PEIMA	Section Officer (Finance)

PEF	Lahore	PEF	Human Resource head
PEF	Lahore	SED	Head of PEF-EVS
PEF	Lahore	SED	Head of PEF-FAS
PEF	Lahore	SED	Head of PEF-NSP
SED	Lahore	The Punjab School Education Board (PSEB)	Senior Officer Finance
SED	Lahore	PSEB	Senior Officer PPP
SED	Lahore	PSEB	OSD
SED	Lahore	PESB	Deputy Secretary

Table 4: District Wise Open-ended Questionnaire

District	**District Wise Open-ended Questionnaire**
Faisalabad	46
Lahore	48
D.G. Khan	41
Khushab	38
Rawalpindi	36
Multan	35
Total	244

Table 5: Operational Definitions

Construct/ variable	Conceptual definition	Indicators
Access to education	Availability, and affordability of educational institutes for marginalized and underserved populations.	• Increase in enrolments. • Drop-out rates • Out-of- school population
Equity of education	Fairness, inclusivity, and social justice in the distribution of educational resources, and opportunities to diverse student populations.	• Representation of marginalized groups in terms of gender, socio-economic status, ethnicity, disability etc. • Fairness in distribution of resources • Provision of supportive services such as school infrastructure, transportation, availability of scholarships or financial assistance
Quality of education	The extent to which educational programs and services meet established standards of excellence and contribute to the holistic development of learners.	• Learning outcomes/ results • Curriculum relevance • Pedagogical effectiveness • Teacher competence • Student-teacher ratios • School facilities. • Teachers' training

Value co-creation	Collaborative process through which diverse stakeholders, including government agencies, private sector partners, educators, students, parents, and community members, collectively contribute their unique strengths and resources to enhance educational services and outcomes.	• Value addition/collaborative advantage • Community outreach/engagement programs • Innovative pedagogical techniques • Technology integration • Stakeholders' resource integration
PPPs governance mechanisms	Institutional frameworks, policies, and decision-making mechanisms of PPPs in education.	• Structure of Board of Governance • Representation from government, private sector, educational experts • Frequency of Board meetings • Powers of the Board • Autonomy of the Board
Inter-organizational relations	How PPP and school owners work together, share responsibilities, and manage their relationships to achieve common educational goals.	• Contractual arrangements between PPPs and partner schools • Accountability • Transparency • Monitoring mechanisms. • Coordination mechanisms • Trust
School management	Process of planning, organizing, leading, and controlling the resources and activities of a school to achieve educational goals.	• School management Plan • Training and capacity development of staff • Staff availability and attendance • Resource allocation and infrastructure development • Lesson planning and assessment system. • Health and hygiene practices, sports activities • co-curricular and extra-curricular activities

Table 6: Access to Education

Year	Enrolment (Millions)	Schools (Thousands)
2003-04	9.3	63.2
2004-05	10.2	63.7
2005-06	11	63.9
2006-07	11.3	62.8
2007-08	10.9	62.2
2008-09	10.6	61.2
2009-10	10.8	60
2010-11	10.7	58
2011-12	10.6	53
2012-13	10.8	52.7
2013-14	10.9	52.7
2014-15	11.3	52.3
2015-16	12	52.6
2016-17	12.1	52.5
2017-18	12.4	52.6
2018-19	12.5	52.5
2019-20	12.5	52.6
2020-21	12.3	52.5
2021-22	12.5	52.6
2022-23	12.5	52.5
2023-24	12.6	52.7

Source: Annual School Census 2023-2024