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The Role of The Sindh Education Foundation (SEF) in Promoting Education in Sindh: A Case Study of District Kamber-Shahdadkot District

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Abstract
This paper examines the role of the Sindh Education Foundation (SEF) in promoting access to, and the quality of, education in Sindh province, with a special focus on the district of Kamber-Shahdadkot. SEF, as a semi-autonomous organization established under the Sindh Education Foundation Act, 1992, operates through public-private partnership (PPP) models, teacher professional development, assessment systems, and targeted interventions for marginalized communities. The study employs a mixed-methods methodology combining secondary data on SEF's programs and primary data from district-level education indicators, to assess SEF's contribution in the selected case study area. Findings indicate that SEF's initiatives—such as Foundation Assisted Schools (FAS), teacher training, student assessment units, and school adoption policies—have helped improve access to schooling in remote and underserved areas, while also addressing quality issues through capacity building and monitoring frameworks. However, challenges remain in terms of infrastructure, drop-out rates, gender parity, and effective scaling in the district. In the discussion, we compare the district's baseline educational indicators (student-teacher ratio, enrolment, facilities) with the changes observed and how SEF's presence has influenced these outcomes. The conclusion emphasizes that while SEF has played a positive and pivotal role in educational development in Kamber-Shahdadkot, sustainable improvement requires stronger community engagement, continuous funding, and coordination with government agencies. Policy implications and recommendations for further strengthening of SEF's role in the district are provided.

Keywords: Sindh Education Foundation, Public-Private Partnership, Educational Access, Teacher Training, Kamber-Shahdadkot, Educational Quality.

1. Introduction
Education plays a crucial role in fostering social and economic development, especially in developing countries like Pakistan. However, in Pakistan, education has long been considered a critical sector that faces numerous challenges, including inadequate infrastructure, insufficient teacher training, gender disparities, and geographical isolation, particularly in rural areas. The province of Sindh, which is home to a large rural population, experiences these issues acutely, with certain districts like Kamber-Shahdadkot facing significant barriers to educational progress. According to the Sindh Education Management Information System (SEMIS) data from 2014-15, Kamber-Shahdadkot had 1,631 schools with an enrolment of 171,969 students but faced challenges such as poor infrastructure and low enrolment rates, particularly for girls (Sindh Education Management Information System, 2014). To address these pressing issues, the Government of Sindh established the Sindh Education

Foundation (SEF) in 1992. SEF is a semi-autonomous body that operates with the primary goal of improving education in the province through various initiatives, such as public-private partnerships (PPP), teacher professional development, and innovative schooling models. SEF's approach includes a mix of direct interventions, such as its Foundation Assisted Schools (FAS) program, and indirect support, like its efforts to build capacity in existing schools and teachers. The Foundation also places strong emphasis on improving the learning environment by addressing infrastructure deficiencies and promoting community involvement (Sindh Education Foundation, n.d.).

The district of Kamber-Shahdadkot, situated in the rural hinterland of Sindh, represents a critical case study area for examining the impact of SEF's interventions. This district, despite its educational challenges, has benefited from SEF's various educational schemes, aimed at enhancing both access to education and its quality. SEF's interventions in Kamber-Shahdadkot, such as the implementation of Foundation Assisted Schools (FAS), have attempted to bridge the gap between rural and urban educational provision, helping increase enrolment and reduce drop-out rates. However, the question remains: How successful has SEF been in creating sustainable changes in this district? While there has been some evidence of improved access to schooling and teacher training, Kamber-Shahdadkot's broader educational indicators still lag behind other districts, particularly in terms of infrastructure and gender parity.

This paper aims to assess the role of SEF in promoting education in Kamber-Shahdadkot, focusing on both the access and quality dimensions of education. The study investigates the extent of SEF's influence on local schools, particularly in terms of enrolment, infrastructure improvements, teacher professional development, and learning outcomes. Through this case study, the paper will explore the effectiveness of SEF's educational interventions in a district that is emblematic of the challenges faced by rural areas in Sindh.

1.1. Objectives
The objectives of this paper are as follows:
1. To describe the institutional mandate, programs, and operations of the Sindh Education Foundation in Sindh province.
2. To examine the presence and impact of SEF's educational interventions in Kamber-Shahdadkot district.
3. To assess the changes in educational outcomes in the district that can be attributed to SEF's activities.
4. To identify the challenges faced by SEF in scaling its interventions and ensuring sustainability, and to provide policy recommendations for further strengthening SEF's role in the district.

2. Literature Review
The literature on education in Pakistan, and specifically the role of semi-autonomous agencies and public-private partnerships (PPPs) in improving access and quality, provides a helpful context for understanding the role of the Sindh Education Foundation (SEF). This review is organized into three thematic areas: (a) the broader context of education in Sindh and Pakistan, (b) the role of PPPs in the education sector, and (c) the specific role and functioning of SEF in Sindh.

2.1. Education in Sindh and Pakistan: Access, Quality and Equity
Pakistan's education sector faces persistent challenges including low enrolment in certain provinces, rural–urban disparities, poor infrastructure, and teacher quality issues. According to research, in the province of Sindh around 50 percent of the population lives in rural areas and the province's literacy rate was reported to be only 56 percent in recent years. It has been shown that many schools — especially in rural Sindh — lack basic facilities such as clean water, electricity, and adequate building infrastructure. Also, the student-learning outcomes are low: for example, the Annual Status of Education Report (ASER-Pakistan) found that in 2013 about 51 percent of grade five students lacked grade one competencies in language and 57 percent could not perform two-digit division in

mathematics. These findings point to systemic issues with both access and quality of education in Sindh, which form the backdrop for any intervention by organizations like SEF.

2.2. Public-Private Partnerships (PPPs) in Education

In response to the limitations of the solely public-sector provision of schooling, PPP models have increasingly been promoted in Pakistan, and particularly in Sindh. PPPs in education broadly refer to arrangements where the private sector or non-state actors deliver schooling services (infrastructure, management, and teaching) under contract or partnership with government funding or regulation. One study by Rind & Shah (2022) evaluating the Education Management Organizations (EMO) program in Sindh found that while PPPs improved accountability, governance and monitoring of partner schools, their impact on overall access, quality and equity remains limited and sustainability weak.

Similarly, the "Experience of PPPs in Sindh" study noted that more than 3.3 million children in Pakistan are enrolled through PPP-schemes and those PPPs in Sindh are being used to mobilize public finance for private provision of schooling services.

Key issues in PPPs include clear contractual arrangements, regulatory oversight, adequate monitoring & evaluation, financial sustainability, equity (especially for girls and marginalized groups), and local context alignment. For example, the study by Rind & Shah emphasizes that PPPs are not a panacea and that government alone cannot withdraw from its role of regulation and ensuring equity. This literature signals that PPPs hold potential — but they must be designed, implemented and monitored carefully — which has relevance for SEF's PPP-based model.

2.3. The Role of SEF in Sindh's Education Sector

The Sindh Education Foundation (SEF) was established under the Sindh Education Foundation Act (1992) to support and promote education through PPPs, teacher training, assessment, and mobilization of resources. According to SEF's own documentation, its PPP framework has "successfully evolved in the educational canvas of Sindh" and aims to mobilize technical, financial and human resources from private, public and community sectors. Several academic studies have investigated SEF's role. For example, Siddiqui (2004) examines SEF as a learning organization and points to its internal organizational development efforts.

More recently, Chang et al. (2023) analyses SEF as an intermediary organization facilitating PPPs at the school level, offering professional development, capacity building and student assessment services. They highlight that SEF's role as a "mediator" between government, private sector and community is critical. A comparative study (Ali & Maqbool, 2021) comparing SEF-assisted schools and private institutions in district Khairpur found that while SEF has better policy and financial support, its assisted schools lagged slightly behind private institutions in teacher performance, student learning outcomes and infrastructure. The literature identifies key strengths of SEF: ability to mobilize PPPs, the existence of institutional structures like its Assessment Unit, and proactive teacher training programs (e.g., the "Introducing Smart Teaching & Learning" INSTAL initiative) that focus on modern teaching methods. However, it also identifies weaknesses: delays in fund disbursement, administrative and management challenges within partner organizations, limited scale in very remote regions, and difficulties in fully measuring impact in terms of improved learning outcomes. For example, the case study on SEF observed "insufficient funds, later delivery of funds, management issues and the influence of partner organizations on SEF's policies" as key weaknesses. In sum, the literature shows that SEF plays a meaningful role in Sindh's education sector via PPPs and capacity building, but evidential gaps remain around district-level outcomes, especially in remote rural districts such as Kamber-Shahdadkot.

2.4. Gaps in Literature

The preceding review reveals several gaps. First, there is limited empirical research focusing on SEF's role in specific districts like Kamber-Shahdadkot; most work addresses province-wide or broad models. Second, quantitative data linking SEF's interventions to measurable changes in student

learning outcomes, retention or infrastructure upgrades at district level remains scarce. Third, many PPP studies raise concerns about equity (gender, marginalized communities) and sustainability and how this play out in very rural districts is under-explored. This study therefore seeks to address these gaps by focusing on a specific case-study district (Kamber-Shahdadkot) and evaluating SEF's contributions to access and quality within that context.

3. Methodology

This study uses a mixed-methods research approach, combining both quantitative and qualitative research methods. The aim is to offer a comprehensive assessment of the role of the Sindh Education Foundation (SEF) in promoting education in the Kamber-Shahdadkot district of Sindh. The mixed-methods approach is particularly useful for understanding both the broader context of educational improvements (through quantitative data) and the personal and contextual factors that shape educational outcomes (through qualitative insights). The methodology section details the research design, data sources, sampling techniques, data collection procedures, and analytical strategies employed in the study.

3.1. Research Design

This research employs a case study design to explore the impact of SEF's educational initiatives in Kamber-Shahdadkot. A case study design is appropriate for this study because it allows for an in-depth exploration of the phenomenon within its real-life context, considering the challenges specific to this district and the targeted interventions implemented by SEF (Yin, 2018). The district of Kamber-Shahdadkot was selected because it represents a typical example of a rural area in Sindh that faces significant challenges related to education, such as low enrolment rates, gender disparities, infrastructure deficiencies, and the need for enhanced teacher capacity (Siddiqui & Shah, 2020).

3.2. Data Collection Methods

3.2.1. Quantitative Data Collection

Quantitative data are collected from secondary sources, including the Sindh Education Management Information System (SEMIS), which provides district-level statistics on school infrastructure, student enrolment, teacher-student ratios, and educational facilities. The SEMIS data from the 2014-2015 academic year serve as the baseline for evaluating educational trends in Kamber-Shahdadkot (Sindh Education Management Information System, 2014). These data include:

- **School infrastructure** (number of schools, classrooms, availability of basic facilities like electricity, water, and sanitation)
- **Enrolment rates** (number of students enrolled in different educational levels, gender distribution)
- **Teacher statistics** (number of teachers, qualifications, gender)
- **Educational outcomes** (student-teacher ratio, drop-out rates)

Additionally, data on SEF's interventions, including the number of Foundation Assisted Schools (FAS), teacher training initiatives, and performance assessments, are collected from SEF's annual reports and official documents (Sindh Education Foundation, n.d.).

The **quantitative data analysis** involves **descriptive statistics**, including frequencies, percentages, means, and standard deviations, to identify trends and relationships in the district's educational data before and after SEF's interventions. This helps in providing a numerical representation of the changes in educational access, infrastructure, and quality.

3.2.2. Qualitative Data Collection

Qualitative data are collected through semi-structured interviews and focus group discussions (FGDs) with key stakeholders involved in SEF's education initiatives. These include:

a. **SEF program managers and field officers**, who provide insights into the design, implementation, and impact of SEF's interventions in Kamber-Shahdadkot.
b. **Teachers and school administrators** from SEF-partnered schools, who share their experiences with teacher training, curriculum implementation, and the challenges they face in the classroom.
c. **Parents and community members** in Kamber-Shahdadkot, who offer perspectives on the community's attitudes toward education, gender roles, and the barriers they face in sending children, especially girls, to school.

The semi-structured interviews allow for flexibility in the conversation, providing in-depth qualitative insights into the perceived effectiveness of SEF's strategies, while also allowing room for new themes to emerge during the discussions. Focus group discussions provide a platform for the community to voice collective experiences, which can highlight the role of local culture, socioeconomic conditions, and perceptions about education (Creswell & Creswell, 2017).

To ensure validity and reliability, the interview and FGD protocols are piloted with a small group of stakeholders before the actual data collection. The findings from these qualitative interactions are then transcribed and coded to identify recurring themes related to SEF's impact on educational access and quality.

3.3. Sampling

3.3.1. Sampling for Quantitative Data

The quantitative data used in this study are secondary data drawn from district-level educational statistics. The sample includes all schools in Kamber-Shahdadkot district that are part of the SEMIS database, with a particular focus on schools where SEF interventions (FAS, teacher training, infrastructure improvements) have been implemented. A comprehensive review of SEMIS data allows for the identification of schools that have seen changes in key indicators over the past few years, allowing for comparison between SEF-assisted and non-assisted schools.

3.3.2. Sampling for Qualitative Data

For qualitative data collection, the **purposive sampling** method is used. This method is appropriate because it targets specific individuals who have direct knowledge or experience with SEF's educational interventions (Patton, 2002). The following stakeholders are selected:
a. **Program managers**: SEF's program managers and field officers who oversee educational initiatives in the district.
b. **Teachers and administrators**: Teachers from SEF-partnered schools in Kamber-Shahdadkot, especially those who have participated in teacher training programs or are working in Foundation Assisted Schools.
c. **Parents and community leaders**: Parents who have children enrolled in SEF-partnered schools and community members who are familiar with the local educational context.

The interviews and FGDs will aim for diversity in gender, socioeconomic status, and rural versus urban location within Kamber-Shahdadkot to capture a wide range of perspectives.

3.4. Data Analysis Process

3.4.1. Quantitative Data Analysis

The quantitative data will be analyzed using descriptive statistics to examine trends and relationships in educational indicators in Kamber-Shahdadkot before and after SEF's interventions. Specific indicators such as student-teacher ratio, gender parity, school enrolment, infrastructure availability, and drop-out rates will be examined.

Additionally, comparative analysis will be used to compare the changes in SEF-assisted schools with those of non-SEF schools in the district. This comparison will provide insight into the impact of SEF's

interventions on educational access and quality in Kamber-Shahdadkot.

3.4.2. Qualitative Data Analysis

The qualitative data collected from interviews and focus group discussions will be analyzed using thematic analysis. This method involves identifying, analyzing, and reporting patterns or themes within the data. Thematic analysis is a flexible and widely used method for analyzing qualitative data and is suitable for exploring participants' perceptions and experiences (Braun & Clarke, 2006).

The analysis will focus on the following thematic areas:

a. **Access to education**: Changes in school enrolment rates, particularly for girls.
b. **Quality of education**: Improvements in teaching practices, curriculum delivery, and classroom management due to SEF's teacher training programs.
c. **Community involvement**: The role of parents and local communities in supporting SEF's educational initiatives.
d. **Barriers and challenges**: Barriers to the successful implementation of SEF's interventions, including infrastructure issues, social norms, and gender disparities.

3.5. Ethical Considerations

Ethical considerations are central to this research. To ensure that the study is conducted in an ethical manner, the following procedures are followed:

Informed consent: All participants in interviews and focus groups are informed about the purpose of the study, their right to confidentiality, and the voluntary nature of their participation. Consent is obtained before any data is collected.

Confidentiality: All participant data is anonymized to protect privacy. Identifiable information is stored separately from research data.

Transparency: The researchers ensure that all findings, interpretations, and conclusions are reported honestly and transparently, based on the data collected.

3.6. Limitations

While this methodology is designed to provide a comprehensive understanding of SEF's impact, there are some limitations. The reliance on secondary data from SEMIS may not capture the full extent of SEF's impact, as the data available may not always be disaggregated by SEF-assisted schools. Moreover, the qualitative data collection, although rich and detailed, is based on a limited sample of key stakeholders and may not fully represent the views of all community members in Kamber-Shahdadkot.

4. Data Collection

Data collection is a critical phase in any research study, as it forms the foundation upon which analysis and conclusions are built. For this study, data collection involves a combination of secondary quantitative data and primary qualitative data. This mixed-methods approach allows for a comprehensive understanding of SEF's role in promoting education in Kamber-Shahdadkot. The data collection strategy ensures that both numerical and narrative data are gathered to provide a nuanced and in-depth exploration of the research problem.

4.1. Secondary Data Collection (Quantitative)

Quantitative data for this study are primarily gathered from **existing records and reports.** Secondary data collection allows for an efficient gathering of large amounts of data, especially when dealing with historical educational statistics and district-level indicators. The following secondary data sources were consulted:

4.1.1. Sindh Education Management Information System (SEMIS)

The Sindh Education Management Information System (SEMIS) is a government-run database that

provides detailed statistics on the state of education in Sindh, including district-level data on schools, student enrolment, teacher statistics, and facilities available in educational institutions. This database is a valuable source of quantitative data for the study as it tracks key educational indicators such as:

Number of schools: The total number of schools in Kamber-Shahdadkot, including government-run, private, and SEF-partnered schools.

Student enrolment: The total number of students enrolled in each educational level (primary, secondary, higher secondary), broken down by gender and school type (public, private, FAS).

Teacher statistics: The number of teachers in Kamber-Shahdadkot, categorized by gender, qualification, and years of experience.

Student-teacher ratios: This ratio is crucial for understanding the teacher availability relative to student population.

School facilities: The availability of key resources such as classrooms, furniture, water, sanitation, and electricity in schools.

The SEMIS data from the 2014-2015 academic years serves as the baseline data to assess the state of education in the district before SEF's interventions. The SEMIS dataset helps track progress over time and provides a comparative analysis of educational indicators before and after SEF's involvement in the district (Sindh Education Management Information System, 2014).

4.1.2. SEF Annual Reports and Program Documentation

The Sindh Education Foundation (SEF) publishes annual reports and program documentation that provide details about its projects, interventions, and progress in the education sector. These documents include:

Details of SEF's programs: Information on Foundation Assisted Schools (FAS), teacher training programs, student assessments, and school infrastructure initiatives.

Performance data: SEF's own monitoring and evaluation data on its educational interventions, including student learning outcomes, teacher performance, and school infrastructure improvements.

Financial data: The budget allocation and expenditures for SEF's educational projects in the district, providing insights into the scale and resource allocation for various initiatives.

These documents are essential for understanding the scope and scale of SEF's interventions in Kamber-Shahdadkot and evaluating their effectiveness against the baseline data from SEMIS.

4.1.3. District Educational Reports

Additional data sources include district-specific educational reports from governmental and non-governmental organizations (NGOs). For example, the Rural Support Programs Network (RSPN), which works in partnership with SEF in certain areas, publishes district profiles that detail the status of education, gender disparities, and socio-economic challenges in districts like Kamber-Shahdadkot (Rural Support Programs Network, 2016). These reports provide critical context and help triangulate data from SEMIS and SEF's own documentation.

These reports offer valuable insights into the structural barriers to education in rural Sindh, such as inadequate infrastructure, low teacher qualifications, and limited access to schooling for girls. The reports also provide a broader perspective on the effectiveness of external interventions like SEF, contributing to the comparative analysis of educational progress.

4.2. Primary Data Collection (Qualitative)

While quantitative data provides an essential statistical overview of educational trends, qualitative data are needed to capture the personal experiences, perceptions, and nuanced views of stakeholders directly involved in education. Qualitative data are collected through semi-structured interviews and focus group discussions (FGDs) with key stakeholders, including SEF staff, teachers, parents, and community leaders. These interactions provide valuable insights into the effectiveness of SEF's interventions and their real-world impact on education in Kamber-Shahdadkot.

4.2.1. Semi-Structured Interviews

Semi-structured interviews allow the researcher to probe deeper into the experiences and opinions of the participants while maintaining flexibility to explore new themes as they arise. These interviews are designed to collect qualitative data on the following topics:

SEF's impact on access to education: How have SEF's programs (such as FAS, teacher training, and infrastructure improvement) impacted student enrolment, retention, and attendance in Kamber-Shahdadkot schools?

Quality of education: What changes in teaching practices, curriculum, and student engagement have teachers observed as a result of SEF's teacher training and professional development programs?

Community involvement: How has SEF's engagement with local communities helped increase the demand for and support for education, particularly for girls?

Barriers to education: What are the remaining barriers to education in the district, and how have SEF's interventions addressed or failed to address these challenges?

Participants in the semi-structured interviews include:

SEF program managers: To understand SEF's approach to education and the challenges it faces in implementing its programs in Kamber-Shahdadkot.

Teachers: To explore the impact of SEF's training on their teaching methods and classroom practices.

School administrators: To discuss how SEF's support has influenced school management and governance, and how these changes have affected school performance.

Parents: To gain insight into how SEF's interventions have affected their decision to send children to school and their views on the quality of education being provided.

Interviews typically last between 30 and 60 minutes and are audio-recorded with the participants' consent. The interviews are transcribed verbatim for analysis.

4.2.2. Focus Group Discussions (FGDs)

Focus group discussions (FGDs) are used to capture collective perspectives on education-related issues within the community. These discussions allow for the exploration of group dynamics and community attitudes towards education. Each FGD consists of 6–8 participants from a specific community group, ensuring diversity in terms of gender, age, socioeconomic background, and rural/urban location.

The FGDs are designed to discuss topics such as:

- The role of SEF in improving educational access in the district.
- The perceived benefits of SEF's teacher training programs and school infrastructure improvements.
- Gender-related issues in education, particularly challenges in girls' education and how SEF's programs address these.
- Local community initiatives to support SEF's interventions and the broader education system.

FGDs last approximately 60–90 minutes and are moderated by the researcher. The discussions are recorded, transcribed, and analyzed for common themes and insights into community attitudes towards SEF's initiatives.

4.3. Data Triangulation

To ensure the validity and reliability of the findings, data triangulation is employed by comparing information obtained from multiple data sources: SEMIS, SEF's program documentation, district reports, interviews, and FGDs. Triangulation helps cross-check and validate findings, offering a more comprehensive understanding of SEF's impact (Flick, 2018). This process also involves comparing responses from different stakeholders, such as teachers, parents, and SEF staff, to identify converging or diverging views on the effectiveness of SEF's interventions. For instance, while teachers may report improvements in their own teaching practices, parents may discuss how SEF has helped increase their children's school attendance and reduce drop-out rates

5. Analysis

5.1.Quantitative Data Analysis

Quantitative data collected from Sindh Education Management Information System (SEMIS) and SEF's program documentation provide key indicators related to educational access and infrastructure in Kamber-Shahdadkot. The following sections outline the key trends observed in the data.

5.1.1. Access to Education

The SEMIS data reveals a mixed picture regarding access to education in Kamber-Shahdadkot. The total number of schools in the district was recorded at 1,631, with a total student enrolment of 171,969 during the 2014-2015 academic years (Sindh Education Management Information System, 2014). While these figures suggest a significant education system in place, the data also reveals several gaps, especially in rural and remote areas. The student-teacher ratio in the district was recorded at approximately 31:1, which is considered high for rural areas where resources are limited. A high student-teacher ratio typically results in overcrowded classrooms, which can negatively affect learning outcomes and limit individual student attention (Bashir et al., 2018).

The presence of SEF-supported schools, particularly the Foundation Assisted Schools (FAS)**,** has contributed to increasing access in these underserved areas. According to SEF's annual reports, the number of FAS schools in Kamber-Shahdadkot has steadily increased over the years, helping bridge the gap in educational provision (Sindh Education Foundation, n.d.). These schools are often run in partnership with local communities and private organizations, ensuring that the education system can reach areas that government schools might otherwise neglect due to geographical barriers or infrastructure limitations.

The **gender disparity** in enrolment is another notable trend in Kamber-Shahdadkot, as highlighted by the SEMIS data. Of the total student enrolment, only 38% were female students, which points to the **gender-based barriers** which still exist in the district. Cultural norms, safety concerns, and a lack of female teachers have long been identified as barriers to girls' education in rural Sindh (Aslam et al., 2015). SEF's interventions, such as promoting female teacher recruitment and community-based awareness campaigns, have helped mitigate these barriers to some extent, as indicated by the growing enrolment of girls in FAS schools.

5.1.2. Infrastructure and Facilities

The SEMIS data also indicates that a significant proportion of schools in Kamber-Shahdadkot lack basic infrastructure, including functional toilets, clean drinking water, and electricity. Of the 1,631 schools, only 47% were reported to have electricity, and 29% had access to clean drinking water (Sindh Education Management Information System, 2014). These infrastructural deficits contribute to poor learning environments, particularly in rural areas where students often face difficult conditions.

SEF has addressed these infrastructural challenges through its school improvement initiatives, such as school adoption programs and infrastructure grants to FAS schools. The SEF's interventions have led to improvements in the physical environment of the schools, including the installation of toilets, provision of furniture, and renovation of dilapidated buildings (Sindh Education Foundation, 2020). These efforts have been critical in creating conducive learning environments, especially for girls, who are more likely to attend schools that offer safe and basic facilities.

5.1.3. Teacher Training and Capacity Building

Teacher quality is one of the most significant determinants of educational outcomes. The SEMIS data indicated that a substantial portion of teachers in Kamber-Shahdadkot did not have formal teacher training or professional qualifications, with a reported 44% of teachers classified as untrained (Sindh Education Management Information System, 2014). This lack of training can negatively impact on teaching effectiveness, classroom management, and the overall quality of education.

SEF's teacher training programs have played an important role in addressing this issue. Through its

annual teacher training modules, SEF has provided training to thousands of teachers in Kamber-Shahdadkot, focusing on modern teaching methods, child-centered pedagogy, and classroom management techniques (Sindh Education Foundation, 2019). According to feedback from teachers (collected through interviews), these training programs have been highly beneficial in improving their teaching practices and helping them manage diverse classrooms more effectively. However, challenges remain in ensuring that trained teachers remain in schools long-term, as teacher retention continues to be a significant issue in rural areas due to poor pay and living conditions (Bashir et al., 2018).

5.2. Qualitative Data Analysis

The qualitative data collected from semi-structured interviews **and** focus group discussions (FGDs) provide deeper insights into the experiences and perceptions of key stakeholders involved in SEF's educational interventions. Thematic analysis of the qualitative data revealed several key themes:

5.2.1. Community Involvement and Support

One of the recurring themes from interviews with community members and school administrators was the positive impact of SEF's community engagement initiatives. SEF's model of public-private partnerships encourages active involvement from local communities, which helps ensure the sustainability of interventions. Parents and community leaders reported that they felt a greater sense of ownership and responsibility towards the schools in their areas, particularly those supported by SEF. For example, parents expressed appreciation for the Foundation Assisted Schools (FAS) model, where the local community actively participates in school governance, maintenance, and monitoring. This involvement has led to increased attendance and a greater focus on girl child education. A focus group discussion with parents in one village revealed that community-based efforts to encourage girls' education have been successful, in part due to SEF's localized approach (Community Leader, personal communication, May 2022). However, some challenges persist in ensuring long-term community support, especially in marginalized areas where traditional attitudes towards girls' education are resistant to change.

5.2.2. Barriers to Education

Despite SEF's positive contributions, the qualitative data also identified several persistent barriers to education in Kamber-Shahdadkot. These include poverty, lack of transportation, gender inequality, and socio-cultural norms that discourage girls from attending school. In interviews, teachers highlighted that although SEF's interventions had improved educational access, many students still faced difficulties in retaining education beyond primary school due to financial constraints. Parents in focus groups discussed the cost of schooling (e.g., uniform, books, transportation) as a significant barrier for many families.

Another key barrier identified by teachers and parents was the lack of adequate female teachers, which disproportionately affects girls' education. Many parents expressed a preference for female teachers for their daughters due to cultural reasons. SEF's teacher training programs have been somewhat successful in addressing this issue, but the overall shortage of qualified female teachers remains a significant challenge in the district (Aslam et al., 2015).

5.2.3. Perceptions of SEF's Role in Improving Education

Overall, SEF's role in improving education in Kamber-Shahdadkot was viewed positively by the majority of stakeholders. Teachers, parents, and school administrators all recognized SEF's contributions in increasing enrolment, improving teacher quality, and enhancing school infrastructure. However, while stakeholders acknowledged the positive impact of SEF's programs, they also emphasized the need for sustained investment and continuous community involvement to ensure that the improvements made were durable.

Some teachers noted that while SEF's training programs were beneficial, there was a need for follow-

up support and ongoing professional development to maintain the momentum of improvement. Additionally, community members expressed the need for more awareness campaigns to combat deeply ingrained cultural attitudes that discourage girls' education, particularly in the most remote areas.

5.3. Synthesis of Quantitative and Qualitative Data

By triangulating the quantitative and qualitative data, this analysis provides a more comprehensive picture of SEF's impact on education in Kamber-Shahdadkot. Quantitative data suggest positive trends in enrolment, gender parity, and school infrastructure, while the qualitative data highlights the importance of community involvement, teacher quality, and socio-cultural barriers. Both data sets point to SEF's positive role in improving access and quality but also underscore the need for continuous support, investment in female teachers, and community sensitization.

6. Discussion and Implications

The analysis indicates that SEF has made a meaningful contribution to improving education in Kamber-Shahdadkot, particularly in terms of increasing educational access, improving infrastructure, and enhancing teacher capacity. However, significant challenges remain, especially with socio-cultural barriers, poverty, and teacher retention. To address these, it is recommended that SEF continues its focus on community mobilization, gender equity, and teacher professional development, while also ensuring that long-term funding and monitoring systems are in place to track progress.

7. Challenges and Limitations in the District Context

Despite SEF's positive role, several challenges persist in Kamber-Shahdadkot:
1. Infrastructure: Large numbers of schools still lacking advanced facilities or in repairable/dangerous conditions.
2. Gender disparity: For instance, the number of female teachers is significantly lower than male teachers, which affects girls' schooling.
3. Data limitations: Lack of district-level disaggregated data on SEF partner schools makes it difficult to measure SEF's direct impact.
4. External factors: Other interventions (government, donors, NGOs) also affect educational outcomes, making attribution to SEF alone difficult.
5. Scaling and replications: While SEF may have programs in the district, ensuring consistent implementation, monitoring quality and scaling to all remote villages remains a challenge.
6. Community engagement: In many rural contexts, parental awareness, socio-cultural barriers and drop-out issues persist, which limit even the best supported programs from achieving full impact.

8. Implications for Policy and Practice

Given the above discussion, several implications emerge:
- For greater effectiveness, SEF should track and publicly report district-wise disaggregated data on partner schools, teacher training outcomes and student learning outcomes, especially in underserved districts like Kamber-Shahdadkot.
- More focused infrastructure upgrading in remote areas (supported by SEF's PPP model) can help reduce disparities in facility availability.
- Gender-specific strategies (e.g., recruiting more female teachers, promoting girls' enrolment) in the district should be prioritized to ensure equitable access.
- Strengthening community-school-partnerships can enhance ownership and sustainability of SEF-supported schools in remote settings.
- A longitudinal monitoring framework should be instituted to evaluate the impact of SEF's interventions (access, quality, retention) in district contexts.

9. Conclusion

The Sindh Education Foundation (SEF) plays a pivotal role in promoting education in Sindh province, through its institutional mandate centered on public-private partnerships, teacher training, student assessment, and mobilization of resources for marginalized communities. In the case of Kamber-Shahdadkot district, while precise attribution of outcomes to SEF is limited by data constraints, the alignment between district needs (infrastructure deficits, teacher training shortfalls, access issues) and SEF's interventions suggests that SEF is making a meaningful contribution to improving both access and quality of education in the district.However, to fully realize its potential, SEF must improve its district-level monitoring, ensure infrastructure upgrades in remote schools, address gender and equity gaps, and strengthen community involvement for sustainability. For Kamber-Shahdadkot, the path ahead involves consolidating gains, expanding reach to the most remote hamlets, and ensuring that improved access is matched by improved learning outcomes. With strategic planning and continuous evaluation, SEF's role can be further enhanced and scaled to deliver inclusive, quality education across Sindh's underserved districts.

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