

## **EXPLORING SCHOOL EFFECTIVENESS OF SECONDARY SCHOOLS IN THE PROVINCE OF PUNJAB, PAKISTAN**

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### **Abstract**

*School effectiveness remains a critical concern in educational systems worldwide, particularly in developing countries where quality education is essential for national development. This study explores the school effectiveness of secondary schools in the Punjab province, Pakistan, examining five key dimensions: safe and orderly environment, opportunities to learn, frequent monitoring of student progress, home-school relations, and clear school mission. The study employed a quantitative correlational research design with a sample of 443 teachers from public and private secondary schools across three districts (Okara, Sahiwal, and Faisalabad). A self-administered questionnaire was used to collect data, and analysis was conducted using SPSS version 27 and Mplus version 8.3. Results revealed that schools demonstrated high levels of effectiveness across all dimensions, with opportunities to learn receiving the highest ratings. Significant differences were found based on the gender of the principal and the type of school, with male principals and private schools reporting higher levels of school effectiveness. However, no significant differences were observed based on school locality, principal education level, or principal age. Exploratory and confirmatory factor analyses confirmed the five-factor structure of the school effectiveness instrument. These findings provide valuable insights for policymakers and school leaders seeking to enhance educational quality in Punjab's secondary schools.*

**Keywords:** School effectiveness, secondary schools, Punjab Pakistan, safe and orderly environment, opportunities to learn, monitoring student progress, home-school relations, clear school mission

### **1 Introduction**

School effectiveness is a concept that has gained significant attention in educational research and policy discussions globally. At its core, school effectiveness refers to the extent to which a school achieves its desired outcomes and fulfills its educational objectives (Scheerens et al., 2003). Barnard (1938, as cited in Çiftçi, 2023) explained that effectiveness means achieving an organization's desired outcomes. In schools, this involves helping students learn, grow, and develop in all areas. Ada and Baysal (2012) explain that effectiveness is not just about results but also about the methods used to reach them. Schools must use the right strategies, have enough resources, and adapt to changes in their environment to be truly effective. Aydın (2010) adds that schools, like all organizations, must function well to survive and succeed. If a school fails to meet its objectives, it cannot provide quality education or support its students and staff.

The concept of school effectiveness has evolved significantly over the past four decades. Teodorovic (2009) identified four main areas of school effectiveness research: (1) student background, (2) input-output, (3) effective schools, and (4) instructional effectiveness. The student background approach examines factors beyond the school's control, such as socioeconomic status, family structure, and parental involvement (Coleman et al., 1966; Caldas & Bankston, 1997). The input-output model focuses on school resources, contexts, and outputs, examining how school inputs like infrastructure and teacher qualifications relate to student outcomes (Scheerens, 1992, 2000; Hanushek, 1989). The instructional effectiveness paradigm emphasizes classroom practices, including instructional clarity, time on task, and classroom management (Scheerens, 2000; Leithwood & Louis,

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2011). The effective schools research movement, initiated by Edmonds (1979), focuses on identifying characteristics of schools that successfully overcome societal challenges to promote student achievement.

Edmonds (1979, as cited in Diş, 2023) described effective schools as those with clear goals, regular assessments, a safe environment, high standards, and a focus on the whole student. These schools do not just teach academic skills but also support students' social and emotional growth. Abdurrezzak (2015) agrees, stating that effective schools help students develop in every possible way. This means looking beyond test scores and considering how well students are prepared for life. Schools that do this successfully positively impact their students and communities.

Many factors contribute to school effectiveness. Research by Khun-Inkeeree et al. (2022) and Javornik and Klemenčič Mirazchiyski (2023) shows that teacher motivation is one of the most important. When motivated, teachers work harder, engage students better, and create a more positive learning environment. Leadership also plays a critical role. Strong leaders set a clear direction for the school, support teachers, and make sure resources are used wisely. A healthy school culture is another key factor. Schools with a positive, inclusive culture have better relationships among staff and students, which leads to higher achievement. Student needs must also be a priority.

Al-Mekhlafi and Osman (2022) support these ideas and add more details. Professional leadership means having administrators who are managers and true leaders who inspire and support their staff. Staff development ensures that teachers continue to learn and improve their skills. Positive reinforcement, such as recognizing and rewarding good work, motivates both students and teachers. Collaboration between parents and schools builds trust and improves student performance. A shared vision means everyone in the school community understands and works toward the same goals. Focusing on learning means that the school prioritizes real understanding and growth over test scores.

The School Effectiveness Model, as conceptualized by Taylor (1998), identifies five critical dimensions of school effectiveness: effective leadership, high expectations, a focus on teaching and learning, a positive school culture, and monitoring student progress. These elements help assess whether a school is functioning efficiently to support student achievement. Lezotte (1991, 2001) further expanded the correlates of effective schools to include a clear and focused mission, a safe and orderly environment, high expectations, instructional leadership, frequent monitoring of student progress, opportunities to learn, and positive home-school relations.

In the context of Pakistan, the quality of education in government schools remains significantly lower than that of private institutions (Andrabi, Das, & Khwaja, 2008). Despite the constitutional promise of free and compulsory education for all children under Article 25-A of the 1973 Constitution, government schools face challenges including poor teaching standards, insufficient leadership, and lack of motivation among staff. The dropout rate at Pakistan's secondary level is alarmingly high, with participation falling from 72% at the primary level to just 42% at the secondary level (I-SAPS, 2015). This situation is worse in rural areas and among female students. While several factors contribute to this crisis, ineffective school leadership and management are significant barriers. Despite multiple policy reforms and professional development initiatives, school effectiveness at the secondary level in Pakistan remains under-researched (Ministry of Education, NEP 2009; Hallinger & Bryant, 2013).

### **1.1 Objectives of the study**

This study aims to fill a significant gap in the literature by exploring the current state of school effectiveness in secondary schools in Punjab, Pakistan, examining five key dimensions: safe and orderly environment, opportunities to learn, frequent monitoring of student progress, home-school relations, and clear school mission. By investigating differences based on demographic variables such as gender of the principal, type of school, locality, education level, and age of the principal, this study provides comprehensive insights into the factors that influence school effectiveness in the Pakistani context. The findings are expected to contribute significantly to the local body of educational knowledge and provide practical recommendations for training programs, policy development, and institutional reforms aimed at enhancing the effectiveness of secondary schools in Punjab, Pakistan.

## **2 Literature review**

### **2.1 Conceptualizing school effectiveness**

School effectiveness is a multidimensional concept that has been defined and measured in various ways across educational research. Scheerens et al. (2003) defined school effectiveness as "the extent to which the desired level of output is achieved" (p. 223), emphasizing the attainment of predetermined educational goals. Van Kesteren (1996, as cited in Scheerens et al., 2003) described school effectiveness as the ability of a school to control what happens inside and outside of it, to give the results that are expected by others. Creemers (2002) built a comprehensive model of educational effectiveness based on Carroll's (1963) learning model, bringing together different ways of thinking about what makes a school effective. This model helped in identifying the main dimensions to understand and measure school effectiveness.

The School Effectiveness Index (SE-I), developed by Hoy and Ferguson (1985) and building on the work of Miskel et al. (1979), provided a framework for measuring stakeholders' opinions about a school's effectiveness. This framework incorporated four characteristics: latency (organizational commitment), goal attainment (student academic accomplishment), integration (teacher, faculty members, and student cohesion), and adaptation (school innovation). The framework analyzed the Goal Model and the Systems Model, two conventional methods for assessing an organization's effectiveness (Price, 1972).

The Goal Model, also known as the goal-setting model, posits that achieving predefined goals is a measure of an organization's success (Hoy & Miskel, 2013). The theory's foundation is the idea that reaching a goal is one of the main motivators. Objectives should be clear, challenging, reachable, and welcomed. However, when companies have unclear goals or are uncertain when an organization meets a goal, the Goal Model can become very complex. The Systems Model, the second component of the Effective Schools Framework, is based on the premise that an organization is too complicated and burdened with demands to concentrate on only one objective (Hoy & Miskel, 2013). Rather, the organization needs to focus on raising inputs to produce higher outputs. The input, the transformation process, and the outputs make up the three parts of the model.

### **2.2 Dimensions of school effectiveness**

Lezotte (1991, 2001) identified seven essential characteristics of effective schools: (i) well-defined and targeted school vision; (ii) high standards for achievement; (iii) instructional leadership; (iv) learning opportunities and student time spent on tasks; (v) secure and orderly environment; (vi) good home-school relations; and (vii) regular student progress monitoring.

The Association of Effective Schools (1996) provided similar correlates: (i) clear goals and objectives; (ii) high standards for every student; (iii) accountability; (iv) learning communities; (v) safe and stimulating learning environment; (vi) professional leadership; (vii) teaching and learning focus; and (viii) teaching with a purpose.

**Clear Mission, Vision, and Goals:** An institution's mission statement explains its goals (McShane, 2009). A vision is "a focus in an organization or a statement for outcomes, products, and results," according to Daresh and Playko (1995, p. 135). According to the Association of Effective Schools (1996), a vision has a shared purpose that includes cooperation, collegiality, a consensus of values, and consistency of practice. A clear vision is essential for a successful school (Lezotte, 1992). The intended future state of the school is expressed in a school vision. Goals outline the precise actions that must be taken to fulfill the institution's mission and vision. Syomwene (2017) states that effective goals must be time-bound, realistic, quantifiable, and precise. Well-articulated objectives offer a way to evaluate the school's performance and efficacy.

**Effective Learning Environment:** The school environment significantly influences the quality of curriculum implementation. An effective learning environment is a recognized indicator of school effectiveness (Catron and Allen, 2008). According to UNICEF (2000), teachers' working conditions impact their capacity to deliver high-quality instruction. Class sizes, the availability of learning resources and textbooks, and the state of the infrastructure all affect how well teachers function. According to Seyfarth (2005), the environment in which people work can either boost or decrease their chances of experiencing psychological success. Lezotte (2001) emphasized that effective schools have a disciplined, goal-oriented, professional environment free from the fear of violence.

**Monitoring Student Progress:** Regular monitoring of student progress is another critical indicator of school effectiveness. According to Lezotte (1991, 2001), effective schools frequently monitor student achievement using tests and data to help teachers adjust instruction and improve learning. This involves thorough review and analysis of test results, consistent criteria for assigning course grades, and recognition of academic performance. Research has consistently shown that schools that regularly assess student progress and use that information to inform instruction demonstrate higher levels of effectiveness (Edmonds, 1979; Scheerens, 2013).

**Home-School Relations:** Many scholars acknowledge strong, positive relationships between homes and schools as crucial to children's growth and education (Edwards & Alldred, 2000; Henderson & Berla, 1994; Richardson, 2009; Sanders & Sheldon, 2009; Sheldon, 2009). Research on successful schools has repeatedly demonstrated that these institutions have solid and constructive school-home interactions (Sanders & Sheldon, 2009; Sheldon, 2009). According to Sanders and Sheldon (2009), schools succeed when a strong and constructive relationship is built between the community, teachers, parents, and students. A supportive home environment increases the likelihood of academic success for all students (Henderson & Berla, 1994; Sanders & Sheldon, 2009).

**Opportunities to Learn:** The provision of adequate opportunities to learn is fundamental to school effectiveness. This includes implementing school policies, integrating special instructional programs with classroom instruction, and ensuring that the school's daily schedule supports instructional goals (Detroit Public Schools Research and Evaluation Department, 1990). Effective schools ensure that factors outside the classroom rarely interfere with instruction and that all students are given fair chances to learn through a strong curriculum, proper teaching support, and equal access to learning resources.

### **2.3 School effectiveness in the Pakistani context**

The Pakistani education system faces numerous challenges that impact school effectiveness. Despite the constitutional promise of free and compulsory education for all children under Article 25-A of the 1973 Constitution and Article 37-B ensuring the eradication of illiteracy, the quality of education in government schools remains significantly lower than that of private institutions (Andrabi, Das, & Khwaja, 2008). Although government schools report higher enrollment due to low tuition fees and easy accessibility, their overall effectiveness is challenged by poor teaching standards, insufficient leadership, and a lack of motivation among staff.

The dropout rate at Pakistan's secondary level is alarmingly high, with participation falling from 72% at the primary level to just 42% at the secondary level (I-SAPS, 2015). This situation is worse in rural areas and among female students, as confirmed by the District Education Plan of Mardan (2015-2020). While several factors contribute to this crisis, ineffective leadership in secondary schools is a significant barrier. Researchers like Saleem et al. (2012) and Niqab (2015) have highlighted the relevance of demographic variables in school leadership research. The need to examine leadership within different demographic contexts - urban vs rural, male vs female schools - is particularly critical in Pakistan, where disparities are profound.

The government of Pakistan has not developed any pre-service training focused on leadership skills for school principals. While many principals hold degrees like B.Ed or M.Ed, these programs have minimal practical application or focus on leadership competencies relevant to modern educational challenges (Ministry of Education, NEP 1998-2010). Teachers are promoted to principal positions without adequate exposure to leadership concepts or practices (Alam, 2012), resulting in leadership that is often administrative rather than visionary. Even in-service leadership training, often provided through foreign aid, is insufficient in quantity and scope. Only a few school leaders have received such training, and its impact on school functioning has been negligible (Khan, 2013a; Khan 2013b).

A major limitation in the existing body of research is the lack of empirical studies on school effectiveness within the Pakistani context. Hallinger and Bryant (2013) noted that only a handful of research papers have been published on educational leadership in Pakistan, with even fewer focusing specifically on school effectiveness. Faisal et al. (2012) also highlighted the scarcity of studies examining how leadership behavior impacts institutional performance. This gap makes it challenging to formulate evidence-based policies and practices that can meaningfully guide school improvement efforts. This study addresses this gap by comprehensively examining school effectiveness in secondary schools in Punjab, Pakistan, across five key dimensions.

## **3 Methodology**

### **3.1 Research design and sampling**

This study employed a quantitative correlational research design. A quantitative method is useful when we want to collect and study data in numbers. It helps in making objective and general findings (Saunders et al., 2019). Since the study aimed to measure the level of school effectiveness in secondary schools, this method was the right choice. A correlational design helped to examine if there is a relationship between different demographic factors and school effectiveness (Chen & Popovich, 2002). The study followed a positivist philosophy, believing that there is one real world and that knowledge should be gained through facts and observations (Quinlan et al., 2019).

The study used the convenience sampling method, a type of non-probability sampling where participants are selected based on their easy availability and willingness to participate (Etikan et al., 2016). The researcher visited selected schools and invited principals and teachers who were present and willing to take part. Convenience sampling made it possible to gather a large amount of data in a short time. A total of 470 questionnaires were distributed to teachers across different schools. After retrieving the completed questionnaires, a thorough data cleaning process was conducted, during which incomplete or invalid responses were removed. As a result, 443 valid responses were retained for final analysis. This sample size meets the recommendations for confirmatory factor analysis with 5 to 10 observations per estimated parameter (Bentler & Chou, 1987; Hair et al., 2013).

**Table 1**

*Study's demographic details (N = 443)*

| Variables                  | Groups                 | Count | Percentage |
|----------------------------|------------------------|-------|------------|
| Gender of the principal    | Male                   | 232   | 52.4%      |
|                            | Female                 | 211   | 47.6%      |
| Type of the school         | Public                 | 217   | 49.0%      |
|                            | Private                | 226   | 51.0%      |
| Locality of the school     | Urban                  | 202   | 45.6%      |
|                            | Rural                  | 241   | 54.4%      |
| Age of principal           | 25-30                  | 110   | 24.8%      |
|                            | 31-35                  | 117   | 26.4%      |
|                            | 35-40                  | 76    | 17.2%      |
|                            | 40-45                  | 83    | 18.7%      |
|                            | Above 45               | 57    | 12.9%      |
| Education of the principal | Bachelors              | 255   | 57.6%      |
|                            | Postgraduate or Higher | 188   | 42.4%      |

The demographic details of the study participants are presented in Table 1. There were 443 principals in total. 232 (52.4%) were male, and 211 (47.6%) were female, showing a nearly equal gender distribution. The schools were almost evenly split between public (49.0%) and private (51.0%) institutions. More schools were in rural areas (54.4%) than in urban areas (45.6%). The largest age group of principals was 31-35 years (26.4%), followed by 25-30 years (24.8%). The smallest group was above 45 years (12.9%). Most principals had a bachelor's degree (57.6%), while 42.4% had postgraduate or higher qualifications.

### 3.2 Instrumentation

To measure school effectiveness, the researcher adopted the School Effectiveness Questionnaire developed by the Detroit Public Schools Research and Evaluation Department (1990). This instrument was designed for the Elementary/Middle School Edition (5th Revised Edition) and is widely recognized for assessing the quality and functioning of schools across different areas. In this study, the original questionnaire was reviewed, and some items were removed due to their irrelevance to the Pakistani context. The final instrument included only the most suitable and culturally appropriate items.

The School Effectiveness Questionnaire is organized into five major indicators:

Safe and Orderly Environment - focuses on the physical safety and general environment of the school. Two sample items include: "This school is a safe and secure place to work" and "Student behavior is generally positive in this school."

Opportunities to Learn - looks at how teaching and learning are supported in the school. Two sample items include: "Teachers implement the homework policy in this school" and "The school's daily schedule supports the goals of the instructional program."

Frequent Monitoring of Student Progress - focuses on how well the school checks student learning and uses that information to improve teaching. Two sample items are: "Teachers and the principal thoroughly review and analyze test results to plan instructional program modifications" and "Many students receive honor and recognition for academic performance."

Home-School Relations - examines how involved parents are in the school. Two sample items from this section are: "Many parents are involved in school activities" and "Parents support the homework policy in this school."

Clear School Mission - refers to the school's goals and how clearly they are communicated. Two sample items under this indicator are: "In this school, the primary emphasis is on teaching and learning" and "This school has a written statement of purpose that is the driving force behind most important decisions."

All the items in the School Effectiveness Questionnaire were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). This allowed the participants to express their level of agreement with each statement based on their experiences and observations in their schools.

### **3.3 Data collection**

Before collecting the data, the researcher applied to the Institutional Review Board (IRB) at the University of Okara. Getting approval from the IRB was necessary to protect the safety and rights of participants. The researcher prepared an informed consent form to share with all participants, explaining the purpose of the study, how participants would be involved, and that their responses would be kept confidential. The researcher also got permission from school principals before accessing teachers through the principal's office.

The data was collected in hard copy format by physically visiting various schools. To ensure the anonymity of participants and encourage honest responses, the questionnaires were handed to the school principals, who then distributed them to their respective teachers. A total of 470 questionnaires were distributed to teachers across different schools. The collection process initially spanned several weeks to allow participants sufficient time to respond. Follow-ups were conducted through coordination with school principals to ensure maximum participation. After retrieving the completed questionnaires, a thorough data cleaning process was conducted, during which incomplete or invalid responses were removed. As a result, 443 valid responses were retained for final analysis.

Confidentiality was maintained throughout the study. The researcher did not collect names, addresses, or any identifying information. Participants were guaranteed anonymity, and their names were not written on the questionnaires. The data was stored in a password-protected computer, and only the researcher had access to this device. As per research guidelines, all electronic records will be deleted after three years.

### **3.4 Data analysis**

To answer the research questions, the obtained data from the questionnaire were analyzed through Statistical Package for the Social Sciences (IBM SPSS Statistics 27) and Mplus version 8.3. The analysis proceeded in several stages:

Exploratory factor analysis (EFA) was conducted to ensure that the adapted school effectiveness scale fit the data and the context well. The Kaiser-Meyer-Olkin (KMO) test and Bartlett Test of Sphericity were carried out to ensure that the correlations among the variables

were significant enough to carry on the factor analysis. EFA was performed using Mplus version 8.3 with GEOMIN rotation and maximum likelihood (ML) estimation. Different factor structures were compared for the school effectiveness scale.

Means, standard deviations, skewness, and kurtosis were calculated to describe the level of school effectiveness and its dimensions. T-tests and ANOVA testing were conducted to find the differences in the level of school effectiveness and its indicators based on demographic variables in the study (gender of principal, type of school, locality, education level of principal, and age group of principals).

## 4 Results

### 4.1 Exploratory factor analysis of school effectiveness

The Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity were conducted to ensure the data's suitability for factor analysis. The KMO value was .954, which is well above the recommended threshold of .60, indicating that the sample is highly suitable for factor analysis. Bartlett's Test of Sphericity was significant ( $\chi^2 = 8095.125$ ,  $p < .001$ ), confirming that the correlation matrix is not an identity matrix and that the items are sufficiently correlated for factor analysis.

A comparison of different factor models for the school effectiveness scale showed that the five-factor model provided the best fit. The one-factor model showed poor fit with a high chi-square value and weak fit indices (CFI = .768, RMSEA = .142, SRMR = .075). As the number of factors increased, the model fit improved. The two-factor model showed a better fit (CFI = .832, RMSEA = .127), but the fit was still not optimal. The three-factor model further improved the fit (CFI = .891, RMSEA = .109), and the four-factor model continued to show improvement (CFI = .934, RMSEA = .089). The five-factor model provided the best fit with the highest CFI (.967) and the lowest RMSEA (.068) and SRMR (.020), suggesting that school effectiveness is best represented by five distinct factors: Safe and Orderly Environment, Opportunities to Learn, Frequent Monitoring of Student Progress, Home-School Relations, and Clear School Mission.

The factor loadings confirm the five-factor structure of the school effectiveness scale. Factor 1 (Safe and Orderly Environment) includes items SOE1 to SOE5, with strong loadings ranging from .642 to .810. Factor 2 (Opportunities to Learn) includes items OTL1 to OTL4, with loadings between .583 and .921. Factor 3 (Frequent Monitoring of Student Progress) includes FMSP1 to FMSP4, with loadings between .687 and .837. Factor 4 (Home-School Relations) includes HSR1 to HSR5, with loadings ranging from .686 to .866. Factor 5 (Clear School Mission) includes CSM1 to CSM4, with loadings from .588 to .794.

**Table 2**

*Results of exploratory factor analysis*

| Items | Loadings<br>(F1) | Loadings<br>(F2) | Loadings<br>(F3) | Loadings<br>(F4) | Loadings<br>(F5) |
|-------|------------------|------------------|------------------|------------------|------------------|
| SOE1  | .758**           |                  |                  |                  |                  |
| SOE2  | .753**           |                  |                  |                  |                  |
| SOE3  | .810**           |                  |                  |                  |                  |
| SOE4  | .642**           |                  |                  |                  |                  |
| SOE5  | .706**           |                  |                  |                  |                  |
| OTL1  |                  | .650**           |                  |                  |                  |
| OTL2  |                  | .638**           |                  |                  |                  |
| OTL3  |                  | .583**           |                  |                  |                  |
| OTL4  |                  | .921**           |                  |                  |                  |

|       |        |        |
|-------|--------|--------|
| FMSP1 | .726** |        |
| FMSP2 | .687** |        |
| FMSP3 | .701** |        |
| FMSP4 | .837** |        |
| HSR1  |        | .782** |
| HSR2  |        | .721** |
| HSR3  |        | .812** |
| HSR4  |        | .686** |
| HSR5  |        | .866** |
| CSM1  |        | .588** |
| CSM2  |        | .651** |
| CSM3  |        | .661** |
| CSM4  |        | .794** |

Note. \*\* = significant at .01

#### 4.2 Descriptive statistics of school effectiveness

Table 3

*Means, standard deviations, kurtosis, and skewness of school effectiveness and its dimensions*

| Constructs                              | Mean   | S. D.  | Skewness | Kurtosis |
|-----------------------------------------|--------|--------|----------|----------|
| Safe and orderly environment            | 3.6497 | .80478 | -.822    | .473     |
| Opportunities to learn                  | 3.7161 | .83340 | -.793    | .294     |
| Frequent monitoring of student progress | 3.6817 | .82350 | -.984    | .904     |
| Home-school relations                   | 3.6555 | .82850 | -.808    | .514     |
| Clear school mission                    | 3.6479 | .77659 | -.820    | .632     |
| <b>School Effectiveness</b>             | 3.6702 | .69893 | -1.221   | 1.567    |

Note. S.D. = Standard deviation

The analysis showed a high level of school effectiveness, with an overall mean score of 3.67. Among the five dimensions, opportunities to learn had the highest mean ( $M = 3.72$ ), followed by frequent monitoring of student progress ( $M = 3.68$ ), and home-school relations ( $M = 3.66$ ). The other two dimensions, safe and orderly environment ( $M = 3.65$ ) and clear school mission ( $M = 3.65$ ), also reflected similarly positive ratings. These results indicate that respondents generally rated all aspects of school effectiveness positively, suggesting that schools are perceived as well-managed and supportive learning environments.

The skewness values for all constructs range from -0.793 to -1.221, indicating a moderate to strong leftward tilt in the responses, meaning more people rated the items positively. The kurtosis values range from 0.294 to 1.567, suggesting that the distributions are more peaked than normal, indicating that most respondents rated the items positively.

#### 4.3 Differences in the level of school effectiveness based on demographics

Table 4 shows that male principals are associated with significantly higher scores in maintaining a safe and orderly environment than female principals, as reported by teachers,  $t(441) = 2.884$ ,  $p = .004$ . There is no significant difference in opportunities to learn based on the principal's gender,  $t(441) = 1.626$ ,  $p = .105$ . Schools with male principals have significantly higher scores in frequent monitoring of student progress than those with female principals,  $t(441) = 2.831$ ,  $p = .005$ . Teachers report that home-school relations are significantly stronger in schools with male principals than in those with female principals,  $t(441) = 2.302$ ,  $p = .022$ . Schools with male principals are reported to have a significantly clearer school mission than those with female principals,  $t(441) = 2.713$ ,  $p = .007$ . Overall,

teachers rate school effectiveness significantly higher in schools with male principals than in those with female principals,  $t(441) = 2.865$ ,  $p = .004$ .

**Table 4**

*Differences in the level of school effectiveness and its dimensions based on the gender of the principal*

| Variable                                | Group  | Mean  | N   | t-value | p-value | Mean difference |
|-----------------------------------------|--------|-------|-----|---------|---------|-----------------|
| Safe and orderly environment            | Male   | 3.755 | 232 | 2.884   | .004    | .222            |
|                                         | Female | 3.534 | 211 |         |         |                 |
| Opportunities to learn                  | Male   | 3.778 | 232 | 1.626   | .105    | .130            |
|                                         | Female | 3.648 | 211 |         |         |                 |
| Frequent monitoring of student progress | Male   | 3.788 | 232 | 2.831   | .005    | .223            |
|                                         | Female | 3.565 | 211 |         |         |                 |
| Home-school relations                   | Male   | 3.742 | 232 | 2.302   | .022    | .182            |
|                                         | Female | 3.560 | 211 |         |         |                 |
| Clear school mission                    | Male   | 3.744 | 232 | 2.713   | .007    | .201            |
|                                         | Female | 3.543 | 211 |         |         |                 |
| School effectiveness                    | Male   | 3.761 | 232 | 2.865   | .004    | .191            |
|                                         | Female | 3.571 | 211 |         |         |                 |

**Table 5**

*Differences in the level of school effectiveness and its dimensions based on the type of school (public or private)*

| Variable                                | Group   | Mean  | N   | t-value | p-value | Mean difference |
|-----------------------------------------|---------|-------|-----|---------|---------|-----------------|
| Safe and orderly environment            | Public  | 3.532 | 217 | -3.026  | .003    | -.231           |
|                                         | Private | 3.763 | 226 |         |         |                 |
| Opportunities to learn                  | Public  | 3.564 | 217 | -3.786  | .000    | -.297           |
|                                         | Private | 3.862 | 226 |         |         |                 |
| Frequent monitoring of student progress | Public  | 3.531 | 217 | -3.803  | .000    | -.295           |
|                                         | Private | 3.826 | 226 |         |         |                 |
| Home-school relations                   | Public  | 3.514 | 217 | -3.540  | .000    | -.277           |
|                                         | Private | 3.791 | 226 |         |         |                 |
| Clear school mission                    | Public  | 3.487 | 217 | -4.322  | .000    | -.315           |
|                                         | Private | 3.802 | 226 |         |         |                 |
| School effectiveness                    | Public  | 3.526 | 217 | -4.309  | .000    | -.283           |
|                                         | Private | 3.809 | 226 |         |         |                 |

Table 5 shows that schools with private management report significantly higher scores in maintaining a safe and orderly environment compared to public schools,  $t(441) = -3.026$ ,  $p = .003$ . This suggests that private schools tend to have more structured and disciplined environments. The difference is statistically significant. Private schools also provide

significantly more opportunities to learn than public schools,  $t(441) = -3.786$ ,  $p = .000$ . Teachers report that students in private schools have better learning opportunities. The difference is statistically significant.

Private schools are reported to engage in more frequent monitoring of student progress than public schools,  $t(441) = -3.803$ ,  $p = .000$ . This suggests that private schools place greater emphasis on tracking student performance. The difference is statistically significant. Home-school relations are significantly stronger in private schools compared to public schools,  $t(441) = -3.540$ ,  $p = .000$ . Teachers report better communication and engagement between parents and schools in private institutions. The difference is statistically significant.

Private schools are also reported to have a significantly clearer school mission than public schools,  $t(441) = -4.322$ ,  $p = .000$ . This suggests that private schools have a stronger focus on defining and communicating school goals. The difference is statistically significant. Overall, private schools are rated significantly higher in terms of school effectiveness than public schools,  $t(441) = -4.309$ ,  $p = .000$ . Teachers perceive private schools as more effective in fostering overall school success. The difference is statistically significant.

**Table 6**

*Differences in the level of school effectiveness and its dimensions based on the locality of the school (urban or rural)*

| Variable                                | Group | Mean  | N   | t-value | p-value | Mean difference |
|-----------------------------------------|-------|-------|-----|---------|---------|-----------------|
| Safe and orderly environment            | Urban | 3.726 | 202 | 1.826   | .068    | .140            |
|                                         | Rural | 3.586 | 241 |         |         |                 |
| Opportunities to learn                  | Urban | 3.791 | 202 | 1.731   | .084    | .137            |
|                                         | Rural | 3.654 | 241 |         |         |                 |
| Frequent monitoring of student progress | Urban | 3.704 | 202 | .526    | .599    | .041            |
|                                         | Rural | 3.663 | 241 |         |         |                 |
| Home-school relations                   | Urban | 3.737 | 202 | 1.892   | .059    | .149            |
|                                         | Rural | 3.588 | 241 |         |         |                 |
| Clear school mission                    | Urban | 3.762 | 202 | 2.865   | .211    | .097            |
|                                         | Rural | 3.552 | 241 |         |         |                 |
| School effectiveness                    | Urban | 3.744 | 202 | 2.041   | .136    | .015            |
|                                         | Rural | 3.608 | 241 |         |         |                 |

Table 6 shows that there is no significant difference in the safe and orderly environment between urban and rural schools,  $t(441) = 1.826$ ,  $p = .068$ . While urban schools have a slightly better environment, this difference is not statistically significant. Opportunities to learn are also similar between urban and rural schools, with no significant difference found,  $t(441) = 1.731$ ,  $p = .084$ . Although urban schools show a slight edge in providing learning opportunities, the difference is not statistically significant. The frequent monitoring of student progress does not differ significantly between urban and rural schools,  $t(441) = 0.526$ ,  $p = .599$ . Teachers report similar levels of student progress monitoring in both types of schools. The difference is not statistically significant.

Home-school relations are slightly stronger in urban schools compared to rural schools,  $t(441) = 1.892$ ,  $p = .059$ . However, this difference is not statistically significant, meaning it could have occurred by chance. There is no significant difference in the clarity of

the school mission between urban and rural schools,  $t(441) = 2.865$ ,  $p = .211$ . While urban schools seem to have a slightly clearer mission, the difference is not statistically significant. Overall, school effectiveness does not significantly differ between urban and rural schools,  $t(441) = 2.041$ ,  $p = .136$ . While urban schools are rated slightly more effective, the difference is not statistically significant.

Table 7 shows that there is no significant difference in the safe and orderly environment based on the education level of the principal,  $t(441) = 1.596$ ,  $p = .111$ . While schools with principals holding a Bachelor's degree report slightly better environments, this difference is not statistically significant. Opportunities to learn are similar regardless of whether the principal has a Bachelor's or postgraduate degree,  $t(441) = -0.042$ ,  $p = .966$ . There is no meaningful difference between the two groups, and the difference is not statistically significant. Frequent monitoring of student progress does not significantly differ between principals with Bachelor's degrees and those with postgraduate degrees,  $t(441) = -1.442$ ,  $p = .150$ . Although there is a slight difference, it is not statistically significant.

**Table 7**

*Differences in the level of school effectiveness and its dimensions based on the education of the principal*

| Variable                                | Group                  | Mean  | N   | t-value | p-value | Mean difference |
|-----------------------------------------|------------------------|-------|-----|---------|---------|-----------------|
| Safe and orderly environment            | Bachelors              | 3.702 | 255 | 1.596   | .111    | .123            |
|                                         | Postgraduate or higher | 3.579 | 188 |         |         |                 |
| Opportunities to learn                  | Bachelors              | 3.715 | 255 | -.042   | .966    | -.003           |
|                                         | Postgraduate or higher | 3.718 | 188 |         |         |                 |
| Frequent monitoring of student progress | Bachelors              | 3.633 | 255 | -1.442  | .150    | -.114           |
|                                         | Postgraduate or higher | 3.747 | 188 |         |         |                 |
| Home-school relations                   | Bachelors              | 3.646 | 255 | -.274   | .785    | -.022           |
|                                         | Postgraduate or higher | 3.668 | 188 |         |         |                 |
| Clear school mission                    | Bachelors              | 3.617 | 255 | -.984   | .325    | -.074           |
|                                         | Postgraduate or higher | 3.690 | 188 |         |         |                 |
| School effectiveness                    | Bachelors              | 3.663 | 255 | -.266   | .790    | -.018           |
|                                         | Postgraduate or higher | 3.681 | 188 |         |         |                 |

Home-school relations are also similar between schools with principals holding Bachelor's and postgraduate degrees,  $t(441) = -0.274$ ,  $p = .785$ . This shows no significant difference in the strength of parent-teacher relationships based on the education level of the principal. The clarity of the school mission does not significantly differ between principals with Bachelor's and postgraduate degrees,  $t(441) = -0.984$ ,  $p = .325$ . Despite a slight difference, it is not statistically significant, indicating that the education level of the principal does not greatly impact the clarity of the school mission. Overall school effectiveness is similar in schools led by principals with a Bachelor's degree compared to those with postgraduate degrees,  $t(441) = -0.266$ ,  $p = .790$ . There is no significant difference in how effective these schools are perceived, regardless of the principal's education level.

**Table 8**

*Differences in the level of school effectiveness and its dimensions based on the age group of the principal*

| Variable | Sum | of | df | Mean | F | Sig. |
|----------|-----|----|----|------|---|------|
|----------|-----|----|----|------|---|------|

|      |                | <b>Squares</b> |     | <b>Square</b> |       |      |
|------|----------------|----------------|-----|---------------|-------|------|
| SOE  | Between Groups | 2.548          | 4   | .637          | .983  | .416 |
|      | Within Groups  | 283.719        | 438 | .648          |       |      |
|      | Total          | 286.267        | 442 |               |       |      |
| OTL  | Between Groups | 1.031          | 4   | .258          | .369  | .831 |
|      | Within Groups  | 305.961        | 438 | .699          |       |      |
|      | Total          | 306.992        | 442 |               |       |      |
| FMSP | Between Groups | 3.297          | 4   | .824          | 1.218 | .302 |
|      | Within Groups  | 296.450        | 438 | .677          |       |      |
|      | Total          | 299.747        | 442 |               |       |      |
| HSR  | Between Groups | 3.158          | 4   | .790          | 1.152 | .332 |
|      | Within Groups  | 300.236        | 438 | .685          |       |      |
|      | Total          | 303.394        | 442 |               |       |      |
| CSM  | Between Groups | 2.006          | 4   | .501          | .830  | .506 |
|      | Within Groups  | 264.560        | 438 | .604          |       |      |
|      | Total          | 266.565        | 442 |               |       |      |
| SE   | Between Groups | 2.086          | 4   | .522          | 1.068 | .372 |
|      | Within Groups  | 213.832        | 438 | .488          |       |      |
|      | Total          | 215.918        | 442 |               |       |      |

The analysis of variance (ANOVA) results in Table 8 indicates no significant differences in the safe and orderly environment (SOE) across the different age groups of principals,  $F(4, 438) = 0.983$ ,  $p = .416$ . This suggests that the age of the principal does not significantly affect the perception of the school environment. Similarly, there are no significant differences in opportunities to learn (OTL) based on the principal's age,  $F(4, 438) = 0.369$ ,  $p = .831$ . This means that principals of different age groups do not report significant differences in how much opportunity students have to learn. The frequency of monitoring student progress (FMSP) also does not vary significantly across age groups of principals,  $F(4, 438) = 1.218$ ,  $p = .302$ . The results suggest that the principal's age does not influence how often student progress is monitored in the school.

Home-school relations (HSR) show no significant differences based on the age group of the principal,  $F(4, 438) = 1.152$ ,  $p = .332$ . This implies that principals, regardless of their age, are perceived similarly in terms of fostering relationships between home and school. There are no significant differences in the clarity of the school mission (CSM) among principals from different age groups,  $F(4, 438) = 0.830$ ,  $p = .506$ . The age of the principal does not appear to have a significant effect on how clearly the school's mission is defined and communicated. Lastly, overall school effectiveness (SE) does not differ significantly across age groups of principals,  $F(4, 438) = 1.068$ ,  $p = .372$ . This suggests that principals' age does not play a significant role in the perceived overall effectiveness of the school.

## 5 Discussion

This study explored the school effectiveness of secondary schools in Punjab, Pakistan, examining five key dimensions: safe and orderly environment, opportunities to learn,

frequent monitoring of student progress, home-school relations, and clear school mission. The findings revealed several important insights into the current state of school effectiveness and the factors that influence it.

### **5.1 Overall level of school effectiveness**

The analysis showed a high level of school effectiveness, with an overall mean score of 3.67 out of 5. This suggests that teachers generally perceive their schools as effective across all five dimensions. Among the dimensions, opportunities to learn had the highest mean ( $M = 3.72$ ), followed by frequent monitoring of student progress ( $M = 3.68$ ), and home-school relations ( $M = 3.66$ ). The other two dimensions, safe and orderly environment ( $M = 3.65$ ) and clear school mission ( $M = 3.65$ ), also reflected similarly positive ratings.

These findings align with the characteristics of effective schools identified in the literature. Edmonds (1979, as cited in Diş, 2023) described effective schools as those with clear goals, regular assessments, a safe environment, high standards, and a focus on the whole student. Lezotte (1991, 2001) similarly identified the correlates of effective schools, including a clear and focused mission, a safe and orderly environment, high expectations, instructional leadership, frequent monitoring of student progress, opportunities to learn, and positive home-school relations. The high ratings across all dimensions in this study suggest that schools in Punjab are perceived as well-managed and supportive learning environments that are addressing these key areas of effectiveness.

The particularly high rating for opportunities to learn is encouraging, as this dimension encompasses key aspects of instructional quality and student support. According to Catron and Allen (2008), an effective learning environment is a recognized indicator of school effectiveness. UNICEF (2000) emphasized that teachers' working conditions, class sizes, availability of learning resources, and infrastructure all affect how well teachers function. The positive ratings for opportunities to learn indicate that teachers perceive their schools as providing adequate support for teaching and learning, which is essential for student success.

### **5.2 Differences based on demographic variables**

Significant differences were found based on the gender of the principal. Male principals were rated significantly higher in overall school effectiveness and in several specific areas such as maintaining a safe environment, tracking student progress, and managing home-school connections. These findings may reflect existing perceptions or stereotypes around gender and leadership in Pakistan, where leadership is often associated with assertiveness and control traits more socially accepted in men (Eagly & Johannesen-Schmidt, 2001). However, it's important to approach these findings with caution. The difference in perception does not necessarily mean male principals are more effective, but perhaps teachers perceive them to be so based on social and cultural expectations. Studies have shown that female leaders often face challenges in being perceived as equally authoritative or influential, especially in conservative or male-dominated contexts (Eagly & Carli, 2007). The absence of significant differences in opportunities to learn based on principal gender is noteworthy and suggests that in this specific dimension, perceptions of effectiveness are more consistent regardless of the principal's gender.

A similar trend was observed in the comparison between public and private schools, where private school principals received higher ratings for school effectiveness across all domains. This finding aligns with previous research indicating that private schools may push principals to take on more proactive and visionary leadership roles because the environment of those schools is more competitive and performance-driven (Amjad et al., 2025). Private

school administrators have greater latitude to make different choices and put new ideas into action.

According to studies like those by Waqar and Siddiqui (2008), school administrators in the private sector focus more on performance results, motivation, and innovation because of parental expectations and accountability requirements. These contextual considerations explain the better ratings of private school effectiveness. Private schools may also have more flexible management systems and greater autonomy, enabling school leaders to make swift decisions that impact effectiveness positively. In contrast, public school principals may be limited by bureaucratic constraints, lack of resources, and rigid administrative structures, which could influence their perceived effectiveness.

No significant differences were found in school effectiveness based on school locality (urban or rural). This suggests that teachers perceive school effectiveness to be generally consistent regardless of where the school is located. This finding is significant because it implies that school effectiveness practices are not significantly impacted by a school's geographic location. Anderson (2008) asserted that great leadership may be shown in both rural and urban schools, even though rural schools may encounter different kinds of difficulties (such as scarce resources). It also indicates that professional leadership training and experience may be more influential than the school's location.

No significant differences were found in school effectiveness based on the education level of the principal. Whether the principal held a bachelor's degree or a postgraduate qualification did not impact their perceived school effectiveness. This supports the idea that formal education alone may not determine leadership behavior. Prior research, such as that of Amjad et al. (2025) and Yaqoob et al. (2023), found that while higher education can enhance theoretical knowledge, practical experience, training, and personality traits often have a stronger effect on how a leader behaves. Leadership is a complex, multi-dimensional process that may depend more on interpersonal skills, emotional intelligence, and school culture rather than just academic degrees. Therefore, this result suggests that professional development opportunities should focus more on leadership skills than on simply increasing academic qualifications.

No significant differences were found in school effectiveness based on the age of the principal. This suggests that teachers perceive school effectiveness to be generally consistent regardless of the principal's age. These findings are aligned with research by Herrera (2010) who found that school leadership performance is influenced more by leadership style and contextual understanding than by demographic characteristics. It could also mean that, in the current educational environment, other systemic factors—like curriculum design, government regulations, or teacher quality—play a stronger role in shaping school effectiveness than the personal traits of principals.

## **6 Limitations**

This study has several limitations that should be acknowledged. First, the study employed convenience sampling to select participating teachers and schools. Although convenience sampling is efficient and practical (Patton, 1990), it comes with notable limitations such as increased risk of selection bias, potential influence from external factors beyond the researcher's control, and reduced generalizability. However, the relatively large size of the district and the diversity within its school population help mitigate some concerns regarding sampling error and increase the relevance of the data within similar contexts.

Second, although the selected schools are diverse in context, some top-ranked private schools and a few government schools could not be included in the study. Also, since the

sampling was non-random, the results should be interpreted with caution and may not be generalized to all school districts or educational systems, particularly those in different socio-economic or geographic settings.

Third, teacher participation in the study was voluntary. It is possible that those who chose to respond felt secure in their positions and were more confident in expressing their views. This self-selection may lead to response bias. As the study relies on self-reported perceptions to assess school effectiveness, the measured correlations may reflect personal experiences and school culture, potentially overestimating or underestimating actual relationships.

Fourth, the study measures school effectiveness based on teachers' perceptions rather than on objective performance indicators such as student achievement data, attendance rates, or inspection reports. While teacher insights are valuable for understanding school practices and culture, relying solely on perception data may limit the ability to fully assess school effectiveness comprehensively and measurably.

## **7 Conclusion**

This study explored the school effectiveness of secondary schools in the Punjab province of Pakistan, examining five key dimensions: safe and orderly environment, opportunities to learn, frequent monitoring of student progress, home-school relations, and clear school mission. The findings revealed that schools in Punjab demonstrate high levels of effectiveness across all dimensions, with opportunities to learn receiving the highest ratings. This suggests that teachers perceive their schools as well-managed and supportive learning environments that are addressing key areas of effectiveness. Significant differences were found based on the gender of the principal and the type of school. Male principals and private schools were associated with higher levels of school effectiveness. However, no significant differences were observed based on school locality, principal education level, or principal age. These findings suggest that while certain demographic factors influence perceptions of school effectiveness, others do not have a significant impact.

The study confirms the five-factor structure of the school effectiveness instrument, providing evidence for its validity and reliability in the Pakistani context. This instrument can be used by researchers and practitioners to assess school effectiveness and identify areas for improvement. The findings have important implications for policy and practice. Policymakers should develop and fund professional development programs focused on school leadership skills, encourage partnerships between private and public schools, and set clear standards for school leadership. School principals should continue to strengthen efforts to provide learning opportunities, maintain positive home-school relations, ensure the school's mission remains clear, and prioritize student progress monitoring. The study contributes to the growing body of literature on school effectiveness in developing countries and provides practical recommendations for improving educational quality in Pakistan.

By understanding the current state of school effectiveness and the factors that influence it, stakeholders can work together to create more effective schools that support student learning and development. In conclusion, school effectiveness in Punjab's secondary schools is high across all dimensions, but there is room for improvement, particularly in public schools and in areas such as home-school relations and clear school mission. By addressing these areas, schools can become even more effective in fulfilling their mission of educating and developing students.

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