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# Evaluating the Impact of Continuous Professional Development (CPD) on Leadership Competencies of School Heads

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**Abstract:** This study examines the role of leadership competencies in supporting school change management (SCM) within elementary education institutions and explores whether CPD moderates these relationships. Data was gathered from 190 elementary principals using a structured questionnaire. The analysis involved descriptive statistics, Pearson correlation, and multiple linear regression (MLR) using IBM SPSS 26. Pearson correlation showed significant positive links between SCM and all independent variables: IPS ($r = .537$, $p < .01$), SeM ($r = .408$, $p < .01$), SuC ($r = .392$, $p < .01$), and CPD ($r = .214$, $p = .003$). MLR identified IPS as the strongest predictor ($\beta = .521$, $p = .027$), followed by SeM ($\beta = .068$, $p = .019$), SuC ($\beta = .068$, $p = .038$), and CPD ($\beta = .166$, $p = .001$). The model was statistically significant ($F = 34.287$, $p < .001$), accounting for 53.8% of the variance in SCM ($R^2 = .538$). Furthermore, CPD significantly moderates the connection between leadership skills and SCM, highlighting its role as a catalyst for effective leadership. It is recommended that educational leaders incorporate CPD into their leadership strategies to boost IPS, SeM, and SuC, as these significantly predict effective SCM.

**Keywords:** Interpersonal Skills, Self-Management, Supervisory Competencies, Continuous Professional Development (CPD), School Change Management

## 1. Introduction

Education is the cornerstone of a nation's future progress toward prosperity (Ahmed & Suhag, 2024). A proficient, inspired, and capable teaching workforce can significantly enhance the ongoing advancement in education. It necessitates Continuous Professional Development (CPD) training programs to adapt to the evolving landscape of science, skills, and technology [1]. Therefore, educational leaders must prioritize personal and professional development to adapt to the changing world of education [2].

Leadership is essential for implementing positive changes in all organizations, including educational institutions [3]. When it comes to building better schools, strong leadership is critical. Parco-Tropic and de Guzman (2014) revealed that in basic education units, practical change efforts in schools are initiated by school principals [4]. Thus, effective school leadership is inevitable for the smooth performance of schools.

Various leadership competencies affect the professional and personal development of school heads [5]. The present study focuses on the interpersonal skills, self-management skills, and supervisory competencies of school heads. The analysis assumes that these leadership competencies are essential in enhancing the personal and professional capabilities of school heads. As a result, school heads can better manage their schools by adopting these leadership competencies [6]. In Pakistan, unfortunately, teachers continuous professional development had been remained a neglected subject for years due to which quality of education suffered badly Therefore, despite the expanding research on Continuous Professional Development (CPD) and its effects on

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school leadership, there still needs to be a constrained comprehension of how particular leadership competencies, including interpersonal skills, self-management, and supervisory capabilities, are influenced by CPD programs.

However, CPD programs can play a role in enhancing the competencies of school heads through professional development initiatives. Interpersonal skills are essential life skills for communicating and connecting with others, whether individually or in groups [7]. Ethical and moral traits, collaborative leadership, and mentoring skills are widely recognized as essential interpersonal skills among leaders. Secondly, school leaders' self-management includes making necessary decisions, communicating information, ensuring accountability, and developing teachers' professional skills [8].

Emotional leadership traits and resilience are key self-management skills for school heads. Thirdly, the purpose of supervision is to provide concrete and constructive advice and encouragement to teachers, thereby improving the school's overall performance [9]. Supervision is a continuous process of personal guidance, characterized by frequent visits to a school [10].

Despite the growing body of literature on leadership competencies and Continuous Professional Development (CPD), significant gaps remain. Much of the existing research either focuses broadly on leadership development without directly connecting it to specific competencies such as interpersonal skills, self-management, and supervisory capabilities, or it explores CPD impacts on teachers rather than school heads [11].

Furthermore, in the Pakistani context, research has largely overlooked how CPD interventions moderate the relationship between school heads' leadership competencies and their ability to implement school change management. This creates a critical gap in understanding whether CPD can act as a catalyst to strengthen leadership effectiveness in managing change.

Addressing this gap, the present study investigates how CPD influences and moderates the link between leadership competencies and school change management in elementary schools. This gap presents a significant opportunity to explore how customized CPD programs can enhance the leadership skills of school heads, leading to more efficient school management.


**Figure 1:** Cycle of Educational Leadership

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### 1.1 Research Objectives

**1.** To assess how Continuous Professional Development (CPD) enhances effective school change management by uplifting the interpersonal skills of school leaders.
**2.** To evaluate how Continuous Professional Development (CPD) enhances effective school change management by uplifting the self-management skills of school leaders.
**3.** To examine how Continuous Professional Development (CPD) enhances effective school change management by uplifting the supervisory skills of school leaders.
**4.** To identify gender-based differences in the effectiveness of Continuous Professional Development (CPD) on school change management among school leaders.

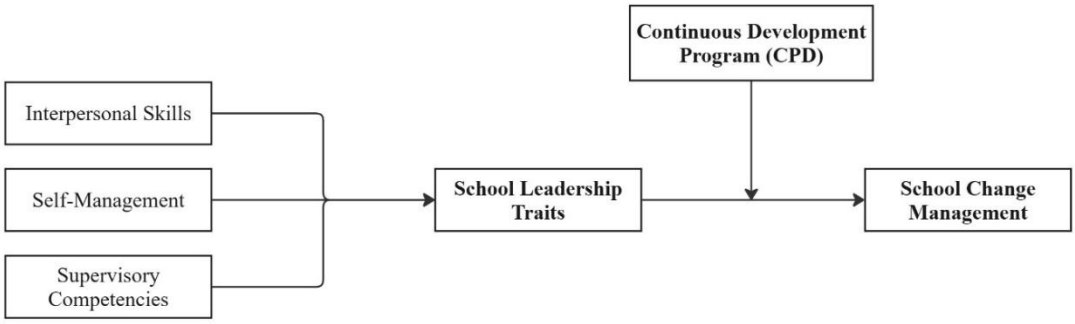


**Figure 2:** Conceptual Framework of the Study

## 2. Literature Review

Educational leaders play a central role in guiding teachers and academic staff to enhance learning experiences across all student populations while acknowledging cultural diversity [12]. Central to this mission is the Continued Professional Development (CPD) of teachers' lifelong learning journeys, which cultivate both personal and professional growth [13].

CPD fosters a dynamic culture of innovation and adaptability within education systems (GPE KIX, 2022), rooted philosophically in constructivism, the idea that individuals' understandings evolve [14]. Msila and Mtshali (2011) highlighted that principals' professional development is critical for school success: well-trained leaders manage schools more efficiently through enhanced decision-making and adaptability. CPD thus plays a dual role: strengthening leadership capacity and improving school quality.

Empirical studies across various global contexts consistently reinforce the impact of CPD. Peleman et al. (2018) in EU countries found that CPD programs emphasizing practitioner engagement and peer exchanges within a shared scientific framework yielded the strongest outcomes.

Similarly, Gümüş and Bellibaş (2020) identified a positive association between professional development for school leaders and effective leadership practices. Grissom, Egalite, and Lindsay (2021) reviewed U.S. research and concluded that both leadership and classroom instruction significantly affect student learning, with leadership ranking second only to direct instruction. Their synthesis provides updated direction for policy and practice linking leadership to student outcomes.

In Pakistan, leadership-focused research emphasizes context-specific forms. Nawab & Asad (2020) observed that in an urban private secondary school, leadership fostering distributed leadership through vision-setting, capacity-building, trust, and collaboration promotes school improvement. They argue that professional development should incorporate distributed leadership models to achieve a broader impact.

Contrastingly, Nawab and Asad (2020), in a rural Sindh context, found instructional leadership (IL) was underemphasized: leaders prioritized administrative routines over teacher development, learning cultures, or

student achievement. The study highlights the importance of leadership training that focuses explicitly on instructional quality in rural areas.

Despite expanding research, organizational challenges remained when schools and education systems struggle to identify, develop, and appoint qualified leaders [15]. This gap motivated Pakistan's launch of Provincial Institutes for Teacher Education (PITEs) in the mid-1990s (ADB-funded), intended to replace the older Bureaus of Curriculum & Education.

However, policy ambiguities undermined their effectiveness. By 2000, the government established Teacher Resource Centers (TRCs) with USAID support, providing a broader strategic framework [16]. Aly (2007) reported 203 teacher training institutions and 300 TRCs, which deliver short-term training to approximately 40,000 instructors annually. Despite scale, programs frequently failed to meet quality standards between 1998 and 2010 (National Education Policy reports). In response, Punjab restructured TRCs into District and Cluster Training & Support Centers by 2015, with the Directorate of Staff Development (DSD, Lahore) institutionalizing the model in 2004 [17].

The 2009 National Education Policy advocated standardized CPD frameworks via public–private partnerships, leading to QAED's CPD framework in 2007: a structured system of assessment, mentoring, planning, coordination, and continuous improvement [18].

Despite repeated initiatives, inconsistent infrastructure and policy reforms hindered the impact of CPD on leadership improvement. As a result, leadership development models such as the 2021–2024 CPD program for Elementary School Teachers (EST), launching across districts like Nankana and Sheikhupura (I-SAPS, 2024), were introduced to address gaps left by policy instability.

Ethics reflects universal principles of right and wrong, distinct from local morality; Chukwu et al. (2023) suggest ethics can be taught, whereas Kılıçoğlu and Kılıçoğlu (2021) view them as innate. Ethical leadership shapes an organization's ethical climate and influences outcomes such as trust, commitment, performance, and justice. Webster and Litchka (2020) demonstrated that principals perceived to embody ethical behavior have a positive impact on overall leadership abilities, although perceptions varied by gender, ethnicity, experience, school type, and jurisdiction. Işik (2020) similarly found that ethical leadership enhances job satisfaction and affective commitment, both of which mediate improvements in school effectiveness. These findings support the integration of ethics training into leadership development frameworks.

Collaborative leadership, strategic, school-wide actions shared among staff support school improvement [19]. However, principals often remain isolated, believing leadership rests solely with them [20]. Schools that foster teacher leadership by mobilizing staff and students toward shared goals can drive collective academic outcomes [16]. A principal-centered leadership model alone is insufficient [21].

Distributed leadership, supported with resources and autonomy, is more effective [22]. Collaborative leadership includes teachers, administrators, and students in decision-making processes [23]. Such approaches build trust, align goals, and foster innovation [24]. However, challenges include resource constraints, time pressures, conflict resolution, and resistance to change [25]. Despite obstacles, collaborative leadership supports inclusive educational cultures.

In Pakistan, collaborative leadership is crucial for overcoming rigid hierarchies that hinder teacher involvement and motivation [18]. Collaborative approaches involving educators, administrators, and community members foster inclusivity and boost school performance [26]. However, empirical studies on the direct impact of collaborative leadership on students in Pakistani public schools are scarce [27].

Research is needed to adapt collaborative leadership to Pakistan's structural and cultural context. Moreover, professional development in Pakistan often emphasizes individual teachers, neglecting peer support and collective learning structures, such as communities of practice [28]. While school councils exist, community involvement in decision-making remains limited [29]. School-based communities of practice where teachers

share experiences and collaboratively tackle challenges hold promise for sustained CPD (Chowdhury, 2018) but remain underdeveloped [30].

Mentoring is recognized as a pivotal CPD mechanism: mentors guide mentees through professional development, role modeling, and psychosocial support [31]. Functions include advising, instructing, counseling, and coaching [32]. Mentoring supports novice teachers as they transition to professional educators, strengthening their pedagogical skills (Hussey & Campbell-Meier, 2021; Orland-Barak & Wang, 2021) and enhancing student learning outcomes [33].

Effective mentoring programs are grounded in needs assessment and structured planning. Özer, Can, and Duran (2020) noted that planned programs yield positive results; Geletu (2024) found that classroom management improved through mentoring, leading to enhanced student outcomes. Under DSD Lahore's CPD framework, mentors assess teachers' needs (e.g., via planning diaries, calendars, AV teaching, classroom interaction, assessments) and monitor student learning through classroom visits [34]. Mentors provide focused support based on data and direct observation.

Nevertheless, mentoring can fail if poorly planned; Abetang, Oguma, and Abetang (2020) noted that unstructured programs often fall short of meeting mentee needs. Mentors must understand teaching gaps and student learning challenges [35]. In DSD's model, mentors analyze monthly assessment data and classroom observation results to guide tailored interventions [36].

The success of mentoring depends on the mentor's commitment and dedication to the program. DSD supports mentors through training, coaching, and mentor guidebooks [37]. Mentors submit activity plans and visit reports, receive feedback, and use updated tools informed by ongoing evaluation [38]. These resources strengthen mentor preparedness and refine the mentoring process over time.

Despite its rigor, DSD's CPD framework faces mixed evaluations. Some experts view mentors as highly effective in raising teacher quality and student learning outcomes, while others argue that they fail to adequately address professional issues [39]. This study explores headteachers' perceptions of mentors' practices and TPS (teacher professional staff) reflections on CPD mentoring under DSD Lahore.

Emotional intelligence (EI) encompasses self-awareness, self-management, social awareness, and relationship management abilities that enable individuals to understand and regulate their own emotions as well as those of others [39]. EI is critical for leaders, as it fosters adaptability, empathy, optimism, and self-confidence and supports change-catalyzing, transparent leadership. Li et al. (2024) argue that EI influences teacher satisfaction through leadership quality.

Studies have affirmed that emotional competence strongly correlates with leadership effectiveness: IQ alone is insufficient; even more critical are EI and related competencies. Positive emotional dispositions support collaboration, reduce conflict, and foster supportive environments. A leader's emotional quality has a significant influence on the quality of leadership and the capacity for organizational change.

To develop effective leaders, careful selection and nurturing of leadership potential are essential traits that include vision, stress management, communication, confidence, responsibility, risk-taking, and unity-building. Emotional competencies support distributive leadership, a decentralized approach essential for sustainable school leadership. Such alignment responds to goals like Malaysia's Education Blueprint (2013–2025), but the general principle applies to leadership succession planning in diverse educational systems.

Classroom observation tools are instrumental for teacher evaluation and professional growth. COT enables systematic observation of interactions between teachers and students [40]. In Punjab, COT is an app-based tool used to mentor and monitor Primary School Teachers, storing data longitudinally and facilitating feedback loops. COT enhances communication between teachers and authorities by enabling immediate feedback and tailored support. COT's benefits include structured evaluation, skill development, and professional support

[41]. As a training and mentoring tool, it helps novices build practical competencies. However, poorly implemented observation can provoke anxiety or resistance if not carefully framed. Recently, QAED launched a CPD program for Elementary School Teachers in 2021 in three districts as a Pilot program. After careful revisions, the new model was launched in 2024 in District Nankana (280 middle schools) and Sheikhupura (180 middle schools). Personalized Learning Hours, Online Learning Communities, Classroom Observation, and Teacher Learning Forums are the focal points of this program. It includes subject-specific sessions, self-study, group work, classroom feedback, and planning based on observations. The framework promotes effective teaching of English, Mathematics, and Science subjects through professional development and interactive learning [42].

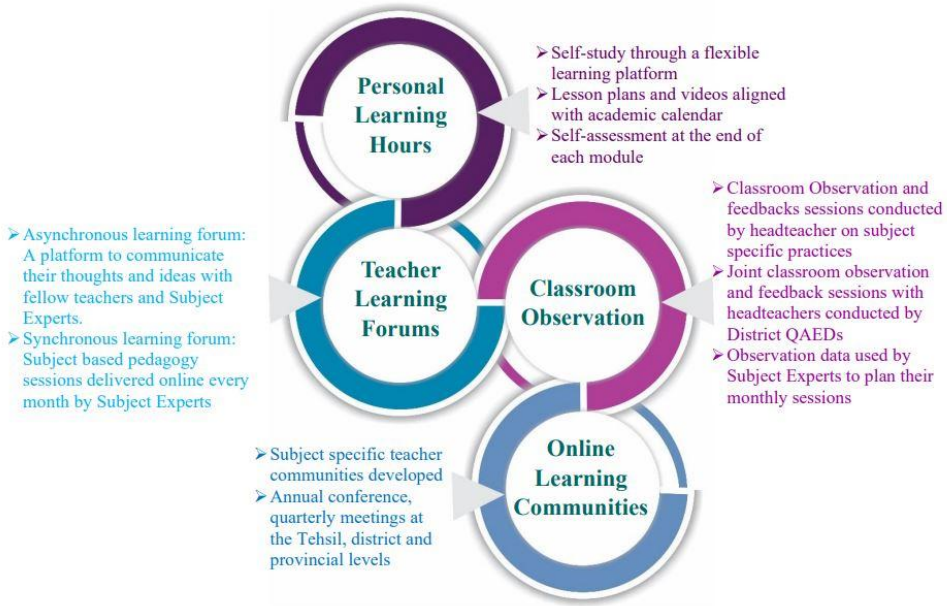


**Figure 3:** CPD EST Model (I-SAPS, 2024)

Personal Learning Hours focus on flexible, self-paced learning. Teachers utilize lesson plans and videos to ensure academic alignment. Each module ends with a self-assessment for evaluation. This encourages teachers to monitor and improve their learning. The approach supports individual growth and professional skill development. Teacher Learning Forums offer educators opportunities to collaborate. Asynchronous forums enable the sharing of thoughts and ideas with peers. Teachers connect at their convenience, fostering a sense of community and promoting knowledge exchange. Synchronous forums feature monthly online pedagogy sessions with experts. These sessions enhance teaching practices and encourage skill-building. Classroom Observation provides feedback to improve teaching effectiveness. Headteachers observe teachers focusing on subject-specific teaching practices. Joint observations involve headteachers and District QAEDs to gather multiple perspectives. Observation data guides monthly sessions to address teachers' needs. This process links professional development to classroom improvement. Online Learning Communities support collaboration among subject-specific teacher groups. Teachers participate in annual conferences and quarterly meetings together. Meetings are held at the Tehsil, district, and provincial levels. Communities offer a platform for discussing challenges and exploring solutions. Teachers gain support and apply best practices in classrooms [43].

## 3. Methodology

This study employs a quantitative research design to evaluate the impact of leadership competencies on the SCM of elementary school heads, with CPD, which moderates the effect of this relationship. The target population consists of elementary school heads in Punjab, Pakistan. To ensure unbiased representation, simple random sampling is employed, and a total of 190 school heads are selected from the 227 elementary schools in the Sheikhupura district (https://sis.pesrp.edu.pk/). A simple random sampling technique was employed in the data collection phase. The survey instrument (QFHT) is adapted from validated scales utilized in prior studies. Leadership competencies are assessed through three domains: interpersonal skills (IPS), measured using Parreira, Pestana, and Oliveira's (2018) scale; self-management (SeM), evaluated with the resilience and

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execution scale; and supervisory competency (SuC), gauged with items from [32]. CPD participation is measured through self-developed items, whereas School Change Management (SCM) items are self-developed. For data collection, surveys are distributed both electronically via Google Forms and in physical form to ensure accessibility across different regions. Ethical considerations are strictly observed, with participants providing informed consent and assurances of anonymity. Data analysis involves both descriptive and inferential statistics. Frequencies, percentages, means, and standard deviations are used to summarize demographics and Likert-scale responses. Pearson correlation tests are used to examine the relationship between CPD participation and competency scores, while multiple regression analysis explores how CPD participation predicts leadership competencies. Ethical approval is obtained from the respondents.

## 4. Results

### 4.1 Demographic Analysis

The demographic profile of the study presents a well-balanced and diverse sample, strengthening the generalizability of its findings. In terms of gender (Figure 6), the distribution is nearly even, with 93 male and 97 female participants, ensuring that perspectives across both genders are fairly represented. The age distribution in Figure 5 shows that most participants fall within the 36–40 age group (n = 74), followed by those aged 31–35 (n = 50). This suggests that mid-career professionals dominate the sample, an important consideration when examining leadership and professional development dynamics in educational settings. Geographically, the sample comprises a mix of urban (n = 104) and rural (n = 86) participants, as shown in Figure 7, reflecting a relatively equitable distribution across different school environments. This urban–rural mix adds depth to the study, as leadership practices and access to CPD opportunities often vary by location. The educational attainment of respondents in Figure 4 reveals a highly qualified group, with the most significant proportion holding MPhil degrees (n = 43), followed by those with Intermediate (n = 34), Matric (n = 33), Master's (n = 32), Bachelor's (n = 27), and PhDs (n = 21). The diversity in qualifications provides a layered view of professional perspectives across different stages of academic and career progression, which is crucial for evaluating perceptions and practices around school change management and leadership competency.

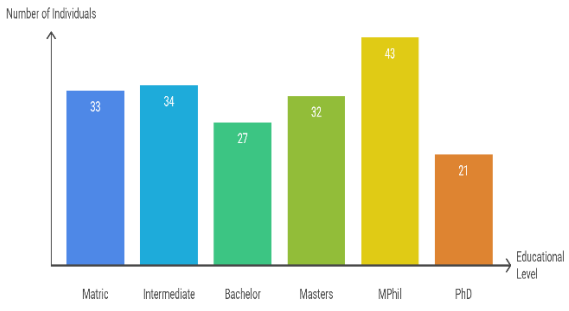


**Figure 4:** Education of Respondents

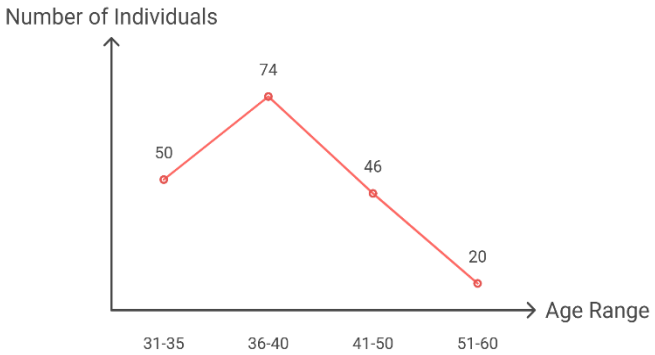


**Figure 5:** Age of Respondents

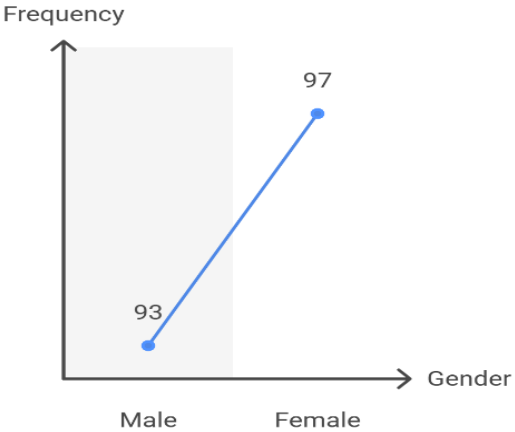


**Figure 6:** Gender of Respondents

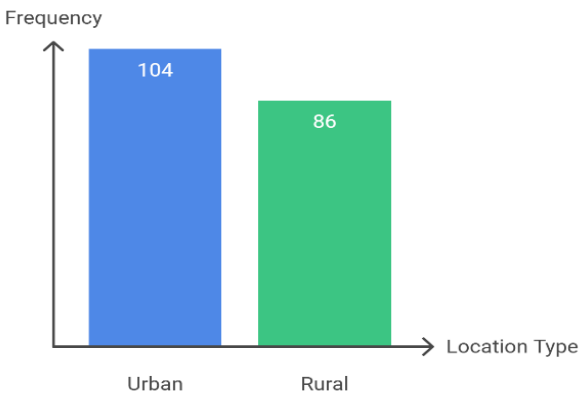


**Figure 7:** Local Respondents

### 4.2 Descriptive Statistics

The descriptive statistics in Table 1 revealed that SCM recorded the highest mean score (M = 4.20, SD = 0.29), suggesting that, on average, school leaders are perceived as managing change effectively. CPD also received a high average score (M = 4.19, SD = 0.18), indicating that respondents view ongoing professional learning opportunities positively. IPS (M = 4.17, SD = 0.16) and SuC (M = 4.13, SD = 0.17) also received strong average ratings. In contrast, Sem yielded the lowest means (M = 3.97, SD = 0.23), indicating a comparatively lower, though still favorable, perception.

**Table 1:** Interpretation of Descriptive Statistics

| Variables | Mean | Std. Deviation |
|---|---|---|
| IPS | 4.1728 | .16401 |
| SeM | 3.9678 | .22500 |
| SuC | 4.1326 | .16854 |
| CPD | 4.1853 | .17696 |
| SCM | 4.1979 | .28876 |

### 4.3 Inferential Statistics

#### 4.3.1 Pearson Correlation

The correlation analysis presented in Table 2 indicates statistically significant positive relationships among all variables: IPS, SeM, SuC, CPD, and SCM. Specifically, IPS shows a moderate positive correlation with SCM, r = 0.537, p = 0.027, suggesting that higher IPS is associated with better management of school change. Similarly, SeM displays a significant positive correlation with SCM (r = 0.408, p < 0.001), indicating that effective SeM practices relate strongly to successful school change.

Additionally, SuCs are positively correlated with SCM (r = 0.392, p < 0.001), implying that stronger SuCs contribute to improved school change outcomes. CPD also has a statistically significant, albeit weaker, positive correlation with SCM (r = 0.214, p = 0.003), underscoring that ongoing professional development activities support effective school change.

Moreover, there are significant positive correlations among the independent variables themselves. For instance, SeM correlates positively with IPS (r = 0.312, p < 0.001), suggesting that these skills complement each other. SuC shows meaningful relationships with SeM (r = 0.344, p < 0.001) and IPS (r = 0.291, p = 0.014), highlighting the interrelated nature of these leadership traits. CPD also correlates positively with SuC (r = 0.365, p = 0.042), SeM (r = 0.296, p < 0.001), and IPS (r = 0.278, p = 0.031), suggesting that CPD enhances multiple dimensions of school leadership traits.

**Table 2:** Interpretation of Pearson Correlation

| Variables | IPS | SeM | SuC | CPD | SCM |
|---|---|---|---|---|---|
| **IPS** | 1.000 | | | | |
| **SeM** | 0.312 | 1.000 | | | |
| | 0.000** | | | | |
| **SuC** | 0.291 | 0.344 | 1.000 | | |
| | 0.014* | 0.000** | | | |
| **CPD** | 0.278 | 0.296 | 0.365 | 1.000 | |
| | 0.031* | 0.000** | 0.042* | | |
| **SCM** | 0.537 | 0.408 | 0.392 | 0.214 | 1.000 |
| | 0.027* | 0.000** | 0.000** | 0.003** | |

Importantly, CPD also shows a significant positive correlation with SCM (r = 0.214, p = 0.003). CPD is significantly correlated with each of the leadership traits: IPS (r = 0.278, p = 0.031), self-management (r = 0.296, p < 0.001), and supervisory competencies (r = 0.365, p = 0.042). These relationships suggest that CPD is not only independently associated with better school change management but is also meaningfully connected to the leadership traits themselves.

Given these patterns, CPD appears to play a supportive and potentially amplifying role. In other words, when school leaders participate in CPD, the positive influence of their leadership competencies on managing change

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is evident. Leaders with strong IPS, SeM, and SuC are more effective in navigating school reforms when those skills are reinforced through targeted CPD programs.

### 4.3.2 Multiple Linear Regression

A multiple linear regression analysis in Table 3 revealed a strong and statistically significant model ($R = 0.756$, $R^2 = 0.538$), indicating that the four predictors explain 53.8% of the variance in school change management. The overall model is robust and highly significant ($F = 34.287$, $p < 0.001$), suggesting strong predictive power. Among the predictors, IPS emerged as the most influential variable ($\beta = 0.521$, $t = 8.561$, $p = 0.027$), supporting the notion that relational leadership—particularly communication and empathy—plays a crucial role in driving successful school change. Self-Management ($\beta = 0.068$, $t = 1.124$, $p = 0.019$) and Supervisory Competency ($\beta = 0.068$, $t = 1.121$, $p = 0.038$) also demonstrated positive and statistically significant effects.

While their standardized beta values are lower than those of IPS, their contribution suggests that organizational discipline and oversight are still important components of leadership effectiveness. Interestingly, Continuous Professional Development (CPD) showed a positive and significant influence on school change management ($\beta = 0.166$, $p = 0.001$). However, the reported t-value appears to be negative, which may be a typographical error given the positive beta and low p-value. Assuming this is corrected, the result implies that investment in CPD enhances leaders' capacity to implement and manage change, possibly by equipping them with up-to-date strategies, tools, and adaptive mindsets.

**Table 3:** Interpretation of Multiple Linear Regression

| Models | B | Std. Error | Beta | t | Sig. | R | R Square | F |
|---|---|---|---|---|---|---|---|---|
| **(Constant)** | 2.331 | 0.84 | | 2.775 | 0.006** | 0.756 | 0.538 | 34.287 |
| **IPS** | 0.917 | 0.107 | 0.521 | 8.561 | 0.027* | | | |
| **SeM** | 0.087 | 0.078 | 0.068 | 1.124 | 0.019* | | | |
| **SuC** | 0.116 | 0.104 | 0.068 | 1.121 | 0.038* | | | |
| **CPD** | 0.271 | 0.099 | 0.166 | 2.729 | 0.001** | | | |

A Dependent Variable is SCM

## 5. Discussion

This study provides unique insights that enrich the discourse on educational leadership and school change, aligning with both foundational and recent literature. Relational leadership is crucial in education, and interpersonal skills were the best predictor of school change management. This aligns with transformational leadership theories, which emphasize trust, communication, and empathy in transforming organizations. It also supports the findings of [44].

That principals' interpersonal competence directly affects school change readiness. However, this study empirically confirms that interpersonal skills are even more important in Pakistan, where systemic challenges often impede reform, in navigating teacher resistance and building consensus. Even though self-management skills were positively associated with school change, they had the lowest mean scores.

In Pakistan's education system, school leaders often work under strict administrative hierarchies that limit their autonomy. Global literature, such as [45]. emphasizes time management, resilience, and accountability as essential to effective leadership; however, the weaker influence of self-management suggests contextual limitations. The gap between international leadership frameworks and localized practices in Pakistan suggests the need for CPD programmers that promote technical skills and empower leaders with greater autonomy and resilience to adapt to systemic barriers [46].

Supervisory competencies also predicted effective school change, supporting instructional leadership models proposed by [47]. These findings support the notion that principals who provide structured guidance, mentorship, and constructive feedback can enhance teacher performance and contribute to school improvement.

This study suggests that supervisory roles can transform schools when reinforced through targeted CPD, contrary to Nawab and Asad's (2020) finding that rural Pakistan underemphasizes instructional leadership. This study demonstrates CPD's moderating role, which is its most significant contribution [50]. Peleman et al. (2018) and Saleem, Gul, and Dogar (2021) confirmed the value of professional development in strengthening leadership skills; however, this research demonstrates that CPD has a direct impact on school change management and enhances interpersonal, self-management, and supervisory competencies. CPD boosts leadership's impact on organizational outcomes. This supports [51]. Recently stressed that meaningful reform requires continuous, embedded, and context-sensitive leadership training.

The policy and practical implications of these findings are significant. The findings suggest that policymakers should make CPD a mandatory and structured part of school leadership development rather than an occasional or optional activity [52]. Training institutions should redesign CPD modules to emphasize technical supervision, interpersonal effectiveness, and self-management, as these have been shown to directly impact change management outcomes [54].

The study emphasizes reflective practice, collaborative leadership, and ongoing professional learning for school leaders to help them manage reform in increasingly complex educational environments. However, the study acknowledges significant limitations. Cross-sectional designs limit causal inference, and self-reported data may introduce method bias [55].

The research is limited to elementary schools in one Punjab district, which may limit its applicability to other regions or educational levels. To better understand how CPD affects leadership, future research should employ longitudinal and mixed methods designs, incorporating observational data and multi-source feedback [56]. Comparative studies across districts and educational levels, including secondary and higher education, would help confirm these findings [57].

## 6. Conclusion

This study examined the influence of leadership competencies, specifically IPS, SeM, and SuC, along with CPD, on SCM within the context of elementary education. Drawing on data from 190 participants and employing multiple linear regression analysis, the findings confirmed that all three leadership competencies significantly contribute to facilitating change in schools. Among these, IPS had the strongest predictive power, followed by SuC and SeM [58]. Additionally, CPD not only independently predicted SCM but also moderated the relationship between leadership attributes and institutional change outcomes.

The study carries several important implications [59]. First, it reinforces the notion that successful school reform is rooted not only in structural adjustments but in the personal and professional capacities of school leaders [60]. Second, it highlights the value of investing in leadership development programs that emphasize interpersonal effectiveness, reflective practice, and active supervision [61].

Third, the moderating effect of CPD underscores the strategic importance of professional learning as a continuous, embedded process that can amplify the impact of leadership competencies on broader organizational transformation. However, studying is not without limitations [62].

It employed a cross-sectional design, limiting the ability to infer causality between variables. The reliance on self-reported questionnaire data may also introduce common method bias and social desirability effects. Additionally, the sample was drawn from a specific educational context, which may constrain the generalizability of the findings to other school systems or cultural settings [63]. Future research could address these limitations by incorporating longitudinal designs, multi-source data, or comparative studies across different regions and educational levels [64].

## 7. Recommendations

1. Institutionalize CPD as a Leadership Lever: The School Education Department should embed structured CPD programs into the leadership development strategies for school heads. This includes reflective practice, mentoring, and adaptive learning aligned with organizational goals [65].

2. Develop Interpersonal Leadership in Practice: School heads' Leadership training must go beyond administrative and supervisory skills to actively develop communication, conflict resolution, and emotional intelligence traits most strongly linked to effective school change[66].
3. Adopt a Continuous Evaluation Approach: Schools should periodically assess the leadership competencies of their staff and the impact of CPD initiatives on change management outcomes, using both quantitative and qualitative tools [67].
4. Expand Research Scope: Future research should adopt a longitudinal design and include comparative studies across districts or countries to test the stability and applicability of the model in diverse contexts [68].
5. Blend Methods for Deeper Insight: Combining statistical methods with qualitative interviews or case studies could provide richer, more nuanced understandings of how leadership and CPD interact in real-life change efforts [69].

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## Data availability
The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

## Ethics approval and consent
Ethics approval was not required. All participants provided informed consent for participation and publication of anonymized data.

## Competing interests
The authors declare no competing interests.

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