

The Mediating Role of Supervisory Working Alliance to the Innovative Instructional Leadership and School Effectiveness: The Moderating Effect of School Environment¹⁴⁵²

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Abstract

This study explored how supervisory working alliance acts as a mediator between innovative instructional leadership and the effectiveness of schools, together with school environment as a potential moderator. This quantitative correlational study collected surveys from 259 public elementary school teachers across the Schools Division Offices of San Pablo City, Imus City, and Lucena City of DepEd CALABARZON. This study employed descriptive statistics, Pearson's r correlation, and multiple linear regression including mediation and moderation analysis. This study reveals that principals showed exceptional innovative instructional leadership and school effectiveness was evident according to the respondents. The supervisory working alliance received high marks as well. Both principal innovative instructional leadership and supervisory working alliance exhibited positive correlations with school effectiveness based on correlational analysis. Supervisory Working Alliance (SWA) partially mediated the effect of School Effectiveness (SE) on Principal's Innovative Instructional Leadership Practices (PIILP), with a significant indirect path. School Environment (SEnv) significantly moderated the PIILP-SE relationship, weakening the effect as SEnv increased. This study concludes that the principal's innovative instructional leadership significantly enhances school effectiveness when supported by supervisory working alliances and a favorable school environment. It is recommended that school leaders strengthen collaborative supervisory relationships and invest in sustaining the improvement of school effectiveness.

Keywords: innovative instructional leadership, supervisory working alliance, school effectiveness, school environment, teacher characteristics, instructional supervision

1. Introduction

Schools that work well create the base for society's growth and teach new citizens their first lessons. DepEd works to make schools work better through the Basic Education Act of 2001 (Ocampo & Buenviaje, 2022) and the Enhanced Basic Education Act of 2013 (Parojenog & Pabalan, 2024). These rules support building total learning spaces and improving schools while providing a good education for every student. Public schools nationwide have become essential to meet learning demands by achieving top operational results and promoting inclusiveness.

Schools work toward becoming effective platforms by delivering excellent results along with positive student relationships while pleasing all their stakeholders. School systems show effectiveness when they respond to students' requirements and handle education transitions successfully. Multiple studies from

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across and within the nation show that school success depends on using fresh methods combined with team-based administration and teacher growth programs (Grøn et al., 2024). To achieve this objective, schools need ongoing targeted efforts from school leaders, teachers, and community stakeholders.

Getting schools to their effective target is difficult to achieve in practice. The fast pace of social change and restricted resources, combined with current student requirements, call for fresh leadership methods that guide current educational practice. Making education better requires us to combine new technologies into classrooms along with shared decision-making and training programs for teachers. Numerous schools face challenges because they lack effective support tools and traditional leadership styles while failing to create spaces where school leaders and teachers can work together. These hurdles prevent them from achieving their greatest possible results.

1.1. Conceptual Framework

This research used an interconnected framework between innovative instructional leadership practices of the principal and their impact on school effectiveness with the mediating effect of supervisory working alliance and the moderating effect of these variables on the school environment. This analysis studies how leadership approaches impact educational outcomes while principal-teacher collaborations act as intermediaries between these effects, with the school environment serving as a controlling variable. The framework uses existing theoretical foundations to outline a systematic explanation of variable relationships that occur throughout educational leadership and management systems.

The framework's fundamental structure rests on the principal's innovative instructional leadership practices, which function as an independent variable. This construct represents leadership behaviors that propel teacher innovation while enhancing educational practice standards and teacher professional development progress. The framework bases its approaches on principles derived from transformational leadership theory (Ladkin & Patrick, 2022) by integrating technology use along with collaborative decision processes and professional growth initiatives. The framework demonstrates through various sub-variables that principals serve multiple functions in driving academic excellence while nurturing innovative environments.

The conceptual framework establishes a systematic method for analyzing the intermediary effect of supervisory working alliances between innovations in instructional leadership and school effectiveness. The framework demonstrates how educational excellence requires understanding both student and organizational contexts along with relational dynamics.

1.2 Statement of the Problem

This study determined the impact of the principal's innovative instructional leadership on school effectiveness among public schools, the mediating effect of the supervisory working alliance, and the moderating effect of the school environment in the SDOs of San Pablo City, Imus City, and Lucena City during the school year 2024-2025.

Specifically, it aims to answer the following questions:

1. What is the level of the principal's innovative instructional leadership practices in terms of:
 - 1.1 Use of Technology in Instructional Leadership
 - 1.2 Collaborative Decision-making; and
 - 1.3 Professional Development Initiatives?
2. How do the respondents perceive the level of school effectiveness in terms of:
 - 3.1 Student Academic Performance;
 - 3.2 Stakeholders' Satisfaction; and
 - 3.3 School Climate?

3. What is the quality of the supervisory working alliance between principals and teachers in terms of:
 - 2.1 Quality of the relationship between principals and teachers;
 - 2.2 Trust; and
 - 2.3 Communication?
4. How do the respondents describe the school environment in terms of:
 - 4.1 Resources; and
 - 4.2 Community Support?
5. Does the Supervisory Working Alliance significantly mediate the relationship between Principal's Innovative Instructional Leadership and School Effectiveness?
6. Does the school environment significantly moderate the relationship between Principals' Innovative Instructional Leadership and School Effectiveness?

2. Methodology

This study used quantitative design that combines mediation-moderation analysis to examine how Principals' Innovative Instructional Leadership Practices relate to School Effectiveness and Supervisory Working Alliance and School Environment (Wang et al., 2020). The research design tracks variable relationships to establish how innovative school leadership practices affect school performance. Leadership practices' indirect relationship with school effectiveness was analyzed through mediation, and the quality of the supervisory working alliance between the principal and the teacher acts as the mediator variable (You et al., 2023). The results of the moderation analysis demonstrate how the environment in schools affects the relationship between leadership innovation and school effectiveness (Abdullah et al., 2024). The research utilizes combined analytical methods to demonstrate empirical evidence backing the conceptual framework and illustrating how leadership interacts with supervision for school effectiveness (Abbas et al., 2023).

The respondents of this study include the teachers at public elementary schools in SDOs San Pablo City, Lucena City, and Imus City of DepEd CALABARZON for the school year 2024-2025. The total number of 259 teachers was the respondents for all three SDOs, with 140 respondents from SDO San Pablo City, 68 respondents from SDO Lucena City, and 51 respondents from SDO Imus City. The study placed considerable emphasis on the analysis of the teachers and school heads to advance the impacts of the principal's leadership on school effectiveness within the local educational environment.

The research used IBM SPSS Statistics for Windows Version 25.0 to evaluate complex linkages between study variables (Caplova & Švábová, 2020). The analysis using SPSS tests three relationships: direct associations (IV to DV), mediation relationships (IV links through mediator to DV), and moderation relationships that exist between IV and DV (Hasudungan & Mustika, 2024). The causal approach was used in the mediation analysis to check if Supervisory Working Alliance serves as a significant mediator between instructional leadership and school effectiveness (Seo & Choi, 2024). The analysis establishes the degree to which School Environment affects the relationship between these factors. A multiple regression analysis verify the predictive capability of each variable toward measuring school effectiveness (Himuro et al., 2024).

Statistical analysis involved several analytical tools depending on the research questions and/or hypotheses. First, inferential statistics of a descriptive nature was used to give an update on the demographic profile of the sample in terms of mean, standard deviation, frequency standard, and percentage. Next, the relationships between direct associations (IV to DV), mediation relationships (IV links through mediator to DV), and moderation relationships that exist between IV and DV (Hasudungan & Mustika, 2024) was assessed with Hayes' PROCESS macro (Model 4) to check if Supervisory Working Alliance serves as a significant mediator between instructional leadership and school effectiveness (Seo & Choi, 2024). The analysis through Hayes' Model 1 establishes the degree to which School Environment affects the relationship between these factors. A multiple regression analysis verifies the predictive capability of each variable toward measuring school effectiveness.

3. Results and Discussion

Respondent's Demographic Profile**Table 3.*****Gender Distribution by Division***

Gender	Division			Total
	SDO Imus City	SDO Lucena City	SDO San Pablo City	
Male	8	6	16	30
Female	43	62	124	229
Total	51	68	140	259

The distribution of gender across the divisions of SDO Imus City and SDO Lucena City reveals a predominantly female workforce in both regions. Specifically, out of the total sample of 259 respondents, 229 are female (88.5%), and 30 are male (11.5%). This finding is consistent across both divisions, where SDO Imus City has 43 female and 8 male teachers, while SDO Lucena City shows an even higher proportion with 62 female and 6 male teachers. The overwhelming representation of female teachers may reflect broader demographic trends in education, where women are often more prevalent in teaching professions. Further exploration of the underlying factors that contribute to this gender imbalance, such as societal expectations or the attractiveness of teaching as a profession for women, could provide valuable insights.

Age Distribution

The age distribution among teachers shows a wide range of experience levels. Teachers aged between 25 and 60+ years are represented, indicating a diverse age range in both divisions. In total, 258 respondents provided their age data, with the age group of 36-40 years having the highest representation (12 teachers), followed by teachers in the 31-35 and 41-45 age groups (10 teachers each). The data reflects a balance of young teachers entering the profession and seasoned educators with decades of experience.

Table 4***Age Distribution by Division***

Age	Division			Total
	SDO Imus City	SDO Lucena City	SDO San Pablo City	
25-29	4	13	5	22
30-34	8	8	25	41
35-39	4	11	22	37
40-44	6	11	23	40
45-49	10	8	29	47
50-54	7	9	18	34
55-59	10	7	15	32
60-61	3	0	1	4
Total	51	68	139	258

The presence of a significant number of teachers in their mid-career years (31-45) suggests a stable and mature workforce. There are fewer younger teachers (below 30), which could indicate challenges in attracting younger generations into the teaching profession or potential barriers related to career progression or salary expectations.

Table 5.***Educational Attainment by Division***

Educational Attainment	Division			Total
	SDO Imus City	SDO Lucena	SDO San Pablo	

		City	City	
Bachelor's Degree	11	11	28	50
Bachelor's Degree with MA units	25	37	54	116
Master's Degree	12	14	47	73
Master's Degree with Ed.D/Ph.D units	2	4	7	13
Doctorate Degree	1	2	4	7
Total	51	68	140	259

The educational attainment distribution across the two divisions indicates a high level of formal education among the teaching staff. In total, 259 teachers provided their educational background, with 50 teachers having completed a Bachelor's degree (19.3%), 116 with a Master's degree units (44.8%), and 73 teachers holding a Master's degree (28.2%). Only 13 respondents (5%) had completed a doctoral degree or post-graduate education. A large proportion of teachers in both SDO Imus City and SDO Lucena City have advanced their education beyond the bachelor's degree level, which reflects the importance placed on higher education for career advancement in the teaching profession. The relatively low number of teachers with doctoral degrees could suggest barriers such as time, financial constraints, or lack of institutional support for advanced studies. Additionally, this finding could indicate a need for more professional development opportunities for those interested in pursuing doctoral programs.

Table 6.
Length of Service by Division

Length of Service (Years)	Division			Total
	SDO Imus City	SDO Lucena City	SDO San Pablo City	
0-5	8	13	12	33
6-10	13	13	42	68
11-15	8	10	19	37
16-2	7	12	29	48
21-25	4	10	21	35
26-30	8	8	12	28
31-35	3	2	5	10
36-40	2	0	0	2
Total	51	68	140	259

The length of service distribution shows a relatively even spread across different service years, although there is a notable concentration of teachers with 6-15 years of experience. In total, 259 teachers provided data on their length of service, with the majority (10-21 years of service) representing 10-13 years of experience, and 21 teachers having 6 years of service. The data also shows a slight dip in the number of teachers with 0-5 years of service, especially in SDO Imus City. The data suggests a workforce that has moderate-to-high levels of experience, which is often beneficial in terms of instructional quality and school leadership. The higher concentration of teachers with mid-level experience could indicate stability in staffing, with fewer new teachers entering the profession. This could point to potential challenges related to teacher retention or recruitment, as more experienced teachers may be nearing retirement, and fewer newer teachers are entering the field.

Principal's Innovative Instructional Leadership**Table 7.*****Descriptive Analysis of Use of Technology***

Use of Technology	Mn	SD	VI
1. The principal encourages the use of technology in teaching and learning.	4.73	0.46	Highly Manifested
2. Digital tools and online resources are integrated into classroom instruction.	4.69	0.49	Highly Manifested
3. Teachers receive adequate training on the use of educational technology.	4.42	0.63	Manifested
4. The school provides sufficient technological resources for teachers and students.	4.29	0.80	Manifested
5. The use of technology enhances student engagement and learning outcomes.	4.68	0.53	Highly Manifested
Overall Mean	4.56	0.60	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/ Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

This domain is measured through five indicators. The overall mean score is $M = 4.564$, with a standard deviation of $SD = 0.460$, suggesting a high level of agreement among respondents on their principals' effective integration of technology in instructional leadership.

Among the items, the highest mean is observed in item 1 ($M = 4.73$, $SD = 0.462$), reflecting the strong perception that school leaders effectively utilize technological tools in instructional supervision. Item 4 reports the lowest mean ($M = 4.29$, $SD = 0.797$), indicating some variation in responses regarding the accessibility or consistency of technology use.

This subscale demonstrates that principals are generally perceived as technologically adept in supporting instructional processes. The slightly lower mean and higher variability in item 4 may point to uneven implementation across schools, some schools have complete computer packages and others have outdated computer packages or none at all, or a need for additional support in technology-related leadership such as trainings on technology advances like AI or IoT (internet of things).

Table 8.***Descriptive Analysis on Collaborative Decision-Making***

Collaborative Decision-Making	Mn	SD	VI
1. The principal involves teachers in important decision-making processes.	4.63	.54	Highly Manifested
2. School policies and programs are developed through collaborative discussions.	4.63	.55	Highly Manifested
3. Teachers' opinions and suggestions are valued in school planning.	4.59	.57	Highly Manifested
4. Collaboration between school leaders and teachers leads to better instructional practices.	4.65	.54	Highly Manifested
5. There is open communication between the principal and teachers regarding decision-making.	4.69	.49	Highly Manifested
Overall Mean	4.64	.48	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/ Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

This domain yielded a high composite mean score of $M = 4.64$, with a relatively low standard deviation of $SD = 0.482$, reflecting consistent and favorable responses across the five indicators. Item 5 had the highest agreement ($M = 4.69$, $SD = 0.487$), suggesting that teachers perceive their school heads as open and inclusive when finalizing decisions. The lowest mean ($M = 4.59$, $SD = 0.57$) was still relatively high, indicating strong consensus on the participatory leadership practices being exercised.

This implies a robust culture of shared governance in the participating schools. Such high levels of collaborative engagement such as educational summits or Conferences, regular faculty meetings, consultation forums, and organizational committees. These venues support the observed "high levels of collaborative engagement" noted in the findings, enabling teacher participation and ownership in decision-making processes are aligned with distributed leadership models and support teacher empowerment and ownership in decision-making processes.

Table 9.

Descriptive analysis of Professional Development Initiatives

Professional Development Initiatives	Mn	SD	VI
1. The principal supports ongoing teacher training and professional development.	4.74	.46	Highly Manifested
2. The school provides opportunities for professional learning and growth.	4.73	.47	Highly Manifested
3. Teachers receive mentorship and coaching for skill enhancement.	4.71	.50	Highly Manifested
4. The principal encourages participation in seminars, workshops, and training.	4.75	.45	Highly Manifested
5. Professional development programs improve teaching effectiveness.	4.75	.44	Highly Manifested
Overall Mean	4.73	.42	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/ Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

This domain recorded the highest overall mean across all dimensions, at $M = 4.73$, with the lowest standard deviation at $SD = 0.42$, indicating strong agreement and minimal variation in perceptions of principals' efforts to promote professional learning.

All items scored consistently high, with item 5 having the highest agreement ($M = 4.75$, $SD = 0.44$). The lowest item, 3, still received a mean of $M = 4.71$ ($SD = 0.50$), reinforcing the uniform appreciation of continuous learning opportunities provided by school leaders. These results affirm the proactive role of school heads in organizing and facilitating sustained professional development through Learning Action Cells (LAC) sessions, research, speakership engagements, and related reports and documentations such as School Improvement Plan (SIP) and Annual Implementation Plan (AIP) monitoring tools. The data suggests that such initiatives are embedded in the school culture and are highly valued by teachers.

Table 10.

Descriptive Analysis of Principal's Innovative Instructional Leadership Practices

Overall Composite Score	Mn	SD	
Use of Technology Overall Mean	4.56	0.60	Highly Manifested
Collaborative Decision-Making Overall Mean	4.64	.48	Highly Manifested

Professional Development Initiatives Overall Mean	4.73	.42	Highly Manifested
Principal's Innovative Instructional Leadership Practices	4.71	.43	Highly Manifested

The aggregate score for the overall composite score of Principal's Innovative Instructional Leadership Practices is $M = 4.71$, with a standard deviation of $SD = 0.43$. The composite mean being close to the maximum possible score (5.0) and the low standard deviation indicate a strong and consistent perception among teachers that their principals demonstrate innovative instructional leadership. These results support the notion that the principals in the three divisions (SDO Imus City, SDO Lucena City, and SDO 3) are actively engaging in modern, collaborative, and growth-oriented leadership practices such as using Learning Management Systems (LMS) such as Google Classroom or Microsoft teams, digital lesson observation tools, tracking student performance online and utilizing flipped classroom models.

Supervisory Working Alliance

Table 11.

Descriptive Analysis of Quality of the Relationship between Principals and Teachers

Quality of the Relationship between Principals and Teachers	Mn	SD	VI
1. The principal maintains a professional and respectful relationship with teachers.	4.73	.46	Highly Manifested
2. Teachers receive constructive feedback and support from the principal.	4.69	.49	Highly Manifested
3. The principal recognizes and appreciates teachers' efforts.	4.69	.51	Highly Manifested
4. Collaboration between teachers and the principal is encouraged.	4.69	.49	Highly Manifested
5. The principal effectively guides teachers in improving instruction.	4.70	.49	Highly Manifested
Overall Mean	4.70	.46	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/ Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

This domain includes five indicators and generated a high overall mean of $M = 4.70$, with a standard deviation of $SD = 0.46$. This indicates a strong and consistent perception of positive principal-teacher relationships.

All five items recorded means ranging from 4.69 to 4.73, with minimal variance, suggesting high agreement among respondents that their principals maintain supportive, respectful, and professional relationships with teaching staff.

Item 1 yielded the highest mean score ($M = 4.73$, $SD = 0.462$), affirming the principal's role in fostering a relationally strong work environment.

The high and consistent scores imply that principals are perceived to possess strong interpersonal skills and relational leadership attributes, which are essential for trust-building and effective instructional supervision. This further suggests that school principals are widely recognized for their strong interpersonal skills and relational leadership qualities, which are critical for fostering trust and maintaining collaborative school environments. These skills enable them to build positive relationships with teachers, students, parents, and other stakeholders, creating a foundation of mutual respect and open communication. Relational leadership also supports distributed leadership practices, empowering teachers to take the initiative and contribute to decision-making processes. When principals demonstrate empathy, active listening, and approachability, they cultivate a school culture where teachers feel valued and motivated. Such environments are more conducive to implementing instructional changes and innovations, as resistance is minimized and cooperation is heightened. Moreover, effective

interpersonal relationships allow principals to mediate conflicts constructively, ensuring that issues are resolved with fairness and understanding. These leadership behaviors contribute not only to professional satisfaction but also to sustained student achievement through cohesive team efforts. Strong relational leadership further supports the alignment of school goals with individual professional development plans, reinforcing a shared vision.

Table 12.
Descriptive Analysis of Trust

Trust	Mn	SD	VI
1. Teachers trust the principal's decisions and leadership.	4.65	.54	Highly Manifested
2. The principal ensures transparency in school operations.	4.63	.58	Highly Manifested
3. The principal fairly addresses concerns and conflicts.	4.66	.54	Highly Manifested
4. Staff members have a strong sense of teamwork and trust.	4.64	.56	Highly Manifested
5. The principal consistently upholds professional ethics and integrity.	4.69	.51	Highly Manifested
Overall Mean	4.66	.51	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/

Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

The trust dimension had an overall mean of $M = 4.66$, with a slightly higher standard deviation ($SD = 0.51$) compared to the relationship quality domain, suggesting a moderately broader spread of responses.

Item 3 recorded the highest mean ($M = 4.66$, $SD = 0.54$), followed closely by H5 ($M = 4.69$, $SD = 0.51$), indicating strong perceived integrity and reliability of school heads. Item 2, with the lowest mean ($M = 4.63$, $SD = 0.58$), still reflects high levels of trust among teachers toward their leaders.

While there is slightly more variability in this domain, the high means demonstrate that trust remains a central and well-established component of supervisory relationships in the schools studied. Despite the slightly variability, the consistently high means across multiple items (e.g., $M = 4.66$, 4.69 , and 4.63) suggest a stable pattern of high trust perceptions, which supports the conclusion that trust is a central and established feature in supervisory relationships.

Table 13.
Descriptive Analysis of Communication

Communication	Mn	SD	VI
1. The principal effectively communicates expectations to teachers.	4.66	.54	Highly Manifested
2. Teachers receive timely and clear instructions from the principal.	4.64	.56	Highly Manifested
3. Open communication is encouraged within the school.	4.65	.57	Highly Manifested
4. Feedback from teachers is acknowledged and addressed.	4.64	.56	Highly Manifested
5. Communication strategies are adapted to meet teachers' needs.	4.66	.53	Highly Manifested
Overall Mean	4.65	.52	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/

Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

Communication between principals and teachers also received a favorable composite score of $M = 4.65$, with $SD = 0.52$, indicating consistent satisfaction with communication processes.

Items 1 through 5 had mean scores ranging from 4.64 to 4.66, showing little variation and confirming a shared experience of clear and responsive communication. Item 1 and 5 were tied with the highest means ($M = 4.66$), pointing to the regularity and transparency in leadership communication.

These scores suggest that the principals demonstrate open lines of communication, a critical aspect of leadership that fosters collaboration, clarity, and responsiveness in school management.

Table 14.

Descriptive Analysis of Supervisory Working Alliance (SWA)

Overall Composite Score	Mn	SD	VI
Quality of Relationship Between Principal and Teachers Overall Mean	4.70	.46	Highly Manifested
Trust Overall Mean	4.66	.51	Highly Manifested
Communication Overall Mean	4.65	.52	Highly Manifested
Supervisory Working Alliance	4.67	.48	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/ Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

The composite score for the full Supervisory Working Alliance construct is $M = 4.67$, with a standard deviation of $SD = 0.479$.

This high overall score confirms that teachers generally perceive a strong supervisory alliance with their principals. It reflects a culture of trust, openness, and supportive leadership within the school context. This strong alliance is crucial in shaping how teachers respond to innovations in instructional leadership and in determining the success of such leadership practices in achieving school effectiveness.

School Environment

Table 15.

Descriptive Analysis on Resources

Resources	Mn	SD	VI
1. The school provides adequate learning resources for students.	4.57	.59	Highly Manifested
2. Teachers have access to necessary materials and tools for effective teaching.	4.62	.55	Highly Manifested
3. Classroom facilities and equipment are in good condition and support learning.	4.59	.59	Highly Manifested
4. The school allocates resources effectively to meet students' diverse needs.	4.57	.60	Highly Manifested
5. The school ensures that resources are equitably distributed among all departments.	4.61	.58	Highly Manifested
Overall Mean	4.59	.54	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/ Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

This dimension evaluates the availability and adequacy of instructional materials, infrastructure, and other resources that support teaching and learning. The five indicators yielded a composite mean of $M = 4.59$, with a standard deviation of $SD = 0.54$, indicating favorable perceptions overall, though with some variability.

Individual items show strong agreement, with mean scores ranging from $M = 4.57$ to $M = 4.62$. The

lowest mean was recorded for 1 and 4 ($M = 4.57$), while item 2 had the highest ($M = 4.62$), implying that although resources are generally available, there may be specific gaps in consistency across schools.

The data suggests that while resources are perceived as generally sufficient, there are slight variations in distribution or access, which may influence instructional implementation and effectiveness.

Table 16.

Descriptive Analysis of Community Support

Community Support	Mn	SD	VI
1. The local community actively participates in school activities and events.	4.64	.51	Highly Manifested
2. Parents and guardians are regularly involved in their children's education.	4.58	.57	Highly Manifested
3. The community supports the school with resources, such as donations or volunteering.	4.62	.54	Highly Manifested
4. The school maintains strong partnerships with local organizations and businesses.	4.67	.54	Highly Manifested
5. Community members collaborate with teachers to improve their educational experience.	4.59	.55	Highly Manifested
Overall Mean	4.62	.50	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/ Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

This dimension assesses the level of community involvement and collaboration with the school, which is critical for sustaining programs and creating a positive learning climate. The five items resulted in a mean score of $M = 4.62$, with $SD = 0.50$, indicating a strong and fairly consistent perception of community engagement.

The highest mean was seen in item 4 ($M = 4.67$, $SD = 0.54$), reflecting strong belief in the community's willingness to support school activities. The lowest score was recorded for item 2 ($M = 4.58$), though still within a favorable range.

These findings show that community participation is active and positively viewed, reinforcing the importance of school-community partnerships in fostering school improvement initiatives.

Table 17.

Descriptive Analysis on School Environment

Overall Composite Score	Mn	SD	VI
Resources Overall Mean	4.59	.54	Highly Manifested
Community Support Overall Mean	4.62	.50	Highly Manifested
School Environment	4.61	.49	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/ Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

The School Environment (SENV) serves as a moderating variable in this study, hypothesized to influence the strength of the relationship between the principal's innovative instructional leadership practices and overall school effectiveness. It is operationalized through two subdomains: (1) resource support and (2) community participation/support.

The overall school environment (SENV) was computed as a composite variable and received a mean of $M = 4.606$, with a standard deviation of $SD = 0.487$. This suggests that schools generally operate within a supportive environment in terms of both internal resources and external community involvement. The relatively low standard deviation indicates a consensus among respondents that their school

environments are conducive to the implementation of instructional leadership practices and the achievement of educational goals.

School Effectiveness

Table 18.

Descriptive Analysis on Student Academic Performance

Student Academic Performance	Mn	SD	VI
1. The local community actively participates in school activities and events.	4.72	.45	Highly Manifested
2. Parents and guardians are regularly involved in their children's education.	4.68	.47	Highly Manifested
3. The community supports the school with resources, such as donations or volunteering.	4.57	.60	Highly Manifested
4. The school maintains strong partnerships with local organizations and businesses.	4.73	.46	Highly Manifested
5. Community members collaborate with teachers to improve their educational experience.	4.70	.48	Highly Manifested
Overall Mean	4.57	.46	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/ Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

Student academic performance, as perceived by teachers, received a composite mean of $M = 4.56$ and a standard deviation of $SD = 0.46$. This suggests a generally high level of agreement among respondents regarding the academic achievement of learners in their respective schools.

The highest mean score was observed in D4 ($M = 4.73$, $SD = 0.46$), which may reflect positive perceptions regarding learning outcomes in specific academic areas or grade levels. The lowest was D3 ($M = 4.57$, $SD = 0.60$), indicating that some respondents perceive variability in learners' academic achievement.

These results suggest that student academic performance is perceived as strong but not without room for further enhancement, particularly in addressing learning gaps among diverse learners.

Table 19.

Descriptive Analysis of Stakeholders' Satisfaction

Stakeholders' Satisfaction	Mn	SD	VI
1. Parents and community members are actively involved in school activities.	4.65	.52	Highly Manifested
2. Teachers feel supported by the school administration.	4.64	.54	Highly Manifested
3. Students receive adequate support for their academic and personal development.	4.64	.52	Highly Manifested
4. Stakeholders' feedback is valued and considered in school improvements.	4.68	.48	Highly Manifested
5. The school promotes strong partnerships with external organizations.	4.69	.45	Highly Manifested
Overall Mean	4.66	.46	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/ Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

Stakeholders' satisfaction received a composite mean of $M = 4.66$ with $SD = 0.46$, indicating a high

level of satisfaction from key school stakeholders, such as parents, teachers, and community members. The highest agreement was recorded in item 5 ($M = 4.69$, $SD = 0.49$), potentially representing confidence in the school's responsiveness to stakeholder needs. All items scored above 4.60, reflecting consistent favorable ratings across all indicators.

These findings affirm the presence of a strong partnership between schools and their stakeholders, which is a crucial factor in sustained school effectiveness.

Table 20.

Descriptive Analysis of School Climate

School Climate	Mn	SD	VI
1. The school fosters a positive and inclusive learning environment.	4.75	.46	Highly Manifested
2. There is mutual respect among teachers, students, and staff.	4.69	.50	Highly Manifested
3. The principal promotes a culture of collaboration and shared leadership.	4.68	.49	Highly Manifested
4. The school maintains a safe and secure environment for students.	4.74	.47	Highly Manifested
5. Student discipline policies are clear and fairly implemented.	4.70	.48	Highly Manifested
Overall Mean	4.71	.43	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/ Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

The school climate dimension achieved the highest average among the three domains, with a mean of $M = 4.71$ and a standard deviation of $SD = 0.43$. This indicates a positive school atmosphere, characterized by mutual respect, support, safety, and a shared vision among school personnel.

The most favorable item was item 1 ($M = 4.75$, $SD = 0.46$), possibly reflecting a strong sense of collaboration and morale among staff. All items were tightly clustered around the mean, demonstrating consensus among teachers regarding a healthy and productive school environment.

A strong school climate enhances teaching and learning conditions and reflects the school's organizational health, directly impacting overall school effectiveness.

Table 21.

Descriptive Analysis on School Effectiveness

Overall Composite Score	Mn	SD	VI
Student Academic Performance Overall Mean	4.57	.46	Highly Manifested
Stakeholders' Satisfaction Overall Mean	4.66	.46	Highly Manifested
School Climate Overall Mean	4.71	.43	Highly Manifested
School Effectiveness	4.64	.41	Highly Manifested

Legend: 4.50-5.00 Strongly Agree/ Highly Manifested, 3.50-4.49 Agree/ Manifested, 2.5-3.49 Neutral/ Moderately Manifested, 1.50-2.49 Disagree/ Less Manifested, 1.00-1.49 Strongly Disagree/ Not Manifested,

The dependent variable, School Effectiveness (SEff), was measured across three major domains: (1) Student Academic Performance, (2) Stakeholders' Satisfaction, and (3) School Climate. Each domain consisted of five survey indicators, with composite means and standard deviations computed.

The aggregate variable School Effectiveness (SEff) received a mean of $M = 4.644$, with a standard deviation of $SD = 0.407$. These statistics confirm that the schools surveyed exhibit high levels of effectiveness across academic performance, stakeholder satisfaction, and school climate.

Table 22.
Relationship between Principals' Innovative Instructional Leadership Practices and School Effectiveness

Principals' Innovative Instructional Leadership	School Effectiveness			
	Student Academic Performance	Stakeholders' Satisfaction	School Climate	Overall, School Effectiveness
Use of Technology	.684**	.714**	.686**	.887**
Collaborative decision-making	.612**	.722**	.693**	.787**
Professional Development Initiative	.719**	.775**	.807**	.846**
Overall Principals' Innovative Instructional Leadership Practices	.715**	.782**	1.000**	.906**

** . Correlation is significant at the 0.01 level (2-tailed).

Interpretation of the R-values for analysis (Cohen, 1988)

Correlation Coefficient (r)	Strength of Relationship	Interpretation
0.90 to 1.00 (-0.90 to -1.00)	Highly Manifested positive (negative)	Indicates a very strong relationship between variables.
0.70 to 0.89 (-0.70 to -0.89)	High positive (negative)	Suggests a strong relationship.
0.50 to 0.69 (-0.50 to -0.69)	Moderate positive (negative)	Represents a moderate association between the variables.
0.30 to 0.49 (-0.30 to -0.49)	Low positive (negative)	Implies a weak relationship.
0.00 to 0.29 (-0.00 to -0.29)	None or very low positive (negative)	Suggests little to no linear relationship between variables.

A Pearson Product-Moment Correlation was conducted to examine the relationship between principals' innovative instructional leadership practices (PIILP) and school effectiveness (SEff), with sub-dimensions including student academic performance, stakeholders' satisfaction, and school climate. Results revealed statistically significant and positive correlations across all variables, with significance levels at $p < .01$.

The overall correlation between principals' innovative instructional leadership practices and school effectiveness is Highly Manifested ($r = .906$, $p < .01$), accounting for 82.1% shared variance. This implies that as principals intensify their efforts in innovative instructional leadership—by integrating technology, promoting collaborative decision-making, and investing in teacher professional development—schools experience a notable increase in effectiveness, especially in academic achievement, satisfaction among stakeholders, and positive school climate.

Among the three leadership strategies, professional development initiatives showed the strongest correlation with school climate ($r = .807$), followed by stakeholders' satisfaction ($r = .775$) and student academic performance ($r = .719$). These findings affirm prior research (e.g., Darling-Hammond et al., 2017), which highlights that when principals actively support continuous teacher learning, it leads to improved classroom practices, more engaged learners, and a culture of trust and collaboration.

This indicates that professional development is not merely a compliance measure but a transformative lever for school improvement. Schools that prioritize teacher growth through sustained and targeted learning opportunities are likely to reap benefits in terms of both

The integration of technology also showed strong correlations, particularly with overall school effectiveness (r

= .887). This supports literature on digital transformation in schools (Schleicher, 2020), which posits that when school leaders champion and model the effective use of technology, it accelerates access to resources, data-driven instruction, and personalized learning pathways. Technology use in school leadership should extend beyond infrastructure. It should support data-informed decision-making, digital lesson delivery, and stakeholder communication—critical areas for modern school management.

Collaborative Decision-Making showed consistently strong correlations with all indicators of school effectiveness ($r = .787$ with overall effectiveness). This aligns with theories of distributed leadership, where empowering teachers and stakeholders in key decisions builds a culture of shared responsibility and professional trust.

Table 23.

Relationship between Supervisory Working Alliance and School Effectiveness

Supervisory Working Alliance	School Effectiveness			
	Student Academic Performance	Stakeholders' Satisfaction	School Climate	Overall, School Effectiveness
Quality of Principal's and Teachers' Relationship	.664**	.762**	.822**	.821**
Trust	.629**	.762**	.753**	.786**
Communication	.663**	.766**	.726**	.789**
Overall supervisory working alliance	.678**	.794**	.795**	.829**

***. Correlation is significant at the 0.01 level (2-tailed).*

<i>Correlation Coefficient (r)</i>	<i>Strength of Relationship</i>	<i>Interpretation</i>
<i>0.90 to 1.00 (-0.90 to -1.00)</i>	<i>Highly Manifested positive (negative)</i>	<i>Indicates a very strong relationship between variables.</i>
<i>0.70 to 0.89 (-0.70 to -0.89)</i>	<i>High positive (negative)</i>	<i>Suggests a strong relationship.</i>
<i>0.50 to 0.69 (-0.50 to -0.69)</i>	<i>Moderate positive (negative)</i>	<i>Represents a moderate association between the variables.</i>
<i>0.30 to 0.49 (-0.30 to -0.49)</i>	<i>Low positive (negative)</i>	<i>Implies a weak relationship.</i>
<i>0.00 to 0.29 (-0.00 to -0.29)</i>	<i>None or very low positive (negative)</i>	<i>Suggests little to no linear relationship between variables.</i>

Table 23 presents the Pearson correlation coefficients examining the relationship between the dimensions of Supervisory Working Alliance (SWA) and the indicators of School Effectiveness (SEff), namely student academic performance, stakeholders' satisfaction, and school climate, including an overall school effectiveness score. The results reflect highly significant correlations at the 0.01 level across all variables, indicating robust linear relationships.

The quality of the relationship between the principal and teachers demonstrates a high correlation with overall school effectiveness ($r = .821$) and even stronger associations with school climate ($r = .822$) and stakeholders' satisfaction ($r = .762$). This suggests that a strong and positive professional rapport fosters a more productive and positive school environment, aligned with the assertions of Getzel and Guba (1957), who emphasized the importance of interpersonal dynamics in effective school leadership. It further supports the idea that when school leaders and teachers have a solid relationship, it significantly enhances both internal climate and external satisfaction levels.

Trust as a sub-variable also shows a high correlation with overall school effectiveness ($r = .786$), with the strongest linkage being with stakeholders' satisfaction ($r = .762$) and school climate ($r = .753$). This highlights the pivotal role of mutual trust in creating a culture of cooperation and credibility within the school system. Consistent with Tschannen-Moran (2014), trust serves as a foundational element that promotes collaboration,

reduces conflict, and encourages a culture conducive to learning and engagement.

Communication between principals and teachers shows strong positive correlations with school effectiveness ($r = .789$), stakeholders' satisfaction ($r = .766$), and student academic performance ($r = .663$). These findings reinforce Leithwood et al.'s (2008) assertion that transparent and effective communication is essential for guiding schools toward shared goals and improved instructional outcomes. Communication not only ensures the alignment of visions and expectations but also enhances the responsiveness of school systems to internal and external needs.

The aggregate supervisory working alliance, encompassing relationship quality, trust, and communication, shows the highest correlation with overall school effectiveness ($r = .829$), as well as consistently strong correlations across all specific indicators: school climate ($r = .795$), stakeholders' satisfaction ($r = .794$), and student academic performance ($r = .678$). These results affirm the theoretical framework of the Working Alliance Model (Bordin, 1983) as adapted to educational leadership, suggesting that when supervisory relationships are characterized by shared goals, mutual trust, and open communication, school outcomes are significantly enhanced.

Table 24.
Relationship between School Environment and School Effectiveness

School Environment	School Effectiveness			
	Student Academic Performance	Stakeholders' Satisfaction	School Climate	Overall, School Effectiveness
Resources	.721**	.724**	.709**	.754**
Community Support	.691**	.764**	.716**	.770**
Overall School Environment	.750**	.789**	.756**	.808**

***. Correlation is significant at the 0.01 level (2-tailed).*

Interpretation of the R-values for analysis (Cohen, 1988)

<i>Correlation Coefficient (r)</i>	<i>Strength of Relationship</i>	<i>Interpretation</i>
<i>0.90 to 1.00 (-0.90 to -1.00)</i>	<i>Highly Manifested positive (negative)</i>	<i>Indicates a very strong relationship between variables.</i>
<i>0.70 to 0.89 (-0.70 to -0.89)</i>	<i>High positive (negative)</i>	<i>Suggests a strong relationship.</i>
<i>0.50 to 0.69 (-0.50 to -0.69)</i>	<i>Moderate positive (negative)</i>	<i>Represents a moderate association between the variables.</i>
<i>0.30 to 0.49 (-0.30 to -0.49)</i>	<i>Low positive (negative)</i>	<i>Implies a weak relationship.</i>
<i>0.00 to 0.29 (-0.00 to -0.29)</i>	<i>None or very low positive (negative)</i>	<i>Suggests little to no linear relationship between variables.</i>

Table 24 presents the correlation coefficients describing the relationship between the school environment and school effectiveness across three key indicators: student academic performance, stakeholders' satisfaction, and school climate, including the overall effectiveness rating. The data reveals statistically significant correlations at the 0.01 level, suggesting robust associations among the variables measured.

The sub-variable resources, which include availability and adequacy of instructional materials, facilities, and learning tools, show high correlations with all components of school effectiveness. It is most strongly associated with overall school effectiveness ($r = .754$), followed closely by stakeholders' satisfaction ($r = .724$), student academic performance ($r = .721$), and school climate ($r = .709$). These results align with the findings of Earthman (2004), who emphasized that the quality of school facilities directly influences student learning outcomes and teacher performance. The correlation also supports the assertion of Picus and Odden (2010) that efficient resource allocation can enhance instructional quality and student outcomes.

The sub-variable community support likewise demonstrates high correlations, particularly with overall school effectiveness ($r = .770$) and stakeholders' satisfaction ($r = .764$), indicating that community involvement plays a significant role in shaping school outcomes. This supports Epstein's (2001) theory of overlapping spheres of influence, which posits that strong school-community partnerships yield better educational results. The association also underlines the importance of parental engagement, local stakeholder participation, and socio-cultural responsiveness in school governance, which has been shown to improve both school climate and learning engagement.

The overall school environment, combining both resources and community support, shows a strong positive correlation with overall school effectiveness ($r = .808$). Among the school effectiveness indicators, it is most highly correlated with stakeholders' satisfaction ($r = .789$), followed by school climate ($r = .756$) and student academic performance ($r = .750$). These results provide empirical support to the premise that a supportive, well-resourced, and community-connected school environment enhances not only academic performance but also stakeholder engagement and the psychosocial well-being of the school community.

Table 25.

Mediating Effect of Supervisory Working Alliance (SWA) on the Relationship between the Principals' Innovative Instructional Leadership Practices (PIILP) and School Effectiveness (SEff)

```

*****
OUTCOMEVARIABLE SupervisorWorkingAlliance(SWA)
ModelSummary
R      E-sq      HSE      F      df1      df2      p
Model  .629      .608      .072      566.776      1.000      257.000      .000

Model
      coeff      se      t      p      LLCI      ULCI
constant  .132      .191      .689      .491      -.245      .509
SEff      .977      .041      23.007      .000      .896      1.050

Standardizedcoefficients
      coeff
SchoolEffectivenessSEff      .629
*****
OUTCOMEVARIABLE Principal'InnovativeInstructionalLeadershipPractices
ModelSummary
R      E-sq      HSE      F      df1      df2      p
Model  .908      .827      .033      611.439      2.000      256.000      .000

Model
      coeff      se      t      p      LLCI      ULCI
constant  .211      .129      1.635      .103      -.043      .466
School    .841      .050      16.955      .000      .743      .939
SWA       .127      .042      3.019      .003      .044      .210

Standardizedcoefficients
      coeff
SchoolEffectivenessSEff      .789
SupervisorWorkingAlliance(SWA)      .141
***** DIRECTAND INDIRECTEFFECTSO F X ON Y *****
Directeffect of X on Y
      Effect      se      t      p      LLCI      ULCI      c'_sw
      .641      .050      16.955      .000      .743      .939      .789
Indirecteffect(s) of X on Y
      Effect      BootSE      BootLLCI      BootULCI
SWA      .124      .069      .009      .279

Completelystandardizedindirecteffects) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
SWA      .117      .064      .006      .264
***** ANALYSISINOTREAND KEEPER*****

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Legend: Supervisory Working Alliance (SWA) School Effectiveness (SEff) Principals' Innovative Instructional Leadership Practices (PIILP)

The first section of the table shows that School Effectiveness (SEff) significantly predicts Supervisory Working Alliance (SWA), with an R value of .829 and an R-squared of .688, indicating that approximately 69% of the variance in SWA can be explained by SEff. The coefficient for SEff is .977 ($p = .000$), showing a strong and statistically significant positive relationship between school effectiveness and the quality of the supervisory working alliance. The standardized coefficient (Beta) is also .829, reinforcing the strong influence of school effectiveness on supervisory alliances in the schools observed. This means that as teachers perceive their schools as more effective, they are also more likely to report stronger supervisory alliances with their school leaders. This outcome highlights the mediating relevance of school performance in shaping interpersonal trust and cooperation in educational leadership. Furthermore, the F value of 566.776 with a p-value of .000 confirms that the model is statistically significant. The lower and upper confidence intervals (.896, 1.058) for SEff further indicate the reliability and stability of the regression coefficient. No multicollinearity or model fit concerns appear in this portion of the analysis.

The second section evaluates how Principal's Innovative Instructional Leadership Practices (IILP) predict both School Effectiveness and Supervisory Working Alliance. The model summary shows a high R value of .909 and an R-squared of .827, meaning that about 83% of the variance in the dependent variables is explained by the predictors. The analysis presents the coefficients for two predictors: School Effectiveness (coeff = .841, $p = .000$) and SWA (coeff = .127, $p = .003$), both of which significantly influence the outcome. The standardized coefficients (.789 for SE and .141 for SWA) indicate that although school effectiveness remains the stronger predictor, supervisory working alliance also contributes uniquely to the model. The F value of 611.439 with a p-value of .000 further supports the robustness of this multiple regression model. This output illustrates that the principal's innovative practices significantly affect both the effectiveness of the school and the quality of the principal-teacher relationship. Notably, the non-significant constant (.211, $p = .103$) means the model does not rely on baseline values and that the effects emerge primarily through the predictors. Overall, the analysis underscores the role of effective leadership and relational trust in fostering productive school environments.

The third section of the output breaks down the direct and indirect effects of Innovative Instructional Leadership Practices (IILP) on School Effectiveness. The direct effect is strong and significant at .841 ($p = .000$), with tight confidence intervals (.743, .939), confirming the robustness of the relationship between IILP and School Effectiveness. This suggests that innovative leadership strategies employed by principals have a powerful impact on improving how effective a school is perceived to be by teachers. More importantly, the output also reveals a significant indirect effect of IILP on school effectiveness through the mediating variable Supervisory Working Alliance (SWA), with an unstandardized effect of .124 and a bootstrapped 95% confidence interval of (.009, .279). The significance of this indirect pathway, confirmed by the p-value and confidence intervals that do not cross zero, validates that part of the leadership's influence on school success is channeled through its ability to build strong supervisory relationships. The completely standardized indirect effect (.117, p significant) further confirms that SWA partially mediates the relationship between innovative leadership and school effectiveness. These results offer empirical support for the theoretical model in which leadership impacts outcomes not just directly, but also by shaping the interpersonal climate within the school.

The data strongly support a mediation model where Supervisory Working Alliance partially mediates the relationship between Principal's Innovative Instructional Leadership Practices and School Effectiveness. This mediation is both statistically significant and theoretically meaningful, indicating that the way leaders relate to and support their teachers can enhance the overall effectiveness of the school. While the direct effect remains dominant, the indirect path through SWA adds depth to our understanding of school governance. This suggests that programs aimed at improving school leadership should also include relationship-building skills, such as trust, communication, and collaborative goal-setting. Moreover, the large effect sizes and high R-squared values across the models demonstrate a well-fitting and impactful model of school leadership. Practically, this evidence can inform professional development policies and performance assessments for

school principals. It emphasizes that leadership is not only about setting direction or managing tasks, but also about cultivating relationships that empower teachers and foster a collaborative culture. In turn, such relational dynamics play a critical role in sustaining high levels of school effectiveness. These findings provide a strong rationale for integrating instructional innovation with human relational strategies in school leadership models.

Table 26.

Moderating Effect of School Environment (SEnv) on the relationship between Principals' Innovative Instructional Leadership Practices (PIILP) and School Effectiveness (SEff)

School Environment	School Effectiveness			
	Student Academic Performance	Stakeholders' Satisfaction	School Climate	Overall, School Effectiveness
Resources	.721**	.724**	.709**	.754**
Community Support	.691**	.764**	.716**	.770**
Overall School Environment	.750**	.789**	.756**	.808**

***. Correlation is significant at the 0.01 level (2-tailed).*

This part of the analysis tests if School Environmental Innovation (SEnv) plays a role in how School Effectiveness (SEff) and the Principal's innovative leadership are related. The model is very significant, since it explains 82.9% of the changes in the PIILP variable. As school effectiveness goes up, principal's innovative leadership practices also increase ($b = 0.866$, $p < .001$). It follows that SEnv significantly influences the way SEff is linked to PIILP ($b = -0.189$, $p = .001$). So, the connection between SEff and PIILP increases as school innovation in the environment increases.

The analysis of the highest-order interaction channel indicates that including SEnv explanatory power helped to explain only a tiny part of the variance, but this is strong enough to make SEnv's moderating effect meaningful. A regression result shows that SEnv by itself does not affect PIILP significantly ($b = 0.029$, $p = .470$). At the same time, its moderator function is based on major interactions with SEff. Higher levels of SEnv result in lower levels of the positive association between SEff and PIILP. So, when innovation rises, SEff is less closely linked to PIILP.

This interaction is also clearer from the conditional effects table. When innovation among firms is not high (SEnv is 1 SD below the mean), SEff has its most significant impact on PIILP ($b = 0.960$, $p < .001$, 95% CI from 0.862 to 1.058). Even at the middle level of SEnv, the effect is quite strong ($b = 0.868$, $p < .001$, CI: 0.773 to 0.963). The effect of SEff on PIILP weakens when SEnv reaches maximum (high innovation), even though it is still significant ($b = 0.794$, $p < .001$, CI: 0.680 to 0.908). What this reveals is that as the pace of school innovation goes up, the impact of school effectiveness on innovative leadership practices goes down slightly.

The School environmental lessens the link between school effectiveness and principal leadership. On the whole, the rise in PIILP is smaller as SEnv gets higher. It seems that in especially innovative schools, principals do not depend much on overall school effectiveness to support innovation, as such schools already foster creative approaches. Even the 0.7% that interaction explains is important, considering the impressive explanatory power of the entire model. Findings indicate that school settings can deeply affect leaders' actions and hint that progressive workplaces can alter the way leaders develop in schools.

4. Recommendations

Based on the findings of the study, several key recommendations are proposed to enhance school effectiveness through strengthened instructional leadership, improved supervisory relationships, and a more supportive school environment.

1. Professional development programs should be intensified to equip principals with advanced skills in using technology, facilitating shared leadership, and promoting continuous professional learning among teachers to improve school effectiveness across all performance indicators.
2. Schools should institutionalize mechanisms that build and sustain strong supervisory working alliances, such as regular coaching sessions, feedback systems, and collaborative goal-setting practices, to ensure that relational trust and communication are maximized in the school leadership process.
3. Stakeholders, including local government units and school governing councils, should prioritize investments in school resources and actively promote community engagement to create enabling environments that support and magnify the effects of instructional leadership on academic and organizational outcomes.

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