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School Heads' Leadership Styles: Impact on Organizational Innovativeness and Performance of Public Elementary Schools in the New Normal

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ABSTRACT

This study determines the impact of school heads' leadership styles on organizational innovativeness and performance of public elementary schools in Cebu City Division in the new normal. Partial Least Squares Structural Equation Modeling (PLS-SEM) was utilized to investigate the linear causal relationships among the variables. Moreover, the study found that transformational leadership of the school head is not related to the organizational innovativeness of the school. However, transactional, and instrumental leadership influence the organizational innovativeness of the schools. On one hand, participative leadership only promotes product innovation, while supportive leadership augments management innovation directly. Lastly, product innovation of the school impacts the school's performance.

KEYWORDS

leadership styles; organizational innovativeness; performance; Partial Least Squares Structural Equation Modeling (PLS-SEM).

INTRODUCTION

The COVID-19 pandemic has caused the largest disruption to education systems in human history, affecting nearly 1.6 billion learners across more than 200 countries. The closures of schools, institutions, and other learning spaces have impacted over 94% of the world's student population (Pokhrel & Chhetri, 2021). Schools have no choice but to adapt to the new normal. The new normal in education involves several key shifts: from public to personal learning spaces, from uniform teaching methods to individualized and differentiated learning, from sole teacher responsibility to active participation of household members in the learning process, and changes in how learning is evaluated (Francisco & Nuqui, 2020). To support the new normal in education, the Department of Education (DepEd) issued DepEd Order No. 012, series 2020. This order provides clear guidance to all offices, units, schools, community learning centers (CLCs), learners, parents, partners, and stakeholders (Mactal, 2020). With this DO, the school heads are expected to play a major role in its implementation. Hence, the need to have a strong, committed, and willing to adjust school head is necessary to survive and continue the delivery of education in this pandemic situation.

School heads play a crucial role during this pandemic crisis. They are expected to be highly adaptable in managing school resources to keep pace with the constantly evolving guidelines and circumstances (OECD Education and Skills Today, 2021). Their responsibilities span several areas, including human resources, financial management, overseeing the educational activities of students and teachers, maintaining external relations, ensuring the well-being of students and teachers, and directly teaching students.

Furthermore, the Australian Institute for Teaching and School Leadership Limited (2020) emphasized that school leaders have offered clarity and direction, fostered resilience, and instilled hope while maintaining their focus on achieving the best possible outcomes for their students and school communities. Altemose and Lampron (2021) also emphasized that school leaders in this new situation must learn to create trust through building transparency. The literature has explicated that to run smoothly the schools in this pandemic, the school heads should have appropriate leadership traits.

Leadership within an organization is essential for creating a vision and mission, setting and establishing objectives, and designing strategies, policies, and methods to achieve these objectives effectively and efficiently (Lase, S., Dewi, R., & Hajar, I., 2024). Additionally, leadership involves directing and coordinating efforts and organizational activities (Xu & Wang, 2008). Additionally, Al Khajeh (2018) asserted that leadership is a crucial factor in the success or failure of any organization. Leadership style refers to how leaders guide and motivate individuals to achieve organizational performance (Al Khajeh, 2018). Studies revealed that leadership styles are significantly associated with employee success (Reed, 2015), organization culture, and performance (Obiwuru et al., 2011; Klein et al., 2013; Wang et al., 2014; Al Khajeh, 2018). Maicibi (2005) also stressed that a proper style of school leadership results in a positive effect on the performance.

During the pandemic, school heads should focus on best practices, seek opportunities within the crisis, communicate, engage with others, and share leadership within the organization, as suggested by Fernandez and Shaw (2020). Additionally, Bagwell (2020) noted that the pandemic is 'quickly changing schooling and leadership' and emphasized the need for adaptive leadership, building both organizational and individual resilience, and establishing distributed leadership structures for optimal institutional response. Similarly, Netolicky (2020) highlighted several tensions school leaders face due to the pandemic, such as the need to lead both swiftly and thoughtfully, balance equity with excellence and accountability, and address both human needs and organizational goals.

The COVID-19 pandemic has taught us that change is inevitable. It served as a push for educational institutions to grow and employ platforms that had never been used before. The global pandemic has presented school administrators with an unprecedented challenge. While principals and superintendents are accustomed to handling smaller crises like hallway altercations, infrastructure problems, parental concerns, financial issues, or localized scandals involving educators, few have encountered crisis of this scale and duration. Even the urgency of more common emergencies that often lead to school closures—such as severe weather, natural disasters, or security incidents—typically subsides within days or weeks. The COVID-19 pandemic has revealed deficiencies in our educational systems and underscored the inadequacy of school leaders' readiness in crisis management.

Although numerous studies have been conducted on the impact of leadership style on the various organizational outcomes, its impact on the organizational innovativeness and organizational performance of the schools in the new normal has not been studied at length. Hence, this prompted the researchers to conduct this study that determines the impact of leadership styles of school heads on the organizational innovativeness and organizational performance of public elementary schools in Cebu City Division. Furthermore, the findings of the study will serve as a basis in crafting and implementing an action plan to further improve the performance of the schools.

CONCEPTUAL FRAMEWORK

The study is anchored on Sofi and Devanadhen's (2015) Leadership Styles on Organizational Performance model and is supported by the Path-Goal theory of House and

Mitchell (1975). The model was developed through structural equation modeling (SEM). This explains how leadership styles impact organizational performance. Sofi and Devanadhen (2015) asserted that leadership styles, including transformative leadership, transactional leadership, participative leadership, supportive leadership, and instrumental leadership, have a significant impact on organizational performance within an institution. With this, the following hypotheses were created:

Ha_1: The school head's leadership styles influence the school's organizational innovativeness and performance.

Ha_2: The school's organizational innovativeness significantly influences its organizational performance.

Conversely, according to the path-goal theory, leadership behaviors catalyze transforming the attitudes, behaviors, and motivation of individuals within the organization (Malik, Aziz, & Hassan, 2014). Furthermore, the leader engages in behaviors that complement the abilities of subordinates and compensate for any deficiencies they may have. In the path-goal theory of leadership, effective leaders give their subordinates a clear path or direction to follow to attain the common goals of the organization.

Leadership style is understood as a blend of various characteristic traits and behaviors employed by leaders in their interactions with subordinates (Mitonga-Monga & Coetzee, 2012). Additionally, Harris et al. (2007) suggested that leadership style can be described as the type of relationship utilized by an individual to unite people toward a shared goal or objective. Sofi and Devanadhen (2015) characterized modern leadership into five leadership styles such as: (1) transformative; (2) transactional; (3) participative; (4) supportive; and (5) instrumental.

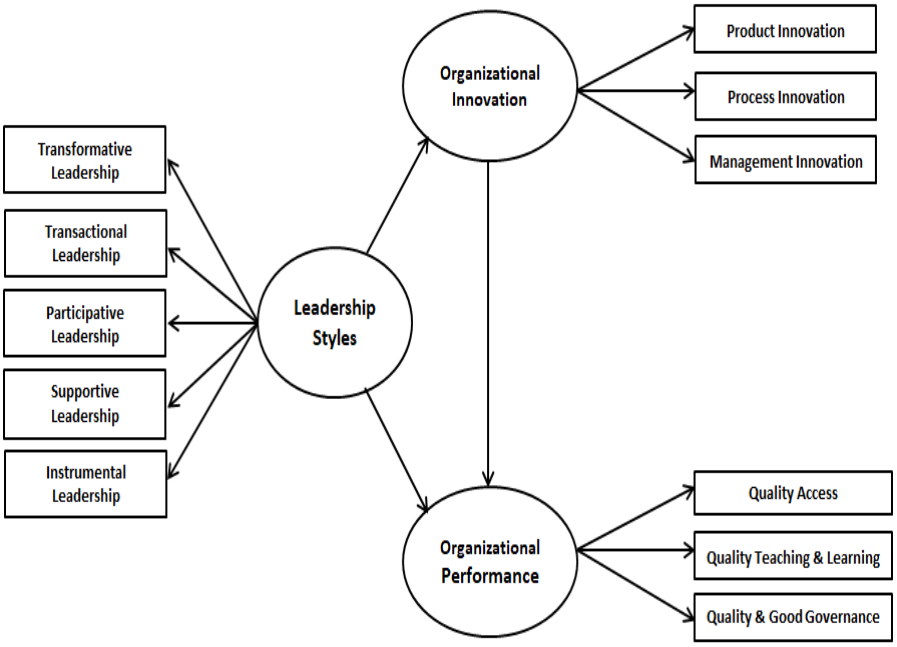

Figure 1. Leadership Styles on Organizational Innovativeness and Performance Model

Organizational performance is a multifaceted and intricate concept. It encompasses the outcomes achieved by an organization, or its tangible outputs, which can be evaluated in comparison to its intended goals and objectives (Gavrea et al., 2011). The performance of the schools is determined based on the results from the Office Performance Commitment and Review Form (OPCRF). The OPCRF results are based on the tenets: (1) quality; (2) efficiency; and (3) timeliness.

The influence of leadership styles on organizational performance is significant. These styles shape the organizational culture, which in turn impacts performance. Klein et al. (2013) demonstrated this relationship through the utilization of the four-factor theory of leadership. Organizational culture and performance are interconnected with the type of leadership style employed (Klein et al., 2013).

The association between the leadership styles of the school heads on the organizational innovativeness and organizational performance of the schools will be determined. Moreover, the researchers aim to create a training program tailored to enhance the organizational performance of schools, utilizing the insights gleaned from the study's findings.

RESEARCH METHODS

Design. The study utilized the correlational research design. Bhandari (2021) emphasized that correlational research design primarily explores the connection between variables without the researcher exerting control or manipulation over any of them. In the study, the correlation between the school heads' leadership styles on the organizational innovativeness and organizational performance of the school will be established.

Environment. The research was conducted in the Division of Cebu City. The Division of Cebu City was divided into two (2) districts namely the North and South districts. The North district has eight (8) sub-districts and 31 public elementary schools. On the other hand, the south district also has eight (8) sub-districts and 30 public elementary schools.

Respondents. The study's respondents comprised 200 school administrators, encompassing principals, assistant principals, head teachers, and master teachers from public elementary schools within the Division of Cebu City. Eighty-six percent (86%) of the respondents were female with an average age of 50.19 years old and many of them (46.50%) were bachelor's degree holders. These respondents were selected using stratified random sampling (Hayes, 2021). Also, the selection process adheres to the inclusion criteria such as: (a) the school head/assistant principal/head teacher/master teacher must be assigned to the school for not less than one (1) Academic Year; (b) voluntarily participate in the study regardless of sex; and (c) must be physically, emotionally, and mentally healthy. In addition, each respondent was provided with informed consent before participating in the study.

Table 1. Distribution of the Respondents

Respondents	North	South	Total	Percentage
Principal	20	15	35	17.50%
Assistant Principal	2	4	6	3.00%
Head Teacher	3	6	9	4.50%
Master Teacher	80	70	150	75%

Table 1 shows the distribution of respondents and presents that 17.50% of the respondents are ranked as Principal (n=35), 3% are ranked as Assistant Principal (n=6), 4.5% are ranked as Head Teacher (n=9), and 75% are ranked as Master Teacher (n=150).

Instrument. The study used three (3) instruments; one (1) for the leadership styles with the profiling questions; the second is the instrument on organizational innovativeness; and the other one is the results from the OPCRF to determine the school performance.

The leadership style questionnaire was adapted questionnaire from Sofi and Devanadhen (2015) in their study titled "Impact of Leadership Styles on Organizational Performance: An Empirical Assessment of Banking Sector in Jammu and Kashmir" published in the Journal of Business and Management.

The questionnaire has two parts: Part 1 contains the profiling questions and Part 2 contains the leadership style questionnaire. The leadership style questionnaire has 38 indicators which are categorized based on the leadership styles namely: (a) Transformational Leadership has 17 indicators; (b) Transactional leadership has 10 indicators; (c) Participative leadership has 4 indicators; (d) Supportive leadership has 3 indicators; and (5) Instrumental leadership has 4 indicators. In addition, the respondents may choose from five options based on their level of agreement.

The organizational innovativeness of the selected public elementary school was obtained using the tool crafted by Liao et al. (2007) as reflected in their study titled "Knowledge sharing, absorptive capacity, and innovation capability: an empirical study of Taiwan's knowledge-intensive industries". The instrument consists of three (3) dimensions of innovation such as (1) product, (2) process, and (3) management.

The organizational performance of the selected public elementary schools was determined using the annual OPCRF reports of the school heads. The consolidated OPCRF results will be obtained from the office of the Cebu City Division. The performance of the schools may vary from outstanding to poor performance.

Data Collection. The researchers followed step by step process in conducting the data gathering: First, permission/approval from the authority will be obtained such as (a) the Dean's approval of the Graduate School; (b) permission from the Superintendent of Cebu City Division; and (c) consent from the respondents.

After all the approvals from the authority have been granted, the researcher scheduled the conduct of the survey. Each of the respondents was provided with the leadership style questionnaire and was asked after three (3) days of receipt. If respondents wish to extend the time or duration of answering the questionnaire, the researcher will extend it willingly. After each of the respondents returned the answered survey questionnaires, the researchers gave them tokens of appreciation.

After the data collection, the researchers tallied, organized, and analyzed the data. The tallied data was kept in the personal computer of the researchers and was made sure that only authorized individuals could access the data. In addition, the answered survey questionnaires were kept in the researchers' cabinets. For online responses, the answers were saved in the drive of the researchers which were encrypted. Lastly, the raw data and the answered questionnaires were destroyed after one (1) year of safekeeping.

Statistical Treatment. After the thorough data collection process, the researchers utilized the following statistical tools: (a) frequency and percentage; (b) Mean; and (3) Pearson's Product Moment Correlation Coefficient.

The frequency and percentage were used in determining the distribution of profiles of the respondents about their sex, age, highest educational attainment, rank, and number of years in service.

The mean was utilized in examining the leadership styles of the school heads and the organizational performance of the selected public elementary schools.

The researchers utilized partial least squares structural equation modeling (PLS-SEM) to gauge and analyze the connections between observed and latent variables. PLS-SEM assesses linear causal relationships among variables (Beran & Violato, 2010).

RESULTS AND DISCUSSION

Leadership Styles. Leaders adjust their leadership approaches to suit the needs and circumstances of the institution (Hussin & Waheed, 2016; Lazaridou & Beka, 2014; Mulford, 2008). Strong leadership forms the cornerstone of exceptional schools. Research indicates that effective leadership is pivotal in fostering a learning environment where each

student receives access to high-quality education. Leadership is widely recognized as among the most critical factors influencing school achievement and distinction (Crum et al., 2009; Urick, 2016). Virtually all aspects of school performance, whether directly or indirectly, hinge on it (Mulford, 2008).

Table 2 presents the leadership styles of the respondents. These include the types of leadership such as transformational, transactional, participative, supportive, and instrumental.

Table 2. Leadership Styles of the School Heads

Leadership Styles	Factor Mean	Verbal Description
Transformative	4.37	Highly Evident
Transactional	3.92	Evident
Participative	4.56	Highly Evident
Supportive	4.62	Highly Evident
Instrumental	4.46	Highly Evident
Grand Mean	4.39	Highly Evident

Transformational Leadership. The respondents generally perceived that the attributes of a transformational leader are highly evident in them. It is also noted that as school head it is very important for him/her to establish with his/her subordinates, the teaching and non-teaching personnel, a strong sense of purpose and a common vision or goal for the organization or school. He, as the school leader, must ensure that all his subordinates have a sense of accountability and a feeling of being part of the organization. Establishing a common goal for the organization gives the community a sense of direction. The direction they opt to follow and the vision they want to achieve.

Transactional Leadership. The respondents generally perceived that the attributes of a transactional leader are evident in them. It is also noted that school heads believed that expressing one's satisfaction to the subordinates after the completion of the tasks and having met the expected output is relevant to the organization. Giving complimentary remarks such as praises will boost the confidence of the subordinates and their sense of purpose and eventually motivate them to strive well in their responsibilities.

Participative Leadership. The respondents generally perceived that the attributes of a participative leader are highly evident in them. It is also noted that they believed that trusting one's subordinates is essential. As you build trust in the people around you, it makes you more confident that everything will be okay. Trusting the people around you provides you with peace of mind. As an organization, trust in every member is necessary, especially in performing school tasks that involve the contribution of everyone.

Supportive Leadership. The respondents generally perceived that the attributes of a supportive leader are highly evident in them. It is also noted that school heads claimed that they helped their subordinates in smooth functions of work. They helped the subordinates to successfully perform the tasks provided to them. Technical assistance is very important to those subordinates experiencing challenges and concerns in the performance of their duties and responsibilities.

Instrumental Leadership. The respondents generally perceived that the attributes of an instrumental leader are highly evident in them. It is also noted that they believed that they must mentor their subordinates to maintain a definite standard of performance. Hence, provide a high rate of completion for all the tasks given. Mentoring subordinates, especially those who encounter challenges is an excellent practice (Akbulut et al., 2015). Indeed, as school heads and master teachers, it is incumbent upon them to fulfill their duties and obligations by offering technical support through activities such as demonstration teaching,

mentoring, coaching, classroom monitoring, and observation. They also play roles in organizing, leading, and serving as trainers or facilitators in teacher quality circles and learning action cells.

Moreover, one of the respondents believed that the mentoring and coaching activities they conducted were helpful for the teachers, especially in organizing their tasks and in performing their respective functions. Lee et al. (2020) indicated the benefits of coaching and mentoring sessions which include better management skills, improved productivity, increased confidence, heightened self-awareness, and greater well-being.

Organizational Innovativeness. The innovativeness of schools has emerged as a pivotal factor determining the long-term success of educational systems in their ability to adapt to societal shifts. Aragón-Correa et al. (2007) highlighted that leadership stands as one of the foremost influences on organizational innovation. For an organization to foster innovation, it necessitates a leader possessing a range of leadership traits, including adeptness as a designer, master, mentor, challenger, and integrator, alongside maintaining a clear and sustained shared vision. Such a leader must actively support and promote innovation and individual initiative by cultivating competencies focused on learning, fostering open communication to minimize the costs of internal change, and fostering cohesion within teamwork.

Table 3 presents the organizational innovativeness level of the respondents. Organizational innovativeness includes the following dimensions of innovation: (1) product; (2) process; and (3) management.

Table 3. Organizational Innovativeness of the Schools

Category	Factor Mean	Verbal Description
Product Innovation	3.69	Very Satisfactory
Process Innovation	3.95	Very Satisfactory
Management Innovation	4.10	Very Satisfactory
Grand Mean	3.91	Very Satisfactory

Product Innovation. The results reveal that the schools have performed very satisfactorily in the aspects of product innovation. The respondents claimed that their school often creates new programs and projects accepted by the community. This explains that the school leaders did greatly consider the suggestions of their stakeholders, programs and projects were crafted or developed to help their stakeholders and to continuously improve as an institution.

Process Innovation. The results reveal that the schools have performed very satisfactorily in the aspects of process innovation. The respondents claimed that they have developed more efficient processes or operation procedures. This is to ensure that basic education services are smoothly delivered and deployed to the stakeholders. This new process and procedure are a clear manifestation of continuous quality improvement of the school. This further indicates that the school leaders are continuously working hand in hand with the subordinates to come up with new ways to better serve their clientele, the stakeholders.

Management Innovation. The results reveal that the schools have performed very satisfactorily in the aspects of management innovation. The respondents claimed that they often adopt new leadership approaches to lead all their teaching and non-teaching personnel toward task completion. This signifies the characteristics of the school heads of being flexible, the ability to adjust and adapt to the existing conditions of their people yet continuously mentoring them for the improvement of their competencies. Besides, one of the respondents stressed that she needed to change her leadership approach after studying

and knowing the characteristics and potentials of his people or subordinates for her to effectively influence and inspire them to do their respective tasks.

Organizational Performance. The significance of the role of school heads within the school organization cannot be overstated. School heads hold a distinctive position in school organizations, often referred to as school managers. Their responsibilities encompass providing leadership, coordinating human and material resources, and ensuring the attainment of organizational objectives. Within the school system, principals, as administrators, guide and inspire their teachers toward accomplishing the goals and objectives of the institution. Carag (2020) emphasized that the primary objective of a school is to foster and facilitate the learning journey. Consequently, school administrators should strive to shape the behavior of teachers to align with the school's objectives. It is expected that school principals demonstrate leadership qualities to enhance the teaching and learning environment. School administrators play a pivotal role in the organization due to their leadership quality, which significantly impacts the school's performance. The way school administrators guide their teachers is contingent upon the leadership styles they adopt and the behavior of their subordinates.

Table 4 presents the organizational performance of the respondents based on the results from the OPCRF. The OPCRF covers the following areas: (1) quality access; (2) quality teaching and learning; and (3) quality and good governance.

Table 4. Organizational Performance of the Schools Based on the OPCRF

Areas	Factor Mean	Verbal Description
Quality Access	4.34	Very Satisfactory
Quality Teaching and Learning	3.98	Very Satisfactory
Quality and Good Governance	4.29	Very Satisfactory
Grand Mean	4.20	Very Satisfactory

Quality Access. The results reveal that schools generally performed very satisfactorily in this area. Yet performed outstandingly in physical facilities and management and support services and merit system. This implies that the schools performed well in relation to quality access.

Quality Teaching and Learning. The results reveal that schools generally performed very satisfactorily in this area. In fact, performed very satisfactorily in curriculum and instruction, teacher's training, and development, and learning resources management. However, performed satisfactorily in research and innovation. This implies that the schools performed well on the area, quality teaching and learning.

Quality and Good Governance. The results reveal that schools generally performed very satisfactorily in this area. They performed very satisfactorily in resource generation mobilization and accountability, fiscal management, and teachers' welfare and development. However, performed outstandingly in data management. This implies that the schools performed well in relation to quality and good governance.

Measurement Model Evaluation. The measurement model analysis is the segment of the model that scrutinizes the connection between latent variables and their indicators. On the other hand, the structural model focuses on the relationships between latent variables (Maslowsky et al., 2015). In the study, the researcher followed the steps in performing the structural equation modeling: (1) establish the reliability of constructs, (2) determine convergent validity, and (3) determine discriminant validity.

Table 5. Indicator Loadings, Convergent Validity, and Reliability Tests

Constructs	Indicator Loading	p-values associated with each loading	Average Variance Extracted (AVE)	Composite Reliability	Cronbach's Alpha
Transformational Leadership			**0.608**	**0.961**	**0.956**
TL1	0.625	<0.001			
TL2	0.744	<0.001			
TL3	0.694	<0.001			
TL4	0.733	<0.001			
TL5	0.767	<0.001			
TL6	0.809	<0.001			
TL7	0.828	<0.001			
TL8	0.788	<0.001			
TL9	0.832	<0.001			
TL10	0.772	<0.001			
TL11	0.805	<0.001			
TL12	0.821	<0.001			
TL13	0.858	<0.001			
TL14	0.814	<0.001			
TL15	0.723	<0.001			
TL17	0.826	<0.001			
Transactional Leadership			**0.744**	**0.953**	**0.942**
TsacL4	0.807	<0.001			
TsacL5	0.893	<0.001			
TsacL6	0.902	<0.001			
TsacL7	0.875	<0.001			
TsacL8	0.873	<0.001			
TsacL9	0.870	<0.001			
TsacL10	0.814	<0.001			
Participative Leadership			**0.783**	**0.915**	**0.860**
PL2	0.892	<0.001			
PL3	0.922	<0.001			
PL4	0.838	<0.001			
Supportive Leadership			**0.865**	**0.950**	**0.922**
SL1	0.920	<0.001			
SL2	0.941	<0.001			
SL3	0.929	<0.001			
Instrumental Leadership			**0.843**	**0.941**	**0.906**
IL1	0.855	<0.001			
IL3	0.942	<0.001			
IL4	0.954	<0.001			
Product Innovation			**0.851**	**0.892**	**0.854**
PInnv1	0.649	<0.001			
PInnv2	0.722	<0.001			
PInnv3	0.727	<0.001			
PInnv4	0.864	<0.001			
PInnv5	0.788	<0.001			
PInnv6	0.804	<0.001			
Process Innovation			**0.646**	**0.900**	**0.858**
PcsInv1	0.747	<0.001			
PcsInv2	0.869	<0.001			
PcsInv3	0.910	<0.001			
PcsInv4	0.837	<0.001			
PcsInv5	0.622	<0.001			
Management Innovation			**0.686**	**0.929**	**0.907**
MnInv2	0.779	<0.001			
MnInv3	0.740	<0.001			
MnInv4	0.887	<0.001			
MnInv5	0.862	<0.001			
MnInv6	0.812	<0.001			
MnInv7	0.880	<0.001			

School Performance Indicators			**0.613**	**0.887**	**0.838**
QA2	0.615	<0.001			
QA3	0.870	<0.001			
QTL2	0.852	<0.001			
QTL3	0.807	<0.001			
QGG3	0.744	<0.001			

In terms of the indicators for transformational leadership, the instrument demonstrates reliability, with a Cronbach's Alpha value of 0.956, surpassing the acceptable threshold of 0.7. Additionally, TL1-15 and TL17 exhibit significant indicator loadings with p-values < .05 and an AVE value of 0.608, exceeding 0.05.

In terms of the indicators for transactional leadership, the instrument demonstrates reliability, with a Cronbach's Alpha value of 0.942, exceeding the acceptable threshold of 0.7. Additionally, TsacL4-10 exhibit significant indicator loadings with p-values < .05 and an AVE value of 0.744, surpassing 0.05.

In terms of the indicators for participative leadership, the instrument demonstrates reliability, with a Cronbach's Alpha value of 0.860, surpassing the acceptable threshold of 0.7. Additionally, PL2-4 exhibit significant indicator loadings with p-values < .05 and an AVE value of 0.783, exceeding 0.05.

In terms of the indicators for supportive leadership, the instrument demonstrates reliability, with a Cronbach's Alpha value of 0.922, exceeding the acceptable threshold of 0.7. Additionally, SL1-3 exhibit significant indicator loadings with p-values < .05 and an AVE value of 0.865, surpassing 0.05.

In terms of the indicators for instrumental leadership, the instrument demonstrates reliability, with a Cronbach's Alpha value of 0.906, surpassing the acceptable threshold of 0.7. Additionally, IL1 & IL3-4 exhibit significant indicator loadings with p-values < .05 and an AVE value of 0.843, exceeding 0.05.

In terms of the indicators for product innovation, the instrument demonstrates reliability, with a Cronbach's Alpha value of 0.854, surpassing the acceptable threshold of 0.7. Additionally, PInnv1-6 exhibit significant indicator loadings with p-values < .05 and an AVE value of 0.851, exceeding 0.05.

In terms of the indicators for process innovation, the instrument demonstrates reliability, with a Cronbach's Alpha value of 0.858, surpassing the acceptable threshold of 0.7. Additionally, PcsInv 1-5 exhibit significant indicator loadings with p-values < .05 and an AVE value of 0.646, exceeding 0.05.

In terms of the indicators for management innovation, the instrument demonstrates reliability, with a Cronbach's Alpha value of 0.907, exceeding the acceptable threshold of 0.7. Additionally, MnIn2-7 exhibit significant indicator loadings with p-values < .05 and an AVE value of 0.686, surpassing 0.05.

In terms of the school performance indicators, the instrument demonstrates reliability, with a Cronbach's Alpha value of 0.838, surpassing the acceptable threshold of 0.7. Additionally, QA2-3, QTL2-3, & QGG3 exhibit significant indicator loadings with p-values < .05 and an AVE value of 0.613, exceeding 0.05.

Table 6. Discriminant Validity using the Forknell-Larcker Criterion

Constructs	TrsformL	TransacL	PartL	SuppL	InstL	PrdINN	PrcssINN	ManINN	SPerf
TrsformL	(0.780)	0.097	0.044	0.030	0.054	-0.058	0.007	-0.153	0.072
PartL	0.097	(0.863)	0.063	0.106	0.016	0.072	-0.007	0.075	0.050
SuppL	0.044	0.063	(0.885)	0.713	0.535	-0.059	0.048	0.119	0.047
InsL	0.030	0.106	0.713	(0.930)	0.505	-0.064	-0.016	0.103	0.020
PrdINN	0.054	0.016	0.535	0.505	(0.918)	0.045	0.117	0.133	-0.059

PrcNN	-0.058	0.072	-0.059	-0.064	0.045	(0.762)	0.609	0.517	0.139
ManINN	0.007	-0.007	0.048	-0.016	0.117	0.609	(0.804)	0.625	0.104
SPerf	-0.153	0.075	0.119	0.103	0.133	0.517	0.625	(0.828)	0.023

Note: Diagonal values are the squareroot of AVE. TrsformL -Transformational Leadership; TransacL – Transactional Leadership; PartL – Participative Leadership; SuppL – Supportive Leadership; InstL – Instrumental Leadership; PrdINN – Product Innovation; PrcINN – Process Innovation; ManINN – Management Innovation; SPerf – School Performance.

Table 6 presents the discriminant validity using the Fornell and Larcker Criterion based on square roots of the Average Variance Extracted (AVEs) in the correlation's matrix. The diagonals are the square roots of the AVE and substantiate that criterion using the heterotrait-monotrait (HTMT) ratios. The results reveal that all the HTMT ratios are significantly less than 1.

Table *7.* Discriminant Validity using HTMT Ratio of Correlations

Constructs	TrsformL	TransacL	PartL	SuppL	InstL	PrdINN	PrcssINN	ManINN
TrsformL	0.171							
PartL	0.085	0.081						
SuppL	0.065	0.112	0.799					
InsL	0.090	0.058	0.608	0.556				
PrdINN	0.096	0.102	0.179	0.171	0.109			
PrcNN	0.088	0.079	0.090	0.041	0.131	0.714		
ManINN	0.166	0.098	0.141	0.112	0.146	0.590	0.706	
SPerf	0.098	0.072	0.068	0.038	0.076	0.173	0.136	0.059

Table 7 shows the discriminant validity using heterotrait-monotrait (HTMT) ratio of correlations. The results reveal that all HTMT ratios are significant wherein $p<0.05$ (one-tailed), level of significance.

Structural Model Evaluation. Structural equation modeling (SEM) comprises statistical methods utilized for gauging and scrutinizing connections between observed and latent variables. It explores linear causal associations among these variables (Beran & Violato, 2010). In the study, the researchers utilized the PLS-SEM. PLS-SEM estimates partial model structures by combining principal components analysis with ordinary least squares regressions (Hair et al., 2019).

Assessing the structural model in PLS-SEM using WarpPLS involves six (6) related steps namely: (1) address the problem of collinearity through acceptable VIF values; (2) determine the path coefficients; (3) determine the coefficient of determination; (4) determine the impact magnitude using the effect size; (5) determine the predictive relevance; and (6) determine Model fit and quality indices.

Table 8. Coefficient of Determination, Full Collinearity VIF, Q2

Endogenous Constructs	**R^2**	**Full Collinearity VIF**	**Q^2**
Product Innovation	0.064	1.745	0.072
Process Innovation	0.067	2.106	0.105
Management Innovation	0.081	1.872	0.162
School Performance	0.034	1.051	0.043

Table 8 shows the coefficient of determination (R^2), full collinearity VIF, and Stone-Geisser,s Value (Q^2). The results reveal that the full collinearity VIF values fall in the acceptable level since these are all less than 5. Moreover, the R^2 values are found to be negligible which means it is far from the 1.

Table 9. Hypothesis Testing Results

Hypothesis	Path	B	P-value	f^2	Decision
Direct Effect					
H1	TrsformL → PrdINN	-0.072	0.152	0.070	Not Supported
H2	TrsformL → PrcssINN	0.025	0.359	0.070	Not Supported
H3	TrsformL → ManINN	-0.110	0.058	0.069	Not Supported
H4	TransacL→ PrdINN	0.122	0.039	0.069	Supported
H5	TransacL → PrcssINN	0.126	0.035	0.069	Supported
H6	TransacL → ManINN	0.170	0.007	0.068	Supported
H7	PartL→ PrdINN	-0.146	0.017	0.069	Supported
H8	PartL → PrcssINN	0.095	0.086	0.069	Not Supported
H9	PartL → ManINN	0.096	0.084	0.069	Not Supported
H10	SuppL→ PrdINN	-0.029	0.342	0.070	Not Supported
H11	SuppL → PrcssINN	0.022	0.378	0.070	Not Supported
H12	SuppL → ManINN	-0.134	0.027	0.069	Supported
H13	InstL→ PrdINN	0.098	0.081	0.069	Not Supported
H14	InstL → PrcssINN	0.231	<0.001	0.068	Supported
H15	InstL→ ManINN	0.175	0.006	0.068	Supported
H16	PrdINN →SPerf	0.162	0.010	0.069	Supported
H17	PrcssINN → SPerf	0.041	0.280	0.070	Not Supported
H18	ManINN → SPerf	-0.020	0.387	0.070	Not Supported

Note: TrsformL -Transformational Leadership; TransacL – Transactional Leadership; PartL – Participative Leadership; SuppL – Supportive Leadership; InstL – Instrumental Leadership; PrdINN – Product Innovation; PrcINN – Process Innovation; ManINN – Management Innovation; SPerf – School Performance.

The results reveal that transformational leadership does not affect principals' product innovation, process innovation, or management innovation (innovativeness), transactional and instrumental leadership both have a direct effect on all three types of principal innovation (innovativeness) in their schools. Moreover, participative leadership promotes (influences) solely production innovation, but Supportive Leadership augments management innovation directly. Additionally, we have evidence that only product innovation has a direct effect on school achievement.

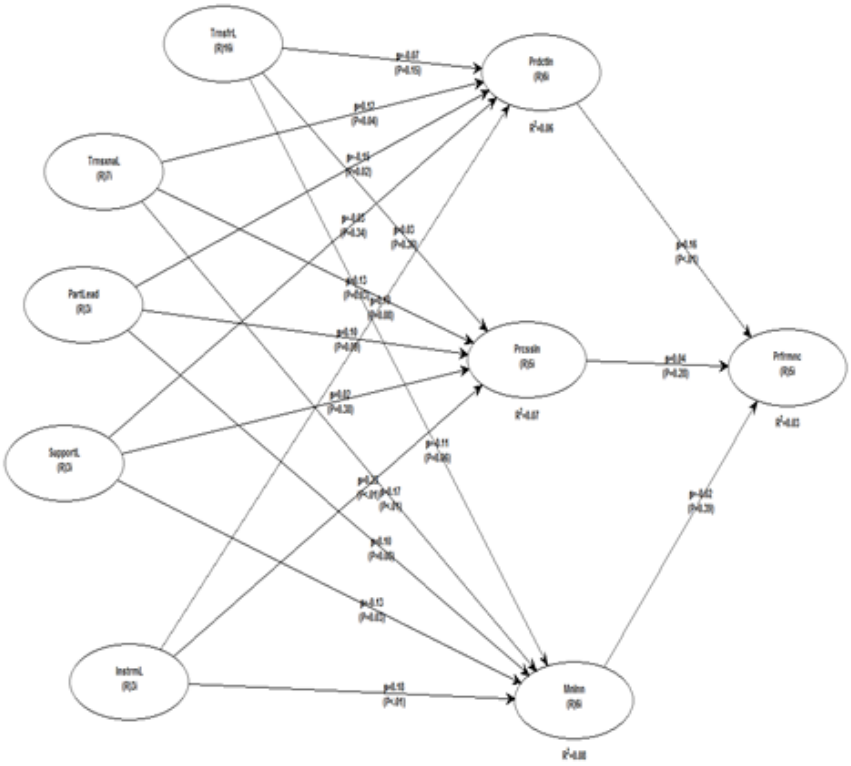

Figure 2. Structural Model with Beta Coefficients

Table 10 shows the model fit and quality indices. The results reveal that the average path coefficient is significant at α 0.05; average adjusted R-squares (AARS) is not significant at α 0.05; average block VIF (AVIF) is within the acceptable level; average collinearity VIF (AFVIF) is within the acceptable level; Tenenhaus GOF is small; Sympson's Paradox Ratio (SPR) is within the acceptable level; R-squared contribution Ratio (RSCR) is not within the acceptable level; statistical suppression ratio (SSR) is within the acceptable level; and Nonlinear Bivariate Causality Direction Ratio is within the acceptable level.

Table 10. Model Fit and Quality Indices

Index Name	Values	Criterion (Kock, 2020)
Average Path Coefficient (APC)	0.104, p<0.034	p <0.05
Average R-Squared (ARS)	0.062, p<0.094	p <0.05
Average Adjusted R-Squared (AARS)	0.040, p<0.142	p<0.05
Average block VIF (AVIF)	1.463	Acceptable if <= 5, ideally <=3.3
Average Collinearity VIF (AFVIF)	1.650	Acceptable if <= 5, ideally <=3.3
Tenenhaus GOF	0.209	Small >=0.1; medium >=0.25; large >=0.36
Sympson's Paradox Ratio (SPR)	0.778	Acceptable if >=0.7, ideally =1
R-Squared contribution Ratio (RSCR)	0.839	Acceptable if >=0.9, ideally = 1
Statistical Suppression Ratio (SSR)	0.944	Acceptable if >=0.7
Nonlinear Bivariate Causality Direction Ratio	0.778	Acceptable if >=0.7

CONCLUSION

After a thorough analysis of the data the researchers safely conclude that the transformational leadership of the school head is not related to the organizational innovativeness of the school. However, transactional and instrumental leadership influences the organizational innovativeness of the schools. On one hand, participative leadership only promotes product innovation, on the other hand, supportive leadership augments management innovation directly. In addition, product innovation of the school impacts the school's performance.

Lastly, the study confirms the model of Sofi and Devanadhen's (2015) "Leadership Style on Organizational Performance" that states leadership style (i.e. transformative leadership, transactional leadership, participative leadership, supportive leadership, & instrumental leadership) influences organizational performance. Furthermore, supported by the Path-Goal theory of House and Mitchell (1996) which explains that leadership behaviors, as a source of influence, can transform the attitude, behavior, and motivation of the individuals in the organization.

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