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Mediating Effect of Organizational Climate on the Relationship Between Principals' Personality Traits and Informational Leadership in Kindergartens in Anshan City, Liaoning Province

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Abstract

This study aimed: (1) to develop a structural equation model (SEM) explaining the relationships among principals' personality traits, organizational climate, and informational leadership in kindergartens in Anshan City, Liaoning Province; and (2) to examine both the direct and indirect effects of principals' personality traits on informational leadership, with particular emphasis on the mediating role of organizational climate. A mixed-methods research design was employed. The target population consisted of 2,091 kindergarten principals in Anshan City. A stratified random sampling technique was used, and a sample size of 325 was determined using a statistical power analysis program. Data were collected through a five-point Likert-scale questionnaire. Descriptive statistics, confirmatory factor analysis (CFA), and structural equation modeling (SEM) were conducted using statistical software. The findings revealed that: (1) the proposed mediating model demonstrated an acceptable fit with the empirical data ($\chi^2 = 150.098$, df = 87, GFI = 0.942, AGFI = 0.920, CFI = 0.971, TLI = 0.965, RMR = 0.037, RMSEA = 0.047); and (2) principals' personality traits had significant direct effects on both organizational climate and informational leadership. Organizational climate also exerted a significant direct effect on informational leadership. Additionally, personality traits influenced informational leadership indirectly through organizational climate, confirming its mediating role.

Keywords: Personality Traits, Organizational Climate, Informational Leadership, Kindergarten Principals

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Introduction

In the 21st century, the rapid advancement of information and communication technologies (ICT) has reshaped educational systems worldwide, fundamentally transforming teaching, learning, and school administration. (Schneider et al., 2011). For kindergarten principals, the ability to effectively manage, integrate, and utilize ICT to improve school operations and learning outcomes has become a core leadership competency. (Schneider et al., 2017). Key dimensions of informational leadership include information literacy, digital resource management, and strategic planning for ICT implementation. (Schneider, Reichers, 2016).

Among the factors influencing principals' informational leadership, personality traits play a central role. Stogdill, R. M. (1974). According to the Big Five personality framework (Zhang, 2007). Traits such as Openness to Experience and Conscientiousness are strongly associated with innovation, adaptability (Zhou, George, 2019), and effective technology-related decision-making. (Van Vianen et al., 2016). Principals who are open to new ideas and demonstrate high levels of responsibility are more likely to adopt ICT tools, support digital transformation, and lead teachers through technological changes. (Wang, Wang, 2019).

In addition, the organizational climate of a kindergarten characterized by collegiality, trust, support, and shared goals significantly shapes how ICT initiatives are implemented. (Wu, 2018). A positive climate fosters collaboration, reduces resistance to technological change, and enhances principals' ICT leadership effectiveness. Conversely, (Zhao, 2018). A restrictive or unsupportive climate can impede efforts to integrate technology into teaching and school management. (Worapongpat, 2025a).

Despite the recognized importance of ICT leadership in early childhood education (Yan, 2018). Empirical studies examining the psychological and organizational determinants of principals' informational leadership, especially in the Chinese context, remain limited. Anshan City, located in Liaoning Province (Yukl, 2010). has recently emphasized digital transformation in education, making it a relevant setting for investigating these relationships. (Zhang, 2017).

Therefore, this research investigates how kindergarten principals' personality traits influence their informational leadership, with a specific focus on the mediating role of organizational climate. The study aims to generate insights that can inform leadership development programs and enhance ICT integration in kindergartens, thereby supporting ongoing educational reform in China.

Questions

1 What structural equation model (SEM) best explains the relationships among principals' personality traits, organizational climate, and informational leadership in kindergartens in Anshan City, Liaoning Province?

2. To what extent do principals' personality traits influence their informational leadership directly and indirectly through the mediating role of organizational climate?

Objectives

1. To develop a structural equation model that explains the relationships among principals' personality traits, organizational climate, and informational leadership in kindergartens in Anshan City, Liaoning Province.

2. To examine the direct and indirect effects of principals' personality traits on their informational leadership, with a specific focus on the mediating effect of organizational climate.

Hypothesis

H1: Principals' personality traits have a positive direct effect on their informational leadership, and a positive indirect effect on the organizational climate.

H2: Organizational climate has a positive direct effect on principals' informational leadership.

H3: Principals' personality traits have a positive indirect effect on their informational leadership through the organizational climate.

Literature Reviews

Personality Traits (PT)

Theoretical Foundation: The Big Five Personality Traits Model (Worapongpat, 2025b). The Big Five model classifies personality into five core dimensions: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. These traits represent stable patterns of thought, emotion, and behavior. Extensive research indicates that personality traits strongly predict leadership behaviors and effectiveness (Worapongpat, 2025c). In the context of school leadership, traits such as Openness and Conscientiousness are particularly relevant, as they support innovation, adaptability, responsible decision-making, and effective integration of ICT, key components of informational leadership.

Organizational Climate (OC)

Theoretical Foundation: Organizational Climate Theory (Worapongpat, 2025d). Organizational climate refers to the shared perceptions among members of an organization regarding its structures, policies, practices, and operational procedures. According to Schneider (Worapongpat, 2025e) and Zhang (2016), leaders play a critical role in shaping this climate. A positive climate fosters collaboration, trust, and innovation, which influence employee attitudes, behavior, and performance. In educational settings, a supportive organizational climate can enhance teachers' willingness to adopt digital tools and promote an environment conducive to effective ICT implementation, thereby strengthening informational leadership.

Informational Leadership (IL)

Theoretical Foundation: Transformational Leadership Theory (Worapongpat, 2025f). Transformational leadership theory explains how leaders inspire and motivate followers, foster innovation, and guide organizational change. (Worapongphat, 2025g). Informational leadership builds on this perspective by focusing specifically on how leaders leverage information and communication technologies (ICT) to facilitate teaching, learning, and school administration. (Worapongpat, Boonmee, 2025).

Informational leaders demonstrate competencies such as information literacy, digital resource management, and strategic ICT planning, enabling them to strengthen technology-enhanced learning environments and improve school performance. Transformational leadership behaviors, such as vision building and intellectual stimulation, closely align with the demands of leading ICT integration in kindergartens.

Methodology

Research Method

This study employed a mixed-methods research design, integrating both quantitative and qualitative approaches to obtain a comprehensive understanding of the relationships among principals' personality traits, organizational climate, and informational leadership. The quantitative component was used to validate the structural equation model, while the qualitative component supported questionnaire development and contextual interpretation.

Population and Sample

The population consisted of 697 kindergartens in Anshan City, Liaoning Province. Each kindergarten operates under a three-principal management structure comprising an overall principal, a teaching principal, and a childcare principal, resulting in a total population of 2,091 principals.

A stratified random sampling technique was employed to ensure that principals from different types of kindergartens (e.g., public, private, urban, suburban) were proportionately represented. The minimum sample size was determined using G*Power, which suggested a requirement of approximately 300 cases for SEM analysis. Therefore, the final sample size was set at 325 principals, meeting the recommended criteria for structural equation modeling.

Research Instrument

The primary instrument used in this study was a structured questionnaire based on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

The questionnaire consisted of four parts:

Demographic information of principals

Personality Traits Scale (PT)

Organizational Climate Scale (OC)

Informational Leadership Scale (IL)

The survey was administered through Questionnaire Star, an online data collection platform. Using simple random distribution within each stratum, a total of 325 valid responses were collected.

Data Analysis

Data analysis was conducted using appropriate statistical software and included the following steps:

Descriptive Statistics

Means, standard deviations, and frequency distributions were used to describe sample characteristics and trends in the variables.

Confirmatory Factor Analysis (CFA)

Conducted to assess the validity and reliability of measurement constructs.

Structural Equation Modeling (SEM)

Used to examine the direct, indirect, and mediating effects among personality traits, organizational climate, and informational leadership.

Both CFA and SEM were performed according to standard fit index criteria, including CFI, TLI, GFI, AGFI, RMR, and RMSEA.

Results

1. Structural Equation Model of the Relationships among Principals' Personality Traits, Organizational Climate, and Informational Leadership

The proposed structural equation model (SEM) was tested to examine the effects of the exogenous latent variable (personality traits) on the endogenous latent variables (organizational climate and informational leadership). Prior to presenting the finalized SEM results, several preliminary statistical assumptions and model verification procedures were conducted to ensure the model's appropriateness and robustness.

(1) Correlation Analysis and Multicollinearity Testing

A correlation analysis of the 15 observed variables was conducted to assess the strength of associations and to determine whether multicollinearity existed among the indicators of the latent variables. The results revealed statistically significant positive correlations at the **0.01 level ($p < .01$)** for all variable pairs.

- The **highest correlation** was observed between **Neuroticism (PT2)** and **Openness (PT3)** with $r = 0.721$.
- The **lowest correlation** was between **Principal Supportive Behavior (OC2)** and **Neuroticism (PT2)** with $r = 0.150$.

Since all correlation coefficients fell within the acceptable range of **0.10–0.80**, none exceeded the recommended threshold of 0.80. This indicates that multicollinearity was absent, thereby supporting the validity of the subsequent path analysis.

(2) Measurement Model: Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis was conducted to evaluate both **convergent validity** and **discriminant validity** of the three latent constructs: Personality Traits (PT), Organizational Climate (OC), and Informational Leadership (KITL). Table 1 presents the results for factor loadings, standard errors, significance levels, and reliability indicators.

Table 1: The important statistics of the CFA model of the relationship among personality traits, organizational climate, and kindergarten principals' informational leadership.

Factor	Variable	Factor loading		SE	Z-test	p	R^2
		Unstandardized	Standardized				
Personality Traits (PT)	PT1	1	0.670				0.449
	PT2	1.351	0.868	0.102	13.264	.00**	0.753
	PT3	1.311	0.805	0.104	12.559	.00**	0.649
	PT4	0.929	0.620	0.093	10.023	.00**	0.384
	PT5	1.268	0.807	0.101	12.579	.00**	0.651
	CR= 0.871, AVE=0.577						
Kindergarten Principal's Informational Leadership (KITL)	KITL1	1	0.694				0.481
	KITL2	1.260	0.759	0.108	11.67	.00**	0.576
	KITL3	1.116	0.700	0.102	10.926	.00**	0.49
	KITL4	1.109	0.744	0.097	11.489	.00**	0.553
	CR=0.816, AVE=0.525						
Organizational Climate (OC)	OC1	1	0.715				0.511
	OC2	0.950	0.646	0.088	10.747	.00**	0.417
	OC3	1.192	0.782	0.093	12.875	.00**	0.611
	OC4	1.001	0.682	0.088	11.34	.00**	0.466
	OC5	1.066	0.714	0.090	11.838	.00**	0.51
	OC6	1.071	0.730	0.089	12.092	.00**	0.533
	CR=0.861, AVE=0.508						

Note: **p < .001

The data analysis presented in Table 2 indicates that the unstandardized factor loadings range from **0.929 to 1.351**. In contrast, the standardized factor loadings range from **0.620 to 0.868**, all of which are statistically significant at the **p < .001** level. Composite Reliability (CR) and Average Variance Extracted (AVE) were calculated based on these factor loadings. The results demonstrate acceptable levels of convergent validity, with CR values of **0.871** for Personality Traits (PT), **0.816** for Informational Leadership (KITL), and **0.861** for Organizational Climate (OC). The AVE values were **0.577**, **0.525**, and **0.508**, respectively.

All standardized factor loadings exceeded the commonly accepted minimum threshold of **0.50** and were statistically significant, indicating that each observed variable sufficiently represents its associated latent construct. CR values should exceed **0.70,** and AVE values should exceed **0.50** to establish adequate reliability and convergent validity. Based on these criteria, all measurement constructs in this study demonstrate strong reliability, convergent validity, and discriminant validity. Therefore, the CFA results support proceeding to the next stage of analysis, Structural Equation Modeling (SEM).

Structural Equation Model (SEM)

The primary aim of this study was to examine the mediating effect of organizational climate on the relationship between principals' personality traits and their informational leadership. This analysis was conducted using AMOS software through Structural Equation Modeling (SEM). SEM, also known as covariance structure analysis, is an advanced multivariate statistical technique that integrates both factor analysis and multiple regression. It allows researchers to evaluate complex relationships among multiple latent and observed variables simultaneously.

SEM provides a comprehensive method to assess both direct and indirect (mediated) effects, enabling a deeper understanding of how personality traits influence principals' informational leadership through organizational climate. By applying SEM, this study identifies the structural relationships and underlying causal mechanisms among the three constructs. The overall analytical process and structural model are illustrated in Figure 1.

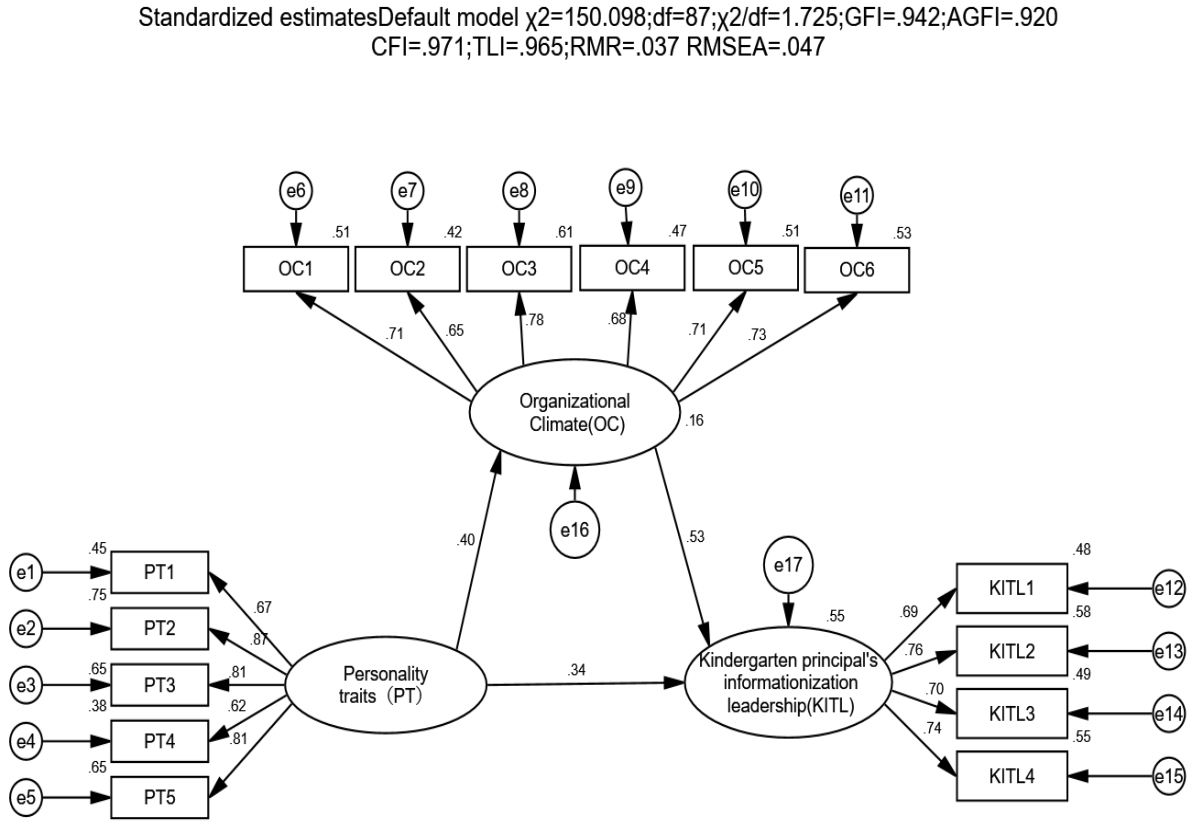

Figure 1 Structural Equation Model (SEM)

Table 2 Hypothesis Testing

Hypotheses	Path of delivery	Unstandardized Estimate	Standardized Estimate	R^2	Z-test	p
Direct effect						
H1	PT=> KITL	0.271	0.398		5.587	.00**
H2	PT=> OC	0.296	0.342	0.16	6.110	.00**
H3	OC=>KITL	0.571	0.535	0.55	7.479	.00**

Significance of Estimates: **p<0.01

Table 2 indicates that:

Hypothesis 1 (PT=> KITL): The standardized path coefficient of PT on KITL was 0.398 (Z-test=5.587, P<0.001), indicating that PT had a significant positive effect on KITL. Therefore, the hypothesis (H1) proposed in this study was accepted.

Hypothesis 2 (PT=> OC): The standardized path coefficient of PT on OC was 0.342 (Z-test =6.110, P<0.001), indicating that PT had a significant positive effect on OC, thus confirming the hypothesis H2 proposed in this study.

Hypothesis 3 (OC=>KITL): The standardized path coefficient of OC on KITL was 0.535 (Z-test =7.479, P<0.001), indicating that OC had a significant positive effect on KITL. Therefore, hypothesis H3 proposed in this study was accepted.

Statistical analysis of the R^2 results revealed that all factors (latent variables) collectively (directly/indirectly) affect KITL, with a predictable percentage of 55% (R^2=0.55). The predictive ability of PT for OC is 16% (R^2 = 0.16).

Using Bootstrap to Test the Mediating Effect of OC

The following table shows the analysis of whether there is a significant mediating effect between variables in the data using Amos 28.0. The Bootstrap method was used, with a 95% confidence interval selected, and the mediating effect was calculated and tested using the software's built-in 5000 rotation iterations. Determine whether there is a significant mediating effect by observing the upper and lower limits of the 95% confidence interval and the significance P-value in Table 3.

Table 3 Mediating effect test of Bootstrap

	Parameter	Effects	95% CI		P
			Lower	Upper	
Total Effect	PT - KITL	0.408	0.285	0.524	0.000
Direct Effect	PT - KITL	0.230	0.108	0.343	0.000
Indirect Effect	PT- OC - KITL	0.177	0.086	0.283	0.001

The above table shows that the mediation effect test was conducted using the Bootstrap method in AMOS. 5000 samples were repeated, and the 95% confidence interval was calculated. From the test results in the table, the total effect value for the path (PT-KTL) is

0.408, and the 95% confidence intervals are all positive, excluding 0. The significance P value is less than the significance level of 0.05, indicating the significant existence of the total effect; The direct effect value of the path (PT-KTL) is 0.230, with a 95% confidence interval of positive values for both upper and lower intervals, excluding 0, and a significance P-value less than the significance level of 0.05, indicating the significant existence of the direct effect.

The indirect effect value of the mediation pathway (PT-OC-KITL) is 0.177, and the 95% confidence intervals are both positive, excluding 0. The significance P-value is less than the significance level of 0.05, indicating a significant mediation effect. OC has a significant mediating effect between PT and KITL, thereby supporting hypothesis H4.

All latent variables in this study.

Personality traits (PT), Kindergarten principal's information technology leadership (KITL), there were statistical significant positively relationship at moderate level, the results of this analysis indicated that the pair of variable "Organizational climate (OC)" and "Kindergarten Principal's Information technology Leadership (KITL)" had a relationship (PCC = 0.671) higher than the pair of another's: Personality traits (PT)and Kindergarten Principal's Information technology Leadership(KITL)(PCC = 0.555), and Personality traits (PT) and Organizational climate(OC) (PCC = 0.398) respectively.

Discussion

Objective 1: To propose a structural equation model (SEM) describing the relationships among principals' personality traits, organizational climate, and informational leadership in kindergartens in Anshan City, Liaoning Province. The findings of this study confirm a structural model in which principals' personality traits influence their informational leadership both directly and indirectly through organizational climate. The final SEM demonstrated an excellent fit with the empirical data, as reflected in the model-fit indices: $\chi^2/df = 1.725$, GFI = 0.942, AGFI = 0.920, CFI = 0.971, TLI = 0.965, RMR = 0.037, and RMSEA = 0.047. These values meet the recommended thresholds for good model fit, indicating that the proposed model is theoretically and empirically sound. The strong model fit can be attributed to two major factors. First, the model comprises only three theoretically well-established constructs—Personality Traits, Organizational Climate, and Informational Leadership each grounded in robust theoretical foundations. Second, the measurement model satisfied key CFA and SEM assumptions, including high questionnaire validity and reliability, normality of the data, and acceptable convergent validity, consistent with the methodological guidelines of Bass (1985) and Costa et al. (1992). Overall, the results demonstrate that the proposed SEM effectively captures the mechanism through which Worapongpat and Kangpheng (2025) personality traits shape principals' informational leadership within kindergarten organizational contexts.

Objective 2: To examine the direct and indirect effects of principals' personality traits on informational leadership, including the mediating role of organizational climate. The SEM results and Bootstrap mediation analysis (Tables 2 and 3) provide substantial evidence for both direct and indirect pathways linking personality traits to informational leadership. Direct Effects. All three latent variables, Personality Traits (PT), Organizational Climate (OC), and Kindergarten Principals' Informational Leadership (KITL), were found to have statistically significant and positive relationships.PT had a significant direct effect on KITL ($\lambda = 0.398$, $Z = 5.587$, $p < 0.001$).OC had a more substantial direct effect on KITL ($\lambda = 0.535$, $Z = 7.479$, $p < 0.001$). Indirect Effect (Mediation).PT also had a significant indirect effect on KITL through OC ($p < 0.05$), confirming that Organizational Climate partially mediates the relationship. This means that principals with stronger personality traits (e.g., higher conscientiousness, openness, and agreeableness) are more likely to cultivate a favorable organizational climate, which, in turn, enhances their informational leadership. Predictive Power (R^2): The model's predictive capability was moderate to strong: PT and OC together explained 55% of the variance in KITL ($R^2 = 0.55$).PT explained 16%

of the variance in OC ($R^2 = 0.16$).Correlation Strength. The correlation between OC and KITL (PCC = 0.671) was more substantial than that between PT and KITL (PCC = 0.555). This indicates that organizational climate plays a more influential role in shaping principals' informational leadership behavior than personality traits alone. (Makjod et al., 2025). Taken together, these findings highlight the central role of organizational climate in determining the level of informational leadership demonstrated by kindergarten principals. (Costa, al. et.,2016) and (Judge et al., 2017). While personality traits serve as foundational characteristics, the organizational environment exerts the most substantial total effect on principals' ability to use information and technology to lead their institutions effectively.

Originality

This study generates new empirical knowledge by demonstrating how kindergarten principals' personality traits influence their informational leadership, with organizational climate as a mediating factor. The findings provide evidence that leadership in the digital era is not shaped solely by personal attributes but is significantly strengthened by the climate within the school organization. This represents an important advancement in understanding the mechanisms that support effective digital transformation in early childhood education settings.

First, the analysis reveals that organizational climate is the strongest predictor of principals' informational leadership, surpassing the direct effect of personality traits. This highlights a new insight: even if principals possess desirable personality characteristics—such as openness, conscientiousness, or extraversion—their ability to practice effective informational leadership depends heavily on whether their workplaces are collaborative, supportive, and communicative. In other words, a favorable organizational climate accelerates leadership capacity, especially in environments where digital tools are increasingly essential.

Second, the study contributes new knowledge by empirically confirming that organizational climate functions as a partial mediator. This means personality traits influence leadership not only directly but also indirectly by shaping organizational norms, communication patterns, and shared expectations. This insight expands academic understanding of leadership development, showing that improving organizational climate can amplify the leadership potential of principals regardless of their inherent traits.

Third, the study uncovers the relative strengths of variable relationships, demonstrating that the correlation between organizational climate and informational leadership (PCC = 0.671) is higher than that between personality traits and leadership (PCC = 0.555). This finding is crucial because it quantifies the degree to which external school conditions outweigh internal personal characteristics. As a result, interventions aimed at improving leadership effectiveness should prioritize organizational conditions rather than relying solely on principal training or individual development.

These new insights have meaningful societal implications. In an era of accelerating digital transformation in education, kindergartens require leaders who can effectively integrate information and communication technologies. This research shows that improving the organizational climate—through better communication systems, supportive work environments, and collaborative cultures—can significantly enhance principals' capacity to lead digital innovation. Consequently, this knowledge can inform educational policy, guide professional development programs, and support the design of leadership evaluation frameworks that incorporate environmental and interpersonal factors.

Overall, this research contributes a deeper and more nuanced understanding of how leadership in digitalized educational settings emerges. By identifying organizational climate as a pivotal mechanism, the study provides a practical roadmap for strengthening informational leadership in kindergartens, ultimately supporting more effective and equitable educational outcomes for young children and the broader community.

Recommendations

Based on the research findings, kindergarten principals' personality traits significantly influence their informational leadership, both directly and indirectly through the mediating role of organizational climate. The study demonstrates that a favorable organizational climate plays a crucial role in enhancing principals' ability to lead digital transformation and integrate information and communication technologies (ICT) effectively within kindergartens.

Recommendations for Applying the Research Findings

Enhancing Organizational Climate: School administrators and policymakers should prioritize creating supportive, collaborative, and communicative organizational environments, as this strengthens principals' informational leadership capabilities.

Leadership Development Programs: Training programs for kindergarten principals should incorporate both personality assessment and strategies to improve the organizational climate, ensuring effective ICT leadership.

Policy Integration: Selection, evaluation, and professional development of principals should consider personality traits and organizational climate factors to ensure alignment with digital leadership requirements.

Resource and Support Allocation: Providing adequate resources, technological tools, and institutional support can further improve organizational climate and, consequently, informational leadership in kindergartens.

Recommendations for Future Research

Broader Validation: Future studies should examine the relationship between personality traits and informational leadership using larger, more diverse samples across different regions and kindergarten types.

Additional Mediators and Moderators: Researchers could explore other mediating or moderating variables, such as ICT literacy, leadership experience, and professional development opportunities, to enrich the understanding of leadership mechanisms.

Multi-Dimensional Analysis of Informational Leadership: Future research could investigate the different dimensions of informational leadership—such as digital resource management, teacher support, and innovation guidance—and their effects on educational quality and student outcomes.

Longitudinal Studies: Conducting longitudinal research would provide insights into how personality traits and organizational climate influence the development of informational leadership over time, especially during educational reform and ICT integration processes

References

Bass, B. M. (1985). *Leadership and performance beyond expectations*. Free Press.

Costa, P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI).* Psychological Assessment Resources.

Costa, P. T., & McCrae, R. R. (2016). *The five-factor model of personality and its relevance to personality disorders*. Guilford Press.

Judge, T. A., & Bono, J. E. (2017). Relationship of core self-evaluation traits—Self-esteem, generalized self-efficacy, locus of control, and emotional stability—with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology, 86*(1), 80–92. https://doi.org/10.1037/0021-9010.86.1.80

Makjod, S., Worapongpat, N., Kangpheng, S., & Bhasabutr, P. (2025). Academic administration of the opportunity expansion school under the Prachinburi Primary Educational Service Area Office 1. *Journal of Education and Learning Reviews, 2(5),* 85–94. https://so19.tci-thaijo.org/index.php/JELS/article/view/963

Schneider, B., & Reichers, A. E. (2016). The effects of climate and personality on leadership performance. *Human Resource Management, 23*(3), 293–309. https://doi.org/10.1002/hrm.3930230305

Schneider, B., Ehrhart, M. G., & Macey, W. H. (2011). *Perspectives on organizational climate and culture*. In S. Zedeck (Ed.), APA handbook of industrial and organizational psychology (Vol. 1, pp. 373–414). American Psychological Association.

Schneider, B., Ehrhart, M. G., & Macey, W. H. (2017). Organizational climate and culture. *Annual Review of Psychology, 64*(1), 361–388. https://doi.org/10.1146/annurev-psych-113011-143809

Stogdill, R. M. (1974). *Handbook of leadership*. Harvard Business Press.

Van Vianen, A. E., & De Pater, I. E. (2016). Personality traits and organizational climate in educational settings. *Journal of Educational Administration, 54*(2), 134–154. https://doi.org/10.1108/JEA-09-2015-0063

Wang, H., & Wang, Q. (2019). Status quo and promotion strategy of ICT leadership of primary and secondary school principals. *Educational Innovation Research, 19*(4), 125–139.

Worapongpat, N. (2025a). Decision-making leadership of school administrators in the Krung Nakhon Chon School Network. *Journal of Patanasilpa Academic, 9*(1), 1–19. https://so05.tci-thaijo.org/index.php/Patanasilpa/article/view/266292

Worapongpat, N. (2025b). Building collaboration between schools and communities: A case study of multiple schools in Luoyang District. *Journal of Education and Learning Reviews, 2*(3), 95–104. https://doi.org/10.60027/jelr.2025.1097

Worapongpat, N. (2025c). Integrating interdisciplinary workshop design to advance life skills and leadership among graduate students at private universities in Thailand. *Liberal Arts and Social Studies International Journal (LAASSIJ), 1*(2), 55–71. https://so18.tci-thaijo.org/index.php/laassij/article/view/1133

Worapongpat, N. (2025d). Building collaboration between educational institutions and communities impacting school management: A case study of Guangzhou Vocational College of Technology, Guangzhou Open University, China. *Journal of Education and Learning Reviews, 2*(4), 1–12. https://doi.org/10.60027/jelr.2025.1759

Worapongpat, N. (2025e). Patterns of participation in the development of life skills, environment, society, and good governance among educational personnel in public universities through a meditation program in Buddhist sacred lands. *Journal of MCU Languages and Cultures, 5*(1), 1–22. https://so08.tci-thaijo.org/index.php/JMLC/article/view/4734

Worapongpat, N. (2025f). Academic administration of educational institution administrators in Mueang Ranong District under the jurisdiction of the Secondary Educational Service Area Office, Phang Nga, Phuket, Ranong. *KKU International Journal of Humanities and Social Sciences, 15*(1), 24–45. https://so04.tci-thaijo.org/index.php/KKUIJ/article/view/270388

Worapongpat, N., & Boonmee, K. (2025). The impact of women's leadership on teachers' feelings of trust in administration in higher education institutions: Universities in Liaoning Province. *KKU International Journal of Humanities and Social Sciences, 15*(1), 162–197. https://so04.tci-thaijo.org/index.php/KKUIJ/article/view/274357

Worapongpat, N., & Kangpheng, S. (2025). Transformational leadership skills for executives in the digital age: China Polytechnic College. *Journal of Education and Learning Reviews, 2*(5), 27–44. https://doi.org/10.60027/jelr.2025.931

Worapongphat, N. (2025g). A study of learning achievement in life skills and brain competency of educational personnel in the university: A meditation practice project in the Buddhist holy land of Thailand, India, and Nepal. *Khuangphaya Journal, Chiang Mai Rajabhat University, 19*(2), 18–35. [in Thai] https://so06.tci-thaijo.org/index.php/khuangpaya/article/view/281757

Wu, M. L. (2018). *Structural equation modeling: Operation and application of AMOS*. Chongqing University Press.

Yan, J. J. (2018). *Strategies for enhancing the informationization leadership of kindergarten principals*. Science Press.

Yukl, G. A. (2010). *Leadership in organizations* (7th ed.). Tsinghua University Press.

Zhang, H. (2007). Individual differences and educational psychology. *Educational Research, 28*(4), 45–50.

Zhang, H. (2016). Personality traits of kindergarten principals and their impact on educational management. *Modern Educational Management, 23*(6), 28–32.

Zhang, H. (2017). The impact of agreeableness and openness on interpersonal relationships. *Acta Psychologica Sinica, 49*(2), 233–240.

Zhao, L. (2018). Information technology adoption in rural kindergartens: Leadership challenges and strategies. *China ICT Education Review, 14*(3), 60–76.

Zhou, L., & George, A. (2019). Leadership effectiveness and ICT integration in early childhood education. *Journal of Educational Research and Development, 14*(2), 78–92.