โมเดลสมการโครงสร้างของพฤติกรรมการทำงานเชิงนวัตกรรม ของผู้บริหารโรงเรียนมัธยมศึกษา สังกัดสำนักงาน คณะกรรมการการศึกษาขั้นพื้นฐาน

A Structural Equation Model of Innovative Work Behavior of Secondary School Principals Under The Office of The Basic Education Commission

ศุภณัฏฐ์ สิริไอศูรย์ เศรษฐพงษ์กร[1*], วิทูล ทาชา[2]
Suphanat Siri-aisoon Setthaphongsakorn[1*], Witoon Thacha[2]
คณะศึกษาศาสตร์,มหาวิทยาลัยมหากุฏราชวิทยาลัย วิทยาเขตอีสาน[1*,2]
Faculty of Education, Mahamakut Buddhist University Isan Campus
Author for Correspondence: Email: ksupha@kku.ac.th*

บทคัดย่อ

การศึกษานี้มีวัตถุประสงค์เพื่อ (1) ศึกษาพฤติกรรมการทำงานเชิงนวัตกรรม (Innovative Work Behavior: IWB) ของผู้บริหารโรงเรียนมัธยมศึกษาสังกัดสำนักงานคณะกรรมการการศึกษาขั้นพื้นฐาน (สพฐ.) โดยอาศัยโมเดลสมการโครงสร้าง และ (2) วิเคราะห์อิทธิพลทางตรง อิทธิพลทางอ้อม และอิทธิพลรวมที่มีต่อพฤติกรรมการทำงานเชิงนวัตกรรม ของผู้บริหารโรงเรียนมัธยมศึกษาสังกัดสำนักงานคณะกรรมการการศึกษาขั้นพื้นฐาน โดยกลุ่มตัวอย่างที่ใช้ในการวิจัยประกอบด้วยผู้บริหารโรงเรียนมัธยมศึกษาจำนวน 960 คน โดยได้รับแบบสอบถามคืนจำนวน 767 ชุด และสามารถใช้ในการวิเคราะห์ข้อมูลได้ทั้งสิ้น 746 ชุด ซึ่งได้มาจากการสุ่มแบบแบ่งชั้นภูมิ เครื่องมือที่ใช้ในการวิจัยคือแบบสอบถามแบบมาตราส่วนประมาณค่า 5 ระดับ และวิเคราะห์ข้อมูลด้วยโมเดลสมการโครงสร้าง

ผลการวิจัยพบว่า พฤติกรรมการแบ่งปันความรู้ (Knowledge Sharing: KS) และภาวะผู้นำตนเอง (Self-Leadership: SL) มีอิทธิพลเชิงบวกอย่างมีนัยสำคัญทางสถิติที่ระดับ .01 ต่อพฤติกรรมการทำงานเชิงนวัตกรรม ในขณะที่บรรยากาศเชิงนวัตกรรมในองค์กร (Organizational Innovative Climate: OIC) มีอิทธิพลเชิงลบต่อพฤติกรรมดังกล่าว ส่วนประสิทธิภาพเชิงสร้างสรรค์แห่งตน (Creative Self-Efficacy: CSE) ไม่พบว่ามีอิทธิพลต่อพฤติกรรมการทำงานเชิงนวัตกรรม

ผลการศึกษาครั้งนี้สามารถใช้เป็นแนวทางในการส่งเสริมพฤติกรรมการทำงานเชิงนวัตกรรมของผู้บริหารสถานศึกษา โดยเน้นการพัฒนาทักษะภาวะผู้นำตนเอง เปิดโอกาสให้บุคลากรในองค์กรมีส่วนร่วมในการจัดการกับ กลยุทธ์ด้านนวัตกรรม และสร้างแรงจูงใจจากภายในเพื่อพัฒนาตนเองอย่างสร้างสรรค์ ควบคู่ไปกับการพัฒนาระบบการให้รางวัลตามผลงานเพื่อกระตุ้นความคิดสร้างสรรค์ของบุคลากร และส่งเสริมชุมชนแห่งการแบ่งปันความรู้ในองค์กร ทั้งนี้ การสร้างบรรยากาศที่ส่งเสริมนวัตกรรม โดยเฉพาะผ่านการสื่อสารที่มีประสิทธิภาพและปฏิสัมพันธ์เชิงบวกภายในองค์กร จะช่วยเพิ่มประสิทธิภาพการทำงาน และส่งเสริมให้ผู้บริหารมีพฤติกรรมที่เน้นนวัตกรรมมากยิ่งขึ้น ซึ่งนำไปสู่การพัฒนาแนวทางในการแก้ไขปัญหาและบรรลุเป้าหมายด้านนวัตกรรมขององค์กรได้อย่างมีประสิทธิผล

คำสำคัญ: พฤติกรรมเชิงนวัตกรรม;การแบ่งปันความรู้;ภาวะผู้นำตนเอง;บรรยากาศเชิงนวัตกรรมในองค์กร;ประสิทธิภาพเชิงสร้างสรรค์แห่งตน;ผู้บริหารสถานศึกษา

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Abstract

The purposes of this study were: (1) to investigate the innovative work behavior (IWB) of secondary school principals under the Office of the Basic Education Commission (OBEC) using structural equation modeling (SEM), and (2) to examine the direct, indirect, and total effects on IWB. A total of 746 secondary school principals were selected using a stratified random sampling technique. From an initial sample of 960, 767 questionnaires were returned, of which 746 were valid and usable for data analysis. A 5-point Likert scale questionnaire was used as the research instrument. Data were analyzed using structural equation modeling.

The findings revealed a significant positive relationship between knowledge-sharing behavior (KS), self-leadership (SL), and IWB ($p = 0.01$). However, the organizational innovation climate (OIC) showed a negative effect on IWB, while creative self-efficacy (CSE) had no significant impact—contradicting the findings of previous research.

This study provides guidelines for school principals to foster IWB through the enhancement of self-leadership by encouraging greater staff engagement in innovation-related strategies to address emerging challenges. Principals should be self-motivated and self-directed in developing their innovative capacities. At the same time, promoting performance-based reward systems can stimulate creative idea generation and strengthen a culture of knowledge-sharing across all areas of school management. A supportive OIC—cultivated through effective communication and interpersonal interaction—can improve work efficiency and encourage more innovative behaviors among executive teachers, thereby contributing to the achievement of organizational innovation goals.

Keywords: Innovative Work Behavior; Knowledge Sharing; Self-Leadership; Organizational Innovative Climate; Creative Self-Efficacy; School Principals

1. Introduction

The widespread use of digital technology has led the world into an internet-based information era, where educational, social, economic, and political activities rely heavily on vast amounts of data and optical communication networks. Developing human resources is crucial in transforming current digitalization, internationalization, and regional economic integration to keep pace with the country's evolving corporate competitiveness and sustainable economic growth. Recent research highlights the significant

role of the digital economy in promoting economic growth and innovation in various regions. For instance, studies have shown that digital technologies enhance language learning and improve translation accuracy, while also supporting economic resilience and technological innovation in regions (Yuan, 2023: 114-121; Tian et al., 2023: 1-17). Thus, integrating technology into education and its proper implementation can improve the quality of students' learning outcomes (Ali, 2019: 81-95).

Since education has become universal, the creation of a knowledge society that supports transformation has faced several challenges. According to Harris (2016: 27-37) tremendous pressure has been put on education providers to meet 21st-century education quality standards that must equip learners with the technological literacy, problem-solving, and global social awareness required to compete in the information-driven world. To develop digital literacy in education as applied by school administrators and teachers, the structure of digital-based adoption in schools must meet today's demand for a digitally driven job market (Kukeska et al., 2020: 59-66). In addition, to help students understand learning content more meaningfully from a new teaching platform than with the traditional teaching approach, the selected choice of technology must allow students to search for information on the Internet, collaborate, and interact with others to develop their learning at their own pace (Halili, 2019: 63-69). Consequently, questions were raised about whether technology integrated into the classroom effectively developed learners' knowledge and skills corresponding to market demand.

In the school context, the degree of innovation adopted in school administration and curriculum is largely based on the principal's innovative work behavior, which includes opportunity exploration, idea generation, idea promotion, idea realization, and reflection – factors that significantly influence organizational effectiveness and school performance (Caruz, 2024: 12-25). Previous studies have mainly investigated how innovation and creativity are performed by teachers and students and whether innovation and creativity hinder their critical thinking. It was found that cross-disciplinary learning led to teachers’ higher collaboration and classroom management, which helped develop critical and innovative thinking, resulting in innovative behavior.

Moreover, school administrators play a crucial role in enhancing school quality by developing leadership capacities among teachers and fostering innovative environments. Generally, principals must have a vision and

leadership skills to support teacher development and innovation (Khanyi & Naidoo, 2020: 168-184). Innovative behavior, such as that described in teacher contexts (Thurlings et al., 2015: 430-471), can be encouraged by strong school leadership, which is essential for turnaround and sustainability efforts (Adams, 2019: 1-3). Therefore, understanding how technological innovation choices impact the innovative behavior of school administrators is vital for overall innovation adoption and development.

However, little research has explored the principal's innovative work behavior (IWB) and what factors affect the behavior. The main objective of this study is to investigate the principal's IWB, which supports technology incorporation into everyday school operations and instruction that would foster teachers to connect teachers' and students' passion with innovative thinking and skill development, particularly in the context of secondary schools in Thailand.

2. Research Objectives

The purposes of this study were 1) to investigate the innovative work behavior (IWB) of the principals of secondary schools under the Office of the Basic Education Commission (OBEC) using the structural equation model and 2) to identify four factors that have a direct effect, indirect effect, and total effect of the latent variables of the structural equation model (SEM) on the IWB of secondary school principals under the OBEC.

3. Research Methodology

The research framework and hypotheses were drawn from related studies, theoretical foundations, and empirical evidence, including the observed variables of each latent variable, to form the structural equation model (SEM) of innovative work behavior (IWB) for secondary school administrators under the Office of the Basic Education Commission (OBEC), as shown in Figure 1. the structural equation model was used to analyze whether and to what degree each factor had a direct, indirect, and total effect on the IWB of secondary school administrators under OBEC.

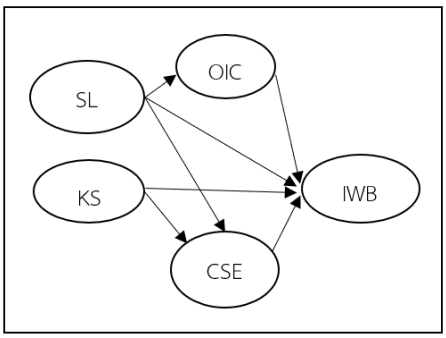

Figure 1 Research Framework

In this study, a quantitative research method was used to examine the relationships between the variables of the IWB model for high school administrators. The population comprises 2,359 principals of secondary schools under the OBEC in the academic year 2021. Simple random sampling without replacement was used to calculate the sample size. Using a sample size of 20 participants per parameter (Wiratchai, 1999: 54) the sample consisted of 960 participants, with 767 questionnaires returned and 746 usable for data analysis.

The questionnaire, which was split into two pieces for the study, served as a research tool: 1) the respondents' demographic data, such as their gender, age, and school size, and 2) The 5-scale questions pertaining to their IWB and the other four factors impacting their behavior. The IWB was measured using a scale and items used in various studies. Self-reported data were used in this study. The questionnaire contained 81 observed variables, comprising 81 questions/items in five categories, with each indication representing a part of the IWB.

(1) The IWB contains 15 questions: 5-item Idea Generation, 5-item Idea Promotion, and 5-item Idea Realization, (2) OIC contained 17 questions: 4-item Reward System, 5-item Support from Superiors, 4-item Group Cohesion, and 4-item Job Autonomy, (3) KS contained 18 questions: 6-item Community of Practice, 4-item Written Communication, 4-item Organizational Communication, and 4-item Personal Interaction, (4) The SL contained 15 questions: 5-item Behavior-Focused Strategies, 5-item Natural Reward Strategies, and 5-item Constructive Thought Pattern Strategies, (5) CSE contained 16 questions: 4-item fluency, 4-item originality, 4-item flexibility, and 4-item elaboration.

Data were collected through a survey that was distributed to schools in 62 educational areas. A pilot study was conducted to increase the return rate using a Google form attached to the QR Code, requesting consent for the questionnaire. When there was no response three weeks after sending the

form, another mail was sent to the school. Consequently, 767 questionnaires were returned, accounting for 79.90% of the 960 schools. However, 746 valid surveys accounted for 77.70% of the school sample. The Kaiser-Meyer-Olkin (KMO) method was used to test sampling adequacy, and the results showed that the primary components of the model were higher than 0.80, IWB (0.901), OIC (0.922), SL (0.891), knowledge sharing (0.899), and CSE (0.942). The sampling adequacy results indicated that the respondents were justified for further investigation.

Data Analysis

Data were statistically analyzed using IBM SPSS Statistics v.27 and IBM Amos v.26. For the demographic data of the respondents, IBM Amos v.26 was used for the analysis, resulting in the frequency, average, and KMO values. For the first-order confirmatory factor analysis and the second order confirmatory factor analysis, several tests were used, including the relative CMIN/DF 1-3, RMSEA < 0.05, GFI, AGFI, CFI, and NFI = 0.90-1.00. Moreover, in the factor loading analysis, the criteria for first order weight were acceptable at 0.7, whereas the criteria for second-order and other items' weight were acceptable at 0.3.

4. Results

4.1 The analysis of innovative work behavior levels among secondary school administrators under the Office of the Basic Education Commission examines three components: Idea Generation, Idea Promotion, and Idea Realization. The analysis utilizes statistical measures including mean (X-bar), standard deviation (S.D.), skewness (SKEW), and kurtosis (KUR), as presented in Table 1.

Table 1 innovative work behavior levels

Components and Indicators	$\overline{x}$	S.D.	SKEW	KUR	ระดับ
1. Idea Generation					
(1) Thinking of new methods	4.55	0.52	-0.453	-1.265	Highest
(2) Thinking of methods to solve problems	4.63	0.52	-1.078	0.764	Highest
(3) Thinking to improve and develop work processes	4.64	0.49	-0.704	-1.235	Highest
(4) Brainstorming ideas	4.63	0.50	-0.768	-0.881	Highest
(5) Focusing attention on organizational outcomes/results	4.68	0.48	-0.981	-0.573	Highest
2. Idea Promotion					
(1) Searching for and gathering allies/partners	4.46	0.56	-0.496	-0.211	High
(2) Mobilizing resources	4.42	0.60	-0.642	0.055	High

(3) Building confidence/trust	4.57	0.53	-0.673	-0.776	Highest
(4) Communicating ideas	4.45	0.56	-0.337	-0.904	High
(5) Accepting risks	4.43	0.55	-0.263	-0.927	High
3. Idea Realization					
(1) Transforming ideas into results	4.43	0.54	-0.224	-0.736	High
(2) Creating and developing prototypes/models	4.31	0.64	-0.431	-0.553	High
(3) Planning and implementation	4.49	0.54	-0.373	-1.017	High
(4) Evaluating work processes by returning to the original concept	4.37	0.59	-0.352	-0.684	High
(5) Application/practical application	4.47	0.57	-0.490	-0.739	High
Total	4.50	0.55	-0.55	-0.65	High

From analysis of Table 1, secondary school principals in Thailand received an overall high score ($\bar{x}$ = 4.50, S.D.=0.55) for demonstrating positive innovative work behavior on three components. Idea Generation was the strongest component with all five indicators rated as "Highest" ($\bar{x}$ =4.55-4.68), especially “Focusing attention on organizational outcomes/results” which was 4.68 (S.D.=0.48). Idea Promotion also had mixed ratings where “Building confidence/trust” was rated as “Highest” ($\bar{x}$ = 4.57, S.D.=0.53) while others earned “High” ratings. For Idea Realization, all indicators were rated “High,” but “Planning and implementation” was rated the highest for this component at ($\bar{x}$ 4.49, S.D.=0.54). All indicators had negative skewness values (-0.224 to -1.078) which suggested responses tilted towards higher ratings. The decrease in means from Idea Generation to Realization indicates difficulty in executing innovative ideas, which is useful for formulating a structural equation model of innovative work behavior in educational leadership.

4.2 Data were analyzed and found that enhancing SL skills significantly boosts innovative behaviors at work using Confirmatory factor analysis and empirical data were used to analyze secondary school principals’ IWB under the OBEC. According to the selected data analysis, the pilot study results were found to have extreme squared multiple correlations. Therefore, in this study, a model was developed and justified with an appropriate overall fit to the corresponding criteria.

The SEM of secondary school principals' IWB under the OBEC consists of five components with two external variables, knowledge sharing (KS) and self-leadership (SL), and two exogenous latent variables with three endogenous latent variables, OIC (OIC), CSE (CSE), and IWB (IWB). The correlation coefficient of all 18 variables was positive, ranging from 0.286 to 0.682, which was statistically significant at the 0.01. The two lowest correlation coefficient values were for Idea Generation (IG) and fluency (FLU) and between Idea Generation (IG) and originality (ORI), whereas the highest correlation coefficient values were for flexibility (FLE) and elaboration (ELA).

According to the confirmatory factor analysis results of the SEM of secondary school principals' IWB under the OBEC, CMIN/DF (χ^2 / df) was 4.421, failing to meet this criterion. RMSEA was 0.068, failing to meet the criteria. The GFI was 0.917, which meets these criteria. The AGFI was 0.888, which did not meet the criteria. The CFI value was 0.938, which met the criteria. The NFI was 0.921, which failed to meet the criteria.

However, the results of the confirmatory factor analysis of the SEM of secondary school administrators' IWB under Thailand's OBEC are inconsistent with the empirical data. Owing to the inconsistency of the confirmatory factor analysis and empirical data of the SEM of secondary school principals' IWB under the OBEC, Model Modification Indices (MI) were used to determine the goodness of fit of the model.

The results of the goodness of fit showed that CMIN/DF (χ^2 / df) was 2.742, passing the criteria. RMSEA was 0.048, which satisfied the criteria. The GFI was 0.955, which meets these criteria. The AGFI score was 0.931, which met the criteria. The CFI was 0.972, which met the criteria. The NFI was 0.957, which failed to meet these criteria. These model modification indices of the SEM of secondary school principals' IWB under the OBEC are consistent with the empirical results shown in Figure 2.

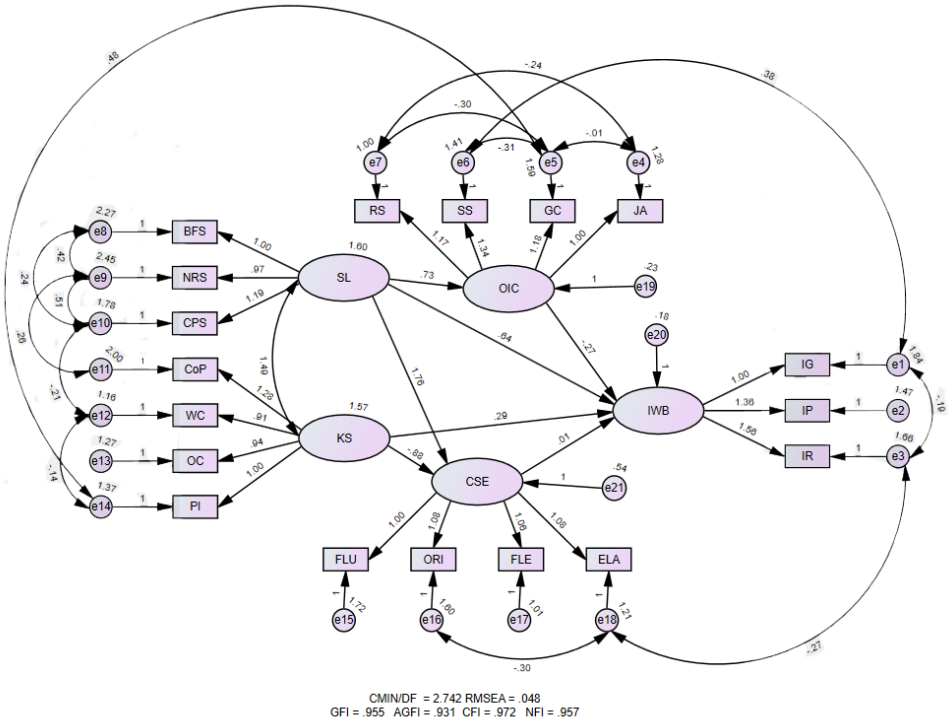

Figure 2 The results of model modification indices of the SEM of secondary school administrators' IWB

The results of the model modification indices of the SEM investigation, which were in accordance with the empirical data, can be explained as follows: First, the model was drawn based on a theoretical foundation. The content and construct validity of the research tools were tested before determining the components of the model using confirmatory factor analysis to ensure the acceptable weight of each latent variable.

Before adjusting the model, the statistical value of each component of the first- or second-order model was tested to meet the specified criteria. The construct reliability of the latent variables was also tested with the average variance extracted and the predictive validity of the correlation coefficient of the structural equation model, with each indicator exceeding the lowest threshold.

Second, the empirical data obtained from the school principals were consistent with the theoretical frameworks that suggest that principals develop school qualities to meet the needs of learners in the 21st century in three skills: 1) learning and innovation skills, 2) ICT skills, and 3) life and career skills. Accordingly, school principals must understand the teaching and learning systems to develop innovative teaching and learning approaches. They must

seek knowledge constantly and attend regular training to develop themselves while sharing ideas with others to create new knowledge and communicate with executives and teachers at their school. It is also essential to enhance opportunities for school personnel to collaborate to develop teaching and learning systems.

The results of the four determinants having direct, indirect, and total effects of the latent variables of the SEM on the IWB of secondary school principals are presented in Table 2.

Table 2 The direct effect, indirect effect, and total effect of the latent variables

Components		IWB			CSE			OIC		
		DE	IE	TE	DE	IE	TE	DE	IE	TE
SL	λ	0.64**	-0.17	0.47	1.76**	-	1.76	0.73**	-	0.73
	S.E.	0.94**	0.76	0.27	0.75**	-	0.75	0.05**	-	0.05
	t	0.69	-0.22	1.74**	2.35	-	2.35**	14.6**	-	14.6**
KS	λ	0.29**	-0.01	0.28	-0.88**	-	-0.88	-	-	-
	S.E.	0.67	0.50	0.27	0.76	-	0.76	-	-	-
	t	0.43	-0.04	1.04**	-1.16	-	-1.16	-	-	-
CSE	λ	0.01	-	0.01	-	-	-	-	-	-
	S.E.	0.18	-	0.25	-	-	-	-	-	-
	t	0.06	-	0.04	-	-	-	-	-	-
OIC	λ	-0.27**	-	-0.27	-	-	-	-	-	-
	S.E.	0.25	-	0.18	-	-	-	-	-	-
	t	-1.08	-	-1.50**	-	-	-	-	-	-
R^2		0.83			0.74			0.79		

** p<.01

From Table 1, it was found that two determinants of SL and knowledge sharing have a significant direct effect on the IWB of secondary school principals with correlation coefficients (λ) of 0.64 and 0.29, respectively at p-value = 0.01. By contrast, CSE had no significant direct effect on IWB (λ = 0.01).

Similarly, SL has a positive total effect on IWB (λ = 0.47). SL has a positive total effect on CSE (λ =1.76), and SL has a positive total effect on OIC (λ = 0.73). On the other hand, KS had a positive total effect on IWB (λ = 0.29), whereas KS has a negative total effect on CSE of the secondary school principals (λ = -0.88).

5. Discussion

"When considering each component, SL has a significant influence on IWB, both directly and through mediators. This result is consistent with previous studies concluding that SL leads to self-motivation and self-direction in seeking solutions to achieve goals (e.g., Kalyar, 2011: 20-28; Gomes et al., 2015: 1-18; Arista & Parahyanti, 2018: 545-552; binti Ibus & binti Ismail, 2018: 1859-1876)."

Houghton, Neck, and Manz (2003: 123-140) revealed that self-leadership (SL) is crucial for leaders to foster innovation by recognizing their strengths and weaknesses, thereby broadening their vision to create new solutions. Similarly, Carmeli et al. (2006: 75-90) found that enhancing SL skills significantly boosts innovative behaviors at work, while Kör (2016: 1-15) emphasized that SL mediates the relationship between entrepreneurial orientation and innovative work behavior (IWB), empowering individuals to adapt effectively in entrepreneurial environments.

Moreover, the findings showed a significant positive relationship between KS and IWB, with a correlation coefficient of 0.29 at a p-value of 0.01, and SL significantly influenced this relationship. These results correspond with previous empirical studies that have found a positive influence of knowledge sharing on IWB (e.g., Wang & Wang, 2012: 8899-8908; Munir & Beh, 2019: 269-289; Akram et al., 2020: 117-129).

Wenger & Snyder (2000: 139-146) explained that individual work effectiveness improves when work-related experiences and expertise are exchanged within the group. There will then be cooperation, innovation development, and efforts to solve problems with new solutions. Innovation has been modified over time during the ongoing KS mechanism (De Jong & Den Hartog, 2007: 41-64; Lecat et al., 2018: 529-554).

However, this study found a negative total effect of OIC on IWB (λ = -0.27), which contrasts with the positive relationships reported in previous studies (e.g., Liu et al., 2019: 1-12). These inconsistent results may be explained by contextual or organizational factors. For instance, Hunter & Cushenbery (2011: 269-289) pointed out that one of the challenges for leaders is 'not to be overly dominant in the creative process such that subordinates are afraid to challenge the leader's ideas.' Furthermore, they discuss what they term the 'generator/evaluator paradox', where leaders face tension between encouraging novel thinking early in the innovation process while later having to evaluate and possibly reject those same ideas. Similarly,

Kylliäinen (2019) noted that innovation can face resistance in organizations where traditional practices are deeply ingrained, stating that 'most people find comfort in routines, and change represents a step into the unknown.' Furthermore, the high costs associated with implementing innovative solutions might discourage administrators from pursuing such initiatives actively.

6. Conclusion

This study contributes to the research gap by providing an SEM result of the IWB for secondary school administrators in Thailand, as shown in Figure 3.

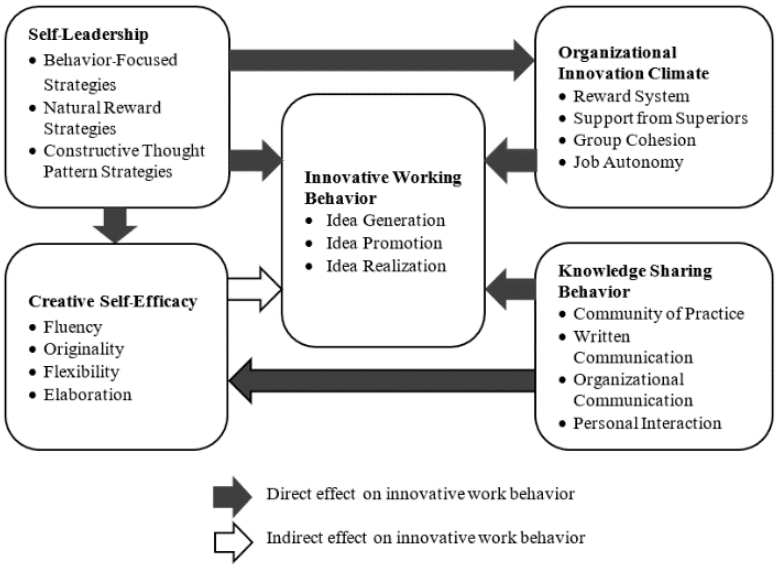

Figure 3 Model of Innovative Work Behavior

The results of this study provide the theoretical implications with empirical evidence of the significant role of SL in stimulating school administrators' development of IWB.

"In addition, the findings have useful applications for administrators. Knowledge management (KM) is a significant management mechanism and a common prerequisite that enhances organizational performance (Bibi et al., 2021: 396-407). Workplace values, such as innovation and participation, affect employees' psychological ownership, which in turn leads to a higher level of involvement in the organization and improved job satisfaction (Aslan & Ateşoğlu, 2021: 1-13). This is consistent with findings that supportive work environments and contextual factors significantly influence individual innovation in workplace settings (Hammond et al., 2011: 1-52)."

Second, due to the rapid change in 21st-century educational development, an operational transformation in the workplace must occur sooner or later. Thus, school administrators should ensure effective and

favourable communication, interpersonal interaction, and organizational support to help employees understand challenges. Individuals tend to demonstrate a stronger willingness to behave innovatively when they receive sufficient supportive resources, including funds and time (Liu et al., 2019: 9).

On the other hand, if there is relatively low task interdependence in an organization, individuals tend to perceive a fixed role as being under 'rules,' despite solid interpersonal interaction and communication. Consequently, a lack of sharing tasks and knowledge can hinder an individual's feeling of being rewarded to achieve the organization's goals (You et al., 2022: 1-13).

Third, it is crucial that school administrators increase their OIC. School administrators should attend to and support other executive teachers to participate in training programs to keep up with innovative changes in education. This allows knowledge sharing practices and feedback among other school executives. Supportive OIC helps improve work efficiency through innovative behaviour, leading to a series of approaches to accomplish the organization's innovation goal as a team (Cheng et al., 2021: 604-618). Thus, higher engagement by activating coping innovation-related strategies to deal with challenges tends to motivate administrators and executive teachers to behave more innovatively.

Suggestions for Future Research

This study concentrated on how school administrators' behavioral patterns play a significant role in determining Innovative Work Behavior (IWB). Future research should broaden its focus to examine additional facets of the proposed conceptual framework in more specialized educational settings.

The factors identified in this study warrant further investigation across diverse educational contexts, taking into consideration additional elements such as organizational culture and incentive structures, leader-member exchange relationships, school size and structure, curriculum characteristics, and student conduct. Future studies would benefit from incorporating additional qualitative research techniques, such as in-depth interviews, to develop a more comprehensive and nuanced understanding of this phenomenon.

7. Implication and Finding Knowledge

7.1 Theoretical Implications

The structural equation model of innovative work behavior among Thai secondary school principals reveals key insights: (1) The positive relationship between self-leadership and innovative work behavior confirms

the importance of internal motivation in educational leadership innovation, supporting self-determination theory, (2) Knowledge sharing's positive correlation with innovative work behavior validates social constructivist perspectives that innovation emerges through collaboration rather than individual effort (3) The negative relationship between organizational innovation climate and innovative behavior challenges conventional theories, suggesting Thai educational structures may sometimes inhibit innovation.

7.2 Practical Implications

This research offers actionable strategies for educational innovation: (1) Policymakers should develop professional development programs enhancing principals' self-leadership skills, focusing on self-regulation and positive thinking approaches, (2) School administrators should establish robust knowledge-sharing systems between institutions through professional learning networks and mentoring frameworks, (3) Educational institutions should examine structures that may suppress innovation, reducing top-down decision-making and creating environments conducive to risk-taking.

7.3 Knowledge Contributions

This study contributes to educational leadership knowledge by: (1) Identifying an implementation gap where innovation capacity diminishes from idea generation through implementation, (2) Establishing self-leadership as the primary driver of innovative behavior among principals, (3) Revealing context-specific innovation dynamics in Thai educational leadership distinct from Western models, (4) Confirming the relationship between knowledge sharing and innovative behavior.

These findings provide a foundation for enhancing innovative leadership in Southeast Asian educational contexts where hierarchical structures create unique conditions for innovation.

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