“The mediating effects of work motivation and organizational support on the relationship between knowledge management and environmental law knowledge in Vietnamese commercial banks”

AUTHORS	Ha Nguyen Son Hai Phan Thanh

ARTICLE INFO	Ha Nguyen Son and Hai Phan Thanh (2026). The mediating effects of work motivation and organizational support on the relationship between knowledge management and environmental law knowledge in Vietnamese commercial banks. *Knowledge and Performance Management*, *10*(1), 40-53. doi: 10.21511/kpm.10(1).2026.04
DOI	http://dx.doi.org/10.21511/kpm.10(1).2026.04
RELEASED ON	Tuesday, 27 January 2026
RECEIVED ON	Thursday, 10 July 2025
ACCEPTED ON	Wednesday, 07 January 2026

JOURNAL	"Knowledge and Performance Management"
ISSN PRINT	2543-5507
ISSN ONLINE	2616-3829
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	Sp. z o.o. Kozmenko Science Publishing

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
39	2	6

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

Ha Nguyen Son (Vietnam), **Hai Phan Thanh** (Vietnam)

THE MEDIATING EFFECTS OF WORK MOTIVATION AND ORGANIZATIONAL SUPPORT ON THE RELATIONSHIP BETWEEN KNOWLEDGE MANAGEMENT AND ENVIRONMENTAL LAW KNOWLEDGE IN VIETNAMESE COMMERCIAL BANKS

Type of the article: Research Article

Received on: 10th of July, 2025
Accepted on: 7th of January, 2026
Published on: 27th of January, 2026

Ha Nguyen Son, Ph.D., Head, Testing and Quality Assurance Department, University of Law, Hue University, Vietnam.

Hai Phan Thanh, Associate Professor, Ph.D., Provost, School of Business and Economics, Institute of Research and Development, Duy Tan University, Vietnam. (Corresponding author)

Abstract

This study examines whether knowledge management practices in commercial banks influence employees' knowledge of environmental law, providing empirical evidence from Vietnam's banking sector as an emerging Asian economy. Data were collected from 568 employees across 35 Vietnamese commercial banks in the first quarter of 2025, and the hypotheses were tested using partial least squares structural equation modeling (PLS-SEM). The results indicate that all three knowledge management components (information-sharing systems, a learning-oriented organizational culture, and training and skill development) have positive effects on both work motivation and perceived organizational support. Information-sharing systems exert a strong influence on organizational support (β = 0.188) and work motivation (β = 0.207), while a learning-oriented culture significantly enhances organizational support (β = 0.204) and work motivation (β = 0.165). Training and skill development show the strongest effects on work motivation (β = 0.240) and organizational support (β = 0.185). In turn, work motivation and organizational support directly and positively affect employees' environmental law knowledge (β = 0.343 and β = 0.363, respectively). Moreover, both variables significantly mediate the relationships between KM components and environmental law knowledge. These findings underscore the relevance of social exchange theory in explaining how effective knowledge management practices enhance employees' legal knowledge, thereby contributing to more sustainable organizational development. Accordingly, practical implications are proposed for bank managers to strengthen knowledge management implementation.

Keywords knowledge management, environmental law, organizational support, employee motivation, commercial banks, Vietnam

JEL Classification M12, M54, J21, K32

INTRODUCTION

In the context of globalization and sustainable development becoming strategic priorities for financial institutions, knowledge management has emerged as a key factor enabling organizations to adapt and enhance operational efficiency. For commercial banks worldwide and in Vietnam in particular, the implementation of knowledge management not only serves internal growth objectives but also plays a crucial role in strengthening compliance capabilities, especially with respect to environmental regulations. As requirements related to green finance

Conflict of interest statement:
Author(s) reported no conflict of interest

http://dx.doi.org/10.21511/kpm.10(1).2026.04

and Environmental, Social, and Governance (ESG) standards become increasingly stringent, equipping employees with comprehensive knowledge of environmental law has become an urgent necessity.

Knowledge management is defined as the process of creating, sharing, storing, and applying knowledge within an organization to achieve strategic goals (Alavi & Leidner, 2001). Previous studies have shown that knowledge management can enhance employee competencies, raise awareness of social responsibility, and promote compliant behavior within organizations (King, 2009; Donate & de Pablo, 2015). In the banking sector, where legal compliance and operational risks are becoming more complex, knowledge management plays an indispensable role in improving employee satisfaction, increasing motivation, fostering organizational commitment, and enhancing awareness and capacity to comply with regulatory standards, including environmental law (Najeeb et al., 2018; Kashef, 2023).

Moreover, environmental law knowledge not only encompasses an understanding of current legal documents and regulations but also reflects awareness of social responsibility, professional ethics, and an organization's commitment to sustainable development. When bank employees possess a solid understanding of environmental law, financial institutions are better positioned to minimize legal risks, enhance brand reputation, and meet the expectations of international partners in the context of global economic integration. However, the specific relationship between knowledge management and the level of environmental law knowledge among banking employees has not been thoroughly explored in emerging markets such as Vietnam.

1. LITERATURE REVIEW AND THEORETICAL RESEARCH MODEL

Knowledge Management is a broad concept with various interpretations; however, in its simplest form, it refers to the process of creating, sharing, utilizing, and managing knowledge within an organization to enhance operational efficiency and foster innovation (Dalkir, 2013). According to Nonaka (2009), knowledge management is not merely about storing information but also about promoting learning and knowledge transfer among individuals and departments. The core components of knowledge management include:

1) *Information-sharing systems*, such as internal databases or digital collaboration platforms, which facilitate easy access to and exchange of knowledge (Alavi & Leidner, 2001);

2) *An organizational culture that encourages learning*, demonstrated by a willingness to share, a spirit of collaboration, and openness to change (Gold et al., 2001); and

3) *Training and skill development*, aimed at improving the ability to absorb, process, and apply new knowledge in the workplace (Holsapple & Joshi, 2000).

Establishing and maintaining these components is essential for organizations to achieve sustainable development and respond effectively to a rapidly changing environment.

Meanwhile, Environmental Legal Knowledge refers to employees' understanding, awareness, and ability to apply environmental regulations in the operational and business activities of an organization. It is regarded as a critical aspect of corporate environmental management. According to Cordano and Frieze (2017), when employees have a clear understanding of environmental legal requirements, they are more likely to make decisions that align with the organization's environmental protection goals.

Flannery and May (2017) emphasize that knowledge of legal responsibilities not only enhances compliance but also helps minimize the risk of violations and improves legal risk management effectiveness. Furthermore, the study by Daily et al. (2009) indicates that the more an organization invests in training and raising employees' legal awareness, the more likely employees are to engage in environmentally friendly behaviors. This

knowledge also serves as a bridge for successfully implementing environmental policies and strategies, thereby contributing to the development of an organizational culture grounded in environmental responsibility.

The relationship between knowledge management and environmental legal knowledge is highlighted as follows:

First, information-sharing systems play a pivotal role in enhancing operational efficiency and human resource development within organizations. In the context of organizations in general, and commercial banks in particular, these systems not only facilitate the storage and retrieval of knowledge but also contribute to creating a supportive environment among individuals and departments (Alavi & Leidner, 2001). Research by Gagné and Deci (2005) and Wang and Noe (2010) demonstrates that effective sharing of information and knowledge increases employees' perception of organizational support, which in turn boosts their intrinsic work motivation. This is especially relevant in the banking sector, where the legal environment is complex and constantly evolving. Timely access to reliable sources of information helps employees stay up to date and better understand environmental legal regulations. According to Daily et al. (2009), information-sharing systems indirectly influence employees' legal knowledge through two mediating factors: organizational support and work motivation – both of which determine the extent to which environmental knowledge is acquired and applied in practice.

Second, a learning-oriented organizational culture is a critical component of knowledge management, serving as a foundation for creating a positive work environment that supports both individual and organizational capacity development (Tuyen, 2021). Organizations with a strong learning culture often foster knowledge sharing, encourage constructive feedback, and promote continuous employee development (Marsick & Watkins, 2003). In both general organizations and commercial banks specifically, this element directly influences perceived organizational support and employees' intrinsic motivation. Edmondson (1999) highlighted that a psychologically safe and transparent learning environment enhances trust and the sense of being supported by the organization. At the same time, a culture that promotes learning helps employees feel valued, recognized, and developed - factors that significantly boost motivation (Ryan & Deci, 2000).

The indirect effects are also evident, as organizational support and motivation create favorable conditions for the acquisition and application of environmental legal knowledge. Daily et al. (2009) suggested that motivated employees who feel supported are more proactive in staying updated and complying with environmental regulations - particularly in the banking sector, which is often subject to strict legal oversight regarding the environment and sustainable development.

Third, training and skill development within organizations play a vital role in enhancing individual competencies and building a high-quality internal workforce, thereby increasing organizational value (Kianto et al., 2014). According to Tharenou et al. (2007), effective training programs not only provide technical knowledge but also enhance employees' perception of organizational support, as they feel invested in and cared for. At the same time, skill development has a direct impact on work motivation, as employees are equipped with the necessary tools to perform more effectively, which increases their confidence and job satisfaction (Noe, 2020). In the context of commercial banking, where legal compliance and professional competence are highly demanded, continuous training helps employees adapt to changes in the regulatory environment, including environmental law.

In addition to its direct effects, training also influences environmental legal knowledge indirectly through the mediating roles of perceived organizational support and work motivation. When employees feel supported and motivated, they tend to be more proactive in acquiring and applying legal knowledge related to the environment (Daily et al., 2009). Therefore, training not only enhances competence but also facilitates environmentally compliant behavior within the organization.

Work motivation, which is the internal drive, such as the need for learning, personal devel-

http://dx.doi.org/10.21511/kpm.10(1).2026.04

opment, and a sense of purpose in work, has a positive and direct relationship with the level of knowledge acquisition, including environmental and legal knowledge within organizations. According to Ryan and Deci (2000), intrinsic motivation drives employees to actively seek, explore, and deeply absorb new information, independent of external rewards. In the organizational context in general, and especially in commercial banks, where legal regulations related to the environment and sustainable development are frequently updated, intrinsic motivation helps employees proactively access and apply environmental legal knowledge in their work practice (Gagné & Deci, 2005).

Furthermore, a study by Daily et al. (2009) highlights that employees with high intrinsic motivation tend to actively participate in training programs and the organization's sustainable development activities, thus enhancing their ability to recognize and comply with environmental legal regulations. This not only contributes to the organization's compliance performance but also promotes environmentally responsible behavior among individual employees.

Organizational support – understood as the extent to which an organization cares for, invests in, and facilitates the development of its employees – has a direct positive impact on the environmental legal knowledge that employees acquire and apply in practice. According to Eisenberger et al. (1986), when employees perceive support from the organization, they are more likely to enhance their engagement and take the initiative to learn, including accessing and gaining a deeper understanding of relevant legal regulations. In the context of modern organizations, especially commercial banks, where strict legal regulations, including those related to environmental protection, apply, organizational support is manifested through providing learning resources, specialized training, and a work environment that encourages exploring legal information. These elements are key factors that help employees improve their environmental legal knowledge and increase work performance (Zohar & Luria, 2005; Srivastava et al., 2006). Additionally, according to Daily et al. (2009), organizations with clear support policies and a supportive culture will promote environmentally responsible behavior, with legal knowledge as a critical foundation. Therefore, organizational support not only increases legal compliance but also contributes to the development of a strong environmental legal competence among employees.

Based on the theoretical framework, the purpose of this study is to explore the impact of the management of knowledge (including information-sharing systems, learning-oriented organizational culture, and training and skill development) on employees' knowledge of environmental law based on the perceptions of employees at commercial banks in Vietnam as a mediator between the two factors, the support of the organization and the work motivation. Figure 1 presents the theoretical model and hypotheses:

H1a: Information-sharing system has a positive impact on work motivation.

H1b: Information-sharing system has a positive impact on organizational support.

H1c: Information-sharing system positively influences environmental legal knowledge through the mediating role of work motivation.

H1d: Information-sharing system positively influences environmental legal knowledge through the mediating role of organizational support.

H2a: Learning-oriented organizational culture has a positive impact on work motivation.

H2b: Learning-oriented organizational culture has a positive impact on organizational support.

H2c: Learning-oriented organizational culture positively influences environmental legal knowledge through the mediating role of work motivation.

H2d: Learning-oriented organizational culture positively influences environmental legal knowledge through the mediating role of organizational support.

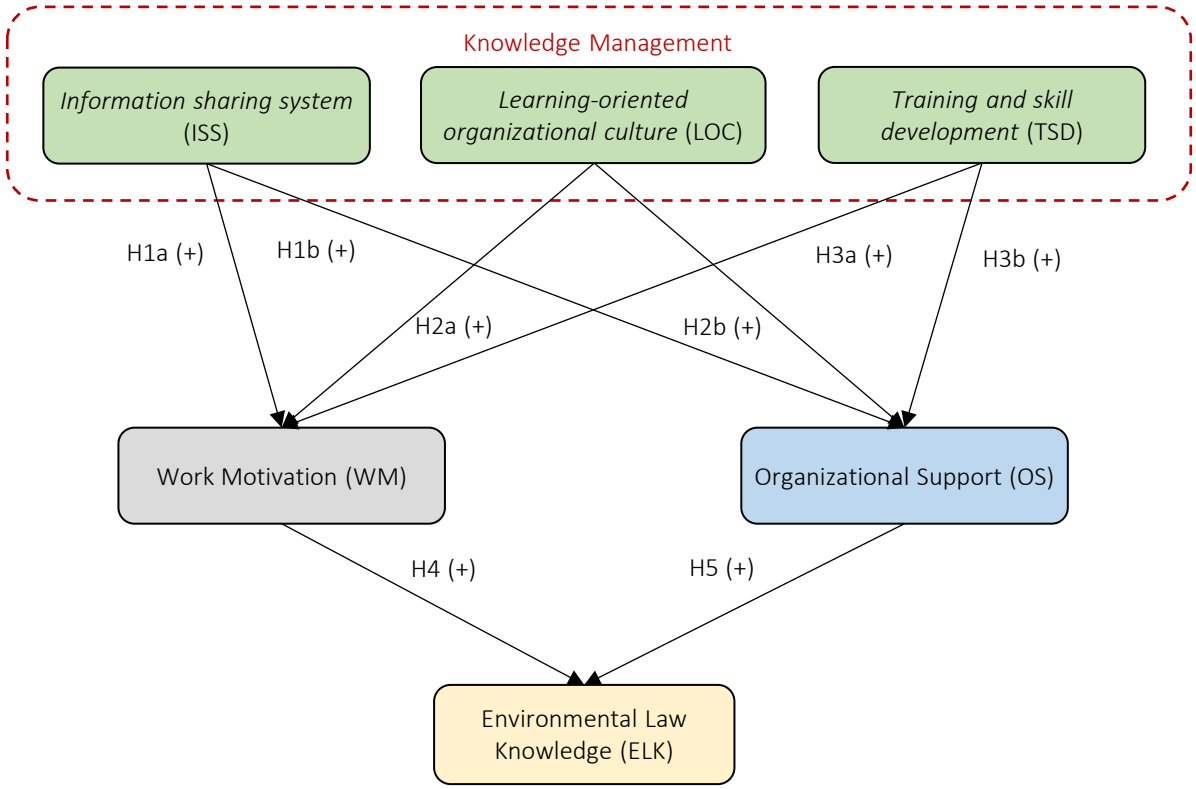

Figure 1. Conceptual model and hypotheses

H3a: Training and skill development in the organization have a positive impact on work motivation.

H3b: Training and skill development in the organization have a positive impact on organizational support.

H3c: Training and skill development in the organization positively influence environmental legal knowledge through the mediating role of work motivation.

H3d: Training and skill development in the organization positively influence environmental legal knowledge through the mediating role of organizational support.

H4: Work motivation within the organization has a positive impact on environmental legal knowledge.

H5: Organizational support positively impacts environmental legal knowledge.

2. DATA AND RESEARCH METHODOLOGY

2.1. Measurement Scales

To collect data for analysis, the qualitative research process was established by developing an initial draft measurement scale based on previous relevant studies, such as those by Alavi and Leidner (2001), Z. Wang and N. Wang (2012), Gold et al. (2001), Nonaka (2009), Ryan and Deci (2000), Rhoades and Eisenberger (2002), Rhoades et al. (2021), Allen et al. (2003), Najeeb et al. (2018), Kashef (2023), Law et al. (2017), AlQahtani (2024), and other studies. The draft measurement scale was used to gather feedback from 10 experts, including university professors with doctoral degrees or executives at commercial banks with over 15 years of work experience. The results of the expert interviews led to contributions, adjustments, and revisions to form the second draft of the measurement scale. This scale was then used to construct a preliminary survey with 5 evaluation levels on a Likert scale ranging from low to high, where 1 represents "Completely Dissatisfied,"

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Table 1. Measurement scales

Symbol	Scales	Sources
	Information sharing system (ISS)	
ISS1	My bank has an effective information-sharing system	Alavi and Leidner (2001), Z. Wang and N. Wang (2012), Gold et al. (2001), Expert opinions
ISS2	I can easily access the information I need from the bank's information-sharing system	
ISS3	My colleagues often share useful information	
ISS4	The bank's information-sharing system is regularly updated	
ISS5	I feel confident using the bank's information-sharing system	
	Learning-oriented organizational culture (LOC)	
LOC1	The organizational culture encourages learning and knowledge sharing	Nonaka (2009), Tuyen (2021), Expert opinions
LOC2	I feel comfortable sharing ideas and knowledge with colleagues	
LOC3	My bank frequently organizes discussions to share knowledge	
LOC4	I am encouraged to participate in learning activities within the organization	
LOC5	I feel that learning is an important part of the organizational culture.	
	Training and skill development (TSD)	
TSD1	I participate in training programs related to knowledge management	Z. Wang and N. Wang (2012), Gold et al. (2001), Nonaka (2009), Expert opinions
TSD2	My bank provides sufficient training courses on environmental law	
TSD3	I feel that the training programs help me enhance my knowledge management skills	
TSD4	I regularly participate in training programs to update my knowledge	
TSD5	I find that training helps me improve my job performance	
	Intrinsic work motivation (WM)	
WM1	I am motivated to learn about environmental law	Ryan and Deci (2000), Locke and Latham (2002), Expert's opinions
WM2	I believe that enhancing my knowledge of environmental law will help me advance in my career	
WM3	I enjoy participating in environmental law training programs	
WM4	I see learning about environmental law as necessary for my career	
WM5	I feel that developing knowledge of environmental law is an important part of my job	
	Organizational support (OS)	
OS1	My bank provides sufficient resources for me to learn about environmental law	Rhoades and Eisenberger (2002), Rhoades et al. (2021), Allen et al. (2003), Expert opinions
OS2	My leadership encourages me to develop knowledge of environmental law	
OS3	I receive support from colleagues in learning about environmental law	
OS4	My bank has clear policies on developing environmental law knowledge	
OS5	I feel that my bank cares about my professional development	
	Environmental legal knowledge (ELK)	
ELK1	I understand the environmental law regulations related to my work	Nonaka (2009), Law et al. (2017), AlQahtani (2024), Expert opinions
ELK2	I am capable of applying environmental law knowledge in my work	
ELK3	I regularly update information on changes in environmental law	
ELK4	I can explain environmental law regulations to my colleagues	

and 5 represents "Completely Satisfied." The results of a preliminary survey with 30 employees, analyzed for reliability using Cronbach's Alpha, as well as discriminant and convergent validity through EFA analysis supported by SPSS 26 software, showed that the measurement scale was valid for proceeding to the official survey phase on a larger scale. Table 1 presents the content of the official measurement scale used in the study.

2.2. Research sample

According to data published by the State Bank of Vietnam as of the end of 2024, the commercial banking system in Vietnam consists of 35 banks. These include 31 joint-stock commercial banks (JSCBs) and 4 state-owned commercial banks, which are fully state-owned: Agribank, GPBank, CB Bank, and OceanBank. As of the end of 2024, among the 31 commercial banks, only 27 joint-stock commercial banks are listed. The total number of employees in these banks is approximately 279,267 people. Based on the total number of employees working in this known commercial banking sector and using the sample size calculation formula proposed by Lamola and Yamane (1967), the minimum sample size for this study is calculated as follows:

$$n = \frac{N}{\left(1 + N \cdot e^2\right)} = \frac{279,267}{\left(1 + 279,267 \cdot 0.05^2\right)} = 399.4. \quad (1)$$

This calculated sample size also aligns with the view of Hair et al. (2014) who state that for stud-

ies using the PLS-SEM model for data analysis, a minimum of 200 samples is required.

To ensure the minimum sample size, the authors decided to survey 1.5 times the calculated sample size, resulting in 600 questionnaires (399.4 · 1.5 = 599.1). The survey was conducted by the research team contacting the human resources departments of the banks to provide the survey questionnaire via a Google Forms link. Bank employees participated voluntarily, randomly, and were incentivized by rewards from the research team.

Table 2. Demographics of participants

Source: Author's survey (2025).

Category		Frequency (N = 568)	Percentage (%)
Gender	Male	235	41.4
	Female	333	58.6
Education level	High school	89	15.7
	College/Bachelor's	292	51.4
	Postgraduate	187	32.9
Age	Under 30 years	141	24.8
	From 30 to under 40 years	253	44.5
	From 40 to under 50 years	122	21.5
	Over 50 years	52	9.2

Table 3. Descriptive statistics, construct reliability, and validity

Source: SmartPLS output (2025).

Constructs	Items	Outer Loading	Mean	Cronbach's Alpha	C.R	AVE
Environmental Law Knowledge (ELK)	ELK1	0.865	3.646	0.861	0.868	0.707
	ELK2	0.865	3.667			
	ELK3	0.843	3.673			
	ELK4	0.788	3.708			
Information Sharing System (ISS)	ISS1	0.819	3.745	0.895	0.899	0.705
	ISS2	0.807	3.752			
	ISS3	0.827	3.727			
	ISS4	0.836	3.651			
	ISS5	0.906	3.565			
Learning-Oriented Organizational Culture (LOC)	LOC1	0.822	3.815	0.874	0.874	0.666
	LOC2	0.808	3.798			
	LOC3	0.823	3.810			
	LOC4	0.819	3.806			
	LOC5	0.807	3.810			
Organizational Support (OS)	OS1	0.861	4.025	0.901	0.902	0.717
	OS2	0.839	4.012			
	OS3	0.845	4.065			
	OS4	0.846	4.004			
	OS5	0.844	4.005			
Training and Skill Development (TSD)	TSD1	0.836	3.611	0.915	0.919	0.746
	TSD2	0.858	3.618			
	TSD3	0.843	3.583			
	TSD4	0.851	3.585			
	TSD5	0.929	3.586			
Work Motivation (WM)	WM1	0.791	3.915	0.854	0.854	0.631
	WM2	0.800	3.894			
	WM3	0.780	3.859			
	WM4	0.781	3.900			
	WM5	0.817	3.877			

Note: CR: Composite Reliability; AVE: Average Variance Extracted.

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As of the first quarter of 2025, 600 responses were recorded; however, after screening for completeness of responses, only 568 surveys were valid (accounting for 94.6%). These 568 completed surveys form the official dataset for the analysis and presentation of the research results. Descriptive statistics of the survey sample data are presented in Table 2.

3. RESULTS

The results of the study are presented according to the research process, starting with the evaluation of the reliability, convergence, and discriminant validity of the data (evaluation of the measurement model), followed by the assessment of the structural model through various indices.

Table 4. Heterotrait-Monotrait (HTMT) ratio

Source: SPSS output (2025).

Constructs	ELK	ISS	LOC	OS	TSD	WM
ELK						
ISS	0.663					
LOC	0.645	0.687				
OS	0.678	0.479	0.483			
TSD	0.655	0.712	0.672	0.470		
WM	0.704	0.527	0.503	0.807	0.532	

The results presented in Tables 3 and 4 indicate that:

1) the reliability of the measurement data, as shown by the Outer Loadings, Cronbach's Alpha, and Composite Reliability coefficients, is all greater than 0.7, satisfying the thresholds suggested by Hair et al. (2014), Hu and Bentler (1999);

2) the convergent validity of the data, as measured by the AVE, ranges from 0.631 to 0.746, which exceeds the 0.5 threshold and therefore confirms the validity (Fornell & Larcker, 1981); and

3) the discriminant validity is confirmed through the HTMT values for each variable pair, all of which are less than 0.85, fully meeting the criteria proposed by Henseler et al. (2015).

The data assessment is further reflected through structural model evaluation using the following indicators: Inner VIF values (to test for multicollinearity), effect size (f^2), coefficient of determination (R^2), predictive relevance (Q^2), and the analysis of both direct and indirect path coefficients in the PLS-SEM model.

To evaluate the structural model using SmartPLS, Hair et al. (2014) recommend first assessing the measurement model through reliability, convergent validity, and discriminant validity of the measured constructs. Subsequently, the structural model is assessed through the following steps:

1) testing for multicollinearity;

2) evaluating the R^2 coefficient;

3) assessing effect sizes (f^2);

4) evaluating predictive relevance (Q^2); and

5) testing the path coefficients for the relationships in the model.

The results presented in Table 5 reveal that:

1) There is no multicollinearity in the model, as the Inner VIF values for all paths range from 1.800 to 2.005, which is less than 3, satisfying the criterion by Hu and Bentler (1999);

2) The f^2 effect sizes for the relationships in the model fall between 0.021 and 0.115, indicating small effects ($0.02 < f^2 < 0.15$ according to Cohen, 1988);

3) The R^2 values for the endogenous variables OS, WM, and ELK are 0.248, 0.281, and 0.427, respectively. This means that the knowledge management factors (ISS, LOC, TSD) explain 24.8% of the variance in OS, 28.1% of the variance in WM, and 42.7% of the variance in ELK;

4) The Q^2 predictive relevance values of Knowledge Management for OS, WM, and ELK are 17.6%, 17.3%, and 29.6%, respectively.

To test the direct and indirect relationships, the Bootstrap method with 5,000 resamples was applied to the original dataset of 568 observations. The results, presented in Table 6, clearly show the

Table 5. Results of structural model evaluation

Source: SmartPLS output (2025).

Constructs/ Path	Inner VIF	f^2	R^2	R^2 adjusted	Q^2
ELK			0.427	0.425	0.296
OS			0.248	0.244	0.176
WM			0.281	0.277	0.173
ISS → OS	1.966	0.024			
ISS → WM	1.966	0.030			
LOC → OS	1.800	0.031			
LOC → WM	1.800	0.021			
OS → ELK	2.005	0.102			
TSD → OS	1.937	0.023			
TSD → WM	1.937	0.041			
WM → ELK	2.005	0.115			

Table 6. Tests of hypotheses

Source: SmartPLS output (2025).

Hypothesis		Beta	Std. Dev	T statistics	P values	Support
Direct relationships						
H1b	ISS → OS	0.188	0.048	3.949	0.000	Yes
H1a	ISS → WM	0.207	0.049	4.189	0.000	Yes
H2b	LOC → OS	0.204	0.048	4.246	0.000	Yes
H2a	LOC → WM	0.165	0.047	3.542	0.000	Yes
H5	OS → ELK	0.343	0.046	7.391	0.000	Yes
H3b	TSD → OS	0.185	0.050	3.685	0.000	Yes
H3a	TSD → WM	0.240	0.049	4.921	0.000	Yes
H4	WM → ELK	0.363	0.049	7.455	0.000	Yes
Indirect relationships (Mediating)						
H1c	ISS → WM → ELK	0.075	0.021	3.538	0.000	Yes
H2c	LOC → WM → ELK	0.060	0.020	3.076	0.002	Yes
H1d	ISS → OS → ELK	0.065	0.019	3.382	0.001	Yes
H2d	LOC → OS → ELK	0.070	0.020	3.474	0.001	Yes
H3c	TSD → WM → ELK	0.087	0.022	3.934	0.000	Yes
H3d	TSD → OS → ELK	0.063	0.020	3.194	0.001	Yes

path coefficients (Beta), p-values, and the conclusions for each hypothesis in the research model.

Based on Table 6, all 8 out of 8 direct effect hypotheses in the model are supported. This clearly demonstrates the positive impact of knowledge management factors (ISS, LOC, TSD) on Organizational Support (OS) and Work Motivation (WM). Among these direct relationships, the factors influencing OS in descending order of impact are LOC ($\beta = 0.204$), ISS ($\beta = 0.188$), and TSD ($\beta = 0.185$). For the relationships influencing WM, the order of descending impact is TSD ($\beta = 0.240$), ISS ($\beta = 0.207$), and LOC ($\beta = 0.165$).

The results in Table 6 also show that both OS and WM have a direct and positive influence on employees' Environmental Legal Knowledge (ELK) in commercial banks in Vietnam, with β coefficients of 0.343 and 0.363, respectively.

Regarding the indirect relationships, the results indicate that all 6 out of 6 indirect hypotheses in the model are accepted. This confirms that OS and WM serve as mediating factors in the relationship between knowledge management and employees' environmental legal knowledge in commercial banks.

Figure 2 clearly illustrates the direct and indirect relationships in the empirical research model based on the survey conducted among employees at commercial banks in Vietnam.

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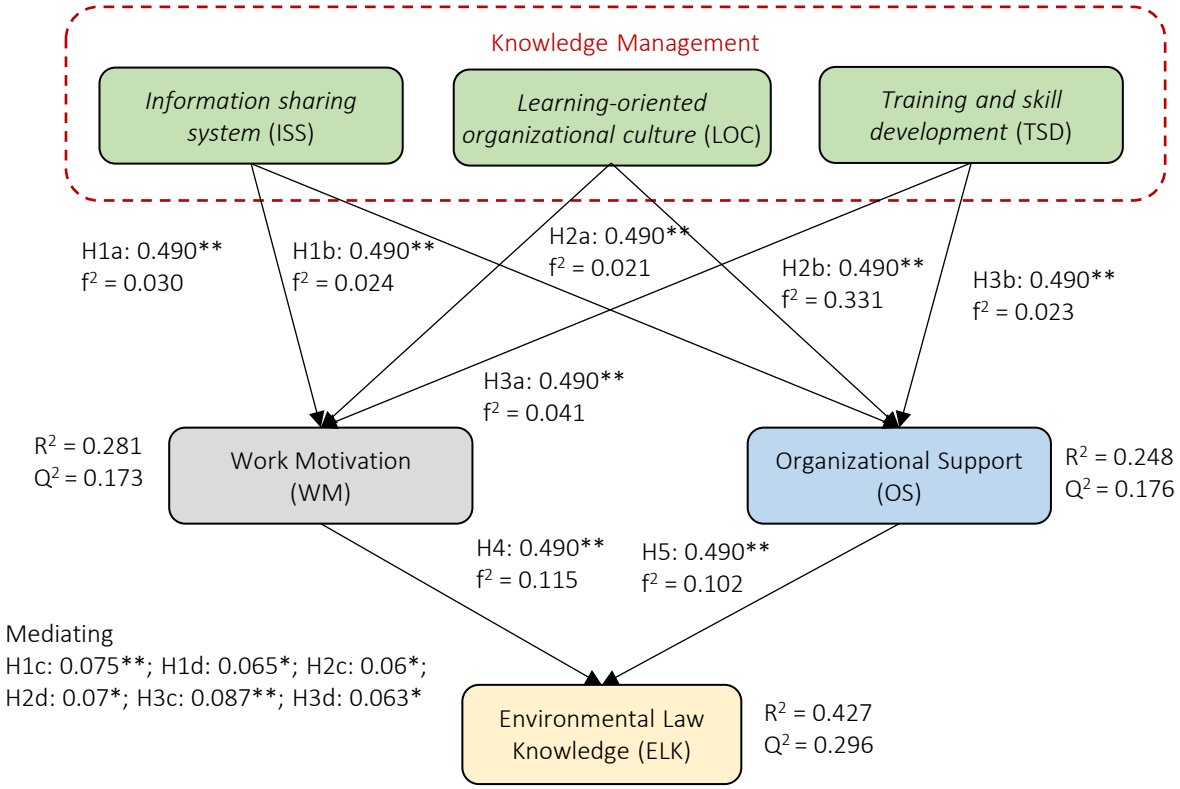

Note: ** p < 0.01; * p < 0.05.

Figure 2. Results of testing the PLS-SEM structural model

4. DISCUSSION

The findings reveal that all hypotheses are supported at a statistically significant level ($p < 0.05$), with both direct and indirect relationships showing meaningful effects. Specifically, all knowledge management factors positively influence OS and WM. ISS shows a strong effect on both OS ($\beta = 0.188$) and WM ($\beta = 0.207$), aligning with the studies by Alavi and Leidner (2001), Z. Wang and N. Wang (2012) and Gold et al., (2001) on the role of information systems in enhancing work performance. LOC also has a significant impact on OS ($\beta = 0.204$) and WM ($\beta = 0.165$), consistent with findings by Schein (2010), Nonaka (2009) and Tuyen (2021) regarding the importance of a learning culture in organizations. Notably, TSD demonstrates the strongest effect on WM ($\beta = 0.240$), supporting prior research by Noe (2020), Z. Wang and N. Wang (2012) and Gold et al. (2001) on the role of training in developing employee competencies.

Beyond the direct effects, the study also confirms the important mediating role of OS and WM in transmitting the impact of Knowledge Management on ELK. Specifically, ISS has an indirect effect on ELK through both WM ($\beta = 0.075$) and OS ($\beta = 0.065$), while TSD shows the strongest indirect effect via WM ($\beta = 0.087$). This emphasizes the importance of a coordinated approach combining information systems and skills training with supportive and motivational policies for employees. These findings are also in line with studies by Ramus (2001), Law et al. (2017) and AlQahtani (2024) on the relationship between the work environment and knowledge acquisition, while contributing a new perspective on the application of knowledge management in the area of environmental law - an underexplored topic in prior research.

Compared to earlier studies, this study both reinforces existing findings on the link between knowledge management and work performance (Nonaka, 2009; Tuyen, 2021) and expands the understanding of influencing mechanisms through mediating factors such as motivation (Ryan & Deci, 2000). However, it also diverges by focusing on environmental legal knowledge within the banking sector – a specific context that has not

been widely examined. To enhance the practical application of these findings, banks should focus on three main groups of strategic solutions.

Firstly, commercial banks need to focus on investing in modern information-sharing systems and building a sustainable learning culture while enhancing training and skill development efforts. Specifically, the adoption of advanced technologies such as knowledge management systems (KM) integrated with artificial intelligence (AI) and big data analytics will allow employees to access, update, and share environmental legal information quickly and accurately. These platforms should be designed to be user-friendly, highly interactive, and include gamification features to actively engage employees. At the same time, banks should foster a strong learning culture by encouraging self-directed learning through internal training programs, specialized workshops, and discussion forums. Leadership should play a pioneering role in promoting this culture and establish reward mechanisms for individuals and teams who contribute positively to knowledge sharing. Moreover, establishing communities of practice focusing on environmental law topics will create a continuous knowledge exchange environment, helping employees consistently enhance their capabilities. By combining modern technology with a proactive learning culture, banks can create a dynamic knowledge ecosystem that enhances legal compliance and supports sustainable development.

Secondly, to improve employees' environmental legal knowledge and work performance, commercial banks should optimize the roles of organizational support (OS) and work motivation (WM) through systematic solutions. Firstly, banks should develop comprehensive employee support policies, including clear welfare programs, transparent career development opportunities, and consistent recognition and feedback mechanisms. According to Eisenberger et al. (1986), when employees perceive genuine care and support from their organization, they are more likely to become engaged and take initiative in learning – particularly in areas such as legal compliance and sustainable development. Additionally, implementing motivation models based on autonomy needs – such as the self-determination theory (Ryan & Deci, 2000) – can help stimulate intrinsic motivation, a key driver of voluntary learning and compliance behavior. Banks should encourage employee participation in decision-making, assign tasks that align with individual capabilities, and provide opportunities for goal self-management. When the need for autonomy is fulfilled, employees become more proactive in acquiring and applying environmental legal knowledge in their work practices.

Thirdly, to enhance accessibility and the sharing of environmental legal information among all employees, commercial banks need to develop a centralized and regularly updated knowledge management system. The primary objective of this system is to minimize environmental legal risks. In addition, it contributes to standardizing training processes and improving the efficiency of legal knowledge dissemination without increasing operational costs. More importantly, as environmental laws frequently change, the knowledge management system enables banks to stay updated in a timely manner and ensures consistent application across the entire system, thereby avoiding misunderstandings or inconsistent implementation. Moreover, the implementation of such a system also helps foster a culture of sharing and continuous learning within the organization - a fundamental element of modern knowledge management.

In conclusion, the combination of comprehensive support policies and autonomy-based motivation models will form a solid foundation for improving human resource quality while promoting the green transformation of the banking sector.

These findings are not only academically meaningful but also provide practical value for financial institutions in an era where legal compliance and sustainable development are gaining increasing attention. However, the study still has several limitations, such as the relatively modest sample size compared to the total workforce currently employed in Vietnam's commercial banking sector. Expanding the sample size and extending the research duration would certainly yield more reliable results. Moreover, this study approached the topic by surveying employee perceptions and awareness. However, employees' environmental legal knowledge is influenced not only by personal factors but also by the organization, family, and society. Therefore, incorporating multi-dimensional perspectives from various stakeholders in future research is a noteworthy recommendation.

http://dx.doi.org/10.21511/kpm.10(1).2026.04

CONCLUSIONS

This study was designed to explore and quantify the impact of knowledge management components on employees' environmental law knowledge in Vietnamese commercial banks, through the mediating roles of work motivation and organizational support. The results reveal that all three components of knowledge management (including information-sharing systems, a learning-oriented organizational culture, and training and skill development) exert significant indirect effects on environmental law knowledge via the mediating mechanisms of organizational support and work motivation. These findings underscore the importance of developing effective knowledge management strategies while fostering a supportive and motivational work environment to enhance employees' legal understanding related to environmental issues in the commercial banking sector.

Beyond theoretical contributions to knowledge management and organizational behavior, the study also offers practical implications for commercial banks in strengthening environmental law compliance and promoting sustainable development. This is because, for organizations in general – and commercial banks in particular – their long-term sustainability is strongly influenced by the extent to which employees possess adequate knowledge and understanding of environmental legislation.

DECLARATION ON THE USE OF AI STATEMENT

During the preparation of this manuscript, the author did not use generative AI or any AI tools, and takes full responsibility for the content of the publication

DATA AVAILABILITY STATEMENT

The data presented in this study may be obtained on request from the corresponding author.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Conceptualization: Ha Nguyen Son, Hai Phan Thanh.
Data curation: Ha Nguyen Son, Hai Phan Thanh.
Formal analysis: Ha Nguyen Son, Hai Phan Thanh.
Funding acquisition: Ha Nguyen Son.
Investigation: Ha Nguyen Son, Hai Phan Thanh.
Methodology: Ha Nguyen Son, Hai Phan Thanh.
Project administration: Ha Nguyen Son, Hai Phan Thanh.
Resources: Ha Nguyen Son, Hai Phan Thanh.
Software: Ha Nguyen Son, Hai Phan Thanh.
Supervision: Ha Nguyen Son, Hai Phan Thanh.
Validation: Ha Nguyen Son, Hai Phan Thanh.
Visualization: Ha Nguyen Son, Hai Phan Thanh.
Writing – original draft: Ha Nguyen Son, Hai Phan Thanh.
Writing – review & editing: Ha Nguyen Son, Hai Phan Thanh.

ACKNOWLEDGMENT

The authors would like to thank the Editor-in Chief and a reviewer for their helpful comments that in our view have helped to improve the quality of the manuscript significantly. Beside, this study is the result of collaboration between researchers from the University of Law, Hue University, and School of Business and Economics, Duy Tan University. The authors would like to thank both institutions for their support and facilitation in the publication of this research.

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