Received 16 June 2025
Revised 20 August 2025
Accepted 10 September 2025

The impact of knowledge sharing on service capability and performance in international logistics companies

Po-Lin Lai
Department of International Logistics, College of Business and Economics, Chung-Ang University, Seoul, South Korea
Xinchen Wang
School of Management Engineering, Anhui Institute of Information Technology, Wuhu, China, and
Yiran Liu
Department of International Trade and Logistics, Graduate School, Chung-Ang University, Seoul, South Korea

Abstract

Purpose – This study investigates the causal relationships among knowledge sharing, service capability (SC) and organizational performance within the framework of international logistics companies, highlighting the strategic importance of knowledge dynamics in supporting trade facilitation and policy compliance.

Design/methodology/approach – A theoretical framework was developed through a comprehensive review of literature on international logistics, trade-related service innovation and organizational knowledge practices. The model was empirically tested using structural equation modeling based on survey responses from 416 employees across multinational logistics firms engaged in international trade operations.

Findings – The results reveal that knowledge sharing significantly enhances both SC and organizational performance. Furthermore, SC mediates the impact of knowledge sharing on performance, indicating its strategic role in adapting to international regulatory environments, meeting global customer expectations and complying with evolving trade policies.

Originality/value – This study contributes theoretically by clarifying how knowledge sharing enhances logistics firms' SCs, which in turn mediate organizational performance. Empirically, it extends prior knowledge management (KM) studies by using survey data from Chinese logistics firms, thereby addressing a gap in emerging-market contexts.

Keywords International logistics, Knowledge sharing, Service capability, Organizational performance, Trade facilitation, Structural equation modeling, Policy compliance

Paper type Research article

1. Introduction

As supply chain (SC) structures continue to evolve, firms are experiencing heightened competitive pressures. This escalation has rendered the management of SC activities increasingly intricate and demanding (Abd Rahman *et al.*, 2023). Considering logistics enterprises striving to maintain sustainable competitive advantages, conventional short-term strategic approaches centered on financial profitability have become obsolete (Lee and Song, 2015). Given the interdependent nature of global logistics, these enterprises must emphasize strategies that enhance both corporate and service values. By cultivating unique and

International Trade, Politics and Development
Vol. 9 No. 3, 2025
pp. 206-220
Emerald Publishing Limited
e-ISSN: 2632-122X
p-ISSN: 2586-3932
DOI 10.1108/ITPD-06-2025-0024

Funding: This research was supported by the Chung-Ang University research grant in 2024.

differentiated services, they can secure a competitive advantage and effectively integrate into the global SC framework.

In today's knowledge-driven landscape, knowledge is recognized as a crucial organizational asset and an essential economic and competitive resource for firms (Iqbal *et al*., 2019). Knowledge management (KM) has attracted considerable scholarly interest as a viable strategy for attaining sustainable competitive advantages and long-term developmental objectives (Migdadi, 2022). Effective KM is known to assist organizations in minimizing labor and infrastructure expenditures, boosting operational innovation and efficiency, securing competitive advantages and enhancing market performance, ultimately fostering organizational prosperity and ensuring longevity (Bahar *et al*., 2021; Lei *et al*., 2019; Zia *et al*., 2024).

The logistics sector is characterized by its knowledge and labor intensity, operating within a fiercely competitive landscape (Yang, 2016). Organizational performance (OP), a critical indicator of firm success (Migdadi, 2022), has been examined in relation to KM within the logistics domain. Utilizing hierarchical regression analysis with moderating effects, Lee and Song (2015) established that a firm's shipping knowledge positively impacts its OP. Likewise, Yang (2016) conducted an empirical investigation that confirmed the positive correlation between learning capabilities, service capabilities (SCs) and OP among international distribution center operators in Taiwan. Furthermore, Cooper *et al*. (2016) underscored the significance of a firm's learning culture in shaping KM capabilities, human capital and OP among logistics service providers. As a process that leverages knowledge as a critical element for value addition and creation, KM typically encompasses stages such as acquisition, creation, storage, sharing and application (Akram *et al*., 2018; Le and Lei, 2019). Alaarj *et al.* (2016) studied Malaysian publicly listed companies and emphasized that knowledge sharing (KS) had the most significant impact on OP within the processes they employed. As the central link between other KM processes and practices, KS is an indispensable capability for sustaining competitive advantage and addressing the myriad challenges that organizations face in knowledge-driven environments (Abdelwhab *et al*., 2019). However, studies examining KS and its contribution to the OP of Chinese logistics enterprises are limited.

From an alternative viewpoint, while previous research has largely concentrated on the direct effects of knowledge on operational performance (OP), there has been limited investigation into the mechanisms by which various structural factors mediate this relationship (Cooper *et al*., 2016). The knowledge-based view (KBV) suggests significant interconnections among KM, innovation and OP (Grant, 1996). Motivated by this perspective, several contemporary studies have delved into these interrelations (Le and Lei, 2019; Lei *et al*., 2019; Zia *et al*., 2024). Given the service-oriented characteristics of the logistics sector, a firm's competitive edge is influenced not only by external environmental conditions but also by its capacity to generate value for its customers. Logistics SC management is recognized as a fundamental competency for achieving enhanced performance and delivering customer value (Yang, 2016). Nevertheless, the existing literature on KS lacks thorough and specific investigations into its significance within this context.

Although research about the importance of safety knowledge exists, few existing literature studies investigate from the perspective of KM deeply. Therefore, the aim of this research is to address the research gap by discussing the current situations of safety KM of logistics companies and empirically assessing its association with organizational performance. Some practical suggestions on KM for logistics companies will be provided by the research findings.

The sample of this research is selected from leading Chinese logistics firms, which account for a substantial share of e-commerce-driven express delivery. Although focused on China, these firms operate internationally through cross-border logistics and multinational networks, meaning respondents included employees engaged in both domestic and international operations. Clarifying this context ensures that the findings are relevant not only for Chinese logistics but also for multinational logistics operations in Asia.

To reach the research objective, questionnaire surveys are employed to collect reliable data from experienced logistics companies. And a structural equation model (SEM) is utilized to

assess the current landscape of KS in logistics companies and evaluate its effects on supply chains and operational performance. The anticipated outcomes aim to yield theoretical insights and practical recommendations for refining KS management, optimizing organizational processes and elevating customer service standards, ultimately fostering the sustainable advancement of logistics enterprises, along with high development of the logistics industry and business in this decade (Zhu *et al.*, 2025). In this case, logistics companies from China are selected as a sample in this research.

This paper is organized as follows: Section 2 presents a detailed literature review, emphasizing key themes from previous studies and the conceptual framework of the research, leading to the formulation of hypotheses. Section 3 elaborates on the research framework and outlines the design of the questionnaire, the steps of implementation and the data collection methodology. Section 4 encapsulates the findings, while Section 5 concludes the study by providing practical recommendations, suggesting avenues for future research and delineating the limitations of the study.

2. Literature review and hypothesis development

2.1 Knowledge management and organizational performance

The implementation of KM strategies and processes plays a significant role in driving innovation for the development of technological and operational capabilities. It facilitates the optimization of business processes, substantially reduces costs, shortens delivery cycles and enhances the efficiency and reliability of responding to customer demand. These improvements ultimately aim to increase customer satisfaction and sustain OP. In other words, knowledge resources possess unique and inimitable characteristics that enable firms to adapt swiftly to dynamic business environments and achieve sustainable competitive advantages (Akram *et al.*, 2018; Bahar *et al.*, 2021; Lee and Song, 2015; Migdadi, 2022).

Logistics companies can be categorized as knowledge-intensive business services (KIBS) because their competitiveness depends heavily on employees' professional expertise, process know-how and customer-oriented solutions. In this context, our data capture how KS practices in KIBS-oriented logistics services enhance both service capability and performance. For KIBS, OP is closely tied to the effective management of knowledge (Iqbal *et al.*, 2018). Organizations in this sector actively seek feasible strategies to enhance knowledge resource management, aiming to adapt swiftly to dynamic changes in the business environment while maintaining operational efficiency. This enables them to meet growing demand and achieve sustainable improvements in OP (Kordab *et al.*, 2020). As a complex system that reflects the efficiency of resource allocation and the degree to which organizational goals are achieved, OP exhibits diverse evaluation dimensions across industries. These dimensions typically include financial and non-financial performance indicators that focus on customer outcomes (Yang, 2016). Direct and indirect intrinsic connections between KM and OP have been well documented (AlMulhim, 2020).

Performance evaluation in the logistics industry has traditionally been categorized into financial performance (measured by indicators such as profit margins, market share, sales growth rate, and cost reduction) and customer service performance (including customer relationships, satisfaction levels and loyalty) (Stank *et al.*, 2003). From the KBV perspective, scholars have focused on the interconnections between KM, innovation activities and OP. Research indicates that shipping organizations' knowledge acquisition and learning capabilities positively influence their organizational innovation and logistics value performance (Lee and Song, 2015). In Malaysia's logistics sector, KM capabilities were similarly found to be closely linked to SC management practices, organizational learning and OP (Bahar *et al.*, 2021). However, significant uncertainties regarding the mechanisms through which KM processes affect OP remain (Migdadi, 2022). Iqbal *et al.* (2018) argued that KM does not directly affect OP but instead operates through mediating variables. Consistent with this, Zia *et al.* (2024) found that tacit KM does not directly influence OP. However, further empirical research is required to substantiate the direct effects of KM on OP in China's logistics industry.

2.2 The critical role of knowledge sharing

Knowledge is a dynamic resource that evolves and accumulates over time through experience and learning (Salehzadeh *et al.*, 2017). As a critical capability that transcends organizational functional boundaries, KM encompasses a range of activities and processes, including knowledge creation, transfer, storage, implementation and utilization (Akram *et al.*, 2018). Failing to share acquired knowledge resources is futile. KS typically occurs through formal or informal interactions, enabling the transfer and exchange of knowledge, skills and expertise among individuals, groups and organizations. This can be facilitated through cross-departmental collaboration, interpersonal communication among employees, training activities, meetings and the use of informal social networks (Lin *et al.*, 2020). KS integrates dispersed knowledge, thereby strengthening organizational knowledge resources, enhancing innovation capabilities and ultimately improving OP (Abdelwhab *et al.*, 2019; Lee and Song, 2015). It is an indispensable capability for organizations seeking to acquire and sustain competitive advantages (Ganguly *et al.*, 2019).

KS requires managers to simultaneously focus on three key domains—individuals, organizations and technology—making it one of the most critical and complex activities in the KM process (Abdelwhab *et al.*, 2019). In the context of business management, knowledge is categorized as tacit and explicit knowledge (Nonaka, 1991). Specific to logistics operations, explicit knowledge includes areas such as inventory management; quality control; warehousing; human resource management; and the design, use and maintenance of logistics equipment. Tacit knowledge encompasses elements such as marketing strategies, locational determinants and distribution center layout planning (Abd Rahman *et al.*, 2023; Kordab *et al.*, 2020). Given the logistics industry's involvement in numerous processes within global supply chains and the utilization of various types of equipment, both explicit and tacit knowledge play an indispensable role in enabling logistics companies to deliver high-quality services to their customers (Yang, 2016).

Despite the critical significance of KS, empirical studies that directly link it to OP remain relatively scarce. Wang *et al.* (2014) conducted a survey using high-tech enterprises in China and revealed that both tacit and explicit knowledge mediated by knowledge capital can enhance a company's operational and financial performance, with notable differences in the influence exerted by each type. Salehzadeh *et al.* (2017) suggested that KS promotes organizational agility among small- and medium-sized enterprises in the Iranian manufacturing sector, thereby collaboratively enhancing overall corporate performance. Lei *et al.* (2019) explored the moderating role of KS in the relationship between transformational leadership and product and process innovations in Chinese enterprises. Abdelwhab *et al.* (2019) posited that, in the oil and gas industry, KS practices can positively impact OP through avenues such as cost reduction, organizational development and the creation of intangible benefits. Thus, it is evident that further investigation into the direct relationship between KS and OP in the context of Chinese logistics enterprises is required.

2.3 Logistics service capability

In the current intensely competitive market landscape, companies are under significant pressure to meet diverse customer demands; therefore, it would be inadequate to rely on KM alone to enhance OP (Migdadi, 2022). Therefore, the analysis of the role of KS in logistics OP requires a more comprehensive perspective. As logistics service providers continue to expand their service offerings, it is imperative to understand the details of logistics operations and customer requirements to enhance service quality. Logistics SC is widely recognized as an effective means to strengthen competitive advantage and performance (Yang, 2016). The purpose of logistics services is to create direct value for shippers by providing a range of services, including warehousing, cargo tracking, inland transportation, customs clearance, packaging and documentation services (Lu and Yang, 2010). Logistics SCs require logistics service providers to integrate and allocate resources to align with customer logistics needs and

achieve outstanding service performance (Lai, 2004). Based on a review of the relevant literature, the commonly used evaluation metrics include customer responsiveness, quality, flexibility, innovation and customer service (Abd Rahman *et al.*, 2023).

Achieving and evaluating effective measurements of logistics supply chains is crucial for accurately meeting customer needs, maintaining long-term customer loyalty and expanding the client base (Yu, 2013). Cruz-Ros and Gonzalez-Cruz (2015) approached this from a capability perspective, demonstrating that the management and organizational capabilities of service companies in Spain can enhance service quality and marketing effectiveness. Within the logistics domain, Yang *et al.* (2009) used factor analysis to identify logistics SC factors and confirmed their positive impact on the performance of Taiwanese container shipping companies. Lu and Yang (2010) categorized the logistics capability attributes of distribution center operators into service efficiency, service quality and responsiveness. Yang (2016) indicated that enhancing the logistics SC of maritime freight forwarders is a key driver for improving customer service performance and financial outcomes.

In summary, this study aims at achieving an in-depth understanding of the current state of KS among the employees of Chinese logistics companies. Furthermore, it explores the intrinsic relationships between KS, SC and OP. The conceptual research model and hypotheses are illustrated in Figure 1; the intention of this study is to provide new theoretical insights and practical guidance for improving KM practices and performance enhancements in Chinese logistics enterprises.

2.4 Hypothesis development

In the context of organizational business strategies, SC is an indispensable core component that plays a critical role in driving organizational growth and innovation and subsequently enhancing competitiveness and customer loyalty in the market (Ganguly *et al.*, 2019). Organizational SC is highly reliant on KS practices. The active engagement in KS activities enables employees to effectively transform their individual knowledge and expertise into organizational-level knowledge and capital (Abdelwhab *et al.*, 2019), which is a crucial prerequisite for improving OP (Lei *et al.*, 2019). Among them, tacit KS forms the foundation of the socialization process, whereas explicit KS facilitates the integration of knowledge within the organization (Wang *et al.*, 2014). Through internal and external KS, organizations not only enhance employees' skills and comprehensive capabilities but also optimize service processes, effectively reducing service errors and delays and improving service efficiency and quality.

KS accelerates the exchange, interaction and application of information, experiences and practical outcomes, thereby broadening the organizational network for acquiring knowledge resources and enriching employees' cross-disciplinary knowledge reserves (Migdadi, 2022). KS also drives product innovation, process upgrades and other innovative practices, ultimately

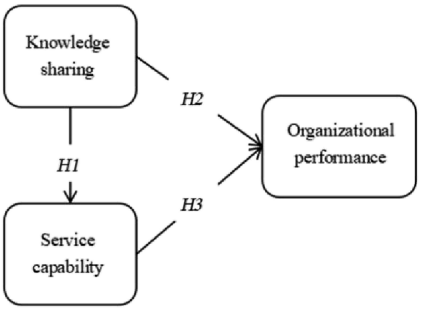

Figure 1. Conceptual framework. Source: Figure by authors

enhancing SC (Rao *et al.*, 2018). By strongly advocating continuous learning among employees, KM helps foster adaptive attitudes, strengthen team collaboration, enhance mutual understanding and trust among employees and improve job satisfaction. Hence, these practices enable employees to integrate more seamlessly into the organizational culture, effectively reducing turnover rates (Akram *et al.*, 2018). Efficient and dynamic employee KS activities significantly enhance employees' work capabilities (Yang, 2016), optimize customer service quality and improve customer relationship management (Rao *et al.*, 2018). Thus, organizations reap substantial financial benefits (Hussain *et al.*, 2016), which can lead to superior operational performance (Bahar *et al.*, 2021). Based on these insights, this study proposes the following hypothesis:

H1. KS among logistics companies positively impacts SC.

According to the KBV, the core source of value creation by organizations lies in their ability to create, transfer and apply knowledge (Iqbal *et al.*, 2018). KS involves the knowledge embedded within the organization's culture, policy orientations, established norms and collective expertise of employees (Cooper *et al.*, 2016). Cultivating a sociocultural environment in an organization that encourages KS among employees across departments and even organizations effectively promotes employee collaborations and facilitates a deeper engagement in knowledge creation and accumulation (Zia *et al.*, 2024). In knowledge-oriented enterprises, the novel culture and efficient work models nurtured by KS effectively promote internal coordination and process optimization, providing strong support for informed decision-making (Iqbal *et al.*, 2018).

Organizations proficient in KS often demonstrate distinctive competitive advantages and exceptional competitiveness (Ganguly *et al.*, 2019). The effective integration and interaction of dispersed knowledge significantly impacts the transformation of knowledge capital into new products, thereby expanding market share. Consequently, organizations can accomplish objectives, like reducing production costs, increasing sales revenue and improving asset profitability (Migdadi, 2022; Wang *et al.*, 2014). Simultaneously, KS facilitates the structured development of relational capital and in-depth enhancement of human capital, thereby improving employee performance significantly (Le and Lei, 2019; Hsu, 2007). By extensively accessing diverse knowledge resources, organizations can meticulously develop sustainable business models and launch high-value-added, knowledge-based innovative products. These efforts positively impact financial performance and organizational efficiency, supporting enterprises in achieving long-term and stable success (Ganguly *et al.*, 2019). In summary, through its multidimensional mechanisms, KS effectively promotes improvements in organizational financial performance. Thus, the following hypothesis is proposed:

H2. KS in logistics companies positively impacts OP.

Given the unique role of the logistics industry in the global service sector, employees' ability to provide high-quality services plays a decisive role in meeting customer demand and achieving organizational goals. To address the growing customer demand for logistics services, providers continuously strive to create and allocate resources to deliver superior service performance (Yang, 2016). SC refers to service providers' capability to effectively utilize their resources to meet customer needs (Lai, 2004). It is regarded not only as a key element for driving excellent performance and creating customer value but also as a strong driver for gaining a unique competitive advantage (Yang, 2016). Many distribution center operators focus on cultivating logistics capabilities to optimize their performance in response to customer demand for logistics services (Lu and Yang, 2010). Logistics services and operational capabilities such as navigation reliability, flexibility, customer responsiveness, service reliability, value-added services and information systems are critical factors for improving OP (Yang *et al.*, 2009).

Logistics SC contributes to the integration of collective skills, capabilities and expertise within organizations, enabling the effective coordination of activities and optimal utilization

of assets to address current and future competitive challenges (Yang, 2016). Thus, enhancing organizational capability serves as a strategic asset for achieving superior performance and creating customer value, exerting a positive and significant impact on business performance. Thus, the following hypothesis is proposed:

H3. The service capability of logistics companies will positively impact OP.

3. Methodology

Data were collected through a questionnaire, and SEM was used to analyze the multidimensional structure of the relationships among the variables. SEM was chosen due to its excellent predictive power and ability to account for measurement errors and effectively handle the complexity of variable relationships (Nachtigall *et al.*, 2003).

3.1 Questionnaire design and scale development

This study used an online questionnaire comprising four sections. The first section focused on collecting basic information about the respondents' companies and included a confidentiality assurance statement to ensure the legality and confidentiality of the survey data. Only participants who agreed with this statement could proceed to the subsequent sections. The second section examined the current state of KS among company employees. The third section systematically evaluated the SCs of the logistics company employees; the fourth comprehensively examined the OP of logistics companies.

The questionnaire employed a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to score each item. The total score for attitudes was obtained by adding all the scores, and the arithmetic mean was used to represent the overall consistency of logistics company employees' perceptions of KS, SC and OP structures (Roopa and Rani, 2012).

To effectively mitigate biases caused by "straight-line" responses, the order of the questionnaire items was randomized. Additionally, screening questions were included to assess the respondents' attention levels, but these responses were excluded from the formal analysis. Given that the variables measured in this study predominantly represented latent constructs that could not be observed directly, a multi-item approach was adopted to quantify each construct. Following a comprehensive review and synthesis of the relevant literature, suitable measurement items were selected, which culminated in the identification of three key dimensions for the investigation: KS, SC and OP (see Appendix).

3.2 Sampling and data collection

In this study, six of the top 10 logistics enterprises selected in China are private companies that account for a substantial proportion of the express-delivery business volume and revenue. Their significant role in the market, coupled with sustained growth driven by the e-commerce boom, makes logistics company employees resource-rich and appropriate survey respondents.

The survey was conducted in two stages. The first stage involved a textual pre-test conducted from March 10 to March 16, 2024. The questionnaire items were updated after the expert review to ensure content validity and contextual relevance for Chinese logistics firms. Specifically, some items were removed because experts found them redundant or not well suited to the Chinese logistics environment (e.g. questions overlapping with existing measures or referencing practices uncommon in China). Other items were refined for clarity, ensuring that constructs such as knowledge sharing, service capability and organizational performance were measured in a way consistent with both the theoretical framework and industry practice.

For the formal survey, a translation-and-back-translation approach was adopted to ensure readability and content consistency. This process involved professional translators who first translated the English questionnaire into Chinese; this was followed by another translator who independently translated it back into English without referring to the original version.

Discrepancies were identified and resolved through offline workshops to refine the Chinese version of the questionnaire. The formal survey was distributed on March 20 to the employees of logistics companies, including senior management, department staff and frontline workers. A total of 500 questionnaires were distributed, and 432 responses were collected over two weeks. After excluding 16 responses that failed the screening or exhibited excessively short response times, 416 valid responses were retained for the formal analysis.

4. Empirical analysis and results

4.1 Demographic characteristics of respondents

A statistical analysis of the basic demographic information of the survey respondents is presented in Table 1. Total respondents are 416, and regarding the functional nature of the companies, most respondents were from warehousing companies (45.91%), followed by integrated logistics companies (32.21%) and transportation companies (21.88%). In terms of business coverage, most respondents (91.83%) worked for companies classified as domestic or non-local enterprises. Regarding company age, the largest proportion of respondents (23.32%) worked for companies established 30–40 years ago. Additionally, 20.19% were employed by companies that had been established for 5–10 years, while 21.63% worked for companies that had been in operation for 10–20 years. Regarding the number of employees, most respondents were employed by companies with 51–100 employees (23.80%), followed by companies with more than 1,000 employees at 22.6%. Finally, in terms of 2023 revenues, approximately half the respondents (50.96%) worked for companies with annual revenues of between RMB 1 billion and 10 billion.

Table 1. Descriptive statistics of respondents

Basic attributes		Frequency	Percentage (%)
Nature of service functions	Warehousing	191	45.91
	Transportation	91	21.88
	Integrated	134	32.21
Business coverage	Domestic same city	348	83.65
	Domestic non-local	382	91.83
	Hong Kong, Macau and Taiwan	224	53.85
	International	272	65.38
Company establishment years	Less than 5 years	53	12.74
	5∼10 years	84	20.19
	10∼20 years	90	21.63
	20∼30 years	45	10.82
	30∼40 years	97	23.32
	More than 40 years	47	11.30
Number of employees (Mainland China)	Less than 20 people	10	2.40
	21∼50 people	63	15.14
	51∼100 people	99	23.80
	101∼500 people	86	20.67
	501∼1,000 people	64	15.38
	More than 1,000 people	94	22.60
2023 Company revenue	Less than 10 million RMB	10	2.40
	10 million∼100 million RMB	100	24.04
	100 million∼1 billion RMB	62	14.90
	1 billion∼10 billion RMB	212	50.96
	10 billion∼100 billion RMB	22	5.30
	More than 100 billion RMB	10	2.40
Total number		$N = 416$	

Source(s): Table by authors

4.2 Bias tests and confirmatory factor analysis

As this study used a single-wave self-report method to collect data, potential issues such as common method and non-response biases were addressed through multiple diagnostic measures to ensure data quality. To address the common method bias, the order of the items was randomized and divided into subsections to mitigate potential effects. Harman's single-factor test (Podsakoff and Organ, 1986) was conducted to separately analyze the KS, SC and OP factors. For both KS and SC, three factors with eigenvalues greater than one were extracted, whereas two factors were extracted for OP. The variance explained by the first factor in each analysis was below the recommended threshold, suggesting that common method bias was not a significant concern. Additionally, a Varimax rotation was applied to enhance the clarity of the factor loadings at an absolute factor loading threshold of 0.5 (Hair *et al.*, 2010). To examine non-response bias, the sample was segmented based on the functional nature of the respondents' companies, and an ANOVA was conducted. The results indicated no significant differences across the groups, suggesting a low likelihood of non-response bias in the dataset.

Confirmatory factor analysis is a critical step preceding SEM (Singh, 2017). As shown in Table 2, the fit indices of the model indicate a good fit between the data and the proposed model (Hair *et al.*, 2010). Regarding reliability, the standardized factor loadings ranged from 0.695 to 0.826, Cronbach's alpha values ranged from 0.881 to 0.926 and composite reliability (CR) values ranged from 0.729 to 0.796, all exceeding the critical thresholds. From the perspective of discriminant validity, the average variance extracted (AVE) values exceeded 0.5 (ranging from 0.565 to 0.573), supporting the convergent validity of the constructs. Moreover, the square root of the AVE for each construct was greater than the correlation between the constructs (Hair *et al.*, 2010; Singh, 2017, Table 3). Overall, the questionnaire demonstrated high reliability, stability and discriminant validity, making it suitable for further analyses.

4.3 Hypothesis testing

Data were analyzed using AMOS 26.0 with covariance-based SEM (CB-SEM), which is suitable for theory testing and provides robust estimates for latent constructs. An SEM analysis was conducted to examine the hypotheses, and the results are presented in Table 4. The indices indicate a good model fit (χ^2/df = 1.778, GFI = 0.907, IFI = 0.951, TLI = 0.945, CFI = 0.951, RMSEA = 0.041, SRMR = 0.083), and all paths in the final SEM model reached significant levels. Although RMSEA values between 0.05 and 0.08 are often considered acceptable, our RMSEA of 0.041 falls below the 0.05 threshold, which indicates a close fit (Hair *et al.*, 2010). Combined with CFI and TLI >0.90, the overall model fit is robust and acceptable for SEM analysis.

Specifically, the standardized path coefficient between KS and SC was statistically significant at 0.548. This suggests that KS has a positive and significant direct impact on employees' SCs within logistics companies, supporting H1. The standardized path coefficient between KS and OP was 0.372 at a significant level, providing support for H2. Similarly, the standardized path coefficient between SC and OP was 0.455, which was also significant. This indicates that employees' SC has a positive and significant impact on OP in logistics companies, thus supporting H3. These results suggest that implementing KS within companies can effectively enhance employees' SC, which, in turn, supports the development of OP. Additionally, employees' SCs contribute positively to OP.

5. Conclusion and recommendations

Logistics companies in highly competitive and uncertain markets can stand out and achieve sustainable growth and development by strategically aligning their plans with the industry's unique characteristics. Achieving this strategic goal depends heavily on employees' possession of professional KS capabilities and the ability to accumulate practical experience over time to tackle diverse and complex challenges at various stages. However,

Table 2. Descriptive statistics and confirmatory analysis results

Constructs		Items	*Λ1*	Alpha	Mean	*Λ2*	AVE	CR
Knowledge sharing (KS)	Knowledge sharing (KS)	Ks1	0.914	0.925	3.610	0.762	0.565	0.795
		Ks2	0.909					
		Ks3	0.911					
		Ks4	0.91					
		Ks5	0.913					
		Ks6	0.912					
	Training and encouragement (TE)	TE1	0.905	0.919	3.429	0.699		
		TE2	0.905					
		TE3	0.904					
		TE4	0.903					
		TE5	0.904					
		TE6	0.903					
	Knowledge acquisition (KA)	KA1	0.859	0.886	3.649	0.791		
		KA2	0.863					
		KA3	0.871					
		KA4	0.863					
		KA5	0.872					
		KA6	0.869					
Service capability (SA)	Service reliability (SR)	SR1	0.913	0.926	3.334	0.695	0.567	0.796
		SR2	0.913					
		SR3	0.912					
		SR4	0.911					
		SR5	0.912					
		SR6	0.912					
	Service efficiency (SE)	SE1	0.901	0.917	3.381	0.732		
		SE2	0.899					
		SE3	0.902					
		SE4	0.901					
		SE5	0.904					
		SE6	0.904					
	Customer response to service (CR)	CR1	0.867	0.888	3.462	0.826		
		CR2	0.863					
		CR3	0.877					
		CR4	0.868					
		CR5	0.871					
		CR6	0.868					
Organizational performance (OP)	Financial policy (FP)	FP1	0.898	0.913	3.371	0.772	0.573	0.729
		FP2	0.896					
		FP3	0.893					
		FP4	0.901					
		FP5	0.894					
		FP6	0.902					
	Customer response efficiency (CE)	CE1	0.845	0.881	3.389	0.742		
		CE2	0.845					
		CE3	0.849					
		CE4	0.851					

Note(s): $\chi^2/df = 2.17$, GFI = 0.983, IFI = 0.983, TLI = 0.973, CFI = 0.983, RMSEA = 0.053, SRMR = 0.038
Source(s): Table by authors

the logistics industry is currently facing significant challenges owing to workforce aging and a retirement wave. This trend has led to numerous difficulties in internal knowledge transfer within companies. In response, this study focuses on analyzing the current state of KS in logistics enterprises and further explores the intrinsic relationships between KS, SC and OP.

Our analysis reveals a highly significant causal relationship between these three factors. The findings enable us to provide targeted and practical recommendations for employee

Table 3. Discriminant validity

	OP	*SA*	*KS*
OP	*0.757*		
SA	0.659	*0.753*	
KS	0.622	0.548	*0.752*

Note(s): Square root of AVEs is shown in the main diagonal
Source(s): Table by authors

Table 4. Hypothesis testing results

Hypothesis path	Estimates	S.E.	*T*-value	*p*-value	Test result
H1: KS → SA	0.548	0.07	7.928	***	Support
H2: KS → OP	0.372	0.081	5.123	***	Support
H3: SA → OP	0.455	0.081	6.114	***	Support

Note(s): χ^2/df = 2.17, GFI = 0.979, IFI = 0.983, TLI = 0.973, CFI = 0.983, RMSEA = 0.053, SRMR = 0.038.
***Significant at $p < 0.01$ level
Source(s): Table by authors

management strategies and overall strategic planning for logistics companies' KM. This study aims to support logistics firms in improving their OP, core competitiveness and capacity for sustainable development in the market.

5.1 Theoretical contributions

This study constructs a multidimensional theoretical contribution system for the performance development of logistics companies at the knowledge level. First, regarding the relationship between KS and SC, the results indicate that KS has a significant positive impact on a company's SC, a conclusion that corroborates previous studies' findings (Hsu, 2007). KS can be subdivided into three key components: the act of KS, training and incentive mechanisms, and avenues for knowledge acquisition. It can be inferred from the structural model that most companies actively expand their knowledge sources through internal and external channels while strongly advocating for comprehensive employee participation in KS activities. When a company successfully and effectively implements KS strategies, its employees can continuously accumulate rich practical experience throughout this process and gradually enhance their professional skill levels; this directly leads to an improvement in the company's SCs.

Second, previous research has found that KS has a significantly positive impact on OP (Migdadi, 2022; Wang *et al.*, 2014). When employees have convenient and efficient channels through which to absorb accumulated knowledge and experience, their actual work performance tends to be significantly enhanced, which ultimately contributes to the improvement of the company's performance. Thus, it is evident that the effectiveness of KS implementation has become a core factor in determining a company's operational success. Therefore, logistics companies should place greater emphasis on KS during their operational management processes and adopt a more proactive approach to integrate it into their daily business practices. Specifically, in the context of Chinese logistics firms—which face rapid digital transformation and e-commerce pressures—our findings highlight that KS is not only a managerial practice but also a strategic resource enabling firms to sustain competitiveness in highly dynamic service markets.

Finally, a company's SCs constitute a vital pathway for achieving excellent results. Numerous previous studies (Lai, 2004; Lu and Yang, 2010) have indicated that, as a key resource that can accurately match and meet diverse customer needs, SC plays an irreplaceable role in the creation and realization of OP. Specifically, by continuously enhancing the service efficiency, service quality and customer responsiveness of logistics companies, it is possible to ensure that they maintain a high level of performance, create significant customer satisfaction and loyalty and ultimately achieve outstanding OP.

5.2 Practical recommendations

The outcomes of this study are expected to provide highly instructive recommendations for logistics companies in China regarding their future strategic planning and implementation. First, the internal reinforcement of KS is a crucial driving force for enhancing SCs and improving company performance. Logistics companies must recognize the significant strategic implications of KS, regard knowledge acquisition as a key task and focus on effectively applying the knowledge gained from sharing to their operational workflows, thereby strengthening their competitive advantages.

Although logistics companies are presently striving to establish standardized KS operational processes, employees continue to lack a sufficient and in-depth understanding of the importance of KS for personal career development and organizational efficiency improvement. Under such circumstances, companies must foster an open and inclusive communication environment, maintain a positive attitude toward knowledge utilization and actively support employees in conducting KS activities. For instance, companies can motivate employees to engage in knowledge exchange by formulating clear KS policies, building comprehensive implementation process systems and establishing reward mechanisms closely linked to performance evaluation. This can help employees accumulate richer work knowledge and practical experience, thereby helping them demonstrate superior service skills and capabilities. Moreover, employees would then be more inclined to view KS as a meaningful and enjoyable task, prompting them to actively practice it amid their busy work schedules. This will facilitate a precise understanding and effective satisfaction of customer needs, ultimately leading to significant improvements in OP.

Second, logistics companies should focus on enhancing service reliability as a key approach to improving SC and driving OP. Building on the foundation for ensuring service efficiency and quality, such as demonstrating high-satisfaction response strategies when handling customer complaints, responding swiftly and effectively to emergencies, ensuring the integrity of package handling and safeguarding customer privacy, companies should further enhance the reliability of their services.

However, certain shortcomings in service reliability persist, including inconsistencies in shipment times, occasional confusion in pricing standards and the complexity of pricing mechanisms. These have contributed to reduced customer satisfaction and highlighted the need for efficiency improvements. To address these issues effectively, companies can implement a series of measures, such as establishing transparent pricing standards, optimizing online platform order-processing workflows and comprehensively enhancing the professionalism and competencies of service personnel, with a particular focus on improving service convenience and pricing rationality. By providing reliable services, logistics companies can achieve higher customer satisfaction, thereby laying a solid foundation for sustainable and stable business growth.

5.3 Research limitations and opportunities

This study has several limitations. First, data were limited to Chinese firms, so future studies could expand to cross-country samples. Second, self-reported survey data may involve perceptual bias; longitudinal or mixed-method approaches could provide deeper insights. Finally, beyond KS, other KM processes (e.g. acquisition, application) could be incorporated in future research. Addressing these limitations will enhance the robustness and generalizability of future studies.

Owing to inherent limitations such as investigation time and costs, this study has scope for improvement. First, the scope of the study was confined to logistics companies in China. However, considering that the development of logistics enterprises is closely linked to the dynamics of the global market, future studies should expand this investigation to achieve a broader operational scope. Second, the questionnaire survey could have been influenced by individual subjective cognitive biases, leading to potential discrepancies between the research results and actual conditions. Thus, future research should employ diverse investigative methods. Finally, existing studies indicate that KS may also affect numerous other factors and dimensions, such as corporate competitiveness. Consequently, future research could further delve into the complex relationships between KS and other dimensional variables and thoroughly explore the multifaceted mechanisms that promote corporate performance development.

Supplementary material

The supplementary material for this article can be found online.

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Corresponding author
Po-Lin Lai can be contacted at: polin@cau.ac.kr