

# How Does Knowledge Management Matter for Supply Chain Resilience? Mediator of Collaborative Innovation Capability and Moderator of Social Media Use

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## ABSTRACT

Disruption events highlight the importance of supply chain resilience (SCR) and leave managers wondering what characteristics can help firms survive and recover. This study employs the knowledge-based theory to investigate factors contributing to SCR. Using data collected from 220 manufacturing firms in China, this study empirically examines the proposed research model. Results indicate KM processes (i.e., creation, sharing, utilization) significantly influence SCR, with collaborative innovation capability (CIC) mediating the relationship between KM and SCR. Interestingly, social media use positively moderates the relationship between knowledge sharing/utilization and CIC, while this effect is absent for the relationship between knowledge creation and CIC. These findings enrich the existing literature on knowledge management and supply chain management, offering managerial insights for effective knowledge strategies and resilience improvement.

## KEYWORDS

Collaborative Innovation Capability, Knowledge Management Processes, Social Media Use, Supply Chain Resilience

As organizations pursue greater efficiency and cost-effectiveness, they may face the double-edged sword of increased vulnerability. This vulnerability is a consequence of growing complexity and interconnectedness of the global supply chains (Irfan et al., 2022; Kamalahmadi & Parast, 2016). Further exposed and exacerbated by the disruptions typical in today's turbulent world from both natural and human factors, this vulnerability directly impairs operational efficiency and magnifies adverse outcomes (Scholten et al., 2014; Williams et al., 2017). Recognizing the critical need to address these challenges, researchers and practitioners have shifted their focus toward the development of resilient supply chains, capable of adapting to and withstanding such unpredictable challenges (Chowdhury

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& Quaddus, 2016; Han et al., 2020; Kamalahmadi & Parast, 2016). Supply chain resilience (SCR) is central to this effort. SCR is described as the supply chain's ability to effectively prepare for, respond to, and recover from disruptions, thereby ensuring business continuity and minimizing negative impacts (Irfan et al., 2022; Wong et al., 2020).

Given its significance, investigating the factors contributing to SCR has become a priority (Goel et al., 2022). Although scholarly attention on SCR has grown, encompassing studies on its definition, dimensions, and measurement criteria (Han et al., 2020; Ponis & Koronis, 2012), as well as understanding its antecedents through case analysis and literature reviews (Goel et al., 2022; Scholten et al., 2014), deeper empirical investigation into the antecedents is still necessary (Chowdhury & Quaddus, 2016; Han et al., 2020; Kamalahmadi & Parast, 2016). The potential of knowledge and knowledge management (KM) in building SCR comes to the fore. As a fundamental asset inherent to each organization, effective KM is essential for understanding supply chain dynamics, and potentially, anticipating disruptions and enhancing SCR (Umar et al., 2021; Zighan et al., 2023). KM not only functions as a driver of organizational uniqueness, innovation, and competitiveness (Raudeliuniene et al., 2021) but also acts as a coordinating mechanism for converting knowledge resources into capabilities (Darroch, 2005). The recognition of KM for resilience development within industries such as pharmaceuticals (Zighan et al., 2023) or agri-food (Ali et al., 2023) underscores the value of delving into this field, and detailed investigations into the specific mechanisms of KM processes remain scant and warrant further exploration.

KM involves processes such as knowledge creation, sharing, and utilization, crucial for integrating organizational knowledge into operations, technologies, personnel, and culture (Ode & Ayavoo, 2020; Raudeliuniene et al., 2021). The creation of new knowledge leads to improved organization performance (Abubakar et al., 2019) and enhances organizational agility in crisis response (Al-Omoush et al., 2020). Knowledge sharing within supply chain networks fosters collaboration and creativity (An et al., 2014; Wang & Hu, 2020; Zada et al., 2023), both of which are crucial for devising solutions to prevent or address disruptions, whereas knowledge utilization strengthens firm innovation (Ode & Ayavoo, 2020) and risk management (Ali et al., 2023). Despite recognition of their individual importance, the integrated impact of these KM processes on SCR requires further investigation. This research aims to address this gap by examining each KM dimension's role in enhancing SCR, thereby responding to the scholarly call for further empirical investigation of KM's strategic value (Ali et al., 2023; Irfan et al., 2022; Hu et al., 2024) to fully understand and leverage its effect on SCR.

Despite large progress in KM research, however, limited exploration has been given to the intermediate mechanisms and boundary conditions that affect KM's value. For organizations to capture desired resilience improvements through KM processes. It's essential for organizations to engage in collaborative innovation. This approach is critical for jointly developing innovative strategies and practices tailored for navigating changing circumstances (Chi et al., 2018; Messabia et al., 2022)—a complex endeavor typically beyond the capacity of a single organization to manage independently (Skippari et al., 2017). KM can potentially foster collaborative innovation capability by aligning knowledge resources because the activities of generating and communicating knowledge impel this collaborative approach (An et al., 2014), further prioritizing the co-creation of innovative practices (De Noni et al., 2017; Wang & Hu, 2020). The enhanced collaborative innovation capability enables organizations to target preparation and adaptation to changing circumstances (Al-Omoush et al., 2020; Messabia et al., 2022), with a cohesion of decision-making and problem-solving. Collaborative innovation capability is therefore expected to mediate the relationship between KM and SCR—explaining how knowledge management processes are materialized into resilience improvements—an important subject not yet empirically examined by previous research.

Although collaborative innovation capability may help explain why KM processes contribute to SCR, contextual factors should also be considered to elucidate when such relationships are likely to be stronger or weaker. The use of social media stands out as a potential moderator, amplifying the effect of KM on collaborative innovation capability owing to its interactive and online engagement nature

to foster communication, collaboration, and knowledge sharing among its participants (Razmerita et al., 2016; Sun et al., 2022). Prior research indicates that the use of social media makes knowledge management activities more effective (Benitez et al., 2018; Razmerita et al., 2016). With intensified knowledge-sharing initiatives and team boundary-spanning interactions (Van Osch & Steinfield, 2016) through social media, organizations accurately use metaknowledge (knowledge of “what” and “whom”) (Leonardi, 2015), which makes the potential of transforming knowledge into innovation stronger. The extensive discussion regarding the role of social media use in the workplace underscores its significant impact (Sun et al., 2022). Social media is recognized for enhancing communal knowledge sharing and presentation (Razmerita et al., 2016), propelling the transformation of acquired knowledge into innovation (Nguyen et al., 2015) and augmenting firms’ operational innovativeness (Lam et al., 2016). Scholars also found that higher levels of social media use amplify the positive impact of KM on employee creativity and innovation (Sigala & Chalkiti, 2015). Yet, the exploration of high levels of social media use in affecting knowledge management’s role in collaborative innovation capability remains scant and is empirically examined in this study.

Using the lens of knowledge-based theory, we propose a hypothesis model to explore the relationship between KM and SCR, considering the mediating effect of collaborative innovation capability and the moderating effect of social media use. Drawing from the literature, we posit that collaborative innovation capability mediates the KM-SCR link and that social media use moderates the KM-collaborative innovation capability link. This study has three key implications. First, this study empirically examines KM’s impact on SCR and thus broadens the research stream on resilience antecedents. Second, this study tests the mediating role of collaborative innovation capability, elucidating the underlying intermediate mechanism of how KM relates to SCR. Third, by examining the influence of different levels of social media use on the relationship between KM and collaborative innovation capability, this study deepens understanding of their interrelationship, guiding practice in fully leveraging KM. Subsequent sections detail methodology, measurement, and hypothesis testing, followed by an in-depth discussion of results. The conclusion outlines implications, limitations, and avenues for future research.

## LITERATURE REVIEW

### Supply Chain Resilience

Resilience was initially described as an object’s ability to return to its original state once an external force was eliminated (Ponis & Koronis, 2012). It was gradually introduced into the operations and supply chain research as scholars argued that disruptions and crises can be seen as a force that threatens organizations’ original state (Ponis & Koronis, 2012). This resilience has been recontextualized to address the intricacies of supply chains, especially under the duress of today’s tumultuous global landscape (Irfan et al., 2022; Wong et al., 2020). SCR is thus characterized by its ability to swiftly reconfigure supply chains (Irfan et al., 2022); it has emerged as a valuable capability that enables organizations not merely to withstand, but also to adapt, respond, and recover from disruptions (Irfan et al., 2022; Williams et al., 2017).

The scholarly discussions on the definition and categories of SCR present differing perspectives. Some scholars describe it as the ability to reactively adapt and recover post-disruptions (Umar et al., 2021), whereas others posit proactive preparation as equally crucial for resilience improvement (Wang et al., 2023; Williams et al., 2017). Delving deeper into the SCR literature reveals a multifaceted construct that encompasses readiness, response, and recovery (Chowdhury & Quaddus, 2016; Han et al., 2020). This construct also extends to identifying key capabilities, such as agility, flexibility, and adaptability (Han et al., 2020). Other categories of SCR focus on differentiating internal and external resilience that highlights the abilities required to manage internal operational disruptions versus those emanating from external sources, enabling effective disruption navigation (Xie et al., 2022).

Extensive research into SCR antecedents has focused on a range of resources and capabilities, including social capital, supply chain structure knowledge, alignment, collaboration, risk management culture, and learning and development (Gölgeci & Kuivalainen, 2020; Kamalahmadi & Parast, 2016; Ponis & Koronis, 2012). Among these, KM's role in fortifying resilience is attracting attention (Irfan et al., 2022). Traditionally associated with building organizational capabilities, KM offers opportunities for collaborative innovation within certain groups (An et al., 2014), and it might also equip firms' innovations practices, enabling them to reduce vulnerabilities and adapt in advance rather than merely responding post-disruption (Chowdhury & Quaddus, 2016; Han et al., 2020). The discussions of KM's role into SCR open new avenues; however, the specific mechanisms and processes by which KM contributes to resilience building remain underexplored and need further investigation.

## **KM**

Effective KM is crucial for organizations to innovate and compete in the modern business landscape (Abubakar et al., 2019; Ode & Ayavoo, 2020). As a multidimensional process, KM encompasses the creation, sharing, and utilization (Raudeliuniene et al., 2021) of both tacit and explicit knowledge within organizations (Nonaka, 1991). KM is the process designed to activate the knowledge; its aim is to optimize an organization's intellectual assets and drive competitiveness (Abubakar et al., 2019; Ode & Ayavoo, 2020). Scholarly research has diversified the understanding of KM processes. Knowledge creation focuses on generating new insights and ideas. Knowledge sharing extends these benefits across the organizational ecosystem, allowing for the diffusion of innovative practices. Knowledge utilization then transforms these insights into concrete actions and decisions, enabling organizations to make informed decisions and innovate effectively to achieve expected goals (Abubakar et al., 2019; Raudeliuniene et al., 2021; Shujahat et al., 2019). This study examines processes of knowledge creation, sharing, and utilization to gain a deeper understanding of how knowledge evolves and is applied within organizations through the lens of knowledge-based theory. This examination allows us to uncover the complex mechanisms of KM and its outcomes.

Knowledge-based theory places organizational knowledge as the most significant strategic resource (Alavi & Leidner, 2001). It posits the importance of effectively managing knowledge to develop and enhance organizational capabilities, providing sustained competitive advantage in increasingly complex business environments (Abubakar et al., 2019; Darroch, 2005). The theory emphasizes knowledge as a key resource for strengthening capabilities. Both resilience and collaborative innovation can be viewed as the capabilities that are crucial for innovating and navigating in disruptions. However, the literature lacks the understanding of how KM influences these two specific capabilities. Applying knowledge-based theory to this study offers a theoretical framework to explore and understand KM's impact on supply chain resilience and collaborative innovation capability.

Research in the field of KM spans diverse perspectives, including the resources, technology, culture, and structures, to explore mechanisms pertaining to positive outcomes (AlQershi et al., 2023). Studies have argued that effective KM exerts potential for innovation (Caccamo et al., 2023; Chiu & Lin, 2022; Ode & Ayavoo, 2020; Shujahat et al., 2019), resilience (Irfan et al., 2022), and operational efficiency (Darroch, 2005). Specifically, collaborative knowledge creation enhances organizational agility, facilitating quicker recovery and adaptability during a crisis (Al-Omoush et al., 2020). Meanwhile, the sharing and utilization of knowledge promote collaboration, innovation, and creativity (An et al., 2014; Ode & Ayavoo, 2020; Wang & Hu, 2020), potentially paving the way for innovative strategies and solutions to navigate disruptions. Despite these insights, however, the differential impacts of KM processes on capability building, such as resilience and collaborative innovation development, require further investigation.

## **Collaborative Innovation Capability**

Collaborative innovation capability, described as the ability to jointly develop new products, processes, and operations through shared knowledge, resources, and expertise (Al-Omoush et al.,

2023; Skippari et al., 2017), is increasingly recognized as crucial in today's changing business landscape. This capability leverages the collective strengths of strategic alliances and supply chain partnerships. It also enables organizations to achieve novel innovations and competitive advantages through effective integration and coordination (Al-Omouh et al., 2023; Skippari et al., 2017). The significance of collaborative innovation stems from its ability to bring together diverse perspectives and capabilities that lead to more innovative and effective outcomes (Skippari et al., 2017). The value of collaborative innovation capability is gaining recognition and is regarded as the contributor for the navigation of challenges.

Scholars have extensively studied the drivers and outcomes of collaborative innovation capability. By bringing together diverse sources of knowledge, collaborative approaches enhance the quality of design solutions, making them more appealing to customers and easier to execute (Swink, 2006; Wang & Hu, 2020). Moreover, collaborative innovation capability increases product reliability and reduces risks associated with introducing new products, thereby providing both revenue-enhancing and cost-reducing outcomes (Najafi-Tavani et al., 2018; Swink, 2006). Collaborative innovation capability also helps promptly convert ideas into innovative initiatives and redirect resources and capabilities through collaborative brainstorming and the generation of creative new solutions (Al-Omouh et al., 2023). As for the drivers of collaborative innovation capability, some scholars have proposed significant contributing factors. For example, Skippari et al. (2017) delved into relations and networks (which increase firms' accessibility to new knowledge sources). Pigola and Da Costa (2022) put forth organizational learning (where experience-based learning triggers knowledge utilization), whereas Wang and Hu (2020) proposed partnering orientation (which ensures knowledge sharing in a shared-vision culture).

## **Social Media Use**

Social media is an internet-driven tool rooted in Web 2.0 principles. It acts as a dynamic platform that enables users to exchange insights and ideas (Kietzmann et al., 2011), redefining the way of communication. Its unique attributes, such as visibility, persistence, editability, and association for action, distinguish social media from traditional communication tools (Treem & Leonardi, 2013). These attributes offer new opportunities for users to share, access, modify, and link knowledge, tasks, and progress (Chen et al., 2021). Organizations are progressively embracing social media for multifaceted organizational objectives spanning marketing, operations, and innovation management (Chen et al., 2021; Lam et al., 2016; Sigala & Chalkiti, 2015). This strategic integration of social media into business practices, referred to as social media use in this research, is gaining traction in various sectors. For instance, in the supply chain management field, social media has become a potent avenue for knowledge sharing and utilization, sparking interest among both practitioners and scholars alike (Benitez et al., 2018).

Within the workplace, social media's role extends beyond simple communication; it fosters enhanced collaboration across supply chain organizations (Leonardi et al., 2013). It enriches KM processes across diverse stages (Sigala & Chalkiti, 2015) by enabling individuals to connect, co-create knowledge, and benefit from each other's experiences (Salo, 2017; Sun et al., 2022), thus impacting individual creativity and collaborative efforts (Sigala & Chalkiti, 2015). Research has illuminated its relationship with knowledge acquisition (Leonardi, 2015; Nguyen et al., 2015) and knowledge sharing (Razmerita et al., 2016), highlighting its potential to drive innovation and generate value (Foltean et al., 2019; Song et al., 2022). However, despite these insights, the comprehensive exploration of social media's effect on collaborative innovation capability and KM processes necessitates further in-depth analysis.

## HYPOTHESIS DEVELOPMENT

### KM Positively Influences SCR

In resilient supply chains, possessing up-to-date knowledge about potential risks and alternative strategies is crucial for effective decision-making and supply chain stability (Irfan et al., 2022; Wong et al., 2020). Knowledge creation allows organizations to continuously generate new insights and update information about market conditions and emerging risks (Leonardi, 2015). Knowledge creation also equips supply chain actors with the necessary foresight and adaptability to manage disruptions proactively. This process of knowledge renewal is expected to enhance preparedness for potential risks, thus strengthening SCR. Furthermore, by staying abreast of the latest developments, decision-makers are empowered to make informed decisions (Abubakar et al., 2019), navigate disruptions more efficiently, and reduce downtime caused by disruptions (Ali et al., 2023; Chowdhury & Quaddus, 2016), ultimately contributing to enhanced SCR. Additionally, through systematic knowledge creation activities, such as capturing lessons learned and documenting best practices, organizations develop a rich reservoir of knowledge (Al-Omouh et al., 2023; Leonardi, 2015). This reservoir is instrumental in developing innovative solutions and alternative strategies specifically tailored for supply chain challenges, thereby enhancing the firm's adaptability and quick recovery from disruptions (Chowdhury & Quaddus, 2016) and contributing to the resilience of the supply chain. We therefore propose hypothesis 1a (H1a): Knowledge creation positively influences SCR.

A diverse and extensive knowledge base, supported by active knowledge sharing among supply chain partners, plays a crucial role in building and maintaining resilient supply chains. Knowledge sharing, which encompasses the exchange of information, expertise, and insights (Raudeliuniene et al., 2021), enables supply chain managers to align perspectives and pool their resources for navigation of disruptions (Razmerita et al., 2016; Yang et al., 2019). The shared knowledge also facilitates brainstorming and implementing the plans for each stage of unexpected events (Ali et al., 2023; Irfan et al., 2022), thereby enhancing the supply chain managers' readiness, response, and recovery capabilities (Chowdhury & Quaddus, 2016). Knowledge sharing allows organizations to tap into the knowledge of their partners, enabling them to enhance their own knowledge base (Massaro et al., 2016; Shujahat et al., 2019). By accessing and learning from the heterogeneous knowledge sourced from multiple organizations, organizations can continuously acquire new insights, improve their processes, and identify areas for optimization. This collective learning and knowledge accumulation empower organizations to effectively navigate uncertainties, adapt to changing circumstances (Irfan et al., 2022; Xie et al., 2022), and strengthen the overall resilience of the supply chain, thereby contributing to the development of a more resilient supply chain. Therefore, we propose hypothesis 1b (H1b): Knowledge sharing positively influences SCR.

Effectively utilizing knowledge is indeed the requirement for building resilient supply chains. Organizations leverage their knowledge of historical cases and events to proactively identify and assess potential risks in the supply chain, drawing insights from past experiences to understand the causes and consequences of disruptions (Pigola & Da Costa, 2022; Shujahat et al., 2019). This knowledge aids in forecasting market trends and environmental dynamism (Deng et al., 2023), enabling organizations to anticipate and mitigate risks and thus maintain operational flow even amid disruptions. Additionally, the utilization of knowledge deepens the understanding of available resources within and across the supply chain (Mahdi et al., 2019; Massaro et al., 2016), clarifying their role in managing unexpected events (Ali et al., 2023). By actively harnessing knowledge, organizations can acquire insights into the types of resources they possess and how these resources can be effectively deployed to address different challenges and events. This knowledge contributes to the integration of previously overlooked or underutilized resources into their operations, processes, or strategies (Caccamo et al., 2023). Consequently, when disruptions arise, efficient resource allocation can be effectively managed to cope with the disruptions, thereby enhancing SCR. We thus propose hypothesis 1c (H1c): Knowledge utilization positively influences SCR.

## Mediating Role of Collaborative Innovation Capability

Organizations actively engaged in knowledge creation tend to be more innovative and competitive in the marketplace, making them attractive partners in collaborative endeavors (Popadiuk & Choo, 2006). This inclination encourages partnerships where innovative initiatives thrive with reduced risk of failure, thereby nurturing collaborative innovation capability (Najafi-Tavani et al., 2018; Skippari et al., 2017). Through the continual act of knowledge creation, organizations refine insights and leverage expertise from both internal sources and external partners (An et al., 2014; De Noni et al., 2017). Such an enriched knowledge pool enables viewing challenges and opportunities through multiple lenses, which, in a collaborative setting, can propel the organization's collaborative innovation capability and lead to innovative solutions that enable it to reach new heights (Popadiuk & Choo, 2006). This collaborative innovation capability, in practice, fosters the development of strategies aligned with prevailing market trends and the creation of disruption solutions adept at responding to changing circumstances (Bellis et al., 2022; Najafi-Tavani et al., 2018). Such heightened adaptation improves the ability to manage disruptions, reinforcing SCR. Consequently, we propose hypothesis 2a (H2a): Collaborative innovation capability positively mediates the relationship between knowledge creation and SCR.

Sharing knowledge resources in financial, technical, or human aspects among organizations and their partners enhances the attainment of collective goals, such as joint innovations in processes or products (Deng et al., 2023; Zada et al., 2023). Collaborative innovation capability, fostered by shared purpose and aligned vision, enables organizations to identify novel opportunities and areas for improvement in supply chains (Chi et al., 2018). By exploring new technologies, processes, and business models, organizations can uncover more efficient means of optimizing supply chain operations and mitigating vulnerabilities, thereby enhancing SCR (Kamalahmadi & Parast, 2016; Ponis & Koronis, 2012). Additionally, knowledge sharing signals the sincerity of collaboration and nurtures collaborative willingness among partners (Chi et al., 2018; Chow & Chan, 2008), encouraging openness in negotiation and propelling exchange of ideas, concerns, and feedback (Capaldo & Giannoccaro, 2015; Razmerita et al., 2016). In such a collaborative setting, organizations not only collaboratively identify potential risks and vulnerabilities, for example, ensuring readiness for disruptions (Chowdhury & Quaddus, 2016; Yang et al., 2019; Zhou et al., 2022), but also analyze these risks to develop mitigation strategies and contingency plans, such as enabling response and recovery for disruptions (Chowdhury & Quaddus, 2016). This further bolsters SCR. Thus, we propose hypothesis 2b (H2b): Collaborative innovation capability positively mediates the relationship between knowledge sharing and SCR.

Organizations that actively apply knowledge in developing new products, services, and operational improvements engage in a dynamic process of utilizing ideas, practices, and lessons learned (Alavi & Leidner, 2001; Ode & Ayavoo, 2020). This engagement enables practitioners to innovatively develop new tools and standards (Wang & Hu, 2020). It also makes organizations more efficient and adaptive, thereby enhancing collaborative innovation capability. Equipped with innovative tools and techniques, such as scenario planning and simulation, organizations are better able to model and proactively strategize for different disruptions (Cai et al., 2016; De Noni et al., 2017), thus enhancing SCR. Meanwhile, employees observing the practical application of their knowledge experience a sense of participation and value (Sigala & Chalkiti, 2015). This feeling motivates them to engage more closely in collaboration and to generate innovative ideas and solutions, thereby further enhancing the firm's collaborative innovation capability. Equally important is the training of supply chain personnel in novel ideas and solutions, such as advanced risk identification and response strategies. This training enhances their understanding of disruptions and ensures that they are well prepared to navigate types of disruptions (Riley et al., 2016), thereby contributing to the enhancement of SCR. Accordingly, we propose hypothesis 2c (H2c): Collaborative innovation capability positively mediates the relationship between knowledge utilization and SCR.

## Moderating Role of Social Media Use

Social media serves as an instant communication channel that enables prompt feedback on newly created knowledge from collaborators (Chen et al., 2021), facilitating its dissemination, refinement, and development (Sigala & Chalkiti, 2015). This iterative cycle of knowledge generation and refinement motivates participants to engage in collaborative endeavors with the intention of strategically allocating knowledge resources and collectively formulating inventive outcomes (Ode & Ayavoo, 2020; Pigola & Da Costa, 2022), leading to a heightened level of collaborative innovation capability. Organizations with lower levels of social media use may experience relative isolation of knowledge within departments or teams, hindering its spread (Van Osch & Steinfield, 2016). Conversely, active use of social media exposes employees to diverse knowledge and viewpoints (Razmerita et al., 2016), increasing the accessibility to knowledge and spurring their willingness to initiate dialogues and share insights (An et al., 2014; Chi et al., 2018). This process, in turn, facilitates multifaceted discourse and brainstorming, fostering innovative thinking and collaboration on projects and ultimately resulting in enhanced collaborative innovation capability (Chi et al., 2018; Chiu & Lin, 2022). Based on the above discussions, we propose hypothesis 3a (H3a): Social media use positively moderates the relationship between knowledge creation and collaborative innovation capability.

Social media provides a platform for users to continuously contact and exchange experiential and cognitive knowledge (Benitez et al., 2018); it also restructures individuals' communication, interaction, and learning approaches (Lam et al., 2016). Users in these interactive online platforms gain easier access to cross-functional or organizational knowledge, which involves insights, perspectives, and expertise from individuals with varied backgrounds, skills, and roles (Leonardi, 2015; Razmerita et al., 2016). Possessing partners' knowledge enriches organizations' comprehension of their partners' offerings, operations, and strategies, thereby enriching the knowledge pool for idea generation, sparking creativity, and reducing trial and error (Nguyen et al., 2015). These activities facilitated by social media enable the effective utilization of shared knowledge and thus promote collaborative innovation capability solutions. Additionally, social media platforms also offer real-time communication channels that facilitate instant interactions (Chen et al., 2021), bridging geographical gaps for dispersed teams to engage in discussions, seek clarifications, and exchange feedback, regardless of time zones or physical distance (Leonardi et al., 2013; Martín-Rojas et al., 2021). This real-time engagement fosters a continuous flow of knowledge, enabling swift responses to queries, timely sharing of updates, and collaborative decision-making (Sun et al., 2022; Van Osch & Steinfield, 2016). This flow of knowledge cultivates an environment for collaboration that individuals actively participate in activities toward common innovation goals. Thus, the value of shared knowledge with the aim of incentivizing collaborative innovation capability is enhanced by the use of social media. We, therefore, propose hypothesis 3b (H3b): Social media use positively moderates the relationship between knowledge sharing and collaborative innovation capability.

Social media offers organizations the chance to not only acquire insights but also learn from past events and experiences. Thus, social media promotes continuous learning for participants to access utilized knowledge (Eismann, 2021). This knowledge includes action plans and problem-solving approaches derived from practical knowledge application (Ode & Ayavoo, 2020). Through the learning process, organizations engage in loop learning and connect with their partners to seek professional growth and collective development. This process enables them to apply knowledge and develop novel insights and practices (Leonardi, 2015), ultimately enhancing collaborative innovation capability. Additionally, messages shared on social media offer transparency to external partners. This transparency enables organizations to overcome opacity challenges that traditional media does not allow them to do (Treem & Leonardi, 2013). It makes the information, strategies, practices, and knowledge visible to those directly connected, as well as to partners from varied departments and organizations (Leonardi, 2015). It promotes clarity, reduces misunderstandings, and fosters a collaborative environment where knowledge is readily accessible and open for exchange (Al-Omouh et al., 2023; Benitez et al., 2018). Consequently, efficiently utilized knowledge becomes more readily transformed into new products or

processes, especially when firms demonstrate proficiency in social media use (Benitez et al., 2018). Therefore, leveraging knowledge utilization to enhance collaborative innovation capability underscores the importance of social media use. Thus, we propose hypothesis 3c (H3c): Social media use positively moderates the relationship between knowledge utilization and collaborative innovation capability.

The proposed hypothesized model is shown in Figure 1.

## METHOD

### Sample and Data Collection

To test our hypotheses, we conducted a survey by distributing questionnaires to experienced managers of manufacturers in China. Given China's significant position in the global supply chain and its extensive manufacturing sector, the country presents a suitable context for exploring SCR. Chinese manufacturers, often embedded in complex global supply networks, are particularly susceptible to various disruptions, such as material cut-offs, natural disasters, and transportation delays. The post-pandemic era has further highlighted the phenomenon, and these organizations experiencing disruptions have gained deeper insights into resilience practices. These manufacturers' experiences with disruptions create an ideal environment for investigating the development of SCR. To ensure the quality and validity of our data, we collaborated with a reputable data collection firm known for its authentic and extensive user base. To ensure sample representativeness, the firm was responsible for collecting a diverse range of responses from typical manufacturing industries, such as electronics, metals, food and beverages, and textiles. We preferred that middle or senior managers fill out the questionnaire because they were knowledgeable about and familiar with the status of their organizations' knowledge management processes and supply chain management.

We distributed a total of 450 questionnaires, with 252 questionnaires being initially considered valid. The remaining 148 questionnaires were automatically excluded owing to their unsatisfactory response times that indicated a lack of thoughtful completion. After conducting a thorough examination, we excluded 32 out of the 252 questionnaires owing to abnormal responses to reverse items. Consequently, a total of 220 questionnaires met the criteria for acceptability and were retained for further analysis. This screening of questionnaires accounted for a response rate of 48.9%. Additionally, after randomly selecting 40 questionnaires and checking the provided information from participants, we found it generally matched the facts. Table 1 displays key details about the sample firms, including industry types, employees' numbers, ownership, and fixed assets (Flynn et al., 2010; Zhao et al., 2011).

Figure 1. Proposed Model

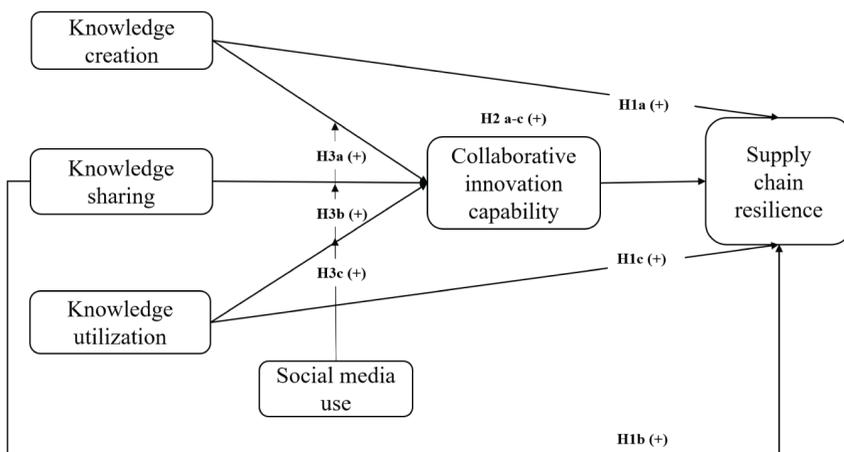


Table 1. Sample Demographic Information

Classification	Item	N	%	Classification	Item	N	%
Industry	Metal, mechanical, and engineering	55	25.0	Number of employees	≤99	8	3.6
	Electronics and appliance	54	24.5		100–499	106	48.2
	Building materials	27	12.3		500–1499	92	41.8
	Textiles and apparel	18	8.2		≥1499	14	6.4
	Food, beverages, alcohol, and cigarettes	15	6.8	Ownership			
	Pharmaceutical and medicals	12	5.5		State-owned enterprises	26	11.8
	Chemicals and petrochemicals	11	5.0		Collectively run enterprises	13	5.9
	Wood and furniture	10	4.5		Private enterprises	138	62.7
	Rubber and plastics	7	3.2		Joint venture enterprises	30	13.6
	Toys	6	2.8		Foreign-invested enterprises	13	6.0
Other	5	2.3					
Respondents' tenure				Fixed assets (mRMB)	<5	6	2.7
	≤4	65	29.6		5–20	29	13.1
	5–9	129	58.6		20–100	101	45.9
	≥10	26	11.8		>100	84	38.3

### Measurement Development

We conducted a thorough literature review to identify appropriate scales and measurement instruments for research. We used previously validated instruments based on widely accepted literature and made necessary adaptations. To ensure accuracy and clarity, we translated the original English version into Chinese and made necessary adjustments through comparisons. To further improve the refined Chinese version, we conducted a pilot test involving 20 manufacturers and incorporated their feedback to align the measurements with manufacturing practices in China. We then back-translated the Chinese version into the English version and did not find any semantic differences between the original questionnaire and the translated English questionnaire. The final version of the questionnaire, presented in Table 2, consists of items measured on a 5-point Likert scale, ranging from strongly disagree = 1 to strongly agree = 5.

The measures for KM were adapted from Raudeliuniene et al. (2021) and Shujahat et al. (2019). We measured these items that incorporate the creation, sharing, and utilization of knowledge resources within organizations to ensure engagement in the main knowledge management processes. To measure SCR, we adapted six items developed by Wong et al. (2020), who treated SCR as the ability to withstand and rebound from disruptions. We selected seven items derived from Al-Omouh et al. (2023) to measure collaborative innovation capability, which reflected a firm's capacity for innovation alongside its collaborative partners. We measured social media use by the five items adapted from Song et al. (2022); these items offered insights into the degree to which firms leverage social media as a tool in the workplace.

**Table 2. Reliability and Validity of Measurements**

Constructs	Loading
A. Knowledge creation adapted from Raudeliuniene et al. (2021) and Shujahat et al. (2019), CA = 0.873, CR = 0.876, AVE = 0.701)	
1. Our organization generates best practices from previous projects to improve future projects.	0.79
2. Our organization quickly uses new opportunities to serve our clients.	0.84
3. Our organization provides new services depending on the market demands.	0.88
B. Knowledge sharing adapted from Raudeliuniene et al. (2021) and Shujahat et al. (2019), CA = 0.774, CR = 0.778, AVE = 0.538)	
1. We share with our colleagues the knowledge necessary for projects on hand.	0.73
2. Our organization always shares its knowledge with its stakeholders.	0.72
3. Our organization has the capability to share relevant knowledge among business units.	0.75
C. Knowledge utilization adapted from Raudeliuniene et al. (2021) and Shujahat et al. (2019), CA = 0.903, CR = 0.906, AVE = 0.763)	
1. Our organization has processes for converting knowledge into action plans.	0.87
2. Our organization has processes for matching sources of knowledge to problem-solving.	0.85
3. Our organization applies knowledge efficiently to reach its goals.	0.90
D. Collaborative innovation capability (Al-Omouh et al., 2023), CA = 0.873, CR = 0.895, AVE = 0.554)	
To what extent does collaboration with supply chain partners enable your company to:	
1. Introduce new products, services, and processes?	0.79
2. Get creative ideas and solutions when solving problems?	0.61
3. Create and integrate new knowledge?	0.65
4. Turn ideas quickly into marketable products or services?	0.78
5. Launch disruptive thoughts and try new ways of working?	0.77
6. Redirect resources and capabilities to support new ventures?	0.90
7. Continuously learn from its partners and the environment and apply recent innovative practices?	0.67
E. Supply chain resilience (Wong et al., 2020), CA = 0.886, CR = 0.891, AVE = 0.581)	
1. Our organization's supply chain is able to adequately respond to unexpected disruptions by quickly restoring its product flow.	0.67
2. Our organization's supply chain can quickly return to its original state after being disrupted.	0.86
3. Our organization's supply chain can move to a new, more desirable state after being disrupted.	0.65
4. Our organization's supply chain is well prepared to deal with the financial outcomes of supply chain disruptions.	0.86
5. Our organization's supply chain has the ability to maintain a desired level of control over structure and function at the time of disruption.	0.69
6. Our organization's supply chain has the ability to extract meaning and useful knowledge from disruptions and unexpected events.	0.81
F. Social media use (Song et al., 2022), CA = 0.904, CR = 0.907, AVE = 0.662)	
1. Our organization has the necessary social media skills to monitor and interpret changes in the supplier market/product base.	0.89
2. Our organization uses social media to help our suppliers improve their processes and products.	0.81
3. Our organization uses social media to improve its total cost of doing business with its suppliers.	0.84
4. We regularly interact with customers via social media to understand whether our products/services correspond with what our customers want (in addition to the information provided by the price).	0.74
5. By using social media, we have information on customers, competitors, and important social developments.	0.78

Note. CA refers to Cronbach's  $\alpha$ , CR refers to composite reliability, and AVE refers to average variance extracted.

## Bias Issues

To evaluate the nonresponse bias of this study, we conducted assessments to compare the responding and nonresponding organizations' differences (Schilke, 2014). The comparison between early and late responses recommended by Armstrong and Overton (1977) was made to detect whether differences existed. We checked the first 25% and the final 25% of respondents of their ownership, number of employees, type of industry, and fixed assets. The results of the analysis showed no significant difference, suggesting that nonresponse bias was not a concern in this study.

Given that our research used surveys and a single-respondent method to collect data, addressing the potential threat of common method bias was crucial; otherwise, the data might pose challenges to the validity of this study. To assess whether common method bias existed in our research, we conducted Harman's one-factor test (Podsakoff et al., 2003). The primary requirements for this test are that at least one factor should have an eigenvalue above 1.0, and the variance explained by the first common factor should be less than 40%. The results of Harman's one-factor test revealed that there were seven distinct factors with eigenvalues exceeding 1.0, and the variance explained by the first common factor was below 40%, indicating acceptable common method bias. Additionally, we conducted a one-factor model analysis to assess whether the research model presented a better fit than the one-factor model (Flynn et al., 2010; Zhao et al., 2011). By comparing the fit indices of the one-factor model ( $\chi^2/df = 10.105$ , RMSEA = 0.204, CFI = 0.478, IFI = 0.481, TLI = 0.906) with those of the research model ( $\chi^2/df = 2.210$ , RMSEA = 0.074, CFI = 0.935, IFI = 0.936, TLI = 0.923), we observed that the research model exhibited better fit. These results suggest that common method bias in this study is not a significant concern and does not pose a substantial impact on the validity of our findings.

## Reliability and Validity

To ensure the reliability and validity of measurements of constructs, we conducted the following assessments. The common method to evaluate the reliability of measurements is to examine the value of Cronbach's alpha (CA) and composite reliability (CR) of each construct. Typically, a CA value exceeding 0.700 and a CR value higher than 0.600 are considered desirable benchmarks (Fornell & Larcker, 1981). The results are presented in Table 2. Each construct exhibited a CA value ranging from 0.774 to 0.904, surpassing the recommended threshold of 0.700. Similarly, the CR values for each construct ranged from 0.778 to 0.907, exceeding the suggested benchmark of 0.600. These findings indicate the acceptable reliability of construct measurements.

To assess the convergent validity of each construct, we examined the factor loadings and average variance extracted (AVE) values, as shown in Table 2. Convergent validity is determined by meeting the basic requirements of factor loadings and AVE values, which should exceed 0.50. In our study, the factor loadings for each item surpassed the threshold of 0.50, indicating acceptable loadings. The AVE values for each construct ranged from 0.538 to 0.763, exceeding the recommended benchmark of 0.500. These results indicate acceptable loadings and AVE values, demonstrating good convergent validity. Additionally, we employed confirmatory factor analysis (CFA) to assess the convergent validity as well. The analysis results were acceptable with qualified model fit indices ( $\chi^2/df = 2.132$ , RMSEA = 0.072, CFI = 0.917, IFI = 0.918, TFI = 0.906) (Fornell & Larcker, 1981; Hu & Bentler, 1999).

To assess the discriminant validity, we conducted a comparison between the square roots of the AVE and the correlation coefficients among all constructs, including the control variables (Paulraj et al., 2008). The results, shown in Table 3, demonstrated that the square roots of AVE values of each construct were higher than its correlation coefficients. These findings meet the requirements of favorable discriminant validity (Fornell & Larcker, 1981).

## Hypothesis Testing

To test the hypotheses, which are grounded in knowledge-based theory, we employed IBM Amos 23.0 and SPSS Statistics 26.0, both of which were specifically chosen for their suitability and

Table 3. Mean, Standard Deviation, and Correlation of Variables

Constructs	Mean	SD	KC	KS	KU	SCR	COI	SMU	Firm age	Industry	NE	Firm assets
KC	4.468	0.564	<b>0.837</b>									
KS	4.123	0.529	0.470**	<b>0.733</b>								
KU	4.622	0.504	0.463**	0.559**	<b>0.873</b>							
SCR	4.252	0.445	0.471**	0.429**	0.422**	<b>0.762</b>						
COI	4.514	0.460	0.441**	0.484**	0.507**	0.518**	<b>0.744</b>					
SMU	4.331	0.568	0.459**	0.434**	0.462**	0.479**	0.440**	<b>0.814</b>				
Firm age	18.910	10.311	-0.009	0.013	-0.004	-0.038	0.045	-0.081	\			
Industry	6.300	3.238	0.039	0.042	0.001	-0.012	0.045	-0.029	-0.111	\		
NE	3.500	1.233	0.153*	-0.017	0.097	0.139*	0.230**	0.118	0.447**	-0.133*	\	
Firm assets	4.750	1.317	0.024	-0.053	0.040	-0.001	0.114	0.060	0.354**	-0.153*	0.569**	\

Note. 1. The square root of AVE is bolded on the diagonal. \*\*p < 0.01; \*p < 0.05. 2. KC: knowledge creation; KS: knowledge sharing; KU: knowledge utilization; SCR: SCR; COI: collaborative innovation capability; SMU: social media use; NE: numbers of employees.

reliability in conducting hierarchical regression and structural equation modeling for our dataset of 220 questionnaires. The results were integrated and presented in Figure 2, which shows the support for the proposed relationship among KM processes, SCR, collaborative innovation capability, and social media use.

First, we employed structural equation modeling in Amos 23.0 to examine the relationships among the studied constructs. The analysis yielded strong and significant standard regression weights for the effect of knowledge creation on SCR,  $\beta = 0.285$  ( $p < 0.01$ ), knowledge sharing on SCR,  $\beta = 0.342$  ( $p < 0.01$ ), and knowledge utilization on SCR,  $\beta = 0.224$  ( $p < 0.05$ ). These findings provide empirical evidence for H1a, H1b, and H1c, indicating a positive correlation between knowledge management processes and the enhancement of SCR.

Second, we employed the analysis developed by Preacher and Hayes (2008) in SPSS 26.0 to assess the mediating role of collaborative innovation capability. The analysis involved 5,000 bootstrap samples and set a 95% confidence interval. The results shown in Table 4 support the mediating role of collaborative innovation capability and confirm hypotheses H2a, H2b, and H2c. The bootstrapping

Figure 2. Results of Hypotheses Testing

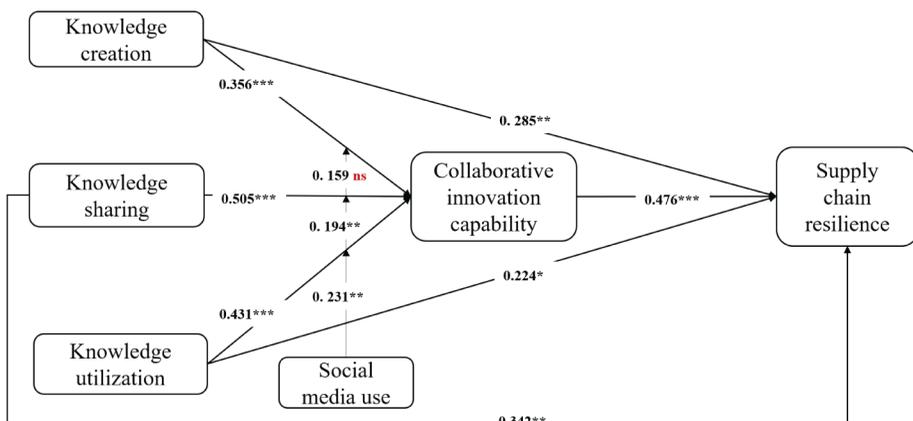


Table 4. Bootstrapping Analysis of Intermediate Effect

	Path	Effect	BootSE	BootLLCI	BootULCI
Indirect	KC-COI-SCR	0.166	0.043	0.092	0.260
	KS-COI-SCR	0.229	0.047	0.144	0.330
	KU-COI-SCR	0.244	0.072	0.282	0.566
Direct	KC-SCR	0.283	0.059	0.168	0.399
	KS-SCR	0.203	0.070	0.040	0.066
	KU-SCR	0.180	0.074	0.035	0.326
Total	KC-SCR	0.449	0.060	0.333	0.568
	KS-SCR	0.432	0.066	0.305	0.559
	KU-SCR	0.424	0.071	0.281	0.561

Note. LLCI: Lower limit 95% confidence interval; ULCI: Upper limit 95% confidence interval.

test revealed that the indirect effects of KM on SCR through collaborative innovation capability were positive and significant. Specifically, knowledge creation had a positive indirect effect on SCR through collaborative innovation capability (indirect effect = 0.166,  $p < 0.001$ ), with a 95% CI (confidence interval) containing no 0 (95% CI = [0.092, 0.260]). Therefore, H2a was supported.

Knowledge sharing had a positive indirect effect on SCR through collaborative innovation capability (indirect effect = 0.229,  $p < 0.001$ ), with a 95% CI containing no 0 (95% CI = [0.144, 0.330]). Therefore, H2b was supported. Knowledge utilization had a positive indirect effect on SCR through collaborative innovation capability (indirect effect = 0.244,  $p < 0.001$ ), with a 95% CI containing no 0 (95% CI = [0.282, 0.566]). Therefore, H2c was supported.

Third, we computed the moderating effect of social media use on the relationship between KM and collaborative innovation capability using the PROCESS in SPSS 26.0. The results are shown in Figure 2. The interaction of knowledge creation and social media use is positively, yet insignificantly correlated to collaborative innovation capability ( $\beta = 0.159$ ,  $p > 0.05$ ); thus, H3a is rejected. Knowledge sharing and social media use is positively and significantly correlated to collaborative innovation capability ( $\beta = 0.194$ ,  $p < 0.01$ ); thus, H3b is supported. Knowledge utilization and social media use is positively and significantly correlated to collaborative innovation capability ( $\beta = 0.231$ ,  $p < 0.01$ ); thus H3c is supported. Figure 3 intuitively shows the interactions of knowledge sharing/utilization and social media use. Figure 3 reveals that the positive effect of knowledge sharing/utilization on collaborative innovation capability is stronger when the level of social media use is higher. Thus, Figure 3 further confirms social media use as a moderator in these relationships.

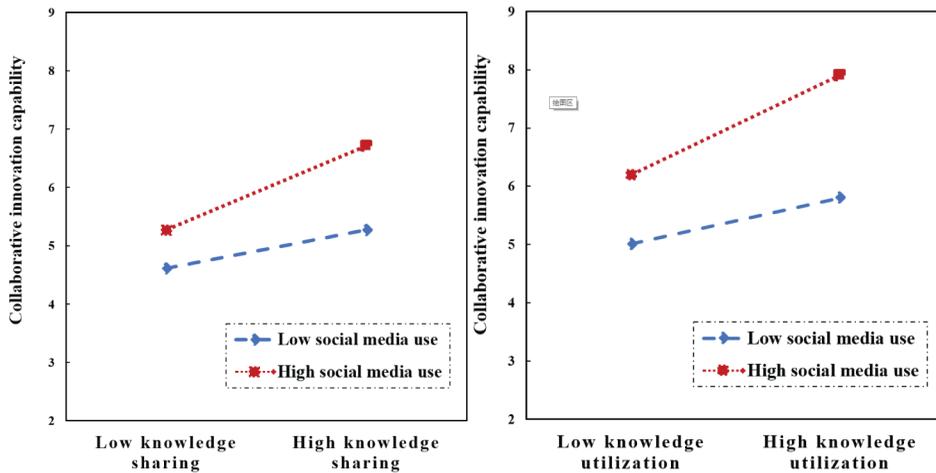
## DISCUSSION, IMPLICATIONS, AND LIMITATIONS

### Discussion

This study proposes a hypothesis model to elucidate the relationship between KM processes and SCR with mediating and moderating effects. By leveraging knowledge-based theory, we gained deeper insights into the strategic management of organizational knowledge resources to enhance SCR, while also investigating the conditions under which such management is more effective.

Resonating with prior research, our study echoes the pivotal role of KM in fostering SCR through methods such as case studies (Irfan et al., 2022) or through empirical evidence from industries such as pharmaceuticals (Zighan et al., 2023) or agri-food supply chains (Ali et al., 2023). These studies underscore KM's role in developing resilience and managing disruptions in a rapidly changing world.

Figure 3. Interaction of KM and Social Media Use



Our study empirically examines the contributing role of KM processes (i.e., creation, sharing, and utilization) in enhancing SCR within manufacturers. Our analysis complements the findings of Al-Omouh et al. (2020) by underlining the importance of knowledge creation in enhancing organizational agility, a key element for effectively dealing with crises. Similarly, we provide additional support to Umar et al.'s (2021) observation that knowledge sharing across organizations plays a vital role in building resilience. The findings extend the understanding of linkage between KM and SCR by offering a novel perspective that integrates three key KM processes and their distinct contributions to SCR.

Through further analysis, this research unveils an underlying mechanism that advances our understanding of the link between KM processes and SCR. We examine the mediating role of collaborative innovation capability in the relationship between KM processes and SCR, substantiating collaborative innovation capability as a mediator within this dynamic relationship. This finding not only aligns with prior research proposing that KM facilitates the building of collaborative innovation capability (An et al., 2014) but also supports certain aspects of the findings presented by Bellis et al. (2022), which explore the activating and sustaining of resilience through social connections (i.e., pair collaboration) in innovation practices. More specifically, the results echo the conclusions drawn by Chiu and Lin (2022), demonstrating that the knowledge creation process can facilitate open innovation capability wherein partners leverage tacit/explicit knowledge to expedite the innovation process. In addition to Chiu and Lin (2022), these results also mirror conclusions by Zhang et al. (2021), proposing that new capabilities (e.g., collaborative innovation capability) are nurtured through knowledge-centered endeavors of sharing, creation, and utilization among partners.

Finally, this study discusses the role of social media use in the relationship between KM processes and collaborative innovation capability. Thus, it identifies a contextual factor in this relationship. We observed that social media use positively moderates the relationship between knowledge sharing/utilization and collaborative innovation capability, yet we did not observe the moderating effect between knowledge creation and collaborative innovation capability. This finding may be attributed to the insufficiency of merely generating knowledge; barriers such as differing goals or inadequate coordination might hinder the process of novel knowledge disseminating and leveraging through social media, as mentioned by Razmerita et al. (2016). Our findings align with the perspectives presented by Benitez et al. (2018), who discuss the moderating role of social media in knowledge exploration/exploitation and innovation. Moreover, our study corroborates the view of Lam et al. (2016) that social media enhances partner communication and interaction, thereby facilitating the flow of knowledge and further sharing or utilizing knowledge to achieve better collaborative innovation capability.

## Theoretical Implications

This study offers valuable theoretical contributions to the existing literature by rendering empirical evidence of the relationship between KM processes, SCR, collaborative innovation capability, and social media use. First, this study enriches the field of supply chain management by empirically demonstrating the significance of KM processes in enhancing SCR, responding to calls for more knowledge-based empirical research in this domain. We dissected KM into three processes: creation, which generates new knowledge; sharing, which ensures the flow of knowledge throughout the supply chain; and utilization, which involves the practical application of knowledge. This delineation offers a nuanced perspective on how each dimension uniquely contributes to SCR (H1a-c). It moves beyond a monolithic view of KM and highlights the complex interplay of knowledge dynamics that fortify supply chain systems. Although prior research has often centered on KM's impact on firm-level efficiency and performance outcomes (Mahdi et al., 2019; Raudeliuniene et al., 2021), our study expands the focus to SCR at the supply chain level and emphasizes how strategic knowledge management within and between firms can be pivotal for resilience. This approach not only bridges a gap in the empirical examination of KM processes but also invites further theoretical development and integration within the broader supply chain system.

Second, this research identifies collaborative innovation capability as a key mediator in the KM-SCR link. Past research conceives a connection between KM and supply chain (Ali et al., 2023), and yet, the literature lacks insights into whether and how KM drives the SCR. This paper advances prior research in this direction. We argue that collaborative innovation capability serves as an important mediator in this KM-SCR relationship, and our mediation analysis confirms that collaborative innovation capability sequentially mediates the links between KM processes (i.e., knowledge creation, sharing, and utilization) and SCR (H2a-c). Delving into the nuances of KM, we elucidate that the act of knowledge creation is more than just generating information; it's about equipping it with the foresight and innovation. This statement echoes prior findings that posit that knowledge generation is a cornerstone for innovation (Chiu & Lin, 2022; Popadiuk & Choo, 2006). We also reveal the role of knowledge sharing and find that it enables flow of knowledge necessary for job effectiveness and inventiveness. This finding aligns with previous studies that highlight the value of diverse perspectives that merge and inspire innovative solutions through open knowledge flow (Wang & Hu, 2020). Moreover, our exploration into knowledge utilization advances the discussion from its traditional operational focus to its strategic potential in fortifying collaborative innovation capability and, by extension, resilience. Hence, this study enriches the supply chain resilience literature by integrating insights from KM and dynamic capabilities.

Third, this research contributes to KM research by regarding social media use as the boundary condition influencing the relationship between KM and collaborative innovation capability. Amid heightened interest in social media's operational role, our work addresses existing concerns about its potential downsides, such as workplace distraction and productivity reduction (Leonardi et al., 2013), and the risk of trade secret leakage jeopardizing innovation. Concurrently, the acknowledged benefits of social media for operational efficiency and innovation (Lam et al., 2016) prompt further exploration. Our findings highlight the constructive role of social media use in the workplace, revealing how it can amplify the effects of KM processes on collaborative innovation capability. Specially, we delineate a positive moderating effect of social media use on the relationships between knowledge sharing and utilization with collaborative innovation capability (H3b-c), providing empirical evidence for the pivotal role of digital communication in facilitating knowledge dynamics. However, we did not observe this moderating effect in the relationship between knowledge creation and collaborative innovation capability (H3a). This finding offers an additional view of social media's role in the knowledge-innovation interface. These findings contribute to a more comprehensive understanding of the value of social media as an effective communication channel within organizational knowledge strategies (Chen et al., 2021; Lam et al., 2016).

## Managerial Implications

Our findings offer valuable insights for practitioners who are interested in enhancing the resilience of their supply chains, particularly during challenging times. This study focuses on examining the role of KM processes—creation, sharing, and utilization—in enhancing SCR. For managers aiming to build resilient supply chains, especially under challenging conditions, focusing on these three key KM processes can be instrumental. Effective management of knowledge resources within organizations can contribute significantly to the resilience-building efforts of their supply chains. To effectively tap into this potential, a nuanced, multipronged approach is essential. This approach includes three areas. First, organizations need to cultivate a knowledge creation culture in which continuous learning and innovation are ingrained. Managers should champion initiatives that not only upskill the workforce but also align learning with the evolving needs of the industry and the organization's strategic vision. Second, building knowledge-sharing networks helps break down barriers to knowledge exchange. This process involves more than just setting up a knowledge-sharing system; it also is about weaving a network where knowledge flows across organizational silos and extends to external partnerships. Managers can thus unlock the collective wisdom of the organization and turn it into a beacon of shared insights and best practices. Third, organizations need to value and reward knowledge utilization to turn the knowledge generated and shared effectively into actions in practical scenarios.

This study also highlights the role of collaborative innovation capability in bridging the relationship between KM processes and SCR. The identification of collaborative innovation capability as a vital factor connecting KM processes and SCR presents an opportunity for managers to leverage knowledge resources toward enhanced resilience. Managers can initiate and encourage cross-functional collaboration by forming diverse teams and providing platforms for interdepartmental knowledge exchange. This action can lead to fresh ideas and innovative solutions, propelling the organization forward and thus equipping it with the ability to cope with disruptions. Managers can also cultivate a culture deeply ingrained with values of collaboration and innovation, encouraging interactions and discussions regardless of their location. Promoting an innovation-friendly environment is also important. Acknowledging that the journey of innovation is fraught with uncertainties, we note that granting employees the autonomy to delve into uncharted territories and experiment with their ideas becomes paramount. This latitude for exploration extends to accommodate the possibility of innovation encountering setbacks or failures. This approach also recognizes that these instances are integral to the collaborative innovation capability process.

Another key insight from our study for managers is the recognition of the potential of social media as a strategic tool to update the KM strategies. Our findings indicate that social media use amplifies the positive effect of KM on collaborative innovation capability. The use of social media isn't merely about communication; it's about cultivating a potent social network that bestows a competitive edge through knowledge resources. To effectively leverage this potential, managers could take two steps: (a) create dedicated online spaces for sharing ideas, encourage employees to contribute insights, and facilitate dialogues that span across parties through social media platforms and (b) encourage teams to use social media for brainstorming and collaborative project management to tap into unexplored knowledge resources and apply them in developing creative solutions and strategies. Meanwhile, managers must carefully navigate the potential pitfalls of distraction and productivity loss associated with social media use (Leonardi et al., 2013). Clear rules and targeted objectives for social media engagement can help mitigate these risks, ensuring that its use strategically aligns with the firm's knowledge and innovation aspirations.

## Limitations and Future Studies

This study has several limitations for future studies. First, this study employed a survey method, sourcing samples from Chinese manufacturers. Although this method is feasible and accepted in existing studies, future studies should consider using objective data and enhancing measurement

accuracy for variables. We also recommend examining these findings across diverse regions, countries, and supply chain types. Second, in this study, we explore the enablers of SCR through the perspective of management of knowledge resources. Acknowledging that alternative perspectives could shed additional light on the mechanisms driving resilience enhancement is important. Third, our exploration of the underlying mechanisms of how KM processes influence SCR primarily centers on collaborative innovation capability. However, other capabilities, such as learning capacity, may also serve as vital bridges within the KM-SCR linkage. Fourth, this study examines how the relationship between KM and collaborative innovation capability might change with varying degrees of social media use, which focuses on organization-level factors. However, it did not delve into the moderators of the transition from collaborative innovation to SCR. Other possible moderating effects, especially those relevant at the supply chain level, were also not explored.

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## **DECLARATION OF INTEREST STATEMENT**

No conflict of interest exists in the submission of this manuscript, and manuscript is approved for publication. We would like to declare that the work described was original research that has not been published previously, and not under consideration for publication elsewhere, in whole or in part.

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