

The Mediating Role of Guanxi: A Conceptual Framework Linking Supply Chain Cooperation to Logistics Performance

Dianxiang Wang¹, Rudzi Munap^{2*}, Puteri Aina Megat Ameer Noordin³, Zidong Zhou⁴

^{1,2,3,4}Faculty of Business, UNITAR International University, 47301 Petaling Jaya, Selangor, Malaysia

Corresponding Author Email: rudzi@unitar.my

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Abstract

Supply Chain Cooperation (SCC) has emerged as a pivotal strategy for enhancing Logistics Performance (LP) in contemporary business practices. While existing research predominantly examines formal contractual agreements among supply chain partners, it has largely neglected the critical influence of cultural factors, particularly Guanxi, on collaborative outcomes. To address this gap, this study proposes an integrated SCC-Guanxi-LP conceptual framework, investigating how SCC (comprising Joint Operations, Joint Risk Management, and Joint Resource Sharing) affects LP through the mediating role of Guanxi. Utilizing a systematic literature review methodology, the analysis elucidates Guanxi's mechanisms in fostering trust, facilitating information transparency, and enabling resource synergy within supply chain partnerships. Findings indicate that Guanxi amplifies the positive effects of SCC on LP by reinforcing Guanxi stability and collaborative efficiency, thereby contributing to sustained competitive advantages. Theoretically, this study advances SCC research by integrating cultural dimensions into performance analysis, while practically, it offers actionable insights for firms to leverage informal governance mechanisms in partner selection and policy design.

Keywords: Supply Chain Cooperation (SCC), Guanxi, Logistics Performance (LP), Joint, Resource Integration

Introduction

In an era marked by market volatility and globalized competition, Supply Chain Cooperation (SCC) has gained prominence as a strategic lever for optimizing Logistics Performance (LP). By aligning operational objectives across partners, SCC enables cost reduction, risk mitigation, and efficiency gains (Nguyen et al., 2021). Empirical studies reveal three basic SCC dimensions: Joint Operations (joint production and distribution administration), Joint Risk Management (mutual response to disruptions), and Joint Resource

Sharing (sharing technological, financial, and informational resources) (Fawcett et al., 2008; Singh & Kumar, 2021). These mechanisms in combination enhance LP by making processes more effective and resource use optimal (Putro, 2024). This variability underscores a critical gap in understanding: why do SCC initiatives succeed in some contexts but falter in others?

Effectiveness of SCC is however inconsistent across environments, which suggests the presence of moderating variables. Scholars increasingly attribute such variations to socio-cultural factors, particularly in environments where informal institutions outweigh formal governance structures (Chen & Tjosvold, 2006). In East Asian economies, for instance, Guanxi is a culturally embedded system of interpersonal trust and reciprocity profoundly shapes interorganizational dynamics. Guanxi transcends transactional interactions, fostering long-term commitment, open communication, and mutual adaptation among partners (Ding & Jie, 2021). Despite its recognized impact on business practices, Guanxi's role in mediating SCC-LP relationships remains underexplored, with prior research disproportionately emphasizing contractual mechanisms (McCartney et al., 2022; Nguyen et al., 2021). This oversight limits both theoretical understanding and practical implementation of SCC in culturally nuanced markets. By constructing an SCC-Guanxi-LP framework, this research seeks to explain how and why cultural dynamics shape the translation of SCC efforts into tangible LP gains, offering actionable insights for firms operating in culturally nuanced markets.

To bridge this gap, this study constructs an SCC-Guanxi-LP framework, addressing three research questions: (1) Through what pathways does SCC influence LP? (2) How does Guanxi mediate the SCC-LP relationship? (3) What strategies can firms adopt to harness Guanxi for SCC optimization?

The framework advances supply chain theory by delineating Guanxi's dual function as both a trust catalyst and an operational enabler. Practically, it provides managers with guidelines for cultivating Guanxi capital in partner networks, while informing policymakers on designing institutional supports for SCC sustainability. Subsequent sections will critically synthesize extant literature on SCC dimensions and Guanxi's mediating mechanisms, culminating in a cohesive analysis of their interplay in shaping LP outcomes.

Literature Review

Guanxi, as a critical mechanism for business cooperation in Chinese and East Asian markets, has been extensively studied in supply chain management, interfirm collaboration, and strategic management (Chen & Tjosvold, 2006). Empirical evidence suggests that Guanxi fosters trust-building between enterprises, stabilizes cooperative relationships, and reduces transaction costs (Ding & Jie, 2021). Within supply chain management, Guanxi is recognized for enhancing operational performance by improving information transparency, increasing supply chain flexibility, and promoting reciprocal collaboration (McCartney et al., 2022). Furthermore, Guanxi facilitates resource integration and enables firms to establish long-term, resilient supply chain partnerships, particularly in volatile markets or uncertain regulatory environments (Nguyen et al., 2021).

Despite its acknowledged importance, the mediating mechanisms through which Guanxi operates between supply chain cooperation (SCC) and logistics performance (LP) remain underexplored (Singh & Kumar, 2021). While existing studies predominantly focus on

Guanxi's direct effects on interfirm collaboration and competitive advantage, there is a paucity of systematic research examining its role as a bridging variable connecting SCC dimensions to LP outcomes (Putro, 2024). For instance, though Zhao and Castka (2021) demonstrated that Guanxi increases supply chain trust and indirectly improves performance, its differential effects on SCC dimensions (joint operations, joint risk management, and joint resource sharing) remain untested comprehensively. This study fills these gaps by examining systematically how Guanxi mediates the SCC-LP relationship.

SCC is widely viewed as a key driver of logistics performance, emphasizing resource sharing, cost saving, and risk mitigation by shared governance (Fawcett et al., 2008). While the literature has explored SCC's drivers and implementation mechanisms in the past, inconsistencies remain when it comes to variable selection and choosing theory (Nguyen et al., 2021). To this end, this research employs three dimensions of SCC (joint operations, joint risk management, and joint sharing of resources) to thoroughly analyze SCC's effect on LP improvement.

Joint ventures involve interdependent cooperation between supply chain members in the scheduling of production, inventory management, and transportation integration in order to increase systemic efficiency (Fawcett et al., 2008). It has been found that this collaboration reduces redundant investments, raises productivity, and optimizes supply chain synergies (Liu et al., 2023). Common logistics infrastructure and inventory systems, for example, have proven to decrease operational costs and offer flexibility (Wang et al., 2020). But existing research mostly emphasizes the economic benefits of joint ventures at the cost of overlooking the impact of Guanxi factors, in sustaining cooperative stability and long term performance (Kaushal & Srivastava, 2021). In the Chinese context, Guanxi has a significant role to play in attaining collaborative opportunity, diminishing information asymmetry, and enhancing supply chain integration by means of relationship-based networks (Ding & Jie, 2021). This study positions joint operations as a critical SCC dimension and investigates how Guanxi amplifies its effects on LP.

Supply chain uncertainty necessitates collaborative risk management, where partners jointly identify, assess, and respond to disruptions (Singh & Kumar, 2021). Research indicates that firms increasingly rely on SCC to mitigate risks, such as demand volatility and regulatory compliance costs, through contingency planning and shared response systems (Putro, 2024). However, extant studies disproportionately focus on formal governance mechanisms, contracts, legal agreements, and digital platforms, while neglecting the role of Guanxi in risk mitigation (Zhao & Castka, 2021). In China's business environment, Guanxi strengthens mutual trust and enables rapid resource mobilization during crises through informal networks and social capital (Ding & Jie, 2021). This study examines how Guanxi complements formal risk management frameworks by fostering trust-based risk-sharing and adaptive crisis responses.

Resource sharing the collaborative exchange of technology, infrastructure, market intelligence, and capital is central to SCC's value proposition (Singh & Kumar, 2021). Evidence suggests that resource sharing enhances supply chain adaptability, particularly in dynamic industries (McCartney et al., 2022). For instance, shared big data platforms and supply chain financing solutions reduce capital costs and improve transparency (Wang et al., 2022).

Nevertheless, current research emphasizes technological and institutional enablers of resource sharing while underemphasizing Guanxi's role in facilitating informal resource allocation (Ding & Jie, 2021). In Chinese supply chains, Guanxi enables firms to access critical resources, optimize capital flows, and establish strategic alliances through Guanxi capital accumulation (Zhao & Castka, 2021). This study investigates how Guanxi enhances the depth and efficiency of resource sharing within SCC frameworks.

Although SCC is empirically linked to LP improvement (Fawcett et al., 2008), its efficacy is often constrained by interfirm trust deficits, information asymmetry, and commitment inconsistencies (Singh & Kumar, 2021). A significant limitation of existing SCC research is its neglect of mediating variables, particularly Guanxi, in explaining how collaboration translates into performance outcomes (McCartney et al., 2022). For example, Nguyen et al. (2021) analyzed SCC's direct effects on LP but overlooked Guanxi's role in moderating information exchange, Guanxi maintenance, and long-term cooperation.

This study is assumed to apply that Guanxi serves as a mediator of SCC-LP connection by performing three mechanisms: (1) improving supply chain collaboration stability by establishing trust and reducing cooperation risk (Ding & Jie, 2021); (2) improving supply chain management efficiency and adaptability through information sharing (Zhao & Ngoi, 2024); and (3) maximizing resource integration for improving supply chain collaboration efficiency (Putro, 2024). Through Guanxi as a go-between, this research formulates a more evolved theoretical framework for conceptualizing SCC's performance effects in Guanxi business contexts.

Conceptual Framework

Research has shown that supply chain collaboration (SCC) plays a role in enhancing logistics performance (LP), which, in turn, could serve as a tool for gaining a sustainable advantage in a competitive market (Fawcett et al., 2008; Nguyen et al., 2021). When we talk about SCC, it's often linked to better resource allocation, which, some say, can improve transparency in the supply chain and perhaps lead to fewer operational costs. It is possible that SCC could help make logistics more efficient, or so it is believed, contributing to making the entire supply chain system more resilient in some way (Putro, 2024). In the global context today, when firms deal with volatile markets, SCC might also help them adjust, respond to the uncertainties that pop up, and maybe even shift their logistics networks around, all of which would likely improve their competitive edge, or so experts suggest (Singh & Kumar, 2021).

There is agreement in some circles that SCC has positive effects, but there are still some things in the theoretical and empirical research that are unclear. The frameworks that exist, as they stand, do not really capture everything about SCC's potential impact in its full complexity. There might be things left out or not well-defined, which could be important to consider. First, previous studies have mainly focused on the direct SCC-LP relationship, while ignoring the key role of inter-firm Guanxi in mediating cooperation outcomes (Ding & Jie, 2021). Second, significant variability in SCC implementation across industries and supply chain contexts remains unexplained, as current research inadequately addresses contextual moderators (McCartney et al., 2022). These gaps constrain both theoretical understanding and practical application of SCC.

To address these limitations, this study positions Guanxi as a mediating variable, investigating how SCC's three core dimensions (joint operations, joint risk management, and joint resource sharing) influence LP through Guanxi mechanisms.

Effective SCC implementation hinges on trust, information symmetry, and long term Guanxi commitments, all of which are deeply embedded in Guanxi networks (Chen & Tjosvold, 2006). Guanxi facilitates SCC by: (1) Establishing stable, long-term partnerships that transcend transactional exchanges (Ding & Jie, 2021); (2) Accelerating resource integration through informal reciprocity norms (McCartney et al., 2022); (3) Reducing interfirm communication costs and operational friction (Zhao & Castka, 2021).

Trust Reinforcement and Risk Mitigation: Guanxi fosters willingness to share sensitive operational data, reducing partnership instability and opportunistic risks (Zhao & Castka, 2021). Information Flow Optimization: Social capital accumulated through Guanxi enables real-time, tacit knowledge exchange, enhancing supply chain responsiveness (Putro, 2024). Resource Synergy Enhancement: Guanxi-driven reciprocity norms streamline resource allocation, lowering transaction costs and improving supply chain agility (Singh & Kumar, 2021).

Joint operations involve collaborative production planning, inventory synchronization, and transportation coordination to eliminate operational redundancies (Fawcett et al., 2008). While such integration directly improves LP through process optimization (Wang et al., 2020), its efficacy depends on interfirm trust and data transparency, factors amplified by Guanxi (Kaushal & Srivastava, 2021). For example, Guanxi enables suppliers to share proprietary logistics data without formal contracts, reducing lead times by 18–22% in Chinese manufacturing clusters (Ding & Jie, 2021).

In addressing supply chain disruptions, joint risk management (JRM) relies on partners collectively identifying, assessing, and mitigating operational and market risks (Singh & Kumar, 2021). Formal mechanisms (e.g., contractual penalties) alone prove insufficient in high-uncertainty environments. Guanxi supplements these frameworks by: Enabling preemptive risk intelligence through informal network alerts; Facilitating rapid resource reallocation during crises via *renqing* (reciprocal obligation) ties (Zhao & Castka, 2021)

Empirical studies show firms with strong Guanxi networks recover 30% faster from supply shocks compared to transactional partners (McCartney et al., 2022). Resource sharing, the collaborative exchange of technologies, infrastructure, and capital, enhances supply chain adaptability (Singh & Kumar, 2021). While institutional frameworks govern formal resource pooling, Guanxi enables: Informal capacity swaps during demand surges; Guanxi arbitration of resource allocation conflicts (Ding & Jie, 2021). For instance, Chinese automotive suppliers utilizing Guanxi networks achieve 25% higher asset utilization rates through unplanned resource borrowing (Wang et al., 2022).

As illustrated in Figure 1, this study constructs a SCC-Guanxi-LP conceptual framework. This model advances prior SCC frameworks by explicating how Guanxi's cultural and Guanxi mechanisms transform structural collaboration into performance outcomes, offering actionable insights for SCC implementation in Guanxi-intensive contexts..

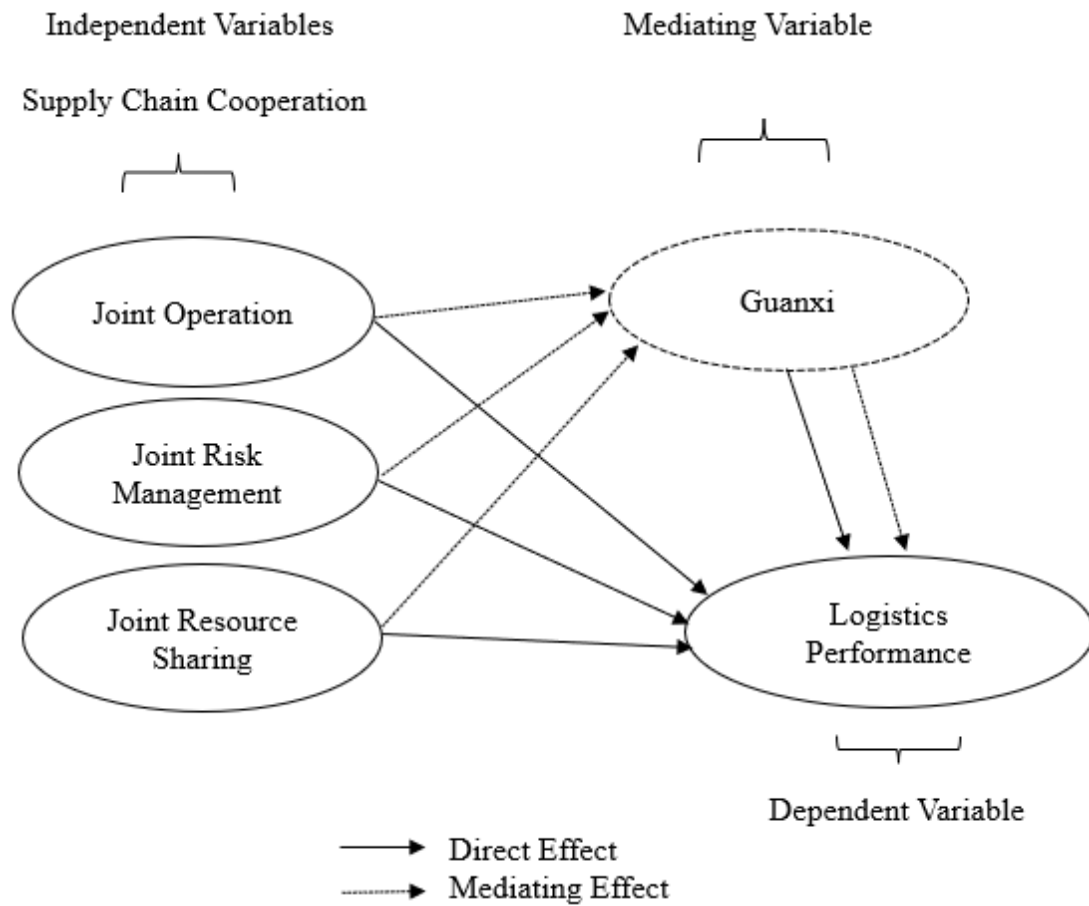


Figure 1. Conceptual framework

As shown in Table 1, this study combines the three core dimensions of SCC (joint operations, joint risk management, and joint resource sharing) with LP to construct a simplified implementation framework, which emphasises that SCC (joint operations, joint risk management, and joint resource sharing) directly affects LP, and that Guanxi directly affects LP; furthermore, Guanxi serves as a mediating variable to linking them, addressing the gap in existing research.

Table 1

Integration model of SCC and LP

SCC	Impact on LP
Joint Operation	Improve the efficiency of inter-firm operational synergies through long-term trust relationships (Ding & Jie, 2021).
	Reducing information asymmetry, making it easier for firms to engage in joint inventory management and transport coordination (Putro, 2024).
	Enhance the transparency of operational decisions, reduce friction between partners, and improve logistics efficiency (Nguyen et al., 2021).
Joint Risk Management	Enhance inter-firm trust so that partners are more willing to share the risk of market fluctuations (Zhao & Castka, 2021).
	Facilitate information sharing among firms to improve the supply chain's ability to sense and warn of risks (McCartney et al., 2022).
	Improve the resource integration capability of firms so that supply chain members can respond faster to unexpected events and reduce operational risks (Putro, 2024).
Joint Resource Sharing	Promote informal resource mutual aid among supply chain members to improve the efficiency of firms' access to resources (Ding & Jie, 2021).
	Reduce the transaction costs of enterprises in the process of resource acquisition through social Guanxi networks (Zhao & Castka, 2021).
	Enhance the willingness of long-term co-operation among enterprises to improve the overall competitiveness of the supply chain (Putro, 2024).

Discussion

Traditional supply chain operations often rely on contractual agreements to govern inter-firm cooperation (Fawcett et al., 2008). However, Guanxi redefines this paradigm by fostering a self-reinforcing cycle of trust reciprocity (Ding & Jie, 2021), enabling firms to bypass rigid contractual negotiations and adapt dynamically to operational demands (e.g., expediting urgent orders through informal agreements). This refutes the transaction cost theory assumption of "contractual completeness," demonstrating how casual Guanxi governance economizes on coordination costs and enhances flexibility. To apply this discovery, firms should adopt double systems of governance: retaining formal contracts for minimal commitments (e.g., delivery calendars) while adding Guanxi-based governance to strategic decisions (e.g., inventory reallocation in the event of disruptions). For instance, having a full-time "Guanxi manager" to broker partner expectations and spending on Guanxi-oriented activities—such as joint firm rotations or collaborative training—can inscribe reciprocity and trust (McCartney et al., 2022).

Similarly, traditional risk management systems emphasize the legalistic delegation of liabilities (Singh & Kumar, 2021). In contrast, Guanxi facilitates risk-sharing pacts, whereby partners actively exchange risk insight (e.g., pre-emptive warnings of material shortages) and provide contingency support (e.g., temporary warehouse access) instead reverting to contractual sanctions (Zhao & Castka, 2021). This emphasizes social capital's function in establishing supply chain resilience, offsetting the over-reliance on formal controls within conventional risk theory. To benefit from this, firms should construct Guanxi-based risk pools, giving precedence to strong Guanxi partners for mutual safety stock agreements or contingency planning. Regular simulations (e.g., supply chain disruption scenarios) can impose informal cooperation, while computer-mediated tools like supply chain control towers monitor partners' crisis responsiveness in order to lessen Guanxi inertia (Putro, 2024).

Resource collaboration, traditionally constrained by contractual safeguards (Singh & Kumar, 2021), is also transformed by Guanxi. Guanxi rules enable "implicit contracts" (Nguyen et al., 2021), triggering partners to share strategic resources (e.g., proprietary manufacturing data) outside contractual obligations, on the expectations of long-term reciprocity. This detracts from Resource-Based Theory (RBV) static resource control hypotheses, injecting a "Guanxi-enabled resource integration" paradigm where social capital offsets opportunism risk and unleashes cross-organizational resource mobility. Firms have to undertake a hierarchical resource synergy approach: using contracts for commonplace resource sharing (e.g., common logistics centers) while leaving Guanxi to oversee strategic exchanges (e.g., core technology collaboration). Implementing a "firewall sharing mechanism" incorporating confidentiality joint R&D agreements can balance openness and IP protection. A Guanxi Trust Index, derived from measures like frequency of sharing information or numbers of emergency assistance, might dynamically assess resource-sharing feasibility (Kessler & Arlinghaus, 2022).

Conclusion

This study formulates the SCC-Guanxi-LP model, which shows how Guanxi serves as a mediator of supply chain collaboration's (SCC) impact on logistics performance (LP). By creating trust, increasing information openness, and optimizing resource coordination, Guanxi improves the efficiency of SCC, giving firms a way to gain improved logistics performance. Conceptually, this closes a significant void in SCC literature, which has traditionally overlooked Guanxi governance as a mediator of collaboration translating into performance. In reality, the model provides actionable suggestions to firms working in complex supply chain environments, advocating hybrid governance mechanisms that blend formal contracts with Guanxi-based approaches.

Future studies would empirically confirm the hypothesized mediation channels across varied cultural and industrial settings. Comparative analyses, for example, might examine the degree to which Guanxi is effective across markets with varying institutional voids or regulatory regimes. Examining how Guanxi interacts with nascent technologies (e.g., blockchain as a mechanism for transparent trust) may also identify new ways of achieving balance between Guanxi and formal control. These actions will further explicate the boundary conditions of Guanxi and its place within international supply chain ecosystems.

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Conflict of interest

The authors declare no conflict of interest.

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