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Can Supply Chain Collaboration Improve Firm Performance? Experiences on Leather and Footwear Companies in Vietnam

Nguyen Thi Duc Nguyen
Department of Production and Operations Management, School of Industrial Management,
Ho Chi Minh City University of Technology (HCMUT), Ho Chi Minh City, Vietnam
Vietnam National University Ho Chi Minh City, Ho Chi Minh City, Vietnam
Email: ntdnguyen@hcmut.edu.vn *(Corresponding Author)*

Nguyen Hoang Phat
Department of Production and Operations Management, School of Industrial Management,
Ho Chi Minh City University of Technology (HCMUT), Ho Chi Minh City, Vietnam
Vietnam National University Ho Chi Minh City, Ho Chi Minh City, Vietnam

Nguyen Thi Hoang Mai
Department of Production and Operations Management, School of Industrial Management,
Ho Chi Minh City University of Technology (HCMUT), Ho Chi Minh City, Vietnam
Vietnam National University Ho Chi Minh City, Ho Chi Minh City, Vietnam

Huynh Thi Phuong Lan
Department of Production and Operations Management, School of Industrial Management,
Ho Chi Minh City University of Technology (HCMUT), Ho Chi Minh City, Vietnam
Vietnam National University Ho Chi Minh City, Ho Chi Minh City, Vietnam

ABSTRACT

This study investigates key components of supply chain collaboration that contribute to firm performance in vertical collaboration with supply chain partners based on supply chain management experiences on the leather and footwear companies in Vietnam as well as how they work in these companies from an extended resource-based perspective. The mix-research methods employed, include prior studies' review, in-depth interviews with seven experts in the leather and footwear industry, and case studies at three typical companies in this sector. The results indicate that seven critical supply chain collaboration components, such as information sharing, goal congruence, decision synchronization, joint knowledge creation, incentive alignment, resource sharing, and collaborative communication, have a significant impact on firm performance in the context of leather and footwear companies in Vietnam. Accordingly, companies in the leather and footwear industry, as well as those struggling to maximize firm performance can use it as a reference and put it into action.

Keywords: *case study, leather and footwear industry, firm performance, supply chain collaboration, Vietnam*

1. INTRODUCTION

In the face of globalization forces, companies all over the world are interested in supply chain management as a means of maintaining, and increasing sales while reducing expenses, and achieving sustainable development (Shahbaz *et al.*, 2018). Companies in Vietnam are not exempt from this challenge; the leather and footwear industry, in particular, is seen as essential in economic restructuring. The products of this industry are currently one of the principal industrial items with significant growth in export turnover to the EU (MOIT, 2021a). To meet industry expectations, leather and footwear manufacturers must satisfy customer needs while also figuring out how to increase production capacity and product quality. However, this industry is confronting numerous obstacles. Its production process is still heavily reliant on critical raw materials sourced from developing countries, posing a significant challenge. Observation reveals that most leather and footwear enterprises with insufficient internal resources are outsourcing to the worldwide leading brands. Companies mostly participate in the cutting and sewing phases of the supply chain, with limited involvement in the product design, marketing, and distribution stages (WTO&IT-VCCI, 2017). Furthermore, due to the negative impact of the Covid-19 epidemic on both the supply and demand sides, the leather and footwear industry suffers significant direct losses, particularly in major export markets like the US and the EU (Diep, 2022). Companies must redefine their competitive advantages and redirect their production activities toward enhancing worker

productivity and shifting the target segment from low-value products to multi-detail products requiring high abilities (MOIT, 2021a). In the face of growing challenges, collaboration is considered essential in the supply chain, because it allows partners to share information, optimize procedures, jointly build production plans, and enhance supply chain performance (Ralston *et al.*, 2017). Simultaneously, it enables the companies to achieve effectiveness and efficiency, increasing competitiveness based on core values (Wang *et al.*, 2021). Therefore, the question of which supply chain collaboration components, leather, and footwear companies in Vietnam should focus their resources on and how to capitalize on these aspects for improving company performance, presents a challenge to their executives.

To date, supply chain collaboration is a research field that many scholars all over the world are interested in studying and investigating. Research on the impact of supply chain collaboration on business performance, in particular, is an exceptional area performed in diverse scenarios, e.g., Cao and Zhang (2011) in the US, Cai *et al.* (2016) in China, Pradabwong *et al.* (2017) in Thailand, Shahbaz *et al.* (2018) in Malaysia, Um and Kim (2019) in Korea. Notably, country-related characteristics such as cultural aspects or technology levels produce significant discrepancies (Sim and Ali, 1998) motivating researchers to explore supply chain components in further settings, such as Laos, and Vietnam. Further understanding of collaboration in various industries is proposed (Ralston *et al.*, 2017), though studies in the specific industries are still limited to a few studies such as healthcare service (e.g., Chakraborty *et al.*, 2014), thin-film transistor liquid crystal display (e.g., Liao and Kuo, 2014), maritime logistics (e.g., Seo *et al.*, 2016), and fast-moving consumer goods (e.g., Salam, 2017). Above, supply chain collaboration research is primarily targeted at generalizing outcomes, industry-specific studies are still a severe gap (Ho *et al.*, 2019). Simultaneously, there are relatively few studies conducted in Vietnam, e.g., Luu (2015)'s research in the mechanical industry, Huynh (2017)'s research in the furniture industry, and Hang and Hang (2018)'s research in multi-sector enterprises. The scarcity of relevant prior research can lead to some concepts not being fully understood and exploited in practice. Research to date on supply chain collaboration in the context of Vietnam has also failed to adequately explore supply chain collaboration components contributing to firm performance, which do not fulfill the prevailing desire of firms in the leather and footwear industry. Therefore, this study takes this opportunity to provide managerial insights to companies in this sector by investigating the experiences of leather and footwear supply chain executives and lessons learned from typical leather and footwear company case studies.

This paper is structured as follows. Section 1 presents the significant issues in the leather and footwear industry in Vietnam. Section 2 provides the current state of supply chain collaboration, and direction of the leather and footwear industry in the Vietnamese economy. Section 3 illustrates research approaches, including prior studies' review, in-depth interviews with seven experts, and case studies at three typical manufacturing enterprises in the leather and footwear industry. Section 4 presents the findings of in-depth interviews and case studies and simultaneously discusses the results in comparison to relevant studies. Finally, Section 5 highlights major findings, management implications, and future research prospects.

2. LITERATURE REVIEW

2.1 Current State of Supply Chain Collaboration Research

Supply chain collaboration is a broad term referring to the business process in which partners work collaboratively to benefit both parties (Mentzer *et al.*, 2001), the establishment of inter-firm links allowing partners to share information, resources, and risk (Min *et al.*, 2005), and the ability of two or more autonomous enterprises to successfully plan and execute supply chain (Cao *et al.*, 2010). The primary goal of supply chain collaboration is to achieve common goals that benefit all parties more than operating independently (Cao and Zhang, 2011). It has been recognized as a significant benefit for business operations since the 1990s, e.g., improving stock levels and shortening lead times at Walmart, reducing lead time and transportation costs at General Electric (Yilmaz *et al.*, 2016). Recently, developing collaborative initiatives provides firms with chances to improve global competitive advantages (Talavera, 2014). For manufacturers, supply chain collaboration enables warehouse space sharing and production capacity to optimize operational operations and meet customer demands (Simatupang and Sridharan, 2002; Ho *et al.*, 2019). On the basis of the relationship structure of the supply chain, there are three categories, including vertical, horizontal, and lateral collaboration (Simatupang and Sridharan, 2002; Soosay *et al.*, 2008; Singh *et al.*, 2018). Vertical collaboration refers to collaboration with customers, internal employees, and suppliers (Barratt, 2004), which improves physical and information flows and reduces inventory management costs (Soosay *et al.*, 2008). Horizontal collaboration entails working with competitors, internally, and with non-competitors (Barratt, 2004) so that companies can benefit from shared information and resources (Simatupang and Sridharan, 2002). And, the combination of vertical and horizontal collaboration creates lateral collaboration, allowing the supply chain to gain more flexibility (Soosay *et al.*, 2008; Singh *et al.*, 2018).

Currently, various studies on supply chain collaboration are being conducted around the world, such as identifying aspects of this concept (e.g., Simatupang and Sridharan, 2005; Cao *et al.*, 2010), analyzing the drivers of successful supply chain collaboration (e.g., Min *et al.*, 2005; Soosay *et al.*, 2008; Zacharia *et al.*, 2009; Salam, 2017), defining collaborative barriers (e.g., Ramanathan, 2014; Mahmud *et al.*, 2021), and assessing supply chain collaboration benefits (e.g., Cao and Zhang, 2011; Pradabwong *et al.*, 2017; Um and Kim, 2019). Generally, vertical collaboration received significant interest until 2017 by evaluating internal collaboration within functions and interactions between partners (Ho *et al.*, 2019). The most recent studies also consistently demonstrate the dominance of research on vertical collaboration in a variety of situations and research approaches.

At the same time, various perspectives are employed, such as the resource-based view (e.g., Dyer and Singh, 1998;

Zacharia *et al.*, 2009), extended resource-based view (e.g., Lavie, 2006; Cao and Zhang, 2011; Pradabwong *et al.*, 2017; Um and Kim, 2019), and transaction cost economics (e.g., Chakraborty *et al.*, 2014; Um and Kim, 2019). Among these perspectives, the extended resource-based perspective stands out because it encourages the deployment of both internal and external resources to obtain and foster individual and collective benefits across the entire supply chain. Accordingly, various supply chain collaboration components are mentioned in different contexts, such as information sharing (e.g., Sezen, 2008; Ye and Wang, 2013), goal congruence (e.g., Cao and Zhang, 2011; Um and Kim, 2019), decision synchronization (e.g., Talavera, 2014; Ho *et al.*, 2017), joint knowledge creation (e.g., Seo *et al.*, 2016; Um and Oh, 2020), incentive alignment (e.g., Simatupang and Sridharan, 2005; Pradabwong *et al.*, 2017), resource sharing (e.g., Nagehan *et al.*, 2017; Hang and Hang, 2018), and collaborative communication (e.g., Cao and Zhang, 2011, Seo *et al.*, 2016). However, previous studies have not achieved consistency in supply chain collaboration components.

In this regard, most research is conducted at the national level for general industrial businesses, which significantly contributes to the current understanding of supply chain collaboration (e.g., Cao and Zhang, 2011; Nagehan *et al.*, 2017; Shahbaz *et al.*, 2018; Um and Kim, 2019). Few studies look at supply chain collaboration in a specific sector, such as the automotive industry (e.g., Wiengarten *et al.*, 2010), marine logistics (e.g., Seo *et al.*, 2016), and fast-moving consumer goods (e.g., Salam, 2017). Notably, research in the leather and footwear sector is still lacking. Since varied partner interactions and supply chain structures exist throughout a wide range of industries, conducting research in a particular sector might provide managers with specialized advice for effectively managing the supply chain.

2.2 The Direction of the Leather and Footwear Industry in the Vietnamese Economy

The leather and footwear industry is now one of the key industries of Vietnam's economy, ranking as the third largest export sector in the world, following nearly three decades of exporting footwear to global markets (Diep, 2022). There were approximately 2,608 firms in the leather and footwear industry nationwide, accounting for 0.34% of all businesses and 2.3% of all businesses in the processing and manufacturing sectors by the end of 2019 (General Statistics Office, 2020). The export revenue in 2020 was 40% of the nation's industrial production value and 7% of all exports (Tran and Le, 2020). Along with making a significant financial contribution to the nation's economy, Vietnam's leather and footwear industry has greatly stimulated employment, fulfilled domestic demand, and strengthened relationships between domestic and overseas footwear suppliers (Diep, 2022). Therefore, the textile and footwear industry group has still been recognized as one of the priority industries for development in Vietnam's industrial development strategy to 2025, vision by 2035 (Vietnam Government Portal, 2014). Accordingly, major developments like investing in product development with a major trend to increase shoe product value, improving the rate of material localization, and gradually taking control of the footwear supply chain by relocating to regions with abundant and reasonably priced labor resources will aid Vietnam's footwear sector in achieving sustained growth for at least another 15 years (Diep, 2022).

In fact, the worldwide fashion market is suffering a severe decline due to the world economy entering a period of extreme uncertainty following the exceptional epidemic. The leather and footwear industry also experiences direct losses, primarily in the two most significant export markets, the US and the EU (Diep, 2022). Additionally, the outcomes of the Russian-Ukrainian conflict are uncertain. Reliance on Chinese supply chains is another ongoing challenge for businesses worldwide. Consequently, the world's consumption of footwear dropped about 16% from 24.6 billion pairs to 20.5 billion pairs (Diep, 2022). Nevertheless, this scenario offers an opportunity for Vietnam's leather and footwear sector. It still is a constant concern, though, the Vietnamese government has successfully contained the outbreak and quickly resumed production after a few months of shutdown by implementing workable strategies, e.g., controlling inflation, lowering insurance premiums, providing money to keep jobs for staff, and offering loans to restart production (Nguyen, 2021). Access to labor resources is made easier by infrastructure development, and a human resource base. Therefore, Vietnam has emerged as a feasible choice as several top fashion brands restructured their supply networks. Especially, numerous US brands keep moving their orders to Vietnam due to the US-China economic tension. The U.S., EU, China, Japan, and Korea are currently Vietnam's top five export markets (Diep, 2022). Also, Vietnam has a lot of prospects thanks to the CPTPP, EVFTA, and RCEP.

After all, the leather and footwear companies in Vietnam have not taken full advantage of the present opportunities. It is primarily involved in downstream assembly operations with little value added along the global value chain for footwear due to labor intensiveness (Hoang and Pham, 2016). Most small- to medium-sized Vietnamese businesses engaged in the footwear industry lack skilled resources, expertise, and needed cutting-edge technology as well as the drive to develop and employ best practices (Herr *et al.*, 2016). Also, labor costs are increasing, and skilled labor shortage occurs in the important economic region, particularly in Southeast Vietnam; thus, most local businesses are not strong enough to join the global supply chain (Diep, 2022). Another downside is that they run the risk of decreasing both the possibility of technology transfer and the prospect for revenue growth if they still prioritize low-skilled assembly operations. A number of new competitors who also have similarities can eliminate the comparative advantage of cheap labor. Therefore, the leather and footwear manufacturers in Vietnam are urgently required to create a new business strategy based on alternative manufacturing processes and the advantages of supply chain management to improve firm performance (Hoang and Pham, 2016; MOIT, 2021a). Accordingly, one of the objectives for this industry's development is accelerating the transition from manufacturing outsourcing to forms needing greater expertise in supply chain and value chain management (MOIT, 2021b). The company managers are nevertheless challenged by the prevailing issues of which

supply chain collaboration components should be prioritized and how to strategically translate these effects into firm success. Research to date on supply chain collaboration has been conducted in some other industries in Vietnam, e.g., the mechanical sector (Luu, 2015), the furniture industry (Huynh, 2017), the textile and apparel industry (Ho *et al.*, 2017), which still falls short of what the companies in the leather and footwear industry in Vietnam need.

Consequently, this study explores key components of supply chain collaboration contributing to firm performance in vertical collaboration with supply chain partners to better understand how it operates in leather and footwear companies in Vietnam from an extended resource-based perspective. Organizations in the leather and footwear sector can benefit from managerial insights based on data gathered through executive interviews and lessons gained from case studies of typical leather and footwear companies.

3. RESEARCH METHODOLOGY

This study employs a mix-research methodology, including prior studies' review, in-depth interviews on Creswell and Creswell (2018)'s approach, and case study research on Yin (2014)'s approach.

In-depth interviews are conducted with seven experts in the leather and footwear industry in Vietnam as purchasing managers, product development managers, and factory directors to discover their opinions and viewpoints. They have at least five years of experience and a thorough understanding of the supply chain, partners, and the industry's distinctive traits. The semi-structured questionnaire is designed to facilitate direct interviews with specialists. Each conversation lasts at least an hour and a half, and the information is taken down and documented. Following each interview, information and data are collected, rewritten, categorized, and presented with care. The data is subsequently evaluated and compiled to get the results.

The case study is employed at three typical companies in Vietnam's leather and footwear industry. Currently, the companies in this sector operate as domestic companies and foreign-invested companies upon four business models, including Original Brand Manufacturer (OBM), Original Design Manufacturer (ODM), Original Equipment Manufacturer (OEM), and Cut–Make–Trim Manufacturer (CMT) (Schmitz, 2006). However, approximately 70% of companies run as OEMs for large brands in the world, producing significant profit margins for the economy (Giang, 2010). When a firm switches from OEM to OBM, its manufacturing activities have a higher added value (Gereffi, 1999; Ponte and Ewert, 2009), hence companies in this sector are attempting to transition from OEM to OBM. By observation, disparities in the capital, size, and business model lead to differences in how companies collaborate with their supply chain partners. Therefore, the three selected companies in this study are representative of the leather and footwear industry in Vietnam.

Company A is the largest domestic footwear and handbag exporter in Vietnam, employing over 50,000 people and producing over 20 million pairs of shoes annually. It is actively involved in the industry's value chain by establishing R&D departments and is in charge of designing models for the brands. Also, for serving domestic customers, it grows into a significant OEM for global brands.

Company B is a reputable outsourcing OEM for the second-largest brand in the world (hereinafter referred to as X) with 100% investment capital from Taiwan. It employs approximately 8,300 people and can annually produce over 14 million pairs of shoes. Currently, company B is ranked second in X's supplier rating system.

Company C is a domestic company differing from companies A and B in that it is involved in the entire supply chain. It employs over 9,000 people and produces over 20 million pairs of shoes annually. It is an OEM that outsources to well-known global brands. Also, company C operates as an OBM by deeply managing most supply chain activities, such as product development, production, and own distribution channels.

4. THE FINDINGS OF IN-DEPTH INTERVIEWS AND CASE STUDY RESEARCH AND DISCUSSIONS

This section presents practical experiences of key supply chain collaboration factors significantly affecting firm performance in the leather and footwear industry in Vietnam based on the findings of in-depth interviews with seven experts and case study research with three companies in this sector. Simultaneously, these essential supply chain collaboration components are discussed in comparison to prior studies.

The symbol in the table has the following meanings:
* : The previous study does not support mentioned aspect;
✔: The finding is similar to the previous study;
✖: The finding differs from the previous study;
☆ The finding differs from the previous study and is newly identified.

4.1 Information Sharing

Information exchange in the leather and footwear sector in Vietnam mostly relies on data from consumers to plan and predict production and materials. Various factors, such as production capacity, order delivery, and raw material problems influence the company's operation activities (**Table 1**).

Sharing information about order capacity and production capacity planning with partners is the basis for companies to receive goods in accordance with their capacity as well as a supplier evaluation criterion. By communicating production capacity information, the organization is able to receive more orders from customers while maintaining high production productivity and reducing excess and shortage capacity. This discovery is consistent with the result of Sezen (2008), and Ye and Wang (2013).

Additionally, sharing production planning information allows companies to more efficiently plan production and supply materials. This is mentioned by Sezen (2008), and Ye and Wang (2013) where production plans allow the company to prepare resources ahead of time and execute more efficiently. Particularly, the production status must be communicated to the partners so that assistance can be provided as needed. However, most companies keep

information about production plans secret, according to Hang and Hang (2018)'s research, doing so might harm their operations. Furthermore, when there are any changes in orders, the company contacts partners as soon as possible to ensure manufacturing progress and sufficient time for partners to prepare. Companies will save money if the order is not produced while updating quickly changing information.

Notably, most companies in this study share order forecasting information with partners to be proactive in production and material preparation. It is backed by the research of Wiengarten *et al.* (2010) and Ye and Wang (2013). The order forecasting data assist the organization and its partners in locating and sourcing raw materials actively, particularly for orders needing specialized and difficult-to-obtain market products. Actually, most of the research companies have long-standing collaborations, and some have formed strategic alliances; therefore, the companies and partners are eager to exchange project information.

Besides, most companies utilize information systems to manage the ordering and production process, enabling them to readily access and share progress-related information with partners, and monitor orders collectively, thereby coming to solutions timely for late orders. Simatupang and Sridharan (2005) and Khare *et al.* (2012), and others have also brought this up. Particularly, companies A and C both use the SAP system to manage order information while company B utilizes its own information system to integrate with its partner. However, due to high investment costs, small and medium-sized enterprises currently lack the ability to construct information systems.

To facilitate collaborative decision-making processes in the supply chain, information on items and pricing is frequently available in periodic evaluation records or provided by partners. This conclusion is reinforced by the research of Sezen (2008) and Khare *et al.* (2012). When collaborating with company A, partners provide full information on prices and raw material qualities. Company B's material suppliers' designated partners always supply all necessary information. Company C focuses on developing partners' profiles and regularly updating product information.

Generally, information sharing assists companies and their partners in updating production activities, optimizing costs, and promptly solving problems in order-making and processing.

Table 1 The Information Sharing Aspects in Comparison to Relevant Studies

Aspect	Previous studies	In-depth interview	Case A	Case B	Case C
Sharing production capacity planning information	Sezen (2008), Ye and Wang (2013)	✓	✓	✓	✓
Sharing production planning information	Sezen (2008), Ye and Wang (2013)	✓	✓	✓	✓
	*Hang and Hang (2018)	✗	✗	✗	✗
Sharing order forecasting information	Wiengarten *et al.* (2010), Ye and Wang (2013)	✓	✓	✓	✓
Monitoring order status easily	Simatupang and Sridharan (2005), Khare *et al.* (2012)	✓	✓	✓	✓
Finding suppliers' products and prices information easily	Sezen (2008), Khare *et al.* (2012)	✓	✓	✓	✓

4.2 Goal Congruence

The leather and footwear companies in Vietnam provide an example of how top global brands develop goals that are congruent with those of their partners. Production capacity, quality, delivery time, social, and environmental responsibility are five target categories that businesses typically agree upon (**Table 2**).

The company and its partners determine the mutual goals that are best suited to each party's long-term strategic goals before signing contracts. This helps them improve their efficiency, customer satisfaction, product quality, delivery schedules, cost minimization, working agreements, and policies between parties, as mentioned in previous studies such as Pradabwong *et al.* (2017), Hang and Hang (2018), Um and Kim (2019). Particularly, company B and its partners aim for social responsibility-related goals including eliminating carcinogens from materials, making them eco-friendly, recyclable, and avoiding issues with security control, terrorism, and human rights management.

Additionally, collaborating with partners enables companies to have more focused development strategies, establish precise and strategic goals, increase capacity and profit, and solve problems quickly and effectively. This supports the results of Cao and Zhang (2011), Al-Refaie (2014), Seo *et al.* (2016). Although Hang and Hang (2018) conclude that most small and medium-sized enterprises in Vietnam are more concerned with achieving their own objectives, this study indicates that the leather and footwear companies pay more attention to supply chain collaboration as an important solution in supply chain management.

In fact, collaboration-based improvements are essential and beneficial for all partners, in terms of increasing order volume, improving product quality, reducing order response time, lowering product costs and labor, and improving productivity. Research by Cao and Zhang (2011) and Um and Kim (2019) support this finding. Especially, the improvements at companies A and B can be extended to other outsourcing companies in the partnership system of the major customers.

Besides, companies emphasize establishing shared objectives to encourage partners to have a clear direction and know each other's tasks, thereby working together effectively. The entire supply chain goals also support companies in achieving their own objectives for high-quality, on-time, and cost-effective products. It is backed by Cao and Zhang (2011), Yilmaz *et al.* (2016), Nagehan *et al.*

(2017), and so on. Specifically, Hang and Hang (2018) found that most enterprises in various sectors have only individual aims and do not collaborate in planning with others.

Regarding collaborative arrangements to achieve supply chain competitiveness, the companies and partners together discuss short-term and long-term plans, including investment, raw material supply, order allocation, quality control, collaborative process, as well as implementation strategies. Company C, unlike companies A and B, also collaborates with distribution partners who schedule their operations and specify precise steps to develop market-related strategies and ensure supply chain sustainability. As a result, companies commit to working toward common goals and engaging in activities that benefit the whole supply chain, as typically indicated by Al-Refaie (2014), and Pradabwong *et al.* (2017).

Generally, effectively establishing and implementing common supply chain goals helps companies to increase responsiveness, which depends on the quality of the information offered.

Table 2 The Goal Congruence Aspects in Comparison to Relevant Studies

Aspect	Previous studies	In-depth interview	Case A	Case B	Case C
Having agreements on the supply chain goals	Pradabwong *et al.* (2017), Hang and Hang (2018), Um and Kim (2019)	✓	✓	✓	✓
Having agreements on the importance of collaboration across the supply chain	Cao and Zhang (2011), Al-Refaie (2014), Seo *et al.* (2016)	✓	✓	✓	✓
	*Hang and Hang (2018)	×	×	×	×
Having agreements on the importance of improvements that benefit the entire supply chain	Cao and Zhang (2011), Um and Kim (2019)	✓	✓	✓	✓
Achieving company goals through the supply chain goals	Cao and Zhang (2011), Yilmaz *et al.* (2016), Nagehan *et al.* (2017)	✓	✓	✓	✓
	*Hang and Hang (2018)	×	×	×	×
Jointly planning collaborative arrangements for supply chain competitiveness	Al-Refaie (2014), Pradabwong *et al.* (2017)	✓	✓	✓	✓

4.3 Decision Synchronization

Decision synchronization varies by business model, companies' roles, and issues that leather and footwear companies in Vietnam can resolve with partners (**Table 3**).

In most cases, supply chain partners collaborate to plan promotional events and make distribution decisions, which are consistent with findings from Cao and Zhang (2011), Al-Refaie (2014), Yilmaz *et al.* (2016), and Um and Kim (2019). However, they have distinct promotional event-planning activities. Large-scale outsourcing companies (like company A) participating from design to production frequently exhibit their products with existing partners or collaboratively develop advertising campaigns for new items. Owned-brand companies (like company C) proactively work with relevant partners to advertise products on online platforms and in shops. Cao *et al*. (2010) and Cao and Zhang (2011) reached a similar conclusion about product distribution collaboration. Particularly, company B and most purely outsourcing companies in Vietnam, exclusively concentrate on manufacturing. This is a new finding when analyzing collaborative activities of different business types and companies' roles in the supply chain, which previous studies had overlooked.

Currently, most outsourcing companies do not participate in demand forecasting, mainly based on their brands' demand predictions to plan raw materials and production. Large outsourcing companies with future expansion plans (like company A) only share forecast production trends with key partners if requested. Few domestic-owned-brand companies (like company C) engage with partners to estimate market demand based on in-store consumers' purchasing data. This is distinct proof in the context of Vietnam's leather and footwear industry, even if certain research (e.g., Wiengarten *et al.*, 2010; Nagehan *et al.*, 2017) encourages forecasting and replenishment collaboration.

Actually, inventory management in the leather and footwear supply chain is determined by the level of partnership and partners' engagement in the operation. When a company outsources to a global brand, like Case B, partners utilize electronic systems to monitor raw materials and finished goods, and the brands could even request the outsourcing factories to dispose of excessive raw materials after the designated period. Vietnamese own brand companies also control distributors' in-store inventory data through an inventory notification system and replenishment system. Generally, most companies control their own raw material inventories, which is consistent with Hang and Hang (2018)'s results. Whereas Cao *et al.* (2010) and Cao and Zhang (2011) conclude that jointly managing inventory allows companies to reduce inventory costs and produce more efficiently.

Besides, brands typically control the styles and volumes of their own product lines. Most outsourcing companies have no involvement in product classification planning and only manufacture products in response to customer orders, as mentioned in Hang and Hang (2018)'s study. To penetrate deeper into the industry's value chain, a few large-scale outsourcing companies, like company A, have some influence over how product lines are created throughout the year by creating product prototypes and commercializing themselves. Therefore, collaboration brings significant benefits to product development and assortment, as stated by Nagehan *et al.* (2017) and Um and Kim (2019).

Adversely, companies and partners frequently discuss operational problems and supply chain disruptions and consistently prioritize long-term growth with a win-win principles while providing solutions. This finding is consistent with results from Al-Refaie (2014), Ho *et al.* (2017), and Pradabwong *et al*. (2017).

Overall, synchronizing decisions enables companies and partners to identify shared strategies, align each side's business operations, and respond to issues head-on. Comprehensive, accurate, reliable, and timely information must be provided for the effective decision-making process.

Table 3 The Decision Synchronization Aspects in Comparison to Relevant Studies

Aspect	Previous studies	In-depth interview	Case A	Case B	Case C
Jointly planning on promotional events	Cao and Zhang (2011), Al-Refaie (2014), Yilmaz *et al.* (2016), Um and Kim (2019)	☆	✓	☆	✓
Jointly developing demand forecasts	Wiengarten *et al.* (2010), Nagehan *et al.* (2017)	☆	☆	☆	☆
Jointly managing inventory	Cao *et al.* (2010), Cao and Zhang (2011), Yılmaz *et al.* (2016), Um and Kim (2019)	×	×	×	×
	*Hang and Hang (2018)	✓	✓	✓	✓
Jointly planning on product assortment	Nagehan *et al.* (2017), Um and Kim (2019)	×	×	×	×
	*Hang and Hang (2018)	✓	✓	✓	✓
Jointly working out solutions	Al-Refaie (2014), Ho *et al.* (2017), Pradabwong *et al.* (2017)	✓	✓	✓	✓

4.4 Joint Knowledge Creation

Joint knowledge creation is a keen interest for leather and footwear companies in developing relevant manufacturing methods and technologies, which increase competitiveness (**Table 4**).

Companies and partners exchange knowledge about material handling, manufacturing methods, and new technologies, collaboratively seeking out and learning new expertise. All of the brand's outsourcing networks, as in company A, use the efficient production techniques of the other partner's outsourcing enterprises. Company B shares test results, color samples, experiences, and practices with the outsourcing firms in the partner's system. This finding is similar to the results of Cao and Zhang (2011), Seo *et al.* (2016), and Ho *et al.* (2017), in which discovering new knowledge and technologies are crucial.

Additionally, the application of new and applicable expertise among the parties is the common point of all sorts of leather and footwear companies, as evidenced by Cao and Zhang (2011), Seo *et al.* (2016), Nagehan *et al.* (2017). Particularly, company B and its partners achieve greater production efficiency by deploying innovative technologies and practices. Company C and distribution partners learn and exchange efficient sales techniques.

Companies play distinct roles in identifying customer needs. Outsourcing companies do not engage in detecting customer requests; instead, they produce based on orders. Larger outsourcing companies with a strong desire to move up the value chain, like company A, frequently do market research, develop product prototypes, and share their findings with suppliers. This feature contrasts with the results of Cao and Zhang (2011), Nagehan *et al.* (2017), and Pradabwong *et al.* (2017). Additionally, for domestic brand development, company C has looked into customer needs with the assistance of its own staff and distribution network.

Most companies explore the market alone, without the deep participation of partners. This finding contrasts the results of Cao and Zhang (2011), Al-Refaie (2014), Seo *et al.* (2016), Pradabwong *et al.* (2017), and Um and Oh (2020), but it is consistent with Hang and Hang (2018)'s results. Particularly, when establishing new markets, strategic partners seek companies, like A, to maintain collaboration and development. Otherwise, company B prioritizes production outsourcing rather than market expansion. Company C does not involve in the partner's market expansion initiatives, though, establishing an R&D team to offer appropriate proposals to suppliers and distributors.

In fact, companies benefit from partners' support to learn competitors' capabilities through information sharing. Particularly, the primary competitors of company B are those within the same customers' network competing with others for order volume. Through factory tours inside the same customer system, the company explores the competitors' technology and capabilities. Company C, which manufactures and distributes its own goods, consults the sales performance of agents to determine how other brands are performing. Therefore, as long as confidential rights are not violated, collaboration with global brands helps companies to learn about the capabilities of more competitors and vice versa, which is mentioned by Al-Refaie (2014) and Seo *et al.* (2016). This is a novel discovery in the context of Vietnam, wherein Hang and Hang (2108) found that small and medium-sized enterprises are unaware of their competitors' intentions and capabilities.

Generally, joint knowledge creation helps companies and partners quickly increase intellectual capital, thereby efficiently improving firm capabilities.

Table 4 The Joint Knowledge Creation Aspects in Comparison to Relevant Studies

Aspect	Previous studies	In-depth interview	Case A	Case B	Case C
Jointly searching and acquiring new and appropriate knowledge	Cao and Zhang (2011), Seo *et al.* (2016), Ho *et al.* (2017)	✓	✓	✓	✓
Jointly assimilating and applying appropriate knowledge	Cao *et al.* (2010), Cao and Zhang (2011), Seo *et al.* (2016), Nagehan *et al.* (2017)	✓	✓	✓	✓
Jointly identifying customer needs	Cao and Zhang (2011), Nagehan *et al.* (2017), Pradabwong *et al.* (2017)	☆	☆	☆	☆
Jointly discovering new or emerging markets	Cao and Zhang (2011), Al-Refaie (2014), Seo *et al.* (2016), Pradabwong *et al.* (2017), Um and Oh (2020)	×	×	×	×
	*Hang and Hang (2018)	✓	✓	✓	✓
Jointly learning the intentions and capabilities of competitors	Al-Refaie (2014), Seo *et al.* (2016)	✓	✓	✓	✓
	*Hang and Hang (2018)	×	×	×	×

4.5 Incentive Alignment

Incentive alignment encourages partners in the leather and footwear supply chain to value collaboration and be willing to support others (**Table 5**).

Companies and partners have varying amounts of intervention in performance data. Global brands evaluate producers' success, whereas manufacturers evaluate material suppliers' performance. Particularly, company A produces monthly and quarterly performance reports at the customer's request to receive the next orders' size. Company B's customer creates performance control systems to rank the manufacturer and assign orders. Company C assesses distributors and material suppliers for future product purchasing and supply processes. The collaborating aspect in assessing and publicizing performance is consistent with the results of Wiengarten *et al.* (2010) and Cao and Zhang (2011), but contrasts with Hang and Hang (2018)'s study, where most companies control their own performance appraisals.

For long-term collaborative partnerships, partners in the leather and footwear supply chain jointly negotiate and share expenses when there is a change in orders, which supports the result of Cao and Zhang (2011), Liao and Kou (2014), and Um and Oh (2020). Particularly, for exclusive outsourcing companies for global brands, like company B, when most of the production is served for these brands, the customers are fully paid if the materials are purchased before the order changes, which is a newly defined finding in this study.

Companies and partners share the advantages of reducing costs, increasing orders, lowering prices, and handling nonconforming products. Partners receive preferred order costs in terms of benefit sharing, particularly as a result of company A's effective inventory management. Contrarily, company B negotiates with partners to have the nonconforming items purchased back at a discount, thereby solving inventory problems. Company C and partners enjoy additional benefits like price breaks and assistance with marketing and advertising initiatives at distribution centers. Many previous studies, e.g., Simatupang and Sridharan (2005), Liao and Kou (2014), and Pradabwong *et al.* (2017), also highlighted the significance of supply chain benefit sharing.

Regarding risk sharing, the companies and partners collaborate to protect each other from hazards and discuss risk sharing before making decisions based on the risk types, e.g., risks of natural disasters, epidemics, and order delays. This is consistent with the results of Cao and Zhang (2011) and Pradabwong *et al.* (2017). The risk of a production delay, however, is not shared but rather held responsible in domestic owed-brand companies, such company C, so the party causing the delay is fully liable. Hang and Hang (2018) also imply that no collaborative sharing is required if risks occur outside of the contract.

Companies evaluate investment costs, returns, and risks during the supply chain collaboration process when selecting partners. The investment costs in machinery, equipment, and labor are proportionate to the order value and in line with the company's growth strategy. This is similar to the results of Cao and Zhang (2011), Pradabwong *et al.* (2017), and Um and Oh (2020). Domestic owned-brand companies, particularly in company C, also invest in distributors' shop design or product marketing, resulting in increased sales and benefits for both parties.

Generally, incentive alignment mainly comes from the vertical supply chain. Large brands and their partners are generally more equitable interests than small customers.

Table 5 The Incentive Alignment Aspects in Comparison to Relevant Studies

Aspect	Previous studies	In-depth interview	Case A	Case B	Case C
Co-developing systems to evaluate and publicize performance	Wiengarten *et al.* (2010), Cao and Zhang (2011)	✓	✓	✓	✓
	*Hang and Hang (2018)	×	×	×	×
Sharing costs	Cao and Zhang (2011), Liao and Kou (2014), Um and Oh (2020)	✓	✓	☆	✓

Table 5 The Incentive Alignment Aspects in Comparison to Relevant Studies (Con't)

Aspect	Previous studies	In-depth interview	Case A	Case B	Case C
Sharing benefits	Simatupang and Sridharan (2005), Liao and Kou (2014), Pradabwong *et al.* (2017)	✓	✓	✓	✓
Sharing risks	Cao and Zhang (2011), Pradabwong *et al.* (2017), Hang and Hang (2018)	✓	✓	✓	✓
Incentive commensuration with investment and risk	Cao and Zhang (2011), Pradabwong *et al.* (2017), Um and Oh (2020)	✓	✓	✓	✓

4.6 Resource Sharing

Resource sharing enables leather and footwear companies in Vietnam to enhance overall operational efficiency and competitiveness (**Table 6**).

Companies invest in a dedicated team working with partners to continuously conduct design and process improvement. For instance, company A receives partners' support and consultations for improvements. Company B's key customers have functional groups managing the quality, orders, and manufacturing operations. The dedicated team at company C implements continuous improvement in technology, layout, and processes to maximize firm efficiency, without interference from partners. Hang and Hang (2018) and Um and Kim (2019) also emphasized the significance of collaborative teams between companies and partners in process design and improvement.

Additionally, companies, company A typically, assign personnel to work directly with specific partners during the collaboration process. Nagehan *et al.* (2017) and Um and Kim (2019) also mentioned this aspect. Particularly, company B and company C have functional departments and representatives responsible for working with the relevant partners. Along with the production managers of company B, company B's key partners have a team of manufacturing engineers working at the factory to handle the technical issues.

Technical support from partners is an essential resource that helps companies run their processes and use materials more efficiently. According to Cao and Zhang (2011) and Um and Kim (2019), technology is a shared resource among supply chain members. Jointly managing the production process also is an important aspect of technical support sharing (Ho *et al.*, 2017). Particularly, company A receives assistance in understanding and resolving issues connected to input material quality by visiting its suppliers. The suppliers of company C provide technical support in fabric handling or printing techniques. Company B receives support from the customer's on-site engineers for complications during the production process, aside from getting the technology transfer while beginning a new order.

The shared resources vary based on the partnership between companies and partners. Some companies receive production equipment help, whereas others must prepare everything on their own. Previous studies on machine sharing include works, e.g., Yilmaz *et al.* (2016) and Um and Oh (2020). Most supported equipment is high-tech equipment or effective improvement devices, thus, companies do not have to spend time learning. Company B creates molds, patterns, and necessary machinery based on customer specifications. Company A additionally invests in its own production equipment with the assistance of partners, e.g., armband tools, adhesive extractors, and glue sprays, as having a sufficient manufacturing infrastructure is a need for obtaining orders from partners. Likewise, partners provide company C with production equipment in special cases upon negotiation, such as shoe form bags.

Besides, partners offer non-financial resources, frequently host training sessions when technology is upgraded, and have a team of engineers on hand to assist the company with technical concerns. Companies increase production efficiency by better understanding their equipment and processes. This notion is emphasized in the research of Ho *et al.* (2017) and Hang and Hang (2018). Otherwise, companies are responsible for paying contract details and do not share financial resources with their partners, whereas Cao and Zhang (2011) and Um and Kim (2019) emphasize shared tangible and intangible resources in the supply chain.

Overall, companies can enhance their technological and operational capabilities, production efficiency, effectiveness at problem-solving, and quality through resource sharing with technical help and training tailored to the firm's actual needs.

Table 6 The Resource Sharing Aspects in Comparison to Relevant Studies

Aspect	Previous studies	In-depth interview	Case A	Case B	Case C
Using cross-organizational teams frequently for designing and improving supply chain process	Cao and Zhang (2011), Nagehan *et al.* (2017), Hang and Hang (2018), Um and Kim (2019)	✓	✓	✓	✓
Dedicating personnel to manage the collaborative processes	Nagehan *et al.* (2017), Um and Kim (2019)	✓	✓	✓	✓
Sharing technical support	Cao and Zhang (2011), Ho *et al.* (2017), Um and Kim (2019)	✓	✓	✓	✓
Sharing equipment	Cao and Zhang (2011), Yilmaz *et al.* (2016), Um and Oh (2020)	☆	☆	☆	☆

Table 6 The Resource Sharing Aspects in Comparison to Relevant Studies (Con't)

Aspect	Previous studies	In-depth interview	Case A	Case B	Case C
Pooling financial and non-financial resources	Cao and Zhang (2011), Al-Refaie (2014), Hang and Hang (2018), Um and Kim (2019)	☆	☆	☆	☆

4.7 Collaborative Communication

Collaborative communication is essential for information flow throughout the supply chain which strengthens the collaboration advantage of leather and footwear companies in Vietnam (**Table 7**).

Currently, companies have regular contact with their partners, via phone conversations, to update information. The severity and urgency of the problems determine the frequency of discussion. This is similar to the results of Cao and Zhang (2011) and Um and Kim (2019). Order-related issues are the major subjects of communication that vary from collaborative type. For example, company A typically discusses production-related concerns with partners, company B regularly updates its partners on order status, and company C constantly engages with distributors to track sales situations.

Furthermore, companies are aware that the lack of communication among supply chain partners is the major obstacle to implementing and practicing supply chain management, as indicated by deSouza and Haddud (2017). Therefore, the companies and their partners maintain open and two-way communication to promptly assist each other with their challenges, which are mentioned by Cao and Zhang (2011), Seo *et al*. (2016), and Um and Oh (2020).

In fact, most communication between companies and partners concern work; partners' representatives also have informal communication with employees to strengthen relationships. They are expected to be able to get assistance outside of the workplace (such as extra time to support late orders) as well as useful production information. This consists of the results by Cao and Zhang (2011), Ho *et al.* (2017), and Um and Kim (2019).

Currently, communication between leather and footwear companies and their partners takes place through various channels. Each company has a particular route for communication depending on how it interacts with its partners. Phone calls and in-person meetings are the primary methods of company A; while company B and company C use other social media sites like WeChat, Viber, and Zalo. The research of Cao and Zhang (2011), Seo *et al.* (2016), Ho *et al.* (2017), and Um and Oh (2020) reach a similar result. However, the formal method of information transmission is, after all, email. The information must be timely exchanged, particularly urgent information exchanged via phone calls or face-to-face meetings.

Notably, when problems arise, companies and partners jointly address them through direct exchanges, rather than requesting from one side. Companies A, B, and C regularly meet their partners to identify more practical solutions. This finding is consistent with the findings of previous studies such as those conducted by Seo *et al.* (2016) and Hang and Hang (2018). Discussion is one of the dimensions of the quality of collaboration communication (Um and Kim, 2019). It enables all members to share accountability and participate in decision-making for the supply chain's performance.

Overall, quick problem solutions are facilitated by the firms' communication with their partners. Therefore, information must be accurate, complete, and reliable and promptly respond to specific requests during collaboration.

Table 7 The Collaborative Communication Aspects in Comparison to Relevant Studies

Aspect	Previous studies	In-depth interview	Case A	Case B	Case C
Frequently contacts on a regular basis	Cao and Zhang (2011), Um and Kim (2019)	✓	✓	✓	✓
Open and two-way communication	Cao and Zhang (2011), Seo *et al.* (2016), Um and Oh (2020)	✓	✓	✓	✓
Informal communication	Cao and Zhang (2011), Ho *et al.* (2017), Um and Kim (2019)	✓	✓	✓	✓
Many different channels to communicate	Cao and Zhang (2011), Seo *et al.* (2016), Ho *et al.* (2017), Um and Oh (2020)	✓	✓	✓	✓
Influencing each other's decisions through discussion rather than request	Seo *et al.* (2016), Hang and Hang (2018), Um and Kim (2019)	✓	✓	✓	✓

5. CONCLUSION

This study results in seven aspects of supply chain collaboration contributing significantly to the performance of leather and footwear companies in Vietnam, including information sharing, goal congruence, decision synchronization, joint knowledge creation, incentive alignment, resource sharing, and collaborative communication. They are influenced by information quality, cultural aspects, partner size, and innovative capability.

Accordingly, companies in the leather and footwear industries, as well as those struggling to maximize firm performance, can utilize these findings as a reference for proper actions from various angles as follows:

1. To foster information sharing, companies and partners communicate significant changes. Firms and partners should also prioritize the development and

implementation of technologies that facilitate information-sharing. For a long-term partnership, partners must first communicate with the company their basic business practices, technology development goals, and strategic vision. Defined by their scale, partners' control systems create a range of when, what, and how information is transmitted differs, which alerts management in the leather and footwear business. Because global customers have a thorough understanding of the market and development orientation, companies should regularly exchange and update information about production plans and capacity with customers. By capturing information from customers, companies become more proactive in the process of planning and working with material suppliers; therefore, companies should also prioritize the development and implementation of technologies (e.g., SAP, Oracle, RFID, etc.) that create chances for collaboration with major partners. Additionally, the Vietnam Leather and Footwear Association (Lefaso) has to increase its initiatives to share information exchanging experiences with small and medium enterprises, so that they may better understand what needs to be done to develop their capacity and join the big brands' systems. Lefaso needs to grasp the necessary topics, the company members' problems, and the updated information on the macro-micro market with a network of domestic and foreign experts. The emphasis of Lefaso-organized digital transformation efforts should be on information sharing. The government should offer to enable packages and policies to promote small and medium enterprises to implement a digital transformation, which helps them develop information-sharing systems with partners, instead of only stopping at the pilot phase for major companies.

2. To obtain goal congruence, managers should thoroughly comprehend the significance of collaboration and have agreements to help partners understand their roles and responsibilities and exploit each other's strengths. Companies whose customers are well-known global brands should strive to meet the common goals to sustain long-term partnerships, as well as increase financial and non-financial performance. Additionally, Lefaso should act as a bridge between companies in the sector and organize working experience exchanges with global brands of major companies in Vietnam so that small and medium-sized businesses can get ready to achieve goal congruence with brands. The government must develop unique policies, rules, and roadmaps for each industry to motivate companies to work toward the common goals of global brands and increase their competitiveness to participate in global supply chains.
3. To synchronize decisions with partners, companies should identify their position in the supply chain and value chain, and jointly participate in the process of planning and implementing promotional activities at the appropriate level to expand partnerships and increase product value. Also, companies should train staff in statistics and forecasting since the parties must assume the risk of making a bad prediction, for instance, inventory costs rise as a result of unsold items. Therefore, companies need to manage big data and make precise decisions by taking risks, markets, and customer needs into account. Additionally, Lefaso should periodically conduct training sessions on the skills needed for organizational decision-making and provide data associated with the industry to help firms with budgetary support from the government. Lefaso can assist companies in managing and sharing risks and preventing disruptions by maintaining market stability, aiding supplies, and developing local industries.
4. To promote joint knowledge creation, companies and strategic partners should organize technology development projects to collaboratively conduct research and produce new knowledge suited for product and process development. Companies should also be proactive in seeking out and implementing improvement, innovation, and new technology processes from partners to increase competitiveness. By integrating technology expertise from several brands, companies can enhance productivity quickly and improve order volume. Companies can visit high-tech factories to gain additional experience by partnering with major brands. With the support of brands, companies should propose research and the acquisition of new technologies, such as implementing 3D technology during the prototyping process to reduce prototype design time. Companies and partners need to develop and share their collective expertise on a shared platform. Diverse firm structures enable expertise shared with partners to expand into new areas (e.g., markets and customers), rather than simply increasing production and operating capacity. Besides, Lefaso should connect industry leaders to arrange visits to machinery, industrial processes, and technology to promote mutual learning and knowledge sharing in the sector. To meet various organizations' goals, the selected companies should differ in size, technical level, management style, product line, etc. The association should keep promoting the role of a bridge to share and organize programs to keep domestic and international professionals up to date on knowledge, experience, and technology.
5. To facilitate incentive alignment, companies and their partners should explicitly define metrics for frequent evaluation to ensure that the performance of both parties is consistent with the initial agreement and investment. Cost-sharing and cost-saving advantages should be communicated with strategic partners for a long-term commitment. Besides, Lefaso should enhance support for businesses in identifying and managing macro-level risks, such as risks of changes in monetary policy, international political instability, international economic integration, etc. Small and medium-sized businesses with weak resilience and low-risk management skills will benefit the most from this support.
6. To effectively share resources with strategic partners, companies and partners should agree on and describe each individual's roles and responsibilities before implementing the plans together. Forming collaborative teams with exceptional engineers from

the partners could be a wise strategy for increasing firm efficiency. Furthermore, to foster the innovative capacity and competitive edge, companies should collaborate with their partners to receive production training courses and address cutting-edge technologies. The government can help businesses promote resource sharing with partners by providing appropriate budgets for training programs in this industry.

7. To ensure the above aspects are successfully implemented, collaborative communication is crucial. Therefore, companies should utilize working opportunities for frequent communication, and seek help from partners. Companies and partners should agree on communication mechanisms facilitating formal communication, informal communication, and information response across platforms. Additionally, functional departments of firms and their partners should work directly to constantly learn, improve, and assist the company in promptly exchanging updated information. Particularly, to enhance communication effectively, companies and partners must focus on three criteria: *(a)* the subject of communication must be clear, well-informed, and accompanied by accurate information; *(b)* the personnel involved in the communication process between the parties should be stable to ensure that they are knowledgeable about the topic; and *(c)* it is necessary to ensure business communication skills of the employees, such as foreign languages, idea presentation skill, meeting minutes writing skill, etc. Additionally, Lefaso can assist in providing information to businesses from the information obtained when communicating with other domestic associations of different industries, with abroad associations of the fashion industry, and with Vietnamese and foreign governments.

Overall, this study only provides exploratory evidence and managerial implications regarding supply chain collaboration activities in leather and footwear companies in Vietnam. Further research could broaden the scope of this study in various ways. Case studies in other significant sectors in Vietnam, such as mechanical and electronics, should be done to supplement comparison for determining the specifications of each dominant industry and generating common features in the supply chain collaboration of manufacturing enterprises. The quantitative study should be conducted to determine the impact of supply chain collaboration components on the firm performance of leather and footwear companies and manufacturing companies in general. Notably, recent research has focused a lot of attention on the moderate effects of firm characteristics such as innovative capability, information technology capability, etc. (e.g., Cai *et al.*, 2016; Donkor *et al.*, 2018).

Due to insufficient research on the subject, more research is needed to determine how cultural differences, company size, innovation capability, and other factors influence the relationship between supply chain collaboration components and firm performance. Research findings can be analyzed and compared to draw more comprehensive conclusions about the reality of supply chain collaboration in Vietnam's industries.

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REFERENCES

Al-Refaie, A. (2014). Examining Factors Affect Supply Chain Collaboration in Jordanian Organizations. *Journal of Management Analytics*, 1(4), pp. 317 – 337.

Barratt, M. (2004). Understanding the Meaning of Collaboration in the Supply Chain. *Supply Chain Management: An International Journal*, 9(1), pp. 30 – 42.

Cai, Z., Huang, Q., Liu, H., and Liang, L. (2016). The Moderating Role of Information Technology Capability in the Relationship Between Supply Chain Collaboration and Organizational Responsiveness: Evidence From China. *International Journal of Operations & Production Management*, 36(10), pp. 1247 – 1271.

Cao, M., and Zhang, Q. (2011). Supply Chain Collaboration: Impact on Collaborative Advantage and Firm Performance. *Journal of Operations Management*, 29(3), pp. 163 – 180.

Cao, M., Vonderembse, M. A., Zhang, Q., and Ragu-Nathan, T. S. (2010). Supply Chain Collaboration: Conceptualization and Instrument Development. *International Journal of Production Research*, 48(22), pp. 6613 – 6635.

Chakraborty, S., Bhattacharya, S., and Dobrzykowski, D. D. (2014). Impact of Supply Chain Collaboration on Value Co-creation and Firm Performance: A Healthcare Service Sector Perspective. *Procedia Economics and Finance*, 11, pp. 676 – 694.

Creswell, J. W., and Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (fifth ed.), Thousand Oaks, CA: Sage Publications.

deSouza, A., and Haddud, A. (2017). Supply Chain Management Integration in Maintenance and Repair Services Sector. *Operations and Supply Chain Management: An International Journal*, 10(4), pp. 200 – 213.

Diep, T. K. (2022). True Vietnam Footwear Industry Insights in the Post-Covid 19. *The 6th Vietnam Footwear Summit 2022*, Ho Chi Minh City, Vietnam

Donkor, J., Donkor, G. N. A., Kankam-Kwarteng, C., and Aidoo, E. (2018). Innovative Capability, Strategic Goals and Financial Performance of SMEs in Ghana. *Asia Pacific Journal of Innovation and Entrepreneurship*, 12(2), pp. 238 – 254.

Dyer, J. H., and Singh, H. (1998). The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage. *Academy of Management Review*, 23(4), pp. 660 – 679.

General Statistics Office. (2020). Statistical Yearbook of Vietnam 2020. Hanoi, Vietnam: Statistical Publishing House.

Gereffi, G. (1999). International Trade and Industrial Upgrading in the Apparel Commodity Chain. *Journal of International Economics*, 48(1), pp. 37 – 70.

Giang, N. B. (2010). The Challenges of Upgrading and Diversifying Viet Nam's Industrial Structure. In R. Banomyong, and M. Ishida (Eds.), A Study on Upgrading Industrial Structure of CLMV Countries (pp. 360 – 391). Jakarta: ERIA Research Project Report.

Hang, L. T. M., and Hang, N. T. (2018). Supply Chain Collaboration (SCC) - A Pilot Study of Small and Medium

Enterprises (SMEs) in Danang. *Asian Economic and Financial Review*, 8(3), pp. 353 – 365.

Herr, H., Schweisshelm, E., and Truong, M. H. V. (2016). *The Integration of Vietnam in the Global Economy and Its Effects for Vietnamese Economic Development* (Working Paper No. 44). Global Labour University.

Ho, D., Kumar, A., and Shiwakoti, N. (2017). Supply Chain Collaboration - A Case Study of Textile and Apparel Industry. *2017 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, Singapore, pp. 1367 – 1371.

Ho, D., Kumar, A., and Shiwakoti, N. (2019). A Literature Review of Supply Chain Collaboration Mechanisms and Their Impact on Performance. *Engineering Management Journal*, 31(1), pp. 47 – 68.

Hoang, L., and Pham, H. (2016). An Analysis of Vietnamese Footwear Manufacturers' Participation in the Global Value Chain Where They Are and Where They Should Proceed?. *VNU Journal of Economics and Business*, 32(5E), pp. 55 – 65.

Huynh, T. T. S. (2017). Factors Impacting on the Supply Chain Collaboration of the Furniture Industry in Vietnam. *Journal of Asian Finance, Economics and Business*, 4(4), pp. 67 – 77.

Khare, A., Misra, R. K., Dubey, A., Garg, A., Malhotra, V., Nandan, H., and Singh, D. (2012). Exploiting Mobile Technology for Achieving Supply Chain Integration in Indian Retail. *Journal of Asia-Pacific Business*, 13(2), pp. 177 – 202.

Lavie, D. (2006). The Competitive Advantage of Interconnected Firms: An Extension of the Resource-Based View. *Academy of Management Review*, 31(3), pp. 638 – 658.

Liao, S. H., and Kuo, F. I. (2014). The Study of Relationships Between the Collaboration for Supply Chain, Supply Chain Capabilities and Firm Performance: A Case of the Taiwan's TFT-LCD Industry. *International Journal of Production Economics*, 156, pp. 295 – 304.

Luu, T. D. (2015). Factors Affecting the Collaboration in Supply Chain of Mechanical Enterprises in Vietnam. *International Journal of Managing Value and Supply Chains*, 6(4), pp. 17 – 29.

Mahmud, P., Paul, S. K., Azeem, A., and Chowdhury, P. (2021). Evaluating Supply Chain Collaboration Barriers in Small- and Medium-Sized Enterprises. *Sustainability*, 13(13), pp. 7449 – 2476.

Mentzer, J. T., DeWitt, W., Keebler, J. S., Min, S., Nix, N. W., Smith, C. D., and Zacharia, Z. G. (2001). Defining Supply Chain Management. *Journal of Business Logistics*, 22(2), pp. 1 – 25.

Min, S., Roath, A. S., Daugherty, P. J., Genchev, S. E., Chen, H., Arndt, A., and Richey, R. G. (2005). Supply Chain Collaboration: What's Happening? *International Journal of Logistics Management*, 16(2), pp. 237 – 256.

MOIT (Ministry of Industry and Trade). (2021a). EVFTA with Vietnam Trade - Specialized in Textile and Footwear. Hanoi, Vietnam: Agency of Foreign Trade of Ministry of Industry and Trade.

MOIT (2021b). Improving Competitiveness and Sustainable Development for Leather and Footwear Businesses. Available online at https://moit.gov.vn/khoa-hoc-va-cong-nghe/nang-cao-tinh-canh-tranh-va-phat-trien-ben-vung-cho-cac-doanh-nghiep-da-giay.html [Accessed 07 November 2022]

Nagehan, U., Çemberci, M., Civelek, M. E., and Yılmaz, H. (2017). The Effect of Trust in Supply Chain on the Firm Performance through Supply Chain Collaboration and Collaborative Advantage. *Journal of Administrative Sciences*, 15(30), pp. 215 – 230.

Nguyen, Q. (2021). The Government Issues Resolution 68/NQ-CP on Policies to Support Workers and Businesses Facing Difficulties Due to COVID-19. Available online at http://www.lefaso.org.vn/chi-tiet-tin-tuc/26697/chinh-phu-ban-hanh-nghi-quyet-68-nq-cp-ve-chinh-sach-ho-tro-nld-dn-kho-khan-do-covid-19 [Accessed 07 November 2022]

Ponte, S., and Ewert, J. (2009). Which Way Is "Up" in Upgrading? Trajectories of Change in the Value Chain for South African Wine. *World Development*, 37(10), pp. 1637 – 1650.

Pradabwong, J., Braziotis, C., Tannock, J., and Pawar, K. S. (2017). Business Process Management and Supply Chain Collaboration: Effects on Performance and Competitiveness. *Supply Chain Management: An International Journal*, 22(2), pp. 107 – 121.

Ralston, P. M., Richey, R. G., and Grawe, S. G. (2017). The Past and Future of Supply Chain Collaboration: A Literature Synthesis and Call for Research. *The International Journal of Logistics Management*, 28(2), pp. 508 – 530.

Ramanathan, U. (2014). Performance of Supply Chain Collaboration – A Simulation Study. *Expert Systems with Applications*, 41(1), pp. 210 – 220.

Salam, M. A. (2017). The Mediating Role of Supply Chain Collaboration on the Relationship Between Technology, Trust and Operational Performance: An Empirical Investigation. *Benchmarking: An International Journal*, 24(2), pp. 298 – 317.

Schmitz, H. (2006). Learning and Earning in Global Garment and Footwear Chains. *The European Journal of Development Research*, 18(4), pp. 546 – 571.

Seo, Y. J., Dinwoodie, J., and Roe, M. (2016). The Influence of Supply Chain Collaboration on Collaborative Advantage and Port Performance in Maritime Logistics. *International Journal of Logistics Research and Applications*, 19(6), pp. 562 – 582.

Sezen, B. (2008). Relative Effects of Design, Integration and Information Sharing on Supply Chain Performance. *Supply Chain Management: An International Journal*, 13(3), pp. 233 – 240.

Shahbaz, M. S., Rasi, R. Z. R. M., and Sohu, S. (2018). The Impact of Supply Chain Collaboration on Operational Performance: Empirical Evidence From Manufacturing of Malaysia. *International Journal of Advanced and Applied Sciences*, 5(8), pp. 64 – 71.

Sim, A., and Ali, Y. (1998). Performance of International Joint Ventures From Developing and Developed Countries: An Empirical Study in a Developing Country Context. *Journal of World Business*, 33(4), pp. 357 – 377.

Simatupang, T. M., and Sridharan, R. (2002). The Collaborative Supply Chain. *International Journal of Logistics Management*, 13(1), pp. 15 – 30.

Simatupang, T. M., and Sridharan, R. (2005). The Collaboration Index: A Measure for Supply Chain Collaboration. *International Journal of Physical Distribution & Logistics Management*, 35(1), pp. 44 – 62.

Singh, H., Garg, R., and Sachdeva, A. (2018). Supply Chain Collaboration: A State-Of-The-Art Literature Review. *Uncertain Supply Chain Management*, 6(2), pp. 149 – 180.

Soosay, C. A., Hyland, P. W., and Ferrer, M. (2008). Supply Chain Collaboration: Capabilities for Continuous Innovation. *Supply Chain Management: An International Journal*, 13(2), pp. 160 – 169.

Talavera, M. G. V. (2014). Supply Chain Collaboration and Trust in the Philippines. *Operations and Supply Chain Management: An International Journal*, 7(1), pp. 1 – 12.

Tran, T. T. T., and Le, T. H. (2020). A Study of Vietnam's Leather and Footwear Company: Focus on the Relationship Between Liquidity and Firms' Profitability. *The 2020 International Conference on Contemporary Issues in Finance, Banking and Accounting for Sustainable Development*, Hanoi, Vietnam, pp. 163 – 171.

Um, K. H., and Kim, S. M. (2019). The Effects of Supply Chain Collaboration on Performance and Transaction Cost Advantage: The Moderation and Nonlinear Effects of Governance Mechanisms. *International Journal of Production Economics*, 217, pp. 97 – 111.

Um, K. H., and Oh, J. Y. (2020). The Interplay of Governance Mechanisms in Supply Chain Collaboration and Performance in Buyer–Supplier Dyads: Substitutes or Complements. *International Journal of Operations & Production Management*, 40(4), pp. 415 – 438.

Vietnam Government Portal (2014). Industrial Development Strategy Through 2025, Vision to 2035. Available online at https://vietnam.gov.vn/period-20112020/industrial-development-strategy-through-2025-vision-to-2035-10054959 [Accessed 07 November 2022]

Wang, M., Wu, Y., Chen, B., and Evans, M. (2021). Blockchain and Supply Chain Management: A New Paradigm for Supply Chain Integration and Collaboration. *Operations and Supply Chain Management: An International Journal*, 14(1), pp. 111 – 122.

Wiengarten, F., Humphreys, P., Cao, G., Fynes, B., and McKittrick, A. (2010). Collaborative Supply Chain Practices and Performance: Exploring the Key Role of Information Quality. *Supply Chain Management: An International Journal*, 15(6), pp. 463 – 473.

WTO&IT-VCCI (Center for WTO and International Trade - Vietnam Chamber of Commerce and Industry). (2017). EVFTA with Vietnam's Textile and Footwear Industry. Hanoi, Vietnam: Center for WTO and international trade - Vietnam Chamber of Commerce and Industry.

Ye, F., and Wang, Z. (2013). Effects of Information Technology Alignment and Information Sharing on Supply Chain Operational Performance. *Computers & Industrial Engineering*, 65(3), pp. 370 – 377.

Yilmaz, H., Çemberci, M., and Uca, N. (2016). The Role of Collaborative Advantage for Analyzing the Effect of Supply Chain Collaboration on Firm Performance. *International Journal of Commerce and Finance*, 2(1), pp. 157 – 168.

Yin, R. K. (2014). *Case Study Research: Design and Methods* (fifth ed.), Thousand Oaks, CA: Sage.

Zacharia, Z. G., Nix, N. W., and Lusch, R. F. (2009). An Analysis of Supply Chain Collaborations and Their Effect on Performance Outcomes. *Journal of Business Logistics*, 30(2), pp. 101 – 123.

Dr. Nguyen Thi Duc Nguyen is currently an official lecturer at School of Industrial Management, Ho Chi Minh City University of Technology. She keeps up her scientific research, advises graduate and undergraduate theses, teaches courses and publishes the findings in domestic and international journals and conferences on supply chain management, Lean-Six sigma, operational improvement, and productivity. She has more than twenty years of real-world experience in operational management improvement, both locally and globally. She performed exceptionally well in the PhD research program at Ritsumeikan University in Japan, and successfully completed two research projects on cross–cultural technology transfer. Also, she had a position as a research professor at the Research organization of science and technology, Ritsumeikan University.

Nguyen Hoang Phat is a master's student at School of Industrial Management, Ho Chi Minh City University of Technology, Vietnam. He starts to research and then becomes interested in supply chain management. He has interests in supply chain collaboration, supply chain integration, lean supply chain practices, and their impact on firm and supply chain performance.

Nguyen Thi Hoang Mai is currently a junior lecturer at School of Industrial Management, Ho Chi Minh City University of Technology, Vietnam. She obtained the degree of Master of Business Administration in 2021. Her current research interests are supply chain management, particularly supply chain collaboration, operations management, and quality management.

Huynh Thi Phuong Lan is an official lecturer at the School of Industrial Management, Ho Chi Minh City University of Technology, Vietnam National University. She was awarded the degrees of Master of Business Administration (2009) from Ho Chi Minh City University of Technology and Master of Science in Global Production and Engineering from Technische Universität Berlin (2020). Her articles and presentations in national and international journals and conferences cover topics like sustainable supply chain management, Lean-Six sigma, and circular economy.