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## Article

# How do strategic networks help SMEs upgrade in global value chains? A cross-national analysis

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*Suggested Citation:* Kang, Sangmin; Kim, Changju (2023) : How do strategic networks help SMEs upgrade in global value chains? A cross-national analysis, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 10, Iss. 1, pp. 1-21, <https://doi.org/10.1080/23311975.2023.2202833>

This Version is available at:

<https://hdl.handle.net/10419/294397>

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To cite this article: Sangmin Kang & Changju Kim (2023) How do strategic networks help SMEs upgrade in global value chains? A cross-national analysis, Cogent Business & Management, 10:1, 2202833, DOI: [10.1080/23311975.2023.2202833](https://doi.org/10.1080/23311975.2023.2202833)

To link to this article: <https://doi.org/10.1080/23311975.2023.2202833>



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Published online: 19 Apr 2023.



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Received: 22 December 2022  
Accepted: 11 April 2023

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## MANAGEMENT | RESEARCH ARTICLE

# How do strategic networks help SMEs upgrade in global value chains? A cross-national analysis

Sangmin Kang<sup>1\*</sup> and Changju Kim<sup>2</sup>

**Abstract:** This study investigates whether strategic networks in global value chains affect the upgrade of suppliers and describes alternative ways of overcoming the barriers to such upgrades. Using a cross-national analysis, we examine the complex upgrade process for suppliers from a long-term perspective by applying qualitative research. We conduct semi-structured interviews to survey small and medium-sized enterprises in Japan and South Korea. The results show that suppliers in global value chains maintain long-term cooperative relationships with lead firms and utilize strategic networks to supplement the management capabilities required for strategic goals. Our findings also indicate that strategic multi-partner networks play a crucial role in ameliorating major barriers to upgrading. This study proposes that suppliers can upgrade through alternative methods utilizing strategic networks. Our findings thus generate important implications for managers working for suppliers in current or potential global value chains.

**Subjects:** Asian Studies; Regional Development; Business, Management and Accounting; International Relations

**Keywords:** global value chain; upgrades; strategic network; small and medium-sized enterprises; South Korea; Japan

### 1. Introduction

While small and medium-sized enterprises (SMEs) play a pivotal role as suppliers in global value chains (GVCs), they are also required to improve their international competitiveness through upgrades. The GVC approach in previous studies provides a conceptual framework for describing, organizing, and managing increasingly fragmented and geographically dispersed value chains from the perspective of multinational corporations (MNCs) (Benito et al., 2019; Gereffi & Lee,

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2016; Gereffi et al., 2005; Gereffi, 1995; Mudambi, 2008; Ponte & Sturgeon, 2014; Strange & Humphrey, 2019). These prior studies indicate the input—output structure of products, geographic scope of product services, governance structure of value chains, and institutional mechanisms as analytical methodologies of GVCs. Notably, Gereffi and Lee (2016) emphasize that the GVC framework provides an overall perspective for better understanding governance and how value is created, maintained, and utilized within industry types.

While GVC governance has primarily focused on MNCs in terms of the structure of supply chains on a global scale (Benito et al., 2019), upgrading is a strategy used by countries, regions, businesses, and other economic stakeholders to maintain or improve their positions in the global economy (Gereffi et al., 2005). In this regard, prior investigators have provided valuable early insights into governance and upgrades in GVCs. First, previous studies have emphasized that GVC governance captures opportunities for value creation through knowledge flow and relationship management by the control and coordination mechanism of the network (Sturgeon & Linden, 2011). Therefore, SMEs should participate in GVCs to create value while continuously acquiring helpful information and knowledge resources.

Second, countries, regions, industries, clusters, and suppliers in GVCs are traditionally beneficiaries of economic and social upgrades (Islam & Polonsky, 2020; Kaplinsky & Morris, 2001; Tian et al., 2019). As these studies adopt a holistic approach (Giuliani et al., 2005), such as industry or clusters in GVCs, and a buyer-focused perspective to investigate upgrades, a suppliers' upgrading perspective is required at the firm level (Sako & Zylberberg, 2019). In the same vein, previous studies have discussed the perspective of SMEs, including the relative influence arising from the differences between lead firms and suppliers, as presented in Table 1. In GVCs, suppliers' effective management in knowledge transfer through enhanced trust-based cooperative relationships with lead firms positively affects their upgrades. We expand our knowledge of suppliers' upgrading by adapting these insights to our study context. It is important to note that previous studies focused only on the relationship between buyers and suppliers, ignoring suppliers' roles and behaviors as in strategic multi-partner networks.

Third, previous studies have shown that lead firms and orchestrating companies, along with MNCs, demonstrate innovative value creation functions and promote excellent performance within GVCs (Humphrey & Schmitz, 2002; Kano et al., 2020; Kano, 2018; Saliola & Zanfei, 2009). Lead firm groups play an essential role in organizing by defining the qualifications of value chain members, integrating or excluding other actors, distributing and allocating value (Gibbon & Ponte, 2005), helping to secure a high-value share in GVCs, and coordinating critical market and technical information (Mudambi, 2008).

However, previous studies have focused on governance mechanisms at the vertical level and adopted a static buyer—supplier perspective, which necessitates more insight into upgrade strategies. As dynamic changes in GVCs affect upgrades (Ivarsson & Alvstam, 2011; Magnani et al., 2019), and the role of lead firms in suppliers' upgrading is essential but still unclear (Giuliani et al., 2005), further research requires a critical review of the evolutionary process at the firm level. Moreover, in GVCs, suppliers' upgrading is hindered by barriers, such as a wide range of asymmetric power structures (Dallas et al., 2019; Farfan, 2005; Soontornthum et al., 2020), knowledge asymmetries (Hoque et al., 2016), buyer—supplier credibility (Choksy et al., 2017), social and environmental requirements of lead firms (Jorgensen et al., 2006), or low value-added locations (Su et al., 2020). A supplier's functional and chain upgrades often infringe on the value addition of the lead firm and turn it into a competitor (Hoque et al., 2016); alternatively, the supplier is excluded from GVCs (Agostino et al., 2015). As these factors hinder the integration of sustainable supply chains, it is important to mitigate such barriers (Baig et al., 2020).

Against this background, this study aims to investigate whether strategic networks in GVCs affect suppliers' upgrading. We describe alternative ways of overcoming the barriers to upgrades

**Table 1. An empirical study on suppliers' perspective in the GVC**

<b>Study</b>	<b>Primary purpose</b>	<b>Study context</b>	<b>Theoretical perspective</b>	<b>Key findings related to our study</b>
Agostino et al. (2015)	A study on the relationship between capability and productivity between lead firms and suppliers	Manufacturing firms in Italy	Firm capability; Firm productivity	Competent suppliers (i.e., those that export and undertake both product and process innovations) are more successful than others in capitalizing on the opportunities that lead firms within GVCs offer.
Hoque et al. (2016)	A study of suppliers' corporate strategy on buyers' knowledge asymmetry	Garment manufacturing firms in Bangladesh	Outsourcing relationships; Knowledge dynamics	Suppliers must leverage a variety of external sources, as well as unique relationship-specific investments, to compensate for buyers' lack of access to tacit knowledge.
Ivarsson and Alvstam (2011)	A study on the relationship between buyer governance and suppliers' upgrading	Home-furnishing sector in Vietnam, China, Thailand, Indonesia	Buyer-driven value chains; Technological support	The developmental category of governance can help lead firms upgrade their suppliers by facilitating close and long-term interactions and providing technical support.
Islam et al. (2023)	A study on the impact of relational governance on supplier lead-time performance	Apparel sector in Bangladesh	Social capital theory; Knowledge-based view	In a GVC, suppliers build and maintain the quality of relationships that enable strong collaboration with many buyers (MNCs), and the resulting opportunities for knowledge accumulation and learning improve lead-time performance.

(Continued)

**Table 1. (Continued)**

<b>Study</b>	<b>Primary purpose</b>	<b>Study context</b>	<b>Theoretical perspective</b>	<b>Key findings related to our study</b>
Magnani et al. (2019)	A study on the asymmetry and the dynamics of trust development of supplier and multinational firms in GVC	Apparel, oil, and gas in a developed country	Dynamics of outsourcing relationship	In the lead firm—supplier relationship, power asymmetry occurs, especially owing to the possession of heterogeneous resources and capabilities. However, trust and partnership can be developed by strengthening interdependence by investing in relationship-specific assets.
Soontornthum et al. (2020)	A study on SME learning from the perspective of power logic and embeddedness logic in the GVC	Electronics and industrial equipment, furniture, jewelry etc. sectors in Thailand	Logic of power and embeddedness	SMEs' technological adaptation can counteract power asymmetry with buyers by mediating the relationship between dependence and learning outcomes from GVCs, that is, knowledge transfer.
Su et al. (2020)	A study on SMEs' relationship between upgrading barriers and networks in the GVC	Furniture and precision instruments, hardware etc. sectors in China	Internationalization perspective; Network ties	Power asymmetry, weak domestic support institutions, or low added value within the GVC impede further business development and capacity building; however, strong network capabilities are critical for upgrades.
Our study	A study on supplier upgrading strategies to GVC's lead firm and multi-partner relationships	Footwear sector in South Korea and office equipment sector in Japan	Strategic multi-partner networks	Suppliers in GVCs overcome upgrading barriers by building long-term partnerships with lead firms based on relationship-specific investments and R&D capacity and leveraging strategic multi-partner networks to achieve strategic goals.

*Note:* The table provides an overview of global value chains (GVCs), and the investigation's supplier focuses on examining the relational aspects; The key findings provide each study's main implications related to the topic of the present study.

through a cross-national analysis of SMEs. Strategic networks are drivers of knowledge flow between network actors and help improve competitive position, cost reduction, product or service improvement, new product development, and research and development (R&D) effects (Thorgren et al., 2009; Vătămănescu et al., 2020). They have a structural form of enduring organizational relationships, such as long-term buyer—supplier partnerships (Gulati et al., 2000). Suppliers with limited resources are often strategically progressive in their strategic network participation (Thorgren et al., 2009). This is simply because SMEs can overcome constraints by leveraging their strategic networks to achieve a competitive advantage while acquiring scarce resources, capabilities, and tacit knowledge (Gulati et al., 2000; Sikombe et al., 2019).

Nevertheless, how suppliers can leverage strategic networks in GVCs requires an in-depth discussion. The general network structure of GVCs may be inherently dual or multi-actor, and these networks influence the flow of knowledge (Lipparini et al., 2014), business operations, and performance (Golini et al., 2016). Accordingly, a GVC can be conceptualized as the governance of an international network (Jarillo, 1988). This study critically evaluates and compares how and why two suppliers in South Korea and Japan, respectively, have evolved within GVCs in terms of the network relations established by different lead firms. We argue that supplier upgrades entail practices and processes in a set of inter-firm relationships that create value by transferring information, knowledge, and technological innovation. This definition explains our focus on the moderating role of suppliers' strategic networks in GVCs.

## 2. Literature review and conceptual framework

### 2.1. SMEs in GVCs

Typically, a GVC is conceptualized as the entire chain of corporate activities involving goods and services, from planning to final consumption (Gereffi & Fernandez-Stark, 2011). There is considerable research on managing MNCs' segmented and geographically dispersed value chains (Mudambi, 2008). Indeed, MNCs play a central role in forming value chains, exercising purchasing power, and distributing added value (Ponte & Sturgeon, 2014). Accordingly, research has focused on the management and structure of relationships, such as how MNCs drive network activity in the international division of labor and suppliers' governance (Humphrey & Schmitz, 2002). These previous studies have provided significant insights into the networks of relational aspects in GVCs.

First, research has revealed the variety in global governance owing to disparities in network types. The GVC governance framework has been extended from a buyer—producer perspective to the issue of asset specificity between markets and buyers (Gereffi et al., 2005). Furthermore, this framework helps further the understanding of governance by adding normative elements between companies in the value chain (Gibbon & Ponte, 2005). It collectively considers the important principles and structures that generate benefits to the network and the decision-making process in participating enterprises (Kano et al., 2020). As Table 1 shows, suppliers' relationship-specific investment promotes interdependence by increasing learning opportunities (Kim, Ishii, et al., 2022; Magnani et al., 2019; Soontornthum et al., 2020). This, in turn, leads to improved firm performances underpinned by relational quality (Islam et al., 2023).

Second, the benefits of various upgrades are contingent on the degree and types of SME participation in GVCs. Suppliers participate in GVCs through network collaboration, learning, and knowledge transfer processes for product technology (Giovannetti et al., 2015; Humphrey & Schmitz, 2002). This requires adhering to process standards such as quality management systems, labor, and environmental standards (Humphrey & Schmitz, 2002). It also requires introducing new business practices and advanced technologies for sustainable growth (Giovannetti et al., 2015). In particular, strong linkages within GVCs are important for conveying knowledge about production processes, sourcing practices, and technological innovation capabilities (Kano, 2018). Overall, GVC governance relates to control and orchestration mechanisms, value distribution, relationship management, and knowledge flow among participating companies. For instance, knowledge

access using various external sources (Hoque et al., 2016) and strong networks such as entrepreneurial networks, various network channels, and significant customers (Su et al., 2020) highlight new perspectives on how SMEs can learn and benefit from GVCs while overcoming upgrading barriers (Table 1). Therefore, this study argues that the suppliers' strategic multi-partner networks are positively related to their upgrades.

Third, previous studies have focused on producer countries regarding the changing dynamics of GVC governance. The overall level of upgrade scope is concentrated in emerging or developing countries (Sturgeon & Linden, 2011) and industrial clusters (Gereffi & Fernandez-Stark, 2011; Giuliani et al., 2005; Strange & Humphrey, 2019), centering on the governance structure of the lead firms for the relationship between GVC participants (Humphrey & Schmitz, 2002; Saliola & Zanfei, 2009). Notably, Agostino et al. (2015) emphasize that the concentration of GVCs in developing countries poses a severe threat to suppliers in developed countries (Table 1), while Magnani et al. (2019) point out that the dynamics of lead firms and suppliers need to be sufficiently investigated in studies of advanced economies (Table 1). GVC governance is relevant because it examines the specific practices, power dynamics, and organizational forms that lend character and structure to cross-border business networks (Ponte & Sturgeon, 2014); this concept can illuminate inter-firm cooperation on a global scale.

SMEs can acquire opportunities for management expertise, technical knowledge, innovation, and new markets through improvement of productivity and efficiency by progressively participating in GVCs (Strange & Humphrey, 2019). Indeed, SMEs participating in GVCs have higher sales and international competitiveness than their non-participating counterparts (APEC, 2014). Thus, we can conclude that suppliers may acquire incentives and opportunities to upgrade their export and innovation capabilities through GVCs (Strange & Humphrey, 2019). In contrast, vulnerable SMEs that fail to participate in GVCs are often excluded from the associated benefits (Lund-Thomsen & Lindgreen, 2014). Furthermore, the structural problems of GVCs and a lack of learning opportunities may pose barriers to upgrading. Structural problems are associated with power asymmetry in GVCs with lead firms engaging in outsourcing (Dallas et al., 2019), thus emphasizing the importance of cooperative trust relationships (Islam et al., 2023; Magnani et al., 2019). A lack of learning opportunities implies that building relational governance through relational capital and interdependence increases the opportunity to transfer knowledge from network partners (Hoque et al., 2016; Sako & Zylberberg, 2019; Su et al., 2020). Therefore, this study examines how suppliers compensate for insufficient management resources attributable to power asymmetry and a lack of learning opportunities through the lens of the strategic network (see Table 1).

## **2.2. Roles of strategic networks in supplier upgrading**

The effective governance of lead firms based on GVCs can provide suppliers with benefits that drive value creation, and suppliers must implement upgrades by strategically reinforcing these benefits. 2002) developed additional analytical elements for supplier upgrades, focusing on upstream and downstream directions in the value chain. Gereffi and Fernandez-Stark (2011) divided upgrades into the process, product, function, and chain (or inter-sectoring). By entering GVCs through MNCs, SMEs can acquire opportunities to upgrade their export and innovation capabilities (Agostini et al., 2019).

From a dynamic perspective on upgrading, Gereffi and Fernandez-Stark (2011), and Kano et al. (2020) point out the pattern of upgrading from original equipment manufacturing (OEM) investment in R&D to entering the original design manufacturing (ODM) business or investing in marketing and branding to become an original brand manufacturing (OBM) business. This includes a series of corporate business activities related to production and export. Upgrading implies a firm moving to the high-value-added activities of GVCs to increase profits, added value, and capacity by participating in global production (Farfan, 2005). As Table 1 shows, the ability to handle a supplier's technology is a factor influencing knowledge transfer (Soontornthum et al., 2020), which positively affects the interactions with lead firms (Ivarsson & Alvstam, 2011; Saliola & Zanfei, 2009). Therefore, a supplier's corporate strategy plays a vital role in forming GVCs with MNCs (Sako & Zylberberg, 2019; Sturgeon & Linden, 2011).



For SMEs to create management resources that produce unique value, it is usually practical to utilize inter-enterprise networks (Gulati et al., 2000); the management resources obtained from these networks can provide a competitive advantage. Thus, SMEs with unique networks can grow and benefit from being part of GVCs. Consequently, SMEs' strategic networks are built for various reasons to achieve strategic goals (Gulati et al., 2000), such as new product and market development (Agostini et al., 2019). Moreover, strategic networks play a critical role in enabling companies to continuously engage with other companies through partnerships in a complex network environment (Hagedoorn et al., 2006), and the interdependencies created in these networks motivate knowledge transfer to partners (Thorgren et al., 2012). In this process, the relationship between companies should be cooperative so that it can be a source of competitive strength (Jarillo, 1988; Jones & Jayawickrama, 2017; Thomas et al., 2017). From this perspective, strategic networks are strategic corporate activities linked by meaningful inter-organizational relationships (Gulati et al., 2000) whose primary purpose is to ensure future success with network partners.

### **2.3. Conceptual framework**

A GVC upgrade is defined as moving to a position where greater added value can be obtained within the production process, based on the theoretical framework of upgrading proposed by Humphrey and Schmitz (2002) and Gereffi and Fernandez-Stark (2011). Specifically, our analysis focuses on the four upgrade aspects that suppliers anticipate when progressively participating in GVCs: process, product, function, and chain. Based on prior studies investigating GVC upgrades (Gereffi & Fernandez-Stark, 2011; Humphrey & Schmitz, 2002), the first aspect is process upgrading, which transforms inputs into outputs more efficiently by reorganizing the production system or introducing superior technology. The second is product upgrading or moving into more sophisticated, high-quality product lines. The third is functional upgrading or acquiring new functions to increase the overall skill content of activities, and the fourth is chain (or inter-sectoral) upgrading, wherein firms move into new but often related industries.

Within the lead firm—supplier framework, we argue that suppliers can achieve economic upgrades by participating in GVCs. However, quantitative studies do not capture the value created by the lead firm—supplier relationship's evolution over time in GVCs (Buckley et al., 2019; Magnani et al., 2019; Qian et al., 2021). Moreover, although previous studies have quantified or analyzed added value in terms of profits, such as export-based indicators (Tian et al., 2019), GVC-level performance is complex and diverse, making it difficult to operationalize quantitatively (Kano et al., 2020). Additionally, previous qualitative studies have primarily focused on the buyer—supplier framework to examine upgrade barriers (i.e., lead firms' requirements and low value-added positions) arising from the network structure. Therefore, this study integrates a lead firm—supplier, multiple-partner perspective to conduct a qualitative and conceptual analysis of the non-financial attributes of upgrades, thereby addressing the notable literature gap. This is accomplished by explaining how two suppliers (hereafter referred to as Firms I and Y) in different countries can achieve an upgrade in GVCs through a strategic multi-partner network. Based on our research question, Figure 1 illustrates our conceptual framework that investigates three main goals. Specifically, we critically evaluate and contrast:

- (1) the necessity of suppliers establishing GVCs to facilitate upgrades;
- (2) how suppliers overcome upgrading barriers in GVCs; and
- (3) the importance of developing strategic networks and how they affect suppliers' upgrading.

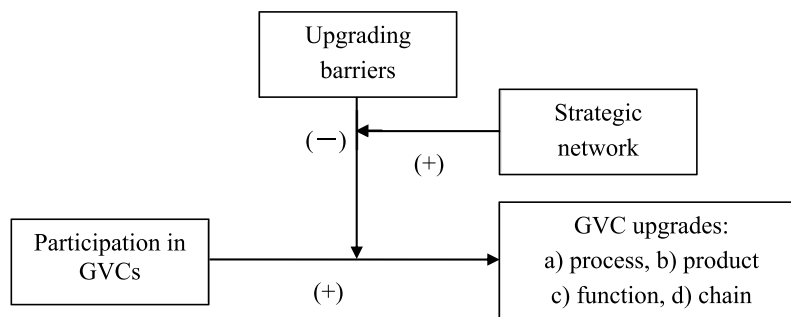
## **3. Methodology**

### **3.1. Research context and sample selection**

Following previous studies (Gereffi & Fernandez-Stark, 2011), this study employs the case analysis method of qualitative research. It is valuable to review and contextualize the core concepts of a proposed conceptual model using case studies (Eisenhardt, 1989). Additionally, it is important to

**Figure 1. Conceptual framework.**

Note: GVC = global value chain.



clarify changes in complex networks over an extended period by monitoring research participants using follow-up surveys (Campbell, 2012). An investigation using this methodology would help us better understand why suppliers participate in GVCs and how they can achieve upgrades (Yin, 1994).

Our case selection was guided by the need to understand how analyses of suppliers' upgrades in GVCs based on advanced economies have been underestimated relative to developing economies (Magnani et al., 2019). Hence, we selected cases from manufacturing SMEs in South Korea and Japan, which are advanced economies, to understand how MNCs' power asymmetry influences SMEs' participation and dynamics in GVCs (Dallas et al., 2019). The barriers to advancement and factors for overcoming them were observed and compared by selecting companies in knowledge-intensive and labor-intensive industries, respectively.

We chose two SMEs participating in GVCs and working in these industries (Table 2). Firm I is a knowledge-intensive company. It operates within the office equipment sector in Japan and supplies toner-fixing tubes—the core components of Canon printers. Firm Y is a labor-intensive company that operates within the footwear sector in South Korea, supplying ethylene-vinyl acetate compounds and soles—the core materials and parts of Nike footwear. These SMEs were selected based on three reasons. First, both companies are in charge of production networks as suppliers within GVCs. Second, both are independent SMEs and have no capital relationship with MNCs. Third, as a comparative group, SMEs in developed countries were selected for labor-intensive and knowledge-intensive industries.

**Table 2. Description of the sample profiles**

	<b>Firm I</b>	<b>Firm Y</b>
Nationality	Japan	South Korea
Year of establishment	1983	1987
Capital fund	8 million yen <sup>a</sup>	50 million won <sup>b</sup>
Number of employees	146	200
Industry	Office equipment sector (i.e., knowledge-intensive)	Footwear sector (i.e., labor-intensive)
Interview method	Semi-structured personal interview and follow-up research by e-mail	Semi-structured personal interview and follow-up research by e-mail
Interviewees	Chief secretary at the general affairs department; Chief of public relations department	Chief executive officer; Development executive director
Interview period	2015–2017	2018–2020

Note: <sup>a</sup>8 million yen is equivalent to 57,725 USD in November 2022; <sup>b</sup>50 million won is equivalent to 37,677 USD in November 2022.

### **3.2. Data collection and analysis**

As shown in Table 2, the information used in this study was extracted from several data sources. Data were gathered over a long period of time between August 2015 and February 2020. This included qualitative survey data from the semi-structured interviews, publicly available information on each firm, and follow-up surveys with firms conducted by e-mail. The semi-structured interviews were conducted in Busan, South Korea (from August 2015 to May 2017) and Shiga, Japan (from August 2018 to February 2020), respectively. Each interview lasted 100–120 minutes and was digitally recorded. On-site memos and photos were also produced during the interview. Two criteria regarding upgrades were used to select appropriate respondents (i.e., key informants) for the semi-structured interviews. First, we considered retention of information about the company's relational activities. Second, experience (or knowledge) related to the company's complex technologies, products, and services was considered.

Finally, we chose respondents with at least 5–10 years of experience at each company. We interviewed the chief secretary at the general affairs department and the chief of the public relations department for Firm I. The development executive director and chief executive officer (CEO) were interviewed for Firm Y. The interviews were based on the respondents' knowledge and experience. Each interview gathered company overview information, primary GVC activities and targets, significant opportunities to participate in GVCs, and the chronological history of the company, focusing on critical concepts identified within the conceptual framework.

During the semi-structured interviews, we surveyed respondents on two main aspects: first, the lead firm—supplier relationship and how it affects the supplier's upgrading in terms of product, process, function, and chain; second, the impact of a supplier's multi-partner network activity on overcoming barriers and achieving upgrades. As this study concerns supplier upgrading, analyzing the patterns in the events in the supplier's time series is essential (Langley et al., 2013). Each interview was transcribed within 48 hours, and the two researchers mutually checked the transcriptions to eliminate inconsistencies. To verify the accuracy of a particular information item, we confirmed it with the respondents following researcher verification. If any information was omitted or unclear, the respondents were contacted to resolve ambiguity. Consequently, we constructed a database of interview data, documents provided by respondents, company websites, and newspapers (Table 2).

Data analysis confirmed that the two suppliers had relational activities using multiple networks and the GVCs of lead firms. Specifically, this study examined temporal evidence for suppliers' strategic networks based on their relationship with MNCs. For theoretical insight into the category of upgrades, an approach to repetitive time series analysis over an extended period was adopted. By continuously reviewing several distinct movements related to the suppliers' respective upgrades as advocated by Grodal et al. (2021), it was possible to improve the study's transparency and rigor.

## **4. Findings**

### **4.1. The necessity of building GVCs**

A salient characteristic found in both cases was the suppliers' formation of long-term collaborations with MNCs. As a respondent from Firm Y described, "Collaboration with MNCs has become an important opportunity to study global markets as well as securing stable demand" (Firm Y, CEO). This statement was echoed by Firm I: "Collaborating with them was an opportunity for our company to grow" (Firm I, Chief secretary at the general affairs department). Cooperation significantly impacted the long-term relationship formation with MNCs.

Both cases indicated that during a relational duration of more than 20 years, arm's length outsourcing transactions have gradually evolved into close partnerships by sharing knowledge, information, and know-how through joint R&D with lead firms. The respondent from Firm Y stated, "We do not simply manufacture and supply parts based on specifications. We continuously

improve parts' materials while proposing products researched and developed with our technology" (Firm Y, CEO). This reveals that collaborative relationships create mutually complementary shared values (Benito et al., 2019) that are difficult to imitate or replace because they arise from strategically important inter-firm relationships (Gulati et al., 2000).

These cases demonstrate Yaqub et al. (2010)'s observation that strategic network partners can be considered reliable because of their committed behavior. Specifically, relational governance in buyer—supplier relationships in GVCs influences the development of cooperative relationships, thereby evolving into beneficial partnerships underpinned by cooperation and mutual trust through goal matching between actors (Magnani et al., 2019). These partnerships, founded on mutual goals, result in knowledge sharing and technological innovation (Kano, 2018). Furthermore, operational and management systems and processes can be improved when relational governance is embodied (Islam et al., 2023). On the contrary, in strategic networks, the supplier cannot maximally leverage members' professional resources and abilities without knowledge-sharing skills (Valkokari & Helander, 2007). From this perspective, suppliers with the ability to absorb knowledge and transform them into innovations can effectively enhance their position in GVCs (Khan et al., 2019). Our findings on the lead firm—supplier relationship, focusing on knowledge sharing and value-creation behavioral patterns, are summarized in Table 3.

#### 4.1.1. Firm I–Canon relationship

Firm I supplies toner-fixing tubes, which are the core components of Canon printers. Its technological prowess drew attention when NTT (formerly, the Nippon Telegraph and Telephone Corporation) adopted the firm's non-combustible functional textile shortly after an underground communication cable fire incident in Tokyo in 1985. The advanced technology and excellent performance of Firm I's products gained a positive reputation in the industry, and joint research with Canon began in 1991 at the CEO's behest. This generated the necessary momentum to drive Firm I to participate in GVCs. The relationship between the two companies led to collaboration and helped them develop highly customized solutions. This enabled Firm I to supply high-performing toner-fixing tubes for Canon printers.

To improve the functionality of the current Canon printer and copier, the researchers from Canon and Firm I held monthly or bi-monthly product development meetings. They shared product ideas while evaluating each other's prototypes and conducted meetings to propose components and materials to be developed by Firm I. In this instance of relational governance, Firm I undertook knowledge sharing through cooperative relationships with Canon and simultaneously exploited these relational resources to develop unique high-value-added products. When asked about their relationship with Canon, Firm I's respondent stated, "Our goal is to provide the world's best technology in R&D and solutions" (Firm I, chief of the public relations department). This statement indicates that Firm I is investing in R&D for the long term, aiming to become an R&D SME, which is supported by company data. Nearly two-thirds of Firm I employees work as researchers, and approximately 5% of its sales are invested in R&D annually.

#### 4.1.2. Firm Y– Nike relationship

The relationship between Firm Y and Nike began as a technical competition for contracts to develop Nike outsoles and midsoles. In 1997, Nike commissioned nine outsole companies worldwide to develop new outsole and midsole materials. A year and a half later, only Firm Y had succeeded in commercializing their product. Consequently, in 2001, Firm Y participated in GVCs as a specialized manufacturer of Nike parts. In 2002, Firm Y's newly developed ethylene-vinyl acetate sole was adopted as the Nike Free sole design, which received global acclaim in the athletic footwear industry. The Nike Free Series, released in 2004, was developed by Firm Y after four years of R&D.

Firm Y is committed to ongoing R&D, aiming for a mutually beneficial relationship with Nike. "We pride ourselves on increasing the brands' market share with the materials we developed and will

**Table 3. The case analysis of the lead firm—supplier relationships**

	<b>Firm I</b>	<b>Firm Y</b>
Lead firm	Canon	Nike
Driver for participating in the GVC	Direct approach	Capacity-building competition
Position in the GVC	Materials and components supply; R&D	Materials and parts supply; R&D
Upgrading pursued	Process and product	Process and product
Relational duration with the lead firm	Long-term relationship since 1991	Long-term relationship since 2001
Evolutionary path of relationships	Outsourcing to partnership	Outsourcing to network integration (partnership)
Relationship-specific investment	R&D investment and FDI (e.g., overseas plant and office construction, workforce development, and self-design of mechanical equipment)	R&D investment and FDI (e.g., expansion of overseas plant, workforce development, and new equipment)
Form of relationship with lead firm	Non-equity and non-contractual commitment to network and culture of collaboration	Non-equity and contractual commitment to network and culture of collaboration
Knowledge sharing	Mutual exchange of information (e.g., regular operational meetings, product development meetings, and sales meetings)	Mutual exchange of information (e.g., joint training courses, seminars, regular operational meetings, and product development meetings)
Governance mechanisms	Common rules and practices of joint development and co-design (e.g., NDA, patent application, and co-applicant)	Common rules and practices of joint development and co-design (e.g., Masterbatch system, and ISO certification)
Relational mechanisms from the supplier's perspective	<ul style="list-style-type: none"> <li>• Supplier progressively strengthens a close partnership based on joint R&amp;D and co-design.</li> <li>• Supplier voluntarily invests in relationship-specific assets to meet the lead firm's needs and improves corporate reputation.</li> <li>• Commitment is based on mutual willingness to work toward innovation through a strong partnership.</li> </ul>	<ul style="list-style-type: none"> <li>• Supplier voluntarily invests in relationship-specific assets to meet the standards and requirements of the lead firm.</li> <li>• Supplier shares goals and risks while researching and developing unique manufacturing capabilities.</li> <li>• Supplier seizes learning opportunities by diversifying buyers to achieve interdependence and strategic goals.</li> </ul>

*Note:* NDA = non-disclosure agreement; ISO = International organization for standardization; FDI = foreign direct investment.

focus on developing materials tailored to the brand's direction," said the Firm Y CEO. This relationship was established because of the CEO's entrepreneurship, high-quality mold technology, and raw material R&D capabilities. The two companies have established a joint R&D system through relational governance based on close partnership. "We aim to provide high-quality products that Nike wants, but we do not stop there; we suggest products we have improved or developed ourselves," noted the Firm Y CEO.

This is supported by company data. Firm Y imported high-tech equipment from the United States to establish a systematic R&D system for advancing technology. Moreover, to improve its ability to respond to Nike's demand, Firm Y made relationship-specific investments in Vietnam in 2001 and Indonesia in 2012 and 2015. In addition to manufacturing outsoles and midsoles for Nike, Firm Y provides technical support and after-sales service to ensure a 0% global product defect rate.

#### **4.2. Overcoming upgrading barriers in GVCs**

Structural problems such as power or information asymmetry in GVCs and a lack of learning opportunities can be major barriers to SMEs' upgrading (Islam et al., 2023; Magnani et al., 2019).

Interestingly, while the cases of suppliers Firms I and Y showed common behavioral patterns in their relationships with MNCs, the suppliers pursued different alternatives for upgrading. Both suppliers invested voluntarily in R&D to build relational mechanisms with lead firms while establishing governance mechanisms such as patents, norms, and contracts (see Table 3).

Considering supplier behaviors in these relationships, Firms I and Y's corporate strategies as suppliers involved actions to acquire value that drives upgrades while simultaneously influencing changes in governance (Sako & Zylberberg, 2019). This corresponds with prior studies (Dallas et al., 2019; Magnani et al., 2019) that note that power asymmetry with lead firms often helps suppliers develop unique capabilities that can lead to interdependence or partnership. Both cases also express a commitment toward investing in relationship-specific assets to improve responsiveness to the lead firm's needs.

#### 4.2.1. *The case of firm I*

As early as the ideation stage, Firm I engaged with patent managers to pay close attention to technology protection and patent possibilities. It even signed a non-disclosure agreement with Canon to conduct joint R&D and thoroughly manage the security of its core technology. Firm I's technical experts designed all the companies' facilities, including prototype and mass production facilities, to prevent core technology leakage because of outsourcing.

Firm I pursued upgrading to diversify into related fields based on its core technology, the first of which is a polyimide resin business. Mainly used in electronic devices, polyimide resin has excellent heat resistance. In 1991, Firm I diversified into the imaging business. The toner-fixing rollers (components of Firm I's toner-fixing tubes) were installed in various types of office equipment in the global market. Additionally, based on the non-combustible functional fiber business, Firm I took over a wool spinning and fabric batch production plant in 2003. The firm then entered the textile business and harnessed the versatility of natural textiles as raw materials. Finally, in 2018, Firm I developed custom-made carbon golf shafts that combine carbon fiber and epoxy resin with their unique technology. The firm started a B2C business in Japan and overseas with this opportunity.

#### 4.2.2. *The case of firm Y*

Firm Y developed Masterbatch—a trading system for supplying material parts developed with Firm Y's core technology (see Table 3). Specifically, for material parts developed with Firm Y's proprietary technology, the firm had the right to supply exclusively to the global market for two years. Following this, they collaborated with partners worldwide and could secure 15%–20% of orders. Through these transactional relationships, Firm Y secured stable orders. The firm invested 10% of its sales into R&D to build resources while pursuing its strategic goal of brand building.

Furthermore, Firm Y is increasingly investing in relationship-specific assets. The firm has invested in R&D and overseas plant construction for flexible response to demand. Specifically, Firm Y is working on R&D to enhance shoe midsole and outsole functionality based on eco-friendly and ergonomic design principles and using advanced materials. The analysis team uses more than 50 types of R&D machinery and equipment to analyze existing products and new materials, standardize test methods, and investigate improvements in product quality. Moreover, the mold development team makes it possible to design an injection press mold of a high-level model using a 3D graphical representation of a form gauge. Consequently, more than 80% of Nike shoe models use Firm Y's injection gauge.

Since Firm Y developed its own brand of functional footwear in 2010, it has also actively engaged in marketing communication activities by attending the International Leisure Industry and High-Tech Shoe Parts Business Exhibitions, thereby attracting worldwide attention as a producer of leisure products.

### 4.3. The importance of a strategic network and its impact on upgrades

Table 4 summarizes the results of Section 4. The suppliers (Firms I and Y) strategically designed their strategic networks based on their business strategies. This can be interpreted as a move to obtain competitive advantages from various relationships. As one respondent from Firm Y stated, “We value the relationship of trust with all our partners as the most important because the synergy effect with partner companies is linked to the future of the company” (Firm Y, CEO). Indeed, the suppliers showed common relational mechanisms of trust and commitment, maintaining relationships with strategic multi-partner networks and partnerships with MNCs (Table 4). Furthermore, as one Firm I respondent stated, “It is good to use whatever resources are available for management activities” (Firm I, CEO). This corresponds with prior research that notes that it is crucial for suppliers with limited internal resources and knowledge bases to actively use external resources to achieve their strategic objectives (Lefebvre et al., 2014).

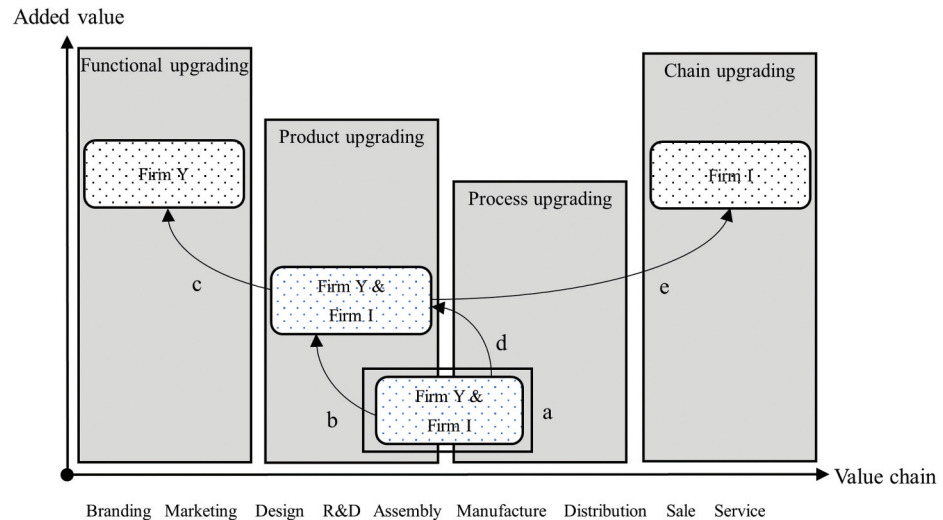
Figure 2 depicts the upgrade phase in both cases. The strategic network formation discussed in this study is shown to be different depending on decision-making regarding the personal and

**Table 4. An analysis of the strategic network dimensions of this study**

	<b>Firm I</b>	<b>Firm Y</b>
Upgrading pursued	Chain	Function
Strategic goals	Business diversification through new market development	Brand development through capabilities
Leverage of strategic networks	<ul style="list-style-type: none"> <li>•Decentralized within the network</li> <li>•Consignment marketing, sales promotion, distribution, and professional field knowledge learning</li> </ul>	<ul style="list-style-type: none"> <li>•Decentralizing from a single lead firm</li> <li>•Buyer diversification (e.g., continuous learning in branding, marketing, design architecture, and risk management)</li> </ul>
Knowledge management	Application of knowledge to new business opportunities, supplementing functional capacity	Challenge of absorptive capacities to knowledge learning
Partnership	Commitment, trust, and customer satisfaction	Commitment, trust, and customer satisfaction
Knowledge sharing	Meeting with firms in different fields	Meeting with firms in the same field, attending national or international trade fairs, attending seminars, and periodically organizing informal social events
Decision-making and skill development mechanisms	<ul style="list-style-type: none"> <li>•Entrepreneurship</li> <li>•Organizational culture (e.g., informal on-the-job training from colleagues and supervisors)</li> <li>•Industry—academia linkages (e.g., funded PhD program, incubator, workforce development and training)</li> </ul>	<ul style="list-style-type: none"> <li>•Entrepreneurship</li> <li>•Self-learning</li> </ul>
Common relational mechanisms for multi-partners network	<ul style="list-style-type: none"> <li>•Forming a trusting relationship through committed investment in relationship-specific assets</li> <li>•Sharing information through regular meetings with networks and making decisions together</li> <li>•Faster and more flexible reactions to customer requirements and continuous improvement of product quality with technology through R&amp;D</li> </ul>	<ul style="list-style-type: none"> <li>•Seeking mutual economic benefit while building a trusting relationship through committed investment in relationship-specific assets</li> <li>•Sharing information through regular meetings with networks and forming cooperative relationships</li> <li>•Faster and more flexible reactions to customer requirements and continuous improvement of product quality with technology through R&amp;D</li> </ul>

**Figure 2. Upgrading phases of the value chain for the suppliers in this study.**

Note: a = Both suppliers lie within the same area of the value chain. Firms I and Y had pre-existing R&D capabilities in material parts before participating in the GVC; b = Firm Y pursued upgrades for ODM while performing design functions. Based on R&D, Firm I performed all the steps related to sole or finished products, including material selection, design, sample approval, standardized production completion, and distribution; c = Firm Y pursued upgrades for OBM while developing brands through buyer diversification. Firm Y conducted the development and marketing activities of their brand products sold in the domestic market. Firm Y performed ODM and OEM simultaneously with OBM; d = Firm I pursued upgrades by strengthening R&D and design functions. Firm I offered solutions related to toner-fixing tubes, including material selection, design, sample approval, standardized production completion, and distribution; e = Firm I pursued upgrading by diversifying their business (i.e., imaging, textile, and golf shaft B2C businesses). Firm I leveraged strategic networks for marketing, sales, and branding tasks required for diversification while improving technological capabilities through university incubation.



regional characteristics of partners and business capabilities. The suppliers (Firms I and Y) were located in geographically accessible network areas and could conduct face-to-face strategic meetings related to products, market information, and sales activities at any time. However, it was observed that information on overseas markets was actively communicated using information and communications technology (ICT). Strategic networks of suppliers participating in GVCs mitigated the negative relationship between the upgrade barriers in relationships with leading companies and the upgrades pursued by suppliers. Entrepreneurial decision-making about upgrading



barriers to acquire learning opportunities and complement the lack of business capabilities was similar in both cases. However, the method of leveraging strategic networks differed depending on the upgrade pursued.

#### 4.3.1. *The case of firm I*

Firm I's strategic networks can be classified into three categories. The first category considers strategic networks formed through the capacity-building approach. After the 1985 underground communication cable fire incident in Tokyo (see Subsection 4.1.1), Firm I worked with DuPont USA to develop a new functional fiber using a composite technology of DuPont's aramid fibers. Firm I then developed a toner-fixing tube for Canon copiers by applying composite fluoroplastic technology. However, the lead firm (Canon) had a strong need for product performance improvement, cost reduction, and the expansion of toner-fixing tube capacity. Firm I heard that DuPont would consider selling its polyimide business for wire coating. After actively participating in the mergers and acquisitions (M&A) of the polyimide business, Firm I succeeded in 1994. Consequently, it built a flexible batch manufacturing system by developing raw materials for polyimide manufacture and sale.

Firm I actively responded to the lead firms' relation-specific investment requirements, resulting in the firm offering products with lower power consumption and developing the necessary supply infrastructure. The same was true for the M&A of Monsanto's polyimide business for heat-resistant composites in 1996. Thus, Firm I leveraged its strategic networks and complementary assets, such as M&A and foreign direct investment (FDI), to improve its technological capabilities and respond to upgrading barriers. Firm I pursued upgrading of market development through business diversification. Simultaneously, it gained knowledge in other fields through M&A and established trust by investing in meeting the lead firms' requirements.

The second category is active participation in industry—academic—government cooperation, specifically through Firm I's investments in R&D capabilities. This was achieved through subsidies from industry-related support organizations and by procuring the necessary machinery for research. In addition, Firm I actively utilized the nearby university incubator and the university's science and engineering knowledge. Moreover, it nurtured R&D researchers by funding doctoral degrees for talented people. In terms of entrepreneurship, Firm I has continuously and actively invested in R&D, workforce development training, and improvement of technological capabilities, which has resulted in the high performance of its toner-fixing tubes as standalone components.

In terms of the third category, Firm I outsourced sales and marketing activities to Firm S. These firms were not in a capital relationship; Firm S acted as a sales agent for Firm I's functional products in Hong Kong, China, the United States, and South Korea. Firm I actively shared information with Firm S in regular meetings on product lineup, quality improvement, customer consultation, and inventory management with Firm S. This relationship was a strategic network formed through the human network of entrepreneurs, as Firm I needed a reliable company to share information about their product technology with their target audiences. Firm I had manufacturing and R&D capabilities but comparatively weaker marketing, sales, and service capabilities. Therefore, Firm I was able to address its weaknesses by leveraging its strategic network with Firm S. This made it possible for the firm to focus on R&D and engage in business diversification.

#### 4.3.2. *The case of firm Y*

In the 1990s, the South Korean footwear industry started losing its share in the international market and faced a decline for the first time. However, Firm Y overcame this crisis through technological innovation and established a strong position in the global market. Focusing on R&D and continuously investing in cutting-edge machinery shortened its production cycle and enabled innovation. The share of Firm Y's sales to Nike exceeded 80% in the 1990s. Hence, Firm Y needed to reduce its excessive dependence on a single lead firm while achieving the strategic goal of brand development. Reebok products launched in 1997, and in 2001, they were registered

as a Nike cooperative company. By the 2000s, Firm Y had started producing parts and materials for world-class brands such as Adidas and Asics. In 2009, Firm Y began developing and supplying Uniqlo with ethylene-vinyl acetate sandals.

As Firm Y's material was eco-friendly and highly functional, it was also supplied to outdoor brands such as K2, Eider, and Lafuma. Since 2014, Firm Y has produced finished products for Crocs in 55 countries. To achieve this, the firm established a distribution system and equipped material processing and adhesion facilities. Additionally, Firm Y was designated as a professional manufacturer of Converse products in 2012. The firm also established a cooperative relationship with Mizuno and started supplying parts and materials to Puma in 2017.

In summary, Firm Y actively pursued diversification of buyers to enhance opportunities for better risk management and knowledge learning. It acquired an industry reputation by generating successful results from its collaboration with Nike, which could lead to collaborations and contracts with various MNCs. "The opportunity to collaborate with many MNCs was partly due to the successful collaboration with Nike," noted a respondent (Firm Y, CEO). The same respondent stated that multi-partner networks allowed the firm "to learn about world-class footwears" (Firm Y, CEO).

In other words, Firm Y, an OEM based on mold technology, has grown into an ODM capable of joint development by manufacturing footwear parts and materials for lead firms and building design capabilities. While conducting R&D and manufacturing products for numerous brands, Firm Y gained specialized knowledge about footwear design. As a result of receiving and absorbing information about design, branding, and marketing for brand development, they were able to achieve the strategic goal of becoming an OBM over 23 years.

## 5. Discussion and implications

This study investigates the importance of strategic networks for suppliers and how it is linked to supplier upgrading in GVCs. We suggest an alternative perspective to implementing upgrades to allow suppliers in GVCs to overcome upgrading barriers. This perspective incorporates type development, configuration analysis, and process investigation without managing contextual constraints to achieve supplier upgrades. Based on semi-structured interviews conducted with SMEs in Japan and South Korea, our results show that suppliers do not only rely on relationships with MNCs to overcome barriers to upgrading. Suppliers also use strategic multi-partner networks to create value to overcome barriers to upgrading. Our findings have significant implications for managers working for suppliers in current or potential GVCs, as we highlight that suppliers can leverage strategic networks to upgrade through alternative methods.

### 5.1. Theoretical implications

This study has three key theoretical implications. First, we investigate the impact of strategic multi-partner networks on supplier upgrading to illustrate how suppliers can influence value creation related to upgrades. The strategic network perspective describes the structural organization in the GVC framework. Commonly, GVCs have lead firms at the center of the network. The lead firm influences power relationships, control levels, innovation, and business performance over the network. The supplier's responses to the lead firm's network structure and requirements differ according to the type of upgrading barrier encountered. Hence, this study proposes multi-partner networks as an alternative method for understanding the upgrading barriers that arise through the lead firm—supplier relationship.

In this vein, we find that suppliers not only continuously strengthen their position in long-term cooperative relationships with lead firms in GVCs but also positively upgrade their firms by leveraging a strategic multi-partner network at home and abroad. Based on Dallas et al.'s (2019) study, which examined the power asymmetry between GVC actors in the network structure, our results provide concrete evidence that the functional and chain upgrades found in our case studies do not necessarily infringe upon enhancing the value-added of lead firms. Thus, this study diverges from

the singular approach adopted by previous studies. We suggest that networks can strategically design or adapt according to the goal orientation of the suppliers.

Second, this study helps to better understand the moderating effects of strategic networks that mitigate the negative impact of upgrading barriers on GVC upgrades. Although a few studies have assessed the negative direct impact of upgrading barriers on suppliers at a single point in time (Su et al., 2020), evolving buyer—supplier relationships (Magnani et al., 2019) and the impact of strategic multi-partner networks (Kano et al., 2020) are rarely investigated together. According to this study's results, the supplier's strategic network was found to directly influence the knowledge learning and skill development mechanisms required for strategic goals and indirectly influence the technological capabilities and workforce enhancement required in relationships with lead firms.

Thus, this study responds to the call for further investigation into whether and how the intent or purpose for a multi-partner network accounts for upgrades following suppliers' GVC participation. Importantly, this study extends existing research by synthesizing two opposing conceptual frameworks: upgrades and upgrading barriers in the context of suppliers in GVCs. Our findings complement those of previous studies by suggesting that a variety of types of supplier upgrading are possible in GVCs. Accordingly, we argue that testing SMEs' GVC and strategic network relationships is a crucial challenge for international business and GVC governance in future research.

Third, we expand the supplier's upgrading perspective by considering the social mechanisms in the structural upgrading problem observed in GVCs. Leveraging the relational capital of strategic multi-partner networks is essential for supplier upgrades in GVCs. Only a few studies on social mechanisms, such as Kano (2018), advance existing knowledge on governance from the lead firm perspective. In this regard, this study contributes to the literature by showing how suppliers can achieve upgrades while strategically interacting with actors in multi-partner networks at the micro level of firm behavior.

This perspective on social mechanisms is important because of existing perceptions regarding power and information asymmetry and suppliers' mistrust of MNCs. As these perceptions often create tension in the inter-firm relationship, Prashantham and Birkinshaw (2020) emphasize the need to explore each actor's untrustworthiness when exploring cooperative relationships. Analogously, Su et al. (2020) argue that a strong dependence on losing buyers may inhibit suppliers' initiatives simultaneously, even though suppliers may perceive the need to upgrade to a higher GVC status. They emphasize that this dependence could hinder the realization of the desired upgrade. Although the influence of networks varies according to market- and firm-specific factors, situations, and contexts of the use of networks, our findings show that suppliers can respond to problems faced in relationships with lead firms by utilizing strategic networks.

### **5.2. Managerial implications**

Two major managerial implications are presented. First, we suggest that managers working for suppliers should build trust-based cooperative relationships through dedicated actions to ensure and improve product quality. The results suggest that it is practical for the supplier to form a strategic network with MNCs in GVCs, as these networks often result in a successful upgrade. For example, the supplier's continued commitment toward proposing new and improved products through ongoing R&D investment can significantly impact long-term, lasting partnerships with lead firms. However, if a supplier fails to build a trusted relationship based on its product technology, it cannot form a long-term relationship with a lead firm. Consequently, this supplier is highly likely to be excluded from the GVC. Moreover, building trust based on product quality can require significant time and resources.

Indeed, collaborative relationships across production activities in GVCs influence upgrading, and successful governance of the value chain can result in long-term sustainability. This is because the competitiveness and sustainability of networks between companies require trust-based

relationships. Therefore, as discussed in Subsection 4.2, suppliers should make decisions by frequently meeting with network partners to share product ideas, product information, and feedback. These routines will promote all partners' learning to facilitate meaningful economic upgrades. We suggest that suppliers should increase these opportunities through formal schedules such as workshops and product meetings. Suppliers should also utilize informal schedules such as sports events and dinner parties. In doing so, they can build cooperative relationships by regularly spending extended periods of time with multi-partner networks.

Such relationships can facilitate positive upgrade outcomes for suppliers. Indeed, following the COVID-19 pandemic, conducting virtual network activities for information sharing using video conferences and websites is also efficient. The use of ICT tools reduces the cost of monitoring and coordinating with network partners. These tools also disseminate knowledge of when, where, and what types of network activities the partners engage in, thereby increasing trust and providing opportunities to strengthen partner relationships. Managers working for suppliers need to realize that the availability of relational capital from multi-partner networks will help them make decisions about establishing new strategic networks.

Second, based on the GVC framework, this study proposes an alternative to facilitate managerial decision-making for adopting a strategic network of suppliers. We strongly recommend that managers working for suppliers should understand how they can overcome their business and operational limitations by utilizing relational capital within strategic networks to achieve their goals. This study's conclusion is especially relevant to the managers of SMEs that have faced (or may face) unexpected upgrading barriers in GVCs. Managers must understand that strategic multi-partner networks are essential for them to achieve better upgrades and reduce reliance on lead firms. Although the scope of forming strategic networks varies with different firms, these networks tend to be strategically integrated through repeated social interactions among member firms.

As shown in our case study of Firm I, a supplier lacking expertise in sales and promotional activities can increase investments for value creation through forming a strategic network with a company with excellent sales ability. Firm Y's case study illustrates that suppliers lacking design skills can increase learning opportunities by forging partnerships with multiple brand companies. As emphasized by prior studies conducted in various contexts (Agostini & Nosella, 2019; Kim, Miao, et al., 2022; Zahoor et al., 2020), it is natural for SMEs to engage in strategic networks with different kinds of organizations to overcome management limitations. These networks provide relational capital, facilitate knowledge acquisition, and promote experiential learning. Consequently, we recommend that managers working for suppliers should ultimately seek to implement upgrades by leveraging their networks to achieve strategic goals while avoiding viewing lead firms' governance as a barrier.

### **5.3. Limitations and scope for further research**

Two primary limitations warrant future research. First, the results rely on case studies in South Korea and Japan, making it difficult to generalize our findings. Future studies will need to adopt a broad-based qualitative or quantitative approach to examine the applicability of these results across various contexts. In particular, we recommend that researchers empirically test our proposed conceptual model by conducting cross-cultural surveys of relevant lead firms and suppliers. This will contribute to the existing literature by providing more concrete evidence for the generalizability of this study's findings.

Second, in addition to conducting cross-national analysis with MNCs to explore supplier upgrades, future researchers need to focus on entrepreneurs who play key roles in developing and maintaining external networks that provide relational capital to SMEs. Relational capital between network partners enhances the innovation potential of GVCs by opening up access to strategic resources and facilitating the flow of tacit knowledge (McDermott & Corredoira, 2010). Therefore, for a better understanding of knowledge flow dynamics in GVCs, future researchers

should explore the actual relationships between individuals and networks (Kano, 2018). Accordingly, examining the specific moderating effect of the entrepreneur's relational role in supplier upgrading could be a fruitful avenue of research in the GVC context.

#### Funding

The authors have not received funding for this research.

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#### Disclosure statement

No potential conflict of interest was reported by the authors.

#### Ethical approval

All procedures performed in studies involving the personal interview surveys were in accordance with the ethical standards of Ritsumeikan University Ethics Committee.

#### Informed consent

Informed consent was obtained from all individual participants in the beginning of the personal interview surveys.

#### Correction

This article has been corrected with minor changes. These changes do not impact the academic content of the article.

#### Citation information

Cite this article as: How do strategic networks help SMEs upgrade in global value chains? A cross-national analysis, Sangmin Kang & Changju Kim, *Cogent Business & Management* (2023), 10: 2202833.

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