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MOSTAFIZ, Md Imtiaz, MUSTEEN, Martina Claasen, SAIYED, Abrarali and AHSAN, Mujtaba

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# COVID-19 AND THE GLOBAL VALUE CHAIN: IMMEDIATE DYNAMICS AND LONG-TERM RESTRUCTURING IN THE GARMENT INDUSTRY

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Mostafiz, Musteen, Saiyed, and Ahsan

## Abstract

Advancing the literature on global value chains (GVCs), this study investigates the impact of the COVID-19 pandemic on immediate dynamics and long-term changes shaping the evolution of the garment GVC. We use a partially grounded, longitudinal approach to analyze data on seven cases of Bangladeshi garment manufacturers, supplemented by archival data on the garment industry. Based on our analysis, we theorize that the COVID-19 crisis has led to three types of dynamics (temporal, structural, and spatial) that contribute to GVC restructuring. Consistent with the paradox approach, we document two counter-tensions that influence the GVC in the long term: the *push to disintegrate* (i.e., permanently restructure) and the *pull to integrate* (i.e., preserve or strengthen the existing structural routines). We conceptualize the ultimate structure of the GVC as the alignment of a new balance of power and new capabilities of the GVC actors. Implications for theory, practice, and policy are discussed.

## 1. Introduction

The COVID-19 pandemic represents one of the most disruptive economic events since WWII, potentially triggering a long-lasting transformation of GVCs (global value chains) (Kano & Oh, 2020). While some scholars (e.g., Contractor, 2021) argue that GVCs will emerge from the crisis relatively unchanged, others foresee future GVCs as more diversified (Gereffi, 2020) and transformed primarily through greater investment in technology and environmental and social sustainability (Sharma et al., 2020; Zhan, 2021). Certainly, as an unparalleled event in terms of magnitude and impact on virtually all facets of human and economic life, the pandemic is an extreme environmental shock critically testing GVCs and their actors (i.e., firms and institutions). It also provides a unique context to examine GVC dynamics during a global crisis. Specifically, it allows us to gain a better understanding of the key processes that unfold as a result of a global disruption and their potential to change GVCs' configuration in the long term.

The GVC literature has generally viewed restructuring, defined as the reshaping of the overall design of the GVC architecture (Azmeah & Nadvi, 2014), as a relatively long-term process taking place over years if not decades due to large environmental shifts (De Marchi et al., 2020). For example, studies have examined the decades-long transformation of the GVC in the textile industry in the 1980s and 1990s (Oh & Suh, 2003; Zhang et al., 2016) and the gradual integration and globalization of the automotive GVC in the 1990s (Sturgeon et al., 2008). More recently, studies have been describing the gradual shifts in GVCs due to new technologies, including additive manufacturing (Hannibal & Knight, 2018) and big data and analytics (Strange & Zucchella, 2017). Much of this work attributes GVC restructuring to broad institutional and macroeconomic forces, such as implementing trade agreements and adopting new technologies (Butollo, 2021; Zhan, 2021). Some studies have also provided insight on the impact of disruptive events on GVCs, including the 2008 global financial crisis (Cattaneo et al., 2010) or the 1999 Taiwan earthquake (Papadakis, 2006). However, disruptions (distinct from disturbances that tend to have a smaller range and impact) have been studied primarily in terms of their *outcomes* on individual firms' performance and their ability to deal with risk and to recover (i.e., return to normal operations levels) (Sheffi & Rice, 2005). Few studies have examined the *processes* caused by such events and their role in long-term GVC restructuring (Greening & Rutherford, 2011). Given the dearth of research (both empirical and conceptual) on the topic, we lack a good understanding about what happens in GVCs during an unprecedented environmental shock such as the COVID-19 pandemic. In particular, there is limited knowledge about the temporary reactions of GVC actors in response to the crisis and how they impact GVC evolution over the long term. As we seek to fill this gap, the key objective of our study is to examine GVC

dynamics that came about as a result of the COVID-19 outbreak and their potential to catalyze long-term GVC restructuring.

In doing so, we follow the calls for more in-depth case-based studies examining the dynamic nature of GVCs (Kano et al., 2020; Sodhi et al., 2012). Such studies are necessary in order to shed more light on the disruption-induced processes in the GVC value capture trajectory, whereby some firms benefit from having more control over transactions and the flow of information, while others find themselves in less advantageous positions (Coe & Yeung, 2019). Understanding such key dynamics underlying and potentially accelerating the GVC evolution is essential for both scholars and practitioners as it may significantly impact their strategic investments in GVCs. Likewise, this knowledge has important implications for policy makers given that countries, too, may be affected by evolving GVCs in terms of job creation, capacity building, and trade (Coe & Yeung, 2019).

Our study is set in the context of the Bangladeshi garment industry, one of the largest garment export industries in the world—second only to China according to the WTO (2020). The research is based on longitudinal data collected from seven Bangladeshi export manufacturers at two points of time—at the height of the COVID-19 crisis in May/June 2020 and one year later. This is because of our desire to explore both the immediate dynamics and long-term shifts in the garment GVC. With a focus on unpacking key processes and tensions, we rely on a partially grounded approach (Jack et al., 2008; Sundaramurthy et al., 2016). Without the constraints of previous theories, this approach allows us to analyze both primary and archival data that help to explain mechanisms inside the “black box” of the GVC evolution in the wake of a large-scale global crisis.

Besides providing rich descriptive insights on the key changes in the garment GVC as a consequence of the COVID-19 disruption, our qualitative study leads to an emergent theoretical framework that views GVC as an interplay of both actors and processes and organizes disruption-related dynamics along three contextual dimensions—temporal, structural, and spatial. Based on the patterns that emerge from the study, we theorize that the degree to which the three types of dynamics become permanent varies. However, in combination, they lead to long-term GVC restructuring that rests on the alignment of a new balance of power among the GVC actors and the development of new capabilities. Consistent with the paradox perspective on GVCs (Gölgeci et al., 2019), we also theorize that the ultimate outcome is a function of the interplay of two significant counter-tensions—the “*push*” to disintegrate (i.e., permanently restructure) the current GVC by way of changes in the membership of the key actors (i.e., new buyers and raw material suppliers) (Azmeah & Nadvi, 2014) and the “*pull*” to integrate (i.e., preserve or strengthen the existing structural arrangements). While the push forces primarily arise from institutional actors’ actions, the pull forces are embedded in actors’ efforts to enhance trust and integrate systems via digitalization.

Our study contributes to the existing literature in two primary ways. First, drawing on a unique, longitudinal data set from the emerging economy context, we extend the GVC literature by providing insight into the dynamic nature of GVC structural arrangements and, ultimately, its long-term evolution (Kano et al., 2020). By presenting evidence that large-scale disruption can substantially change the structure of GVCs within a relatively short period of time (i.e., a single year), we challenge the implicit assumption that, as complex but flexible structures, GVCs tend to evolve over time in a relatively incremental, slow fashion (Kano et al., 2020). By organizing the disruption-related dynamics along the temporal, structural, and spatial dimensions, we

provide a framework for future research on the impact of large-scale disruptions on GVCs.

Second, we add to the growing literature on the paradox in GVCs by identifying and describing two emerging counter-tensions (i.e., the pull to integrate vs. the push to disintegrate) that go beyond supply–demand and efficiency–resilience paradoxes investigated in the previous literature (Gölgeci et al., 2019; Gölgeci et al., 2020). By incorporating these counter-tensions in a theoretical model, we add to a greater understanding of the long-term changes and evolution of GVCs affected by the COVID-19 pandemic.

## **2. Literature Review and Research Question**

GVCs, defined as “the full range of activities that firms and workers perform to bring a product from its conception to end-use and beyond in a global scale” (Gereffi & Fernandez-Stark, 2011, p. 4), enable multinational enterprises (MNEs) to leverage a global network to achieve lower cost, superior scale, and spatial flexibility (Ponte et al., 2019). GVCs have been associated with the growth of the global economy over the past several decades and offshoring production networks in emerging economies (Gereffi, 2020). Much of the literature has approached GVCs from the viewpoint of Western MNEs; however, studies have also begun to investigate the benefits accruing to firms in the emerging economies as a result of participating in GVCs (Coe & Yeung, 2019; Islam & Polonsky, 2020).

A fundamental assumption in the extant literature is that GVCs are not static, and their arrangements change over time either as a result of changing industries or macro-environmental shifts (Kano et al., 2020). The long-term changes in GVCs have been typically referred to as restructuring, defined as the process of firms entering or discontinuing operations in a few international locations (Azmeah & Nadvi, 2014, p. 173). Some studies refer to such changes as “decoupling,” whereby new actors or actor groups are incorporated or recombined with existing

regional and global GVC actors (MacKinnon, 2012; Yeung, 2016). GVC lead firms—MNEs with significant power and influence to shape GVCs—have been assumed to play an essential role in GVC restructuring, having the ability (primarily through contractual means) to orchestrate GVCs in order to continually upgrade their own global competitiveness (Enderwick, 2018). Indeed, much of the GVC literature on the dynamic nature of GVCs has focused on the role of governance in such relationships, often codified in contracts and formal rules (Kano et al., 2020). The dominant assumption has been that GVCs evolve in a relatively slow fashion via incremental upgrading, with the lead firms having the most power to control and shape the process (Azmed & Nadvi, 2014).

As the summary of key studies (presented in Table 1) suggests, prior research on restructuring has been rather fragmented in terms of its theoretical approaches and has focused on the effects of the process on the economy (Huws et al., 2009), firms' longevity (Gereffi et al., 2021), and manufacturing efficiency (Hammer & Plugor, 2016). Interestingly, only a handful of studies have explicitly examined the role of disruptions in GVC restructuring. GVC disruptions are discreet events that occur as a result of the “removal of ties/nodes from the GVCs network (temporarily or permanently) as a consequence of some unanticipated critical event” (Greening & Rutherford, 2011, p. 105). The literature has documented various types of GVC disruptions such as natural disasters, transportation delays, major accident and blockages, factory strikes, quality and operational issues, and terrorism (Chapman et al., 2002; Cooke, 2002; Machalaba & Kim, 2002; Mitroff & Alpaslan, 2003). However, much of the literature on GVC disruptions has been focused on GVC resilience to such events. Specifically, the focus has been primarily on managing the demand risk (e.g., panic consumer buying) and the supply chain risk (e.g., closures of the supplying factories and warehouses) (Christopher & Peck, 2004). Studies have suggested

that GVC resilience can be enhanced through the use of flexible suppliers from the domestic market (Tang, 2006), stock buffer and backup sources (Khan & Burnes, 2007; Vanpoucke & Ellis, 2019), ensuring redundant suppliers (Chopra & Sodhi, 2004), and sharing of risks with multiple sources within supply chain networks (Manuj & Mentzer, 2008). With a few exceptions (e.g., Greening & Rutherford, 2011), the literature on GVC disruption has taken the perspective of individual firms (rather than that of the entire network of actors) and/or has been focused on static outcomes of disruptive events on GVC. Research seeking to understand the *processes* that arise as a result of disruptions and have the potential to lead to long-term restructuring is scarce. The question of what happens under the condition of an extreme, rapidly spreading global disruption and how this impacts the long-term evolution of GVC thus remains relatively unexplored. Not surprisingly, as Gereffi (2020) posits, the implications of the disruptions in restructuring GVCs are unclear.

Insert Table 1 here

### **2.1. COVID-19 Crisis and GVC Restructuring**

While studies have investigated outcomes of GVC disruptions such as earthquakes and terrorist attacks (e.g., Papadakis, 2006; Sheffi, 2001), no such event in recent history compares to the COVID-19 pandemic. Unlike previous disruptions such as natural disasters or financial crises, the COVID-19 pandemic is truly global in terms of its range and impact and, unlike protracted transformative macro-environmental shifts such as the rise of the digital platform economy, which took years (if not decades) to unfold, the COVID-19 pandemic onset and spread have been relatively rapid and highly unpredictable. Thus, the COVID-19 pandemic represents



an unusual disruption. Its implications for GVCs are still debated (Kano & Oh, 2020; Miroudot, 2020; Verbeke, 2020).

The pandemic visibly shuttered the largest economies of the world “as national governments have sought to weather the global pandemic with its disastrous and escalating toll on global trade and productions” (Gereffi, 2020, p. 288). It also revealed preexisting underlying fragilities of GVCs in almost every industry and pointed out that GVC arrangements have often been established with few redundancy plans and risk-mitigation strategies to combat such extraordinary shocks (Silverthorne, 2020). As a result, many firms discontinued operations; some lead firms have considered reshoring or nearshoring the production of commodities, prioritizing vertical integration in manufacturing (Kano & Oh, 2020), and reducing irreversible investments abroad (Verbeke, 2020). Supply chain shortages caused supply and demand imbalance, triggering price hikes (Strange, 2020). Firms that survive are expected to closely monitor changes in supply chain networks, travel bans, and extended lockdown measures, mostly in countries that generate maximum revenue, and to continuously revise GVC routines (EY Global, 2020).

From the perspective of both scholars and practitioners, the COVID-19 crisis and its impact on GVCs have been complicated by the shifting geopolitical context. Even prior to the pandemic, the global economic and political landscape was characterized by heightened volatility, ambiguity, and uncertainty. In such a context, causes and effects may be difficult to understand, presenting a challenge for scholars using conventional theories and frameworks seeking to understand GVCs and their evolution (Petricevic & Teece, 2019). Indeed, in their recent synthesis of global strategy and GVC research, Pananond and colleagues (2020) argued that in order to get a better grasp of the impact of disruptions like the COVID-19 pandemic on

GVCs, research needs to go beyond investigating the largely static aspects of GVC industry governance, which has been a common approach in the past. Instead, it needs to adopt a perspective that examines the dynamic processes characterizing the interplay between firm actions and the broader environment. This requires an in-depth, longitudinal approach that considers the multitude of actors and the overall “dramatically transformed context” (Pananond et al., 2020, p. 435).

With this in mind, we decided to investigate the impact of the COVID-19 crisis on GVC restructuring by taking a partially grounded case study approach that allows us to approach the phenomenon holistically and permits new insights to emerge from data without the constraints of previous theories (Ahsan et al., 2018). Specifically, set in the context of the garment industry, our study seeks to address the following research question:

*What is the impact of the COVID-19 crisis on the immediate dynamics in the global value chain, and what are the long-term effects on the GVC evolution?*

### **3. Methodology**

#### **3.1. Study Setting and Sample**

Our research question is approached primarily from the perspective of Bangladeshi garment manufacturers who play a critical role in the garment GVC as well as for the development of Bangladesh, an emerging economy with 164 million people (World Bank, 2021). Our decision to use the Bangladesh garment industry as a setting for our study was motivated by several reasons. First, understanding the garment industry and the COVID-related changes in the GVC is essential, given its role in the global economy. Currently, the garment industry employs approximately four million workers (Ahmed & Brennan, 2019) and consists of roughly five thousand supplier firms in Bangladesh. By exporting to 150+ countries ([www.bgmea.com.bd](http://www.bgmea.com.bd)),

Bangladesh is ranked second only to China in exporting garment products (WTO, 2020). As Martin (2013) notes, the garment industry is “a three trillion dollar industry that encompasses the manufacturing and selling of textiles and garments, and has long been considered a source of economic progress around the world, historically catalyzing national development and industrialization” (p. 2).

Second, the industry was one of the most affected by the COVID-19 pandemic. According to the WTO, there was an 81% decrease in export orders in April 2020 (amounting to USD 3.18 billion in export cancellations) compared to the same time in the previous year. The popular press (e.g., CNBC, 2020; Reuters, 2020) has also documented the immense human cost of the COVID-19 crisis on Bangladeshi garment manufacturing workers.

Third, the garments industry has received considerable attention in previous GVC literature, with studies examining it in the context of shifting trade preferences and upgrading in GVCs (Curran & Nadvi, 2015; Islam & Polonsky, 2020), the governance of GVCs (Keane, 2012), supply chain resilience (Ahsan & Iqbal, 2021), and GVC disruptions (Chakraborty & Biswas, 2020). Thus, our study seeks to add and extend that body of work, providing a singular focus on the immediate dynamics and long-term changes in the GVC of this industry in the wake of the COVID-19 crisis.

To gain rich insight on the phenomenon we employed qualitative analysis based on a partially grounded approach to multiple cases of Bangladeshi garment manufacturers. In order to capture the global nature of the value chain of this industry, we sought cases of firms that were internationalized from inception and that generate 100% of their sales from the international markets. Furthermore, our sample firms had to be registered with BGMEA (Bangladesh Garment Manufacturers and Exporters Association), therefore, strictly not allowed to generate any

revenue from the local market by Bangladeshi government regulations (Mostafiz et al., 2019). This ensured that the firms were well integrated within the overall garment GVC.

Using the snowball sampling method (Goodman, 1961), we approached managers/directors of 13 firms via LinkedIn and/or email. The point of theoretical saturation—i.e., a point at which “no new properties, dimensions, or relationships emerge during analysis” (Strauss & Corbin, 1998, p. 143)—was reached at seven firms. That is, after interviewing the first seven firms, no new additional insights were generated. Thus, we decided to base our study on these seven firms and not request participation from the remaining firms. All seven are located in Dhaka (the capital of Bangladesh) and registered with the BGMEA. The size of the firms varies with the number of executive/administrative employees ranging from 25 to 4000 and the low-skill labor ranging from 150 to 26,000 workers. Table 2 provides additional information about the firms<sup>1</sup> in the sample and their position in the overall GVC, which is consistent with Ahsan and Iqbal (2021). Specifically, for years prior to the COVID-19 pandemic, the firms would generally take design orders from Western (mainly European) buyers (retailers) and contract with nominated suppliers of raw materials (located mainly in China) such as natural and synthetic fibers, yarn and fabric, and accessories.

Insert Table 2 here

### **3.2.Data Collection and Analysis**

Seeking to gain a rich understanding of the impact of the crisis on the dynamics affecting the garment GVCs’ members, we relied on semi-structured, open-ended interviews to collect primary data from the seven firms in our sample at two points of time—May/June 2020 (i.e., T1) and May/June 2021 (T2). The interview data were supplemented with additional confidential

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<sup>1</sup> The names of the firms were disguised to ensure confidentiality.

data obtained from the companies (e.g., invoices, order lists, WhatsApp and email conversations with suppliers and buyers) and publicly available information from companies' websites as well as other public sources (e.g., the trade associations BGMEA and BKMEA, Bangladesh Bank, Textile Today, The World Bank open data, OECD, the International Labor Organization, and press releases). The latter allowed us to construct a chronological event history relevant to the Bangladeshi garment industry for the time period of our study. This is summarized in Table 3.

Insert Table 3 here

The interview data were collected via Zoom interviews ranging from 50 to 110 minutes in length. In most cases, the primary respondents were top-level directors/managers. In such positions, they have the most comprehensive knowledge about their firm's operations, suppliers, procurements, sourcing, and export markets. We sought to establish a rich rapport with the respondents, so as to encourage honest and in-depth information (Daniels & Cannice, 2004). First, the interviewer invited all the interviewees to connect on LinkedIn and WhatsApp. The interviewer, who spoke the native language, then engaged them in informal conversations via text messages, which set a friendly tone for the relationship. Before the actual interviews, all the respondents from the seven firms were asked for written consent and assured that no confidential information would be disclosed. All interviews were conducted in the native language of the respondents because that is likely to engender more authentic expressions as well as more detailed and accurate information (Cortazzi et al., 2011; Piekkari, 2006). With the approval of the informant, the interviews were recorded and transcribed verbatim and then translated into English. The second round of interviews in May/June 2021 with the primary respondent from the seven firms was supplemented with an interview with a secondary respondent—an additional manager from the firm. The total number of interviews undertaken for this study is therefore 21.

Given that we aimed to holistically assess a complex phenomenon—i.e., the impact of the COVID-19 crisis on the immediate and long-term dynamics of the garment GVC—we adopted a partially grounded qualitative approach to data analysis and theory building (Glaser, 1992; Yin, 2013). This approach allows us to develop new insights without the constraint of previous theories. However, unlike the fully grounded approach, a partially grounded approach to data analysis and theory building can be informed by constructs and concepts in the existing literature (Ahsan et al., 2018; Jack et al., 2008). The focus is on a contextualized explanation of a combination of effects of multiple factors in a given context rather than seeking to assess the effect of an isolated variable (Welch et al., 2011).

Following Ott and Eisenhardt's (2020) multi-case theory building approach, we used the interview data and company records to compile case histories for each of the seven firms in our sample. The histories spanned the period from the beginning of the pandemic in March 2020 to June 2021, which was of interest to us based on the assumption that this was arguably the most disruptive and uncertain time of the COVID-19 pandemic. This also allowed us to examine the more long-term changes in the wake of the COVID-19 disruption.

As is common in qualitative case research (Gölgeci et al., 2019; Musteen, 2016; Ott & Eisenhardt, 2020), we adopted a multi-phase approach, allowing for simultaneous interaction between theory and data. The main advantage of this approach is the richness and depth of data related to multifaceted, complex phenomena, which is difficult to attain through a quantitative research design. Our focus was on combining deduction and induction in developing a new theoretical explanation of the phenomenon (Eisenhardt, 2021; Gölgeci et al., 2019). We sought to triangulate our findings by assessing consistency between interview transcripts obtained from primary and secondary informants, by comparing information with that obtained from public

sources (e.g., company and government sites and news reports) and confidential company records such as text messages and email conversations between the Bangladeshi garment manufacturers and their buyers and/or raw material suppliers.

In the first “manifest” phase of our analysis (Berg, 2004), all researchers met to discuss the cases and the trends in the garment industry broadly concerning our research question. The second phase involved “open coding,” whereby the researchers, informed by the previous literature on GVC evolution, independently developed a preliminary “minimal” codebook of first-order codes that allowed for data organization and its comparison and contrast, both within and across cases (Sundaramurthy et al., 2016). This was followed by a discussion among researchers, resulting in intimate familiarity with each case and the formation of tentative constructs. In the third phase, the researchers engaged in “axial coding” (Strauss & Corbin, 1998) by seeking emergent connections, themes, and patterns through combining first-order quotes and generating conceptual categories. The last phase—“selective coding”—involved researchers iteratively refining the codes obtained in the previous phase and binding the categories into a theoretical model (Corbin & Strauss, 2008). The data structure, including first-order codes, second-order conceptual categories, and theoretical dimensions, is provided in Figure 1.

Insert Figure 1 here

#### **4. Findings**

The analysis of the data reveals several patterns related to the dynamics of the garment GVC during the COVID-19 crisis and long-term implications for garment GVC restructuring. Specifically, we find that the experiences of all seven Bangladeshi garment manufacturers are remarkably consistent in that the pandemic presented an unprecedented, disruptive event with a

multifold impact on their companies, workers, and the garment GVC in general. This is supported by the archival information and publicly available data. In the subsequent sections, we discuss each theme in more detail and synthesize the specific findings in a more general theoretical framework visually depicted in Figure 2.

#### **4.1. COVID-19 and Immediate and Long-Term GVC Dynamics**

Perhaps not surprisingly, all respondents expressed the same sentiment regarding the impact that COVID-19 and the associated lockdown measures had on the garment industry and their GVC partners. It represented a situation that none of them and their companies had ever experienced. They felt they were not prepared for it personally and in terms of their business processes, even with risk management systems in place. As the co-founder and director of one of the firms stated,

*This [the pandemic] is something new. We have not seen anything like this before. Entirely new for us. The overall experience is shocking. We have an expert risk management system in place. However, those are for factories, hazards, and so on. Not like this pandemic. This is the first time in the history of the company. (Beta, director, T1)*

Similarly, other respondents also expressed surprise at the unanticipated nature of the crisis, as it started, and the lack of preparedness for its impact:

*To be honest, we did not predict that we would be facing such a devastating situation. It's not common in Bangladesh to have a department that can assess this type of global risk. Even China itself had no idea what was coming. So the experience was completely different. In fact, due to COVID, we don't know yet what will happen in the next two to three months. (Omega, director, T1)*

*[...] The impact or risk associated with COVID-19 was totally unpredictable. When we first heard the news on COVID back in November 2019, no impact on our business. In fact, our factories were fully occupied with orders and production. In December 2019 and January 2020 as well. No impact on sales but the raw materials supply chain got impacted. But shipping and exporting to Europe and the US was ongoing. But, then, the impact was getting severe day by day. We thought it might have an*



*impact like a tsunami or other natural disasters or like SARs in 2012.* (Delta, export manager, T1)

All seven firms reported a significant impact on their profitability as a result of order cancellations and sales discount pressure from buyers and increased overhead due to increased inventory, new safety measures, and an immense increase in absenteeism, particularly among unskilled workers. Indeed, as the publicly available data suggest (see Table 3), collectively, Bangladeshi garment industry order cancellations amounted to USD 2.5 billion by March 25, 2020. Overall, the respondents conveyed the sense that, in all respects, the COVID-19 pandemic was nothing like previous global events including the 2008 global financial crisis. This is consistent with emerging research on the impact of the crisis on firms across industries (Gölgeci & Kuivalainen, 2020; Kraus et al., 2020). The resulting effect of this disruption in the garment industry GVC, specifically, was a profound disruption, characterized by the respondents as “*mass chaos in the supply chain*” (Beta) and a situation where the “*supply chain has broken*” (Charlie).

#### **4.1.1. Temporal Dynamics**

Temporal considerations related to changes in GVCs have been a relatively under-researched area in the GVC literature (Barratt & Ellem, 2019; Kano & Oh, 2020). Our analysis reveals two vital temporal patterns with regard to the effects of the COVID-related GVC disruption. First, there was a substantial slowdown in business transactions with both raw materials suppliers (primarily in China) and buyers (primarily in the European Union [EU]). Specifically, Bangladeshi garment suppliers experienced a slowdown in the supply of raw materials from their Chinese suppliers, who were in lockdown prior to the spread of the virus to other countries. The changes in the timing of processes also included delays (and/or cancellations) of orders from

their buyers, who sought to preempt being stuck with the merchandise in anticipation of the pandemic's impact on global demand. As expressed by one of the respondents,

*Due to the lockdown in China, the lead time to delivery has significantly increased for the raw materials.* (Alpha, export manager, T1)

In the words of another respondent,

*After the COVID hits the market, we also have been hit badly. Most of the buyers postponed, pushed for delays, and held on to the orders. They suddenly changed the payment terms and their natures as well.* (Beta, director, T1)

However, the slowdown of transactions (both down- and upstream in the value chain) was not only specific to the behavior of the firms in the GVC. It was also logistics related, as is indicated in the following quote:

*Due to lockdown in China, and ports as well, even if the firm [i.e., the supplier] is operating there is no shipment of raw materials to Bangladesh.[...] Lead time is very critical in this industry, which is normally 90 days from order placement to delivery.* (Beta, director, T1)

Explaining how the COVID-19 crisis uncertainty evolved from the beginning through the first six months of lockdown, another manager detailed the timing decisions of the key European buyers related to his company as follows:

*At the beginning of May, suddenly they [i.e. the buyers] told us to stop the production. They didn't want us to produce and ship because they are in the lockdown situation and they don't have a warehouse to stock the bulk inventories. [They] also informed the logistics not to load the products from factories. [...] On top of that, they wanted us to postpone the shipment of the month of April to November and December. In addition, a few orders they pushed to next year's summer season as during this summer, we are in a lockdown. [...] Normally, the cycle is, in winter, buyers stock the summer clothes, and in summer, they stock winter clothes. So, they have a huge stock of summer clothes this year, which they will clear in 2021.* (Tango, director, T1)

The second immediate temporal dynamic revealed by our analysis relates to the shortening of the payment terms in response to the growing uncertainty in the garment GVCs. The firms we

interviewed cited their raw material suppliers pushing payment terms down from 90 or 60 to 30 days. The time compression in payment had an immediate impact on the cash flow management of the Bangladeshi garment firms.

The effect of the asymmetric COVID-related timing issues (i.e., slowdown of both upstream and downstream business and shortening of payment terms to raw material suppliers) put Bangladeshi garment manufacturers in a difficult situation. Specifically, they found themselves between suppliers demanding payment on a shorter term for raw materials that were shipped (even if not delivered) and buyers who either postponed their payments or pushed for completion of existing orders. As one of the respondents detailed,

*On the supplier side, we already paid a large portion of the amount. Because the payments are settled through banks. Based on the maturity date of the LC [Letter of Credit], the payment will be automatically cleared. There is no way we can stop it as the raw materials are already with us and we can't return the raw materials now. So they will be paid by the bank. Now, if I fail to pay to my bank on time, then my interest will increase; there are international buyers, who have not cancelled or put a hold on the orders. In those cases, we need to produce and ship the goods. But the problem is, due to the lockdown in China, many yarn factories were locked down for the 45 days. So we are now 45 days. The whole process (i.e., from order to delivery is a cycle of 90 days) got vulnerable. (Delta, export manager, T1)*

The immediate temporal dynamics associated with the COVID-19 crisis had clear implications for garment manufacturers and their position in the garment GVCs. All the firms along the supply chain—European buyers, Bangladeshi garment manufacturers, and Chinese suppliers of raw materials—were impacted by the lockdown measures and a decrease in demand and logistics challenges. However, it appears that Bangladeshi garment firms occupied a particularly vulnerable position due to the timing issues associated with the financial “squeeze” exerted through the slowdown of orders and supply of raw materials. Indeed, the problem was so widespread and severe that it demanded an emergency meeting of the BGMEA and Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA), two key industry associations of

Bangladeshi garment manufacturers (see Table 3, May 2020 events). One of the responses was an urgent letter to the EU to communicate to the buyers not to withhold payments (Ovi, 2020).

As one of the respondents stated,

*BGMEA and BKMEA are working so hard in terms of negotiation. For example, buyers are asking for a 40 to 50% discount on the products that they ordered and signed the contract already, and now they are pressuring us to offer discounts; otherwise they are going to cancel the order. So, BGMEA and BKMEA are negotiating with buyers as we are not in the position to offer that much of a discount. (Omega, director, T1)*

Given the critical importance of the garment industry for the local economy, the Bangladeshi government also stepped in to assist firms in coping with the temporal aspects of the COVID-19 disruption in the garment GVC. This took the form of financial loans and other initiatives. For example, as the public records indicate, as early as April 2020, the Bangladeshi government withdrew all the demurrage fees on imports through Bangladeshi ports in order to ease the problems associated with delayed shipments. Government-backed financial loans were also advanced to firms to deal with the general slowdown of business that put them under financial pressure.

The analysis of the data one year later (i.e., May/June 2021) suggests that the temporal dynamics that emerged during the first few months of the crisis have largely abated. At this point in many parts of the world (particularly the U.S., Europe, and China), the COVID restrictions have been largely lifted. In all seven cases, the respondents indicated that orders have picked up (although not quite to the pre-pandemic level in some cases), and the pressure to pay faster for raw materials and accessories has decreased substantially. This is partially because of the increased demand in the “opened” Western countries and the fact that the Bangladeshi firms began to source more from local suppliers. The reversal to largely pre-COVID temporal

dynamics is also in part due to industry associations and the Bangladeshi government, which took an active role in engaging lead buyers to resume their orders and pay on time (see Table 3, May 2020 events) and instituted programs to assist the garment manufacturers to cope with the pandemic pressures (see Table 3, September 2020, December 2020, and February 2021 events). The following quotes illustrate the situation regarding temporal dynamics approximately 16 months after the pandemic started:

*We are not facing short-term payment issues, as most of the raw materials we are now sourcing from the local market and we have a rolling contract with them. [...] Both US and European markets are functioning, and we are getting orders. The lockdown is not strict, and most of the people are already used to it as well as us and the buyers. Now we have less problem between us and we find new ways of doing business.* (Alpha, export manager, T2)

*During the pandemic, buyers were pushing us, suppliers were asking for shorter payment terms; those things are now back to normal a bit. Now, we are not facing any pressure to shorten the payment term by our nominated suppliers.* (Omega, general manager, T2)

As the respondents noted, however, some problems remained with respect to logistics (i.e., delays in shipping due to the lack of shipping containers). Nevertheless, the GVC members came to understand and deal with the issue. In the words of two respondents,

*Yes, we face a shipping problem from our suppliers due to a shortage of containers. A lot of our supplies from China were stuck in the port. Normally a full loaded cargo takes 12 days to come from China to Bangladesh. But, it took more than 20 days to come to Bangladesh. Furthermore, due to border lockdown, a lot of cargo planes were not operating. So, air shipments closed down. The air shipments were replaced by the sea shipments, which created extra pressure on the sea route, therefore, causing container shortages. So, this creates a lot of problems in our production. We explained this to our buyers. Buyers also understand and allow us more time. Because it's not our fault.* (Tango, general manager, T2)

*[...] [The] the ports are operating cautiously and taking a long time to clear the products. Slowly, it's getting better. Currently, we are using air for low-weight products such as accessories like buttons, labels, zippers, etc. from China.* (Beta, director, T2)

#### **4.1.2. Structural Dynamics**

In addition to the temporal dynamics discussed above, another pattern that emerged from our data relates to important structural dynamics arising due to the COVID-19 crisis. Specifically, a prominent theme is that the slowdown of orders and the financial squeeze along with the uncertainty experienced as a result of the pandemic stimulated an active search for both new buyers and suppliers. As one of the respondents stated,

*We are heavily exploring new opportunities. Like others, we started producing PPE [personal protective equipment], face masks, and other health-related products in our factory before the lockdown, but our marketing team is working so hard to enter the US and Canada and new markets. (Omega, director, T1)*

What is interesting is that the push to look for new buyers is not seen solely as a necessity but also as an opportunity to expand customer networks, as is indicated in the following quote:

*Meanwhile, we are opportunistic. Our marketing team is working around the clock. We want to occupy our production capacity as much as we can to come back from the crisis that we faced. We started getting new orders from new buyers (1st-time buyers). [...] we see that as opportunities. (Beta, director, T2)*

On the supplier side, a clear pattern emerging from our analysis is the shift from “nominated” suppliers (i.e., suppliers contractually prescribed by the lead buyers) toward new (predominantly local) suppliers. Interestingly, this shift was perceived and experienced in different ways across the firms in our sample. Some firms saw the shift away from the nominated suppliers as something that had to be “forced” on their buyers. This is illustrated by the following quote:

*Buyers who have not cancelled orders or put a hold on the orders had no choice but to accept our proposition in terms of local suppliers. These were buyers who usually worked with nominated suppliers. (Gamma, commercial manager, T2)*

Alternatively, some firms were urged by their buyers to look for alternative suppliers in their own network. As expressed by one of the respondents, “Our buyers are also encouraging

*us to source from our suppliers' network rather than nominated suppliers by them.*" (Omega, director, T1).

The structural change toward new suppliers has generally been appreciated and viewed as an opportunity by the Bangladeshi garment manufacturers. Some did not see this as an immediate dynamic only but expected it to last even after the pandemic. As one respondent stated,

*I'm not saying that we will completely source the raw materials from entirely new suppliers. What I'm saying is that we want the freedom to source raw materials from suppliers who ensure affordable price and quality. [...] We understand it will not happen soon, but if it happens, then we will definitely prioritize that.* (Charlie, director, T2)

Indeed, the longitudinal data provides strong evidence that both the expansion of the customer network and the shift toward non-nominated suppliers have proved to be an enduring structural change. The respondents expressed that buyers no longer require them to work only with nominated suppliers (as long as the cost, quality, and delivery are satisfactory). In fact, buyers continue to encourage them to source locally. The following quotes are examples of this change:

*The way we do business is changed significantly. The buyers want us to source raw material from the local market.* (Alpha, general manager, T2)

*[...] we now prioritize nominated suppliers to a lesser degree as the buyers understand that it will put them in a risky situation if the suppliers somehow fail to deliver the raw materials. The only concern of the buyer is now the manufacturing cost of the product, quality, and fast delivery. And yes, these changes will be permanent as I do not see any reason to go back to our existing mechanism.* (Beta, director, T2)

*We are currently working a lot with non-nominated suppliers, so definitely it has changed. [...] we are working with a lot of new suppliers, and definitely, those [changes] are permanent. We are prioritizing local suppliers. We are introducing them to our new buyers as well, and we will continue to do it.* (Gamma, commercial manager, T2)

As for the structural changes related to new buyers, the data suggest that these also persisted beyond the initial efforts to find new sources of revenue as a reaction to COVID-related financial difficulties. For example, one year into the pandemic, the Bangladeshi manufacturers retained several new buyers. Some of this new business arose as a result of competitors going bankrupt and/or experiencing difficulties as a result of the pandemic. In other instances, it was a result of the manufacturers' changes to their product portfolios:

*We are working with a lot of new buyers. Because, currently, buyers are unable to place orders in India and Myanmar. So we are getting those orders nowadays. This is one of the most successful periods that Bangladesh will enjoy in the history of the garment industry in Bangladesh. (Charlie, export manager, T2)*

*There are two categories of new buyers. One, new to Bangladesh and two, new to our factories. We have both. A few factories in Bangladesh have discontinued their operations for the time being. Those orders came to us. [...] We used to work with the same buyers and same suppliers but now we are working with a lot of new buyers and suppliers. (Tango, general manager, T2).*

*We have a lot of new buyers. Previously we used to produce only suits and jackets as our main items. Now we also produce normal woven and knits. We increased our product lines. So we started working with multiple brands in the UK. Plus, we now also cater to the US and Canada. (Omega, general manager, T2)*

#### **4.1.3. Spatial Dynamics**

Our analysis reveals that structural changes (i.e., the formation of new buyer and raw material supplier relationships in the garment GVC) are also accompanied by interesting spatial dynamics. The most obvious of them is the shift away from China to Bangladesh (or other countries such as Vietnam) for sources of raw material. The pattern of localization of suppliers is explained as a function of several factors. First, in most cases, the push away from China has been driven by the Bangladeshi firms. However, it is also supported, if not encouraged, by the (primarily European) buyers, as the following quote illustrates:



*We will continue sourcing from these local suppliers rather than international suppliers, and I can assure that after the COVID crisis, European and American buyers will think many times before pushing us to source from China again due to hygiene and safety concerns. ... [...] There are a few items which we can't source from our local market. So for those, we source those raw materials from Turkey and India.* (Omega, director, T2)

Second, the spatial shift is contingent on the fact that Bangladeshi raw material suppliers have upgraded their skills over time. As one of the respondents stated, “*Nowadays, local suppliers are also outstanding, and they are producing better quality products*” (Delta, factory manager, T2). Third, the move toward local raw material suppliers made economic and operational sense given the COVID-related logistics issues:

*A few factories who are producing the raw materials are located in a very close proximity (within 5 km), which significantly shortens the delivery time. Previously, it took 20 to 30 days if shipped by sea to get the raw materials, and now it takes only one day to get the raw material delivered to our factory. We found it very efficient.* (Gamma, commercial manager, T2)

While on the supply side, the garment GVC appears to be decoupling (i.e., shifting away from China to Bangladesh), the immediate spatial dynamics in the wake of the COVID-19 crisis also involve changes in the buyer geography. This is occurring through an intensified search for new business opportunities in new and often more distant markets. For example, the slowdown in orders from existing European customers prompted some firms to look for orders in markets less impacted by the pandemic, as is described in the following quote:

*Our UK marketing team is working so hard to get new orders from the countries where the cases of COVID are low, and the market is still open.* (Alpha, export manager, T1)

With key customers located in EU countries (initially a region with the greatest spread and impact of the virus), many of the firms in our study began to look aggressively for buyers in the US and Canada and other previously untapped regions such as the Middle East, Japan, and Latin

America. As the archival data suggest, this move was also strongly encouraged by the Bangladeshi government. For example, in August 2020, the Bangladeshi foreign minister appealed to the garment manufacturers, urging them to focus on new markets and decrease their dependence on the EU as an export market (Textile Today, 2020).

The spatial dynamics persist even as the effects of the pandemic on global trade begin to diminish. The data point to an enduring shift away from Chinese suppliers. The permanency of this shift is largely supported by operational and economic considerations, as dealing with local (i.e., Bangladeshi) suppliers involves lower cost and shorter lead time, but also by strategic considerations. Specifically, there is a recognition of the previous “over-dependency” on China, and the localization is promoted by the lead buyers from Europe and elsewhere. The following quotes illustrate this dynamic.

*The way we do business has changed significantly. The buyers want us to source raw material from local market. [...] They are now expecting everything from one country. [Sourcing from the local market] takes only one week. So, we have 50 days to complete the order. If you complete early then we can ship early and if the shipping of delivery is delayed for like one week, we can still ship the completed goods before the expected date. This is a good way to reduce cost and time (Alpha, export manager, T2)*

*Previously we procured 70% of our raw materials from China. But in the last year, the procurement from China has significantly reduced. I must say the over-dependency on China is over. (Gamma, commercial manager, T2)*

However, as the data indicate, the shift away from Chinese suppliers to Bangladeshi suppliers is somewhat constrained by the capacity of the local firms to produce the required quantity and quality of materials. For example, one respondent indicated that “*Bangladesh still cannot supply all the raw materials*” (Tango, director, T2).

The spatial pattern related to the geographic expansion of the buyer network also appears to hold. In other words, the search for new markets as a way to deal with the cancelled orders at the

initial stages of the pandemic resulted in a more permanent, geographically diverse set of buyers, as is illustrated by the following quote:

*Yes, currently we are working with a range of new buyers. We have new buyers from Japan. Surprisingly we are also exporting to China. We are also exporting to Russia. So, we are successful in exploring and finally working with those new buyers.*  
(Gamma, commercial manager, T2)

Taken together, the analysis of the seven cases, supplemented with company data and archival information describing the garment industry during the height of the COVID-19 crisis, points to several patterns related to key processes in the garment GVC. Specifically, the significant disruption of the garment GVC manifested itself in temporal, structural, and spatial dynamics that range from transient to relatively permanent. While the processes in the temporal dynamics more or less dissipated one year into the pandemic, the structural and spatial changes are more permanent.

#### **4.1.4. Long-Term GVC Restructuring**

The in-depth interviews accompanied by archival data indicate that by May/June 2021, the garment GVC had largely stabilized. From the perspective of the Bangladeshi manufacturers, “*things [were] better now*” (Tango), and the industry was “*stable now*” (Beta). Most of them were able to recover their financial losses, and they expressed optimism about the future of the industry. The data also provide strong evidence of significant visible changes in the GVC structure that came about as a result of the COVID disruption—those related to the membership of the key players and the new spatial contour of the GVC (see Table 3, January and March 2021 events). However, our qualitative data also point to less obvious changes accompanying the GVC restructuring. These relate to power among the existing actors and their capabilities. Moreover, our data suggest that the reshaping of the garment GVC was not a uniform and one-directional process. We unpack this in the next sections.

#### **4.1.5. New Balance of Power**

An important finding that emerged from our data is that the dynamics set in motion by the COVID-19 disruption resulted not only in a new structure but also manifested in a new balance of power among the GVC actors. Specifically, a key theme that surfaced from our analysis is that despite the initial financial “squeeze” exerted by both buyers and raw material suppliers, Bangladeshi manufacturers emerged from the COVID-19 crisis in a relatively more powerful position. Having relatively more freedom to choose their own suppliers (most of which are now either local or from other countries such as Vietnam) and to expand their customer network gave them more control within the GVC, as illustrated by the following quotes:

*We have more control now. We are no longer only a contract manufacturer, and we push our buyers through negotiations. As I told you, we are working with new suppliers as well as existing suppliers in relevant cases. It's not like nominated-suppliers kind of thing as the buyers are not pushing us to source from nominated-suppliers, but it's our decision to source from nominated-suppliers because they are offering better deals and costing compared to new suppliers. We are developing new designs, trying to enter new markets, and also keeping very good relationship with our existing buyers. (Delta, export manager, T2).*

*We are in a better position in terms of control. We don't have pressure from buyers in terms of sourcing. Buyers also know that it's not possible. If they pressure us to source from China then the timeline to complete the production will increase. (Charlie, director, T2)*

*[...] We learned this during the pandemic. Because working for a few buyers and producing a large quantity for them can put you into a problem during a crisis. And it happened with us. So, we now have new markets and buyers. And instead of working with a few buyers we work with a range of buyers. (Gamma, commercial manager, T2)*

#### **4.1.6. New Capabilities**

The analysis of our data also suggests that the gains in power were accompanied by the development of new capabilities, which helped to preserve and/or enhance control of the Bangladeshi firms in the restructured GVC. These mainly included new product development, marketing, and operational and R&D capabilities. For example, respondents mentioned the

creation of a new “*dedicated product development team*” (Gamma, commercial manager, T2) and the development of new “*digital capabilit[ies]*” (Alpha, general manager, T2). Others noted that having “*risk-taking capability*” (Tango, director, T2) became important, particularly for identifying new business opportunities. Many firms also mentioned being more focused on R&D and innovating their processes to become more environmentally friendly. Indeed, the increased emphasis on sustainability as critical for the Bangladeshi garment industry was also borne out in the secondary data (see Table 3, February and March 2021 events). The following quotes illustrate these developments and their alignment with the new power dynamics in the garment GVC:

*We hire skilled people to do marketing, research, and new product development. My firm is focusing on developing new products: we discontinued non-denim products and are focusing on denim-made fabrics. It gives us more options to develop a variety of products and enter more markets. We can control the whole process.* (Alpha, export manager, T2)

*We have dedicated sourcing, R&D, and international business expansion teams. We are investing in green technologies. These are the changing ways of doing business. So these are permanent changes. We are becoming more responsible manufacturers day by day. [...] I can say in the next 10 years' time, we will move up from second position to first position in the ready-made garment industry.* (Delta, factory manager, T2)

*We [have] a green factory. That significantly helped us to work with new and retain existing buyers, mostly from the EU, like Germany.* (Gamma, commercial manager, T2)

*Recently, we started using an online platform where buyers and sellers can sign up. It is a new and special platform for us and the buyers. We have our dedicated account where we upload our original design and can do 3D presentation, live presentation; it is an online fashion show kind of technology. So, buyers participate and join the online platform, and, as a seller, we also join and showcase our products on that platform to attract new buyers. In the system, buyers can modify our design color and request some other changes and contact us for orders. We did that and are still doing it. It will be a new digital marketing tool in this industry. Another online platform introduced by UK Next is online studio, which is a similar kind of platform but only for the Next brand. So, these are new capabilities we need to develop to attract new customers.* (Tango, director, T2)

Besides the upgrading of companies' own capabilities, the data in our study also consistently point to a strategic decision on the part of Chinese raw materials suppliers to shift toward developing capabilities in technology and high-value products. This development appears to cement the structural and spatial changes in the GVC, as the following quote explains:

*China nowadays doesn't want to focus on this sector. They want to become a superpower and they are more focused on innovation and technology. [...] You will be surprised to know that China is nowadays importing apparel products from Bangladesh and Vietnam. Why? Because they want to exit this industry and focus on innovation and technology activities that will make them a superpower. In the apparel industry, China is only focused on selective high-value products, and low-priced products are shifting to Bangladesh. (Gamma, commercial manager, T2)*

#### **4.1.7. “Push” to Disintegrate**

The long-term changes in the structure of the garment GVC that came about in response to the COVID-19 pandemic have not occurred without frictions. In fact, consistent with the paradox perspective recently explored in the context of GVCs (Gölgeci et al., 2019), our data reveal that the COVID-related restructuring unfolded in the presence of two paradoxical counterforces: the *disintegrative “push”* to permanently restructure the GVC and the *integrative “pull”* working toward preserving the pre-COVID-19 status quo.

Specifically, in line with the immediate dynamics in the temporal, structural, and spatial dimensions of the GVC, which were catalyzed by the pandemic, the push to disintegrate (i.e., permanently restructure) the existing GVC was strengthened by another factor: the actions of the local institutions. The Bangladeshi government and the powerful industry associations, BGMEA and BKMEA, played an essential role in reshaping the GVC. As documented in Table 3 (see March 2020, May 2020, and April 2021 events), the associations took an active stance to assist Bangladeshi garment manufacturers in negotiating with lead buyers and governments to stabilize the garment industry. More importantly, the associations were taking steps to support the

continuation of the localization of raw materials (and a shift away from China), as the following quotes obtained during the height of the COVID-19 crisis suggest:

*Now we source 100% from the Bangladeshi market. There is a lot of discussion going on in BGMEA and BKMEA to develop the raw material suppliers industry in Bangladesh. If we can do it, then the country's economy will significantly grow, and the existing garments industry will substantially benefit. (Alpha, general manager, T2)*

*Both BGMEA and BKMEA and the government are providing incentives to the [local] raw material manufacturers. This is significant. If we are successful in this process, then we don't need to depend on the Chinese suppliers. (Delta, export manager, T2)*

Likewise, given the importance of the garment industry for the economy, the Bangladeshi government developed a program to incentivize local manufacturers to seek new buyers, thereby contributing to the restructuring of the garment GVC in the wake of the COVID-19 pandemic. The program involved a 4% incentive on exports to the US, Canada, and several other countries outside the EU. Almost all respondents mentioned the program as stimulating them to aggressively expand their marketing efforts and develop new products and diversify their product portfolio. As the following quotes illustrate, the disruption initiated by the COVID-19 pandemic created a particularly opportune time for localization of raw material suppliers and the search for buyers in new export markets with the support of the government and local institutions:

*I strongly believe that if the Bangladeshi government wants, it is possible to develop the backward linkage now. And this is the right time. [...] We can source all raw material from Bangladesh and offer a more affordable price. The government must take initiatives to develop the backward linkage. The Bangladesh government has already announced a 4% incentive if Bangladeshi firms export to the US, Canada, and a few other countries outside of Europe. (Omega, director, T2)*

*The government already announced that they would provide a 4% incentive if we can export to a new market such as the US, Canada, and South Africa. Plus 1% extra incentive on overall exports. (Charlie, director, T2)*

Finally, the evolution of the garment GVC toward permanent restructuring (i.e., localization of suppliers and acquisition of new buyers) was also aided by institutions outside of

Bangladesh. This included the action of the US government to ban Chinese cotton due to suspected child labor (Swanson, 2021) and the military coup in Myanmar (Textile Today, 2021). The former action strengthened the push away from Chinese raw material suppliers while the latter event served to push certain buyers to look for new suppliers in Bangladesh.

#### **4.1.8. “Pull” to Integrate**

A careful analysis of the data also points to a “counterforce” acting to preserve (if not strengthen) the existing (i.e., pre-COVID) structure, including the relationships of the Bangladeshi garment manufacturers with existing suppliers of raw materials (located primarily in China) and buyers (mainly from Europe). This pull to maintain the status quo arose from the change in behavior of some existing raw materials suppliers who initially sought to strengthen the established relationships in light of the COVID-19 crisis and its impact. As the quotes below illustrate, such suppliers sought to deepen the bond with Bangladeshi firms and to do so by resisting the trend of shortening the payment terms and even taking supportive actions such as sending personal protective equipment (PPE) for factory workers and/or providing free product samples to Bangladeshi firms.

*A few suppliers are also supportive in terms of payment terms, and they have not increased the price. They have been doing business with us for a long time. And in the future, they want to continue doing it. [...] For example, [supplier X] already sends masks and PPE for our factory workers free of cost. So the bonding becomes stronger. (Delta, export manager, T2)*

*I believe the crisis strengthens our relationship. Now we are closer to each other. For example, previously, when we ordered samples from our suppliers, we had to pay for that, but now they are giving it for free. All of us are trying to support each other as much as we can. (Tango, director, T2)*

Our data also suggest that the shift toward permanent restructuring was also countered by trust between the current garment GVC actors and greater digitalization of the buyer–supplier



interactions. Specifically, our data indicate that, because of the pandemic, most GVC actors had to abandon an important practice related to quality control: the physical inspections of goods. In addition, because of the lockdown measures, all GVC actors engaged in more digital communication. Both of these factors generally led to greater system integration among the GVC actors. In addition, the new practice initially strengthened trust, which has served as a “glue” of the existing relationships. The following quotes illustrate the situation:

*The norm was physical inspection. However, now everything is happening online. We usually use Zoom and Google Meet. [...] Due to COVID, the frequency has increased significantly. So now, in the online system the buyers, suppliers, and our company are completely integrated.* (Alpha, export manager, T1)

*All sorts of external communication are transferred to digital communication. Basically, we are a techno-savvy firm. However, the intensity increased significantly. We are doing an in-house inspection of the product before dispatching. We are sharing paperwork with our buyers and buying house before we ship. We don't need an inspection for the raw materials because the containers are sealed. If they are open, we immediately return that to suppliers. No physical inspection is happening between buyers and us, and the buying house.* (Charlie, director, T2)

*There is no external physical inspection currently happening. The buyer trusts us, and we trust our suppliers. So, the buyer wants to carefully inspect the order before shipping, and we also asked our supplier to check for faulty raw materials.* (Tango, director, T1)

The data collected one year into the pandemic suggest that in-house inspection performed by the Bangladeshi firms before shipping to buyers became a norm, enhancing the efficiency of the supply chain. In this arrangement, Bangladeshi garment manufacturers perform the inspection of goods prior to shipping while bearing the liability for any defects.

## **5. Discussion**

### **5.1. Emergent Theoretical Framework**

The objective of our study was to unpack and understand key processes that underlie GVC restructuring in the wake of an unprecedented global disruption brought about by the COVID-19

pandemic. We did so in the context of the Bangladeshi garment industry. While the industry is often characterized by significant agility (Christopher et al., 2004), the data from our study provide strong evidence that the global disruption of the GVC due to the COVID-19 pandemic created a unique situation that none of the GVC actors had ever experienced or could prepare for. Most importantly, our partially grounded approach to data analysis provided a nuanced understanding of the interplay of multiple factors that contributed to the long-term structural changes in the GVC.

The synthesis of our findings leads us to an emergent theoretical framework, which is depicted visually in Figure 2. Challenging the implicit assumption that GVCs evolve in an incremental, slow fashion over several years or decades (Azmeah & Nadvi, 2014; Kano et al., 2020), we argue that a large-scale disruption such as the COVID-19 crisis leads to a long-term restructuring in a relatively short period of time (i.e., a single year). This is because it impacts multiple dimensions of the GVC context—specifically, the temporal, structural, and spatial elements of the GVC configuration of actors and processes. We also theorize that whether or not the disruption-related dynamics lead to a permanent restructuring is a function of the *relative strength* of the counterforces that support GVC integration vs. disintegration as well as of the *alignment* between the new balance of power among GVC members and their capabilities.

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Insert Figure 2 here  
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As is characteristic of the grounded approach to theory building, our framework emerged without constraints of a particular theory, within a specific context, and with few a priori theoretical constructs (Shepherd & Sutcliffe, 2011). However, we expect it to be helpful in

predicting and explaining the GVCs' evolution as a result of other potential disruptions that may arise in the future in the garment or other industries (Welch et al., 2011). Future researchers can benefit from building on our conceptualization of GVCs along the three contextual dimensions (i.e., temporal, structural, and spatial), which addresses some of the limitations of previous research. Specifically, the extant literature on GVCs often considered structural arrangements among actors by adopting a network or transaction cost perspective, but such conceptualizations continue to provide a rather static picture, leaving us with a limited understanding of the dynamic nature of the GVCs (Kano et al., 2020; Pananond et al., 2020). This is particularly troublesome if scholars seek to explain the evolution of GVCs in the wake of large-scale, global disruptions that simultaneously affect industries, governments, logistics, and the economics of international trade.

Consistent with the emerging research on paradoxes in GVCs (Gölgeci et al., 2019), our model also predicts that GVC restructuring depends on the balance of countervailing forces that either aid or suppress the disruption-related dynamics. While the paradox perspective has been applied to GVCs in the context of tensions between efficiency and resilience (Gölgeci & Kuivalainen, 2020), our study shows that paradoxical forces also characterize GVC dynamics under the condition of extreme environmental shock such as the COVID-19 disruption. Based on the patterns revealed by our data, we argue that the relative strength of such forces depends on the broader institutional environment—particularly the actions of institutional actors both at the local and global level. As we documented in our study, the Bangladeshi government's actions, along with the support of industry associations, have contributed to the solidification and acceleration of the long-term restructuring of the GVC, given their push for greater localization of raw material suppliers and incentives aimed to promote export market diversification. Clearly,

the impact of institutions and policy cannot be underestimated when seeking to predict the impact of COVID-19 on GVCs (Miroudot, 2020).

Likewise, in seeking to predict the evolutionary consequences of large disruptions for GVCs, we propose that inter-firm trust and digitalization are elements that can have a decelerating effect on permanent restructuring. Much of the emerging literature on the impact of COVID-19 on GVCs highlights the role of trust and relational governance to improve access to and processing of information, particularly from the perspective of lead MNEs (Kano & Oh, 2020; Verbeke, 2020). However, our study suggests that trust-building strategies on the part of the lower-tier suppliers and the sense of “*we are all in this together*” can act as an incentive to keep the GVC arrangements intact even in the face of global disruptions such as the COVID-19 pandemic. Likewise, digitalization can play a role as a force supporting the reconfiguration of and changes in the governance of GVC, as it causes a greater inter-firm integration of systems. This is consistent with conceptual research linking digitalization with GVCs’ transformation in both pre-and post-pandemic eras (Papanond et al., 2020; Zhan, 2021).

Finally, our model suggests that the permanency and magnitude of restructuring rests on the *alignment* of the changes in the power of the GVC members with their capabilities. Specifically, as we documented, a crisis like the COVID-19 pandemic can disrupt the relative power positions of GVC actors and diminish (or increase) their control over certain processes, operations, and each other. However, based on our data, we can theorize that whether or not this becomes permanent or reverses once the crisis is over depends on the development of new capabilities. In the context of the garment GVC, this is related to the upgrading of capabilities of Bangladeshi suppliers, allowing them to economically develop high-quality raw materials locally. Such upgrading enabled Bangladeshi manufacturers to substitute many Chinese suppliers

with local suppliers. Likewise, Bangladeshi manufacturers were able to retain their power gained by developing capabilities related to innovating new products and capturing market opportunities. The move away from China as the primary source of raw materials was also aligned with China's increasing focus on the manufacturing of high-value-added products and advanced technologies.

## **5.2. Implications for GVC Research**

Viewing GVCs as an arrangement of both actors and processes, our study provides rich insight on the impact of disruptions on the long-term evolution of GVCs. Our findings and the emergent theoretical framework support the emerging literature that questions the common assumption that it is the lead firms that have the most power to influence GVC arrangements (Azmeah & Nadvi, 2014). We show that a global crisis such as the COVID-19 pandemic provides supplier firms in emerging economies with the opportunity to reshape the power asymmetry with buyers in advanced economies. In addition, our findings are consistent with previous studies (Islam & Polonski, 2020; Mostafiz et al., 2019) providing evidence that Bangladeshi garment manufacturers aspire to be more than contract manufacturers and desire to develop entrepreneurial capabilities to pursue new opportunities in foreign markets (Mostafiz, Sambasivan, & Goh, 2020). We suggest that the COVID-19 crisis provides them additional power to become more independent and influential players in the global garment industry, particularly if they adopt entrepreneurial, opportunity-seeking strategies (Mostafiz et al., 2019). Our findings also contribute to the growing literature which views GVC upgrading as a phenomenon that is not always driven by powerful buyers (Pipkin & Fuentes, 2017).

Our study adds to the literature that sees GVC decoupling as a possible result of the increasingly bifurcated economic order, with the growing competition for technological

dominance and increasing tensions between China and the West (Petricevic & Teece, 2019). We show that the COVID-19 disruption induced Bangladeshi firms to shift away from Chinese raw material suppliers primarily toward local suppliers, and this shift was strengthened as a result of the growing reluctance of European and US companies to work with Chinese suppliers as well as China's strategic shift away from being a supplier of raw materials to becoming a developer of high technology and innovative products. The apparent decoupling from China is thus consistent with the ongoing global geopolitical shifts underlying the US–China trade war and the rise in protectionism (Sukar & Ahmed, 2019) but partially also with the prediction that GVCs will become more regional as a result of the COVID-19 pandemic (Contractor, 2021; Zhan, 2021).

Finally, the findings of our study provide a hint at the expected changes in future governance relationships among GVC actors. While Bangladeshi firms may have gained more control over their upstream operations, overall, the relationships with their buyers and suppliers became more transactional (with price being the most important factor in securing orders). The digitization of the industry and the push by the Bangladeshi government for greater autonomy of local firms, and the development of local capabilities in raw materials, seem to be contributing to this trend. Specifically, the adoption of digital platforms that connect multiple potential buyers with multiple suppliers enables transactions with substantial investments in buyer–supplier relationships.

### **5.3. Practical and Policy Implications**

Besides contributing to the literature on GVC, our study also has important practical and policy implications. First, our research shows that despite the immense challenges and human suffering, the COVID-19 crisis may present opportunities. This is particularly true for GVC actors, such as Bangladeshi garment suppliers, who benefited from relaxed governance

arrangements, giving them greater freedom to select their own local suppliers and follow more entrepreneurial strategies (Mostafiz et al., 2019). To continue this trajectory and leverage the advantages of GVC restructuring, garment manufacturers are advised to invest in technological innovations such as 3D technologies to develop prototypes and further reduce sample lead time and increase quality. They should also play an active role in digital platforms that enable them to expand their buyer network. Indeed, the recent Bangladeshi industry press (Purba, 2021) suggests that adopting process innovations such as digital sampling solutions, including Marvelous Designer, CLO 3D, and TUKA3D, will continue to cement the enhanced power position of the Bangladeshi garment manufacturer's position within the global GVC. Moreover, we see the adoption of sustainable practices and investments in green technologies as a way for Bangladeshi manufacturers to create and capture more value within the post-COVID GVC.

Second, there are important takeaways for policy makers (such as the Bangladeshi government). Perhaps counterintuitively, we suggest that a global crisis may represent, under certain circumstances, the most opportune time for governments to invest in the development of the domestic ecosystem. However, in the case of the Bangladeshi garment industry, to continue to reap the benefits of the COVID-related GVC restructuring, further government interventions are needed. These should be designed to attract foreign investment and enable collaborations between foreign raw material manufacturers and local businesses, with the aim of transferring and creating know-how. For example, the government may sponsor international expos and symposiums showcasing the capabilities of Bangladeshi raw material manufacturers and highlighting the benefits of the local ecosystem to foreign buyers. In addition, in future crises, governments and industry associations are advised to collaborate closely to promote local

industry and engage in effective economic diplomacy that puts pressure on powerful buyers in other countries.

## **6. Limitations and Future Research Opportunities**

While providing interesting insights, there are some important caveats and boundary conditions regarding the generalizability of our findings and the application of our theoretical model. First, while supplemented by extensive secondary data, our study was primarily based on interviews of managers from seven firms in one country. Although we achieved theoretical saturation at this sample size, in order to confirm the validity and generalizability of our theoretical framework, future studies should strive to test it in the context of larger samples and different countries. Second, our study involved firms from only one link of the garment GVC—Bangladeshi garment manufacturers. While our informants corroborated the findings related to the actions of the up- and downstream GVC actors (i.e., raw material suppliers and buyers), research that would involve data from firms along the entire GVC would likely generate additional valuable insights.

Third, our findings may not be generalizable to GVCs in other industries. For example, while the garment industry was severely disrupted in terms of supply and demand and logistics (Ahsan & Iqbal, 2021; WTO, 2020), other sectors such as medical supplies have experienced even stronger pressures, including greater interventions of governments from powerful advanced economies (Gereffi, 2020). Likewise, the institutional support that firms receive in developing countries may vary from one industry to another (Ahsan et al., 2021). Thus, future research should take into account the idiosyncrasies of different GVCs in different industries and their impact on the temporal, structural, and spatial dynamics as well as the role of institutions, trust, and digitalization on the long-term evolution of the GVC in the wake of the COVID-19 crisis.



In conclusion, our study provides important, rich insights into the immediate dynamics and long-term changes related to the impact of COVID-19 on the garment GVC. We hope our study stimulates further research in this exciting area.

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## List of Tables

**Table 1: Global Value Chain Restructuring**

Authors	Research context	Research method	Theoretical lens	Research outcomes
Chen and Shen (2021)	China	Conceptual	No explicit theoretical perspective	Disruptions due to COVID-19 create not only challenges but also opportunities to restructure the GVC in environmentally sustainable and ecological ways.
Gereffi et al. (2021)	Global apparel, automobiles, and electronics industry	Conceptual	Trade theory	Instead of creating disruptions due to trade restrictions and agreements, the dynamic interactions between GVC-oriented trade policies and firm strategies complement GVC restructuring (i.e., upgrading) to support firms' longevity.
Martinelli (2021)	Swiss machinery industry	60 in-depth interviews	Grounded/emergent	GVC restructuring influences conflict resolution in three ways; namely, limited scale of action, forcing actors to adapt to individual rather than collective form or resistance as an exit strategy, after solidarity during the struggle – division reappeared.
Song et al. (2021)	Chinese high-tech industry	Secondary panel analysis	Epidemiological theory and trade in value-added perspectives	Pharma and transportation equipment manufacturing industries develop national value chains against the background of globalization, whereas chemical, electrical, and optical equipment manufacturing industries follow indigenous innovation while dominating regional value chains, integrating GVC to achieve cycle goals.
Strange (2020)	-	Conceptual	No explicit theoretical perspective	Reshoring or internalizing GVC activities is not an immediate solution to achieve resiliencies; resilience will come from diversifications involving more suppliers in multiple countries.
Hammer and Plugor (2016)	UK apparel industry	Secondary panel analysis	Grounded theory	Reshoring as a part of GVC restructuring is required to achieve productivity in the UK apparel industry.
Huws (2012)	-	Perspective	No explicit theoretical perspective	GVC restructuring evolves from mutual adaptation and accommodation to local institutional and labor market contexts.
Greening and Rutherford (2011)	-	Contextual analysis	No explicit theoretical perspective	A paucity of empirical research regarding supply chain disruptions assuming a network perspective, highlighting the dynamic nature of networks and emphasizing the difference between supply chain disturbance and disruption.
Hu and Zhao (2010)	Recreation industry in China	Case study	Innovation perspective	Innovation laid a solid foundation for GVC restructuring in a crisis time.
Kädtler (2008)	German chemical, pharma, and automotive industries	Secondary qualitative data	No explicit theoretical perspective	Globalization-based disruptions drive GVC restructuring as they influence the employees' bargaining power, which is eroded, persists, or even increases depending on companies' product strategies.



Huws (2008)	Global perspective	-	No explicit theoretical perspective	GVC restructuring reshapes the workers' strategies that are actively involved in the GVCs.
Ramioul and De Bruyn (2008)	-	Conceptual	No explicit theoretical perspective	Intervention from trade union and employee representatives triggers GVC restructuring through offshoring and outsourcing projects.

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**Table 2: Description of Sample Firms and Informants**

<b>Company code name</b>	<b>Position of the respondent (first-round of interview, T1)</b>	<b>Position of the respondent (second-round of interview, T2)</b>	<b>Years of operation</b>	<b>Ownership</b>	<b>Number of workers</b>	<b>Key pre-COVID-19 buyers (lead firms)</b>	<b>Key pre-COVID-19 suppliers of raw materials</b>	<b>Key post-COVID-19 buyers (lead firms)</b>	<b>Key post-COVID-19 suppliers</b>
Alpha	1 export manager	1 export manager 1 general manager	7 years	Family business and one foreign investor	50 executives & admin, 1500 workers	UK high-street brand	Majority from China; the rest from Italy, Turkey, and India	UK, US, and Canada	Majority from local suppliers; a few from Chinese suppliers
Beta	1 director and owner	1 director and owner, 1 export manager	28 years	Family business and investment from Singapore	4,000 executives & admin, 22,000 workers	EU, US, and Canada	Majority from China; the rest from India and the local market	EU, US, Canada, the Middle East, South Africa, and Mexico	Primarily local suppliers and China
Charlie	1 director and owner	1 director and owner 1 export manager	5 years	Family business	25 executives & admin, 150 workers	EU, US, and Canada	Most raw materials made in China; small portion of locally made raw materials	EU, US, and Poland	Germany and Switzerland
Delta	1 export manager	1 export manager 1 factory manager	10 years	Family business with one foreign investor	750 executives & admin, 9,000 workers	EU and US	Majority from China and Pakistan	EU, US, and Canada	China, Pakistan, Turkey, and local suppliers
Gamma	1 commercial manager	1 commercial manager 1 general manager	30 years	Family business	1,000 executives & admin, 17,000 workers	EU	Majority from China; the rest from India and Pakistan	EU, Japan, China, and Russia	Primarily local suppliers, Vietnam, India, Pakistan, and China
Omega	1 director and owner	1 director and owner 1 general manager	5 years	Family business	130 executives & admin, 2,600 workers	EU, Brazil, and Mexico	40% from China and 60% from the local market	EU, UK, US, and Canada	Local suppliers, Turkey, and Pakistan
Tango	1 director and owner	1 director and owner 1 general manager	18 years	Family business	300 executives & admin,	EU and US	Majority from China; the rest from Germany,	UK, Spain, US, and Sweden	India, Pakistan, Vietnam, local

10,000  
workers

India, Turkey,  
and the local  
market

market, and a  
low quantity  
from China

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**Table 3: Chronological Development of COVID-19-Related Events in the Bangladesh Garment Industry**

<b>Time/date</b>	<b>Key Events</b>
January 2020	- A large percentage of Bangladeshi suppliers reported that they faced a delay in raw material shipments during this pandemic due to a sudden lockdown in China. As a result, the price of the raw material has suddenly increased.
February 2020	The number of coronavirus cases has increased worldwide; more than 203,000 confirmed cases have been recorded, with over 8,200 deaths. - Walmart (one of the largest buyers of the Bangladesh apparel industry) commits USD 25 million to go toward firms on the “front line” in fighting the coronavirus.
March 2020	- Lockdown measures have been initiated around the world. For example, India shuts factories for 21 days. - A large number of cancelled and suspended orders worth more than USD 2.5 billion apparel products from Bangladesh until 25 March. - BGMEA president appeals to international buyers and is calling for responsible partnerships. - Bangladesh entered into its first lockdown and terms it a “general holiday”; the Bangladeshi government announced a stimulus of USD 591 million. - Bangladeshi apparel factories start producing personal protective equipment for health professionals. - The cancellation of India Handicrafts and Gifts Fair 2020 caused USD 530 million economic loss.
April 2020	- BGMEA confirms health and safety guidelines for apparel manufacturers in Bangladesh. - H&M, M&S, PVH, Inditex, KIABI, and Target confirm to receive finished goods. - Bangladesh government withdraws VAT on all kinds of yarn and fabrics sold between March 30 and June 30 and withdraws all demurrage fees for imports at the port. - The industry promotes innovation to produce new activewear with hydrophobic materials.
May 2020	- As per the BGMEA and BKMEA, 1,150 apparel manufacturing factories report a loss of 98 million pieces of product orders equivalent to USD 3.18 billion. - Bangladesh is ready to manufacture and export KN95 masks. - BGMEA and BKMEA directors meet with the EU directorate general for trade to negotiate and stabilize the garment GVC. - Both associations threaten to blacklist retailers such as Peacock, Jaeger, and Philip Day, which have delayed payments. - New orders for Bangladesh from countries; for example, Japan declared a USD 2.2 billion package to reshift its manufacturing from China to Bangladesh.
June 2020	- Bangladesh apparel firms heavily investing in creating online platforms as a strategy in response to GVC disruption. - Bangladeshi firms to take legal action against Sears for refusing to settle more than USD 40 million in outstanding payments. - The government of Bangladesh announced additional 1% cash incentives to all export destinations and 4% on selected new markets to deal with COVID-19 disruptions.
July 2020	- BGMEA seeks Bangladesh to focus heavily on the diversification of production such as value-added products as a response strategy to the COVID-19 crisis. - Bangladesh to produce high-quality PPE, masks, medical gowns, and gloves worth USD 11.58 million export. - BGMEA to focus heavily on sustainable sourcing. - The Global Brand Group (subgroup: Calvin Klein, Reiss, Kenneth Cole, etc.) cancels orders worth USD 4.61 million. - BGMEA seeks “zero duty” benefits extension from the EU to combat COVID-19 pressures.
August 2020	- Bangladeshi apparel exporters are focusing on US markets. Many factories received enough orders to work until September. - Foreign minister urges to focus on the new market and suggests a decreased dependence on the EU as an export market.

- Although the impact of COVID-19 continues, Bangladesh becomes no.1 in denim exports to the US. Bangladesh to heavily focus on sportswear as a way out and mitigate the impact of COVID-19 on the apparel industry and targets USD 50 billion in exports by 2021.
- Bangladeshi scientist invents biodegradable PPE using jute polymer.
- Bangladesh has become the third-largest sourcing destination for US-based fashion brands; around 55% of fashion brands in the US are considering increasing the importation from Bangladesh.
- Export shipments have bounced back to USD 3.23 billion, up from USD 2.3 billion in August 2019.
- Orders increasing and lead time shortening from 90 days to 45 days.
- Bangladesh government is revisiting FDI policies to combat pandemic-induced disruption in the apparel sector, allowing 100% FDI in the textile and apparel sector.
- BGMEA president meets with Paul John Merchant in September to discuss RMG Sustainability Council.
- BGMEA president had a meeting with the US Acting Assistant Secretary of State for South and Central Asian Affairs Alice G. Wells in New York to discuss new business opportunities in the US.
- Japanese government signs contract with the Bangladeshi government to open a new Japanese economic zone in Bangladesh to cut its reliance on China.
- RMG (ready-made garments) export orders back to lead time 35–40 days (down from 90 days lead time during the height of the pandemic).
- MOU was signed between BGMEA and Bangladesh Economic Zone Authority to lease 500 acres of land for developing a garment park.
- In the July–October period, the home textile export climbed 47.86% to USD 354.25 million, up from USD 239.59 million the previous year.
- Apparel factories back to full employment.
- BGMEA president meets the prime minister of Bangladesh to discuss the future of the RMG sector.
- Feeder vessel operators increased rent for containers to and from Chattogram in the name of emergency cost recovery surcharge (ECRS) amid the coronavirus outbreak.
- Canadian minister and BGMEA VP discuss increasing BD–CA businesses, requesting the Canadian minister to extend Bangladesh’s duty-free ready-made garments access to the Canadian market until 2029.
- BGMEA president met PwC Global Markets Leader Richard Oldfield to discuss the prospects of RMG and the potential of product and industry diversification.
- BGMEA takes the initiative to set up a Center of Innovation, Efficiency, and OSH for its member factories in an effort to increase competitiveness in the garment industry.
- In the last two decades, Chinese textile and garment industry owners who invested heavily in neighboring Vietnam and Cambodia focused on shifting their factories to Myanmar and Bangladesh.
- BGMEA and the Joint Apparel Association Forum sign a MoU to collaborate for the mutual development of the apparel industry in Bangladesh and Sri Lanka.
- The US bans all cotton from the Xinjiang region of China as well as all products made with those materials, citing human rights violations and the widespread use of forced labor in the region.
- BGMEA president highlights Bangladesh’s “miraculous rise” in the US Chamber of Commerce roundtable.
- Over 30 renowned fashion brands, manufacturers, and recyclers are collaborating on a new initiative to capture and reuse textile waste as raw material in Bangladesh.
- Due to the coup in Myanmar, lead buyers explore the move of orders to associated factories already in place in Bangladesh and Vietnam.
- BGMEA and Walmart discuss safety and business potential.
- BGMEA directors urge Bangladesh Bank to include Forwarder Cargo Receipt for receiving a cash incentive.

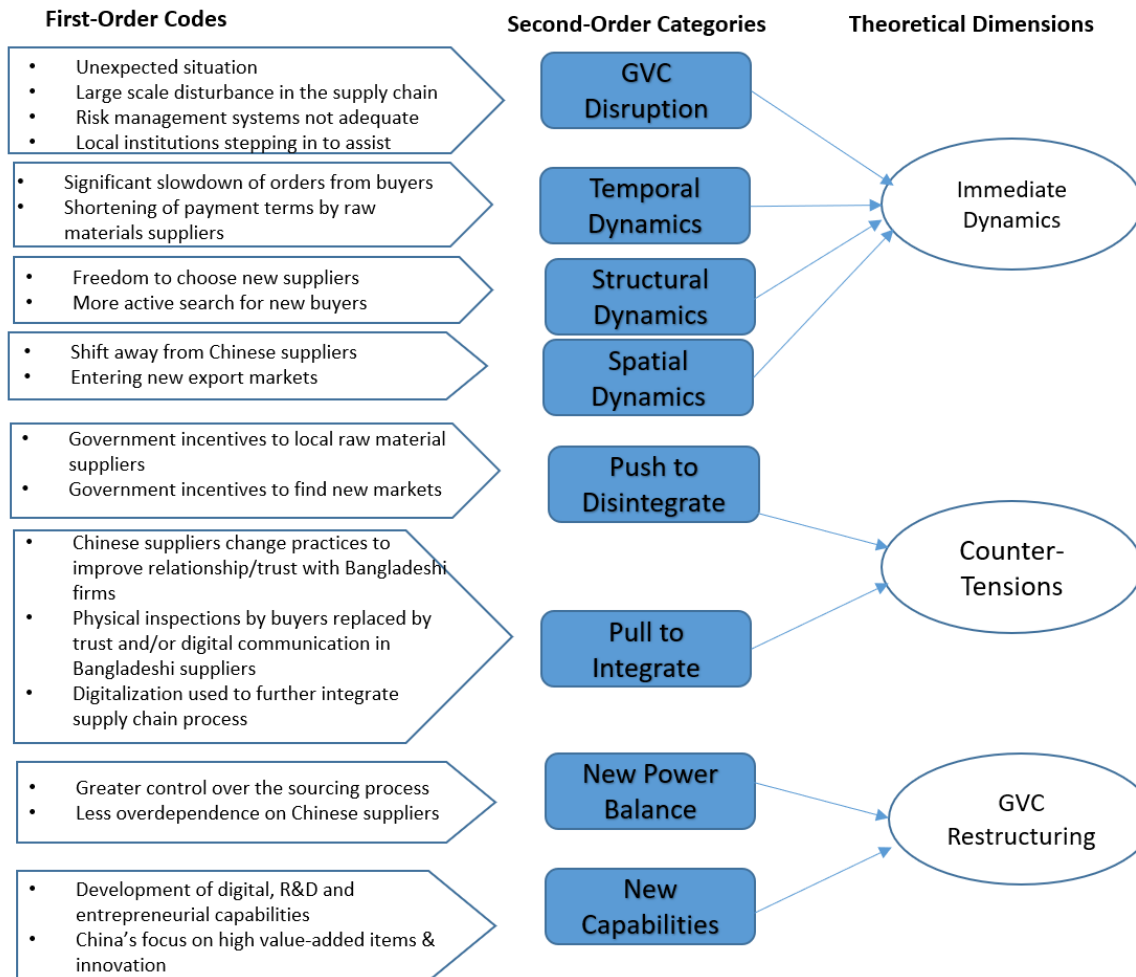
- March 2021
- 37 Bangladeshi textile and RMG manufacturers started investing in the Bangabandhu Sheikh Mujib Shilpa Nagar economic zone, the country's largest (30,000 acres) government-supported industrial park, to launch high-end apparel factories.
  - BGMEA leaders meet German Minister Gerd Müller to emphasize the need to focus on RMG's sustainability.
  - Industry experts note that big RMG factories are turning to local fabric manufacturers for fabric and yarn, partially because of the escalating freight cost.
  - Bangladesh RMG industry's progress highlighted in Paris OECD.
  - BGMEA launches a mobile app for its members. Members will get instant notifications of updated information, including circulars and news, on their mobile phones through this app.
- April 2021
- RMG factories run with a full workforce amid COVID-19 limits.
  - Export earnings account for USD 3.03 billion in the month of April.
  - BGMEA president seeks policy support from the government for the RMG sector in the upcoming national budget.
  - Amid the COVID-19 pandemic, Vietnam RMG fetching better apparel prices than Bangladesh.
  - After a year of COVID-19 disruption, global apparel companies see Bangladesh RMG as a key sourcing destination of RMG in the coming months.
- May 2021
- MoU signed between Commerce Ministry and BGMEA to enhance the knowledge of future production leaders of the country, increasing the efficiency of manufacturing plants, resource efficiency, and occupational health and safety.
  - BGMEA president seeks policy support from the government for the RMG sector to retain competitiveness.
  - Introduction of digital sampling, an innovative tool for the Bangladesh RMG sector to shorten sample lead time dramatically.
  - Tuomo Poutiainen, country director of the International Labor Organization in Bangladesh, praised the progress made in Bangladesh RMG to combat the COVID-19 pandemic.
  - The global market for knitting machines by 3D knitting technology is expected to show a compound annual growth of 27.4% by 2026, driven primarily by the growing demand for advanced automation and the capability of artificial intelligence.
- June 2021
- Indian textile and apparel manufacturers are suffering severely due to increased COVID-19 infections; over 20% of orders have been diverted to Bangladesh, Sri Lanka, and Vietnam.
  - BGMEA demands 15 million vaccines for RMG workers.

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Sources: BGMEA, BKMEA, Bangladesh Bank, Textile Today, company websites, NY Times, The Times of India, The World Bank open data, OECD, The Phnom Penh Post, NCBI, McKinsey & Company, and International Labor Organization.

## List of figures

**Figure 1: Data Structure**



**Figure 2: Theoretical Framework**

