

FACTORS AFFECTING SUSTAINABLE SUPPLY CHAIN MANAGEMENT AND IMPLICATION FOR DEVELOPING COUNTRIES IN THE POST-COVID-19 PANDEMIC

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ABSTRACT:

Critical success factors (CSFs) enable the successful implementation of sustainable supply chain management (SSCM) practices in organizations. This study identifies factors affecting the sustainable supply chain survivability (SSCS) during and after the COVID-19 pandemic. This study emphasizes the crucial elements that must be considered to adapt sustainable supply chain (SSC) practices. The results reveal that the survivability of the supply chain network is the essential criteria for managing the relationships of suppliers and buyers and maximizing SSCS during and after the COVID-19 pandemic. This study is expected to help businesses, manufacturers, and other stakeholders to concentrate on the analyzed factors to achieve a brighter environment.

Keywords: supply chain management, sustainable, post-COVID-19 pandemic.

1. Introduction

The issue of sustainability has seen a growing interest in SCM, both from the academic and corporate world (Seuring and Muller 2008). This led to a new paradigm of SCM, incorporating the sustainable dimension within the traditional SCM, the sustainable supply chain management (SSCM).

The literature acknowledges that an organization can only be as sustainable as its supply chain (Krause et al., 2009). There is a growing belief that the idea of sustainable business is optimistic, visionary, and strategic (Larson 2000). All managerial practices and activities that intend to achieve sustainable supply chains consequently form the concept of SSCM (Pagell and Wu 2009; Seuring and Muller 2008). Thus, SSCM describes

how organizations actively expand the concept of corporate sustainability from their intra-organizational boundaries into their supply chains (Sarkis 2012).

SSCM also emerged because of the integration of corporate sustainability with supply chain management. This implies that organizations practicing sustainable supply chain management strive to satisfy multiple, possibly conflicting objectives. While maximizing profits calls for reducing operational costs, minimizing environmental impacts and maximizing social well-being can increase supply chain operational costs.

Logistical and manufacturing operations have been restricted due to the severe lockdown, which significantly impacts the demand and supply of

various items. COVID-19 has a massive effect on a multitude of units of various sectors. This research emphasized the essential elements that must be considered to adapt the sustainable supply chain (SSC) practices.

Coordination of suppliers is critical for building customer relationships to have sustainable outcomes (Badraoui et al. 2020; Reuter et al. 2010; Alghababsheh and Gallea 2020). Global sustainability encourages firms to redesign and reform economic, social, and environmental concerns for maintaining the buyer-supplier relationship by mutual coordination (Ni and Sun 2018). Due to the rise of the coronavirus, a life-threatening environment was hovering over the globe, putting enormous pressure on businesses' stakeholders, governments, and policymakers to maintain their supply chains due to social, environmental, and economic factors (Cohen 2020; Sarkis et al. 2020). As the COVID-19 pandemic has put enormous disruptions on the survivability of the supply chains management all over the globe, it makes it imperative to identify, assess, and prioritize the factors affecting SSC. Like the rest of the world, Pakistan's economy has also faced a COVID-19 pandemic and its negative impacts. COVID-19 pandemic has also affected the SSC of fast-moving consumer goods (FMCGs). The present study identifies, assesses, and prioritizes factors affecting supply chains, providing a deeper understanding of SSC survivability in COVID-19 and post-COVID scenarios.

2. Literature Review

2.1. Sustainable development

Sustainable development comprises teaching and learning about sustainability for stakeholders and promoting principles and practices compatible with the organization's goals. Sustainable development demands comprehensive risk assessment, vulnerability monitoring and evaluation, and the identification of constraints and opportunities to minimize issues and improve adaptability. This research highlighted vital indicators that might help them restructure their supply chain for sustainability and better buyer-supplier relationships.

The fundamental objective of sustainable

development is to increase flexibility and resilience (Barrow 2018). Sustainable innovation can help businesses become more competitive (Agrawal et al., 2021). Schoenmaker (2019) and Ikram et al. (2020a, b) illustrate the environmental, economic, and social challenges of sustainable development and rank them as follows: environmental challenges are essential for a livable planet; next, social challenges are essential due to a well-connected society that can organize production and consumption to bring prosperity; and finally, economic challenges are the most difficult to overcome. The United Nations Convention (1972) on the Human Environment was the one to promote sustainability. Following the Brundtland report in 1987, there was a surge in worldwide attention to sustainability (Klewitz and Hansen 2014). According to the World Commission on Environment and Development (WCED), sustainability is defined as "meeting the requirements of the present, without affecting future generations' ability to fulfill their particular goals" (WCED 1987).

2.2. Factors for sustainable supply chains

Organizations are moving to a demand-driven paradigm for handling their supply chains in the pandemic (Chi et al. 2020; Choi and Guo 2020). The interaction of supply chain and environmental growth is the basis of SSC. Environmental, economic, and social concerns play an imperative role (Dubey et al., 2017; Hayat et al., 2020). COVID-19 has put much stress on organizations offering tangible and intangible resources, so they are using new supply chains. To meet demand and supply, the firms consider outsourcing mediators and depend on the supply chain system's association with multiple single-level suppliers (Wilhelm et al., 2016). Global supply chains use both traditional and non-digital modes to expand their presence and remain competitive in the industry (Araz et al., 2020). The supply chain's controlled inventory gives the distributor access to actual inventory data, forecasting, and order specifics, which helps the upstream distributor (Prince et al. 2019). Additional platforms, associations, value-adding, co-creation, optimization techniques of distribution and pickup options, omnichannel supply chains, balancing

management capacity, order fulfillment, embracing digital applications, and crowd and capital management are all areas where the supply chains.

2.3. Disruptions on sustainable supply chains

Firms face various risks and threats because of their supply chain environments (Peck, 2005). Disruptions due to the variety of crises (financial, economic, social, ecological, and political) have raised researchers' focus to the need of researching supply chain robustness and resilience. Several pieces of research on companies' reactions to risks through dynamic adaptation to conditions have explored SSC robustness and stability (Dolgui et al. 2020; Pettit et al. 2019; Scholten et al. 2019). In a difficult era, firm survival and expansion have been a serious subject of study in the wake of the COVID-19 epidemic (Ivanov 2020).

The supply chain's efficiency has improved due to the collaboration, reducing costs, and improving profitability. The bullwhip effect in supply chains can be reduced by retailers and suppliers working together (Dolgui et al. 2020). The supply chains come in various shapes and sizes, but they all help alleviate the distress of the affected people. Both physical and intellectual assets are widely shared, and these resources and knowledge exchange are critical for successful communication between suppliers and buyers (Pankowska 2019; Ikram et al. 2021). Supply chain exposure to disruptions has been examined in previous research studies in the physical aspect, uncertainty considerations, and conceptual network analysis (Ivanov et al. 2010; Pavlov et al. 2019; Li and Zobel 2020). Its conservation focus and environment orientation calculate the longevity of a system. The feasibility of supply chains combines efficiency and durability and adds durability to the process (Ivanov and Dolgui 2020). From the available literature, essential elements for improving the buyer-supplier relationships and survival of SSCs are created.

2.4. Previous research

Various studies in the literature focus on the analysis of supply chain management (SCM) and its factors. Seuring and Miller (2008) developed a conceptual framework for an SSC using a review approach. Winter and Knemeyer (2013) carried out a thorough analysis of growth in three areas

(operations, social, and environmental management) based on SSC growth. Ashby et al. (2012) tried to trace the evolution of long-term supply chain systems, processes, and interactions. Carter and Easton (2011) and Rajeev et al. (2017) aimed to discover the evolution of SSCs and provide recommendations for future study across all sectors and geographies. Some of the findings from the literature reviews on SSCs have been presented using a specific phenomenological approach, such as dynamic capacity (Beske and Seuring 2014) and decision philosophy (Tidy et al. 2016). In the comprehensive explanation by Seuring (2013) and Brandenburg et al. (2014), so many applications of comparative features to a forward supply chain for sustainability have been mentioned; Reuter et al. (2010) expanded by highlighting the efficacy of business analytics means of achieving SSC. Barbosa-Pívoa et al. (2018) also offered literature evaluations on the SSC from 2006 onwards. None of the research was solely focused on SSC and buyer-supplier relationship evolution in the FMSGs particularly.

2.5. Sustainable supply chain in the post-COVID-19 pandemic

In supply chain operations, broad socio-political forces have always played an imperative role, whether from tariffs on goods or new norms related to safety practices or regulations on technological practices (Handfeld et al. 2020). Consequently, supply chain processes will be transformed post-COVID-19, but will these transformations stay in place? Data-driven recognition is going to be a significant change (Scharmer 2020). This activity entails working together to address issues and then modifying action in addition to the COVID-19 pandemic dilemma. Companies must change their behavior as processes, particularly market and government legal structures, begin to collapse. Similar expression changes can help with long-term sustainability.

During and after the crisis, organizations and their supply chains will demand more timely data; they will integrate decision-making and establish new programs and initiatives in reaction to the crisis. This organizational capability can help people think more about sustainability when

environmental and social problems happen, but their timing and magnitude will be unpredictable. Centralized networks are more likely to be solid and resilient than global supply networks, as seen by this issue (Nandi et al., 2021). Localization is also critical for the ecological supply chain's long-term viability (Holmström, J. and Gutowski, T. 2017). Local manufacturing can offer quick responses to local demands while using less energy and resources.

While this situation offers chances for long-term sustainability, it also has the potential to frustrate. Although uncertainty and issues persist, we can see a change to SSC arising from this situation. Supply chain resilience is supported by sustainability strategies and practices, such as assuring ecological functions are preserved, enabling more sustainable “buy local” behaviors and promoting public confidence. The crisis provides a revolutionary opportunity because it allows us to use sustainability to minimize risk and develop resilience.

Researches have investigated supply chain challenges, restrictions, channels, sharing of knowledge, convergence, and supplier engagement (Marques 2019; Roy et al. 2020; Liu and Lee 2018; Nazam et al. 2020); coordination (Wankmüller and Reiner 2020); order fulfillment and delivery supply chains (Ishfaq and Raja 2018); strength and longevity in provider relationships (Touboul et al. 2014); SCM competition (Tidy et al. 2016; Sauer and Seuring 2017; Patel and Desai 2019); model growth in SCM (Brandenburg et al. 2019) as well as stability and buyer-supplier relationships (Kumar and Rahman 2016).

The existing studies have examined supply chain challenges. Still, there has been no systematic analysis of the requisite significant factors for improving SSCs during pandemics, specifically in the post-COVID-19 pandemic context. As a result, this research fills in the gaps. It examines the drivers to give additional insights to supply chains about reinventing their sustainability of supply chains to succeed during and after the COVID-19 pandemic scenarios.

The research aims to identify conditions that contribute to the long-term viability of SSCs and the handling of buyer-supplier relationships. The study

guides companies, retailers, government agencies, and professionals about handling their supply chains to meet society's social and economic needs while not losing business in the epidemic. For determining the significant factors to survive during the COVID-19 pandemic scenario, this research involves defining variables to design and operate SSCs for FMCGs companies in the unpredictable world of an epidemic (coronavirus) as a distinctive character.

It sheds light on the feasibility and resiliency of supply chains. It can prompt them to modify their current tactics to improve their resiliency in both pre- and post-pandemic scenarios. While progress is being made in environmental and social sustainability, it is slow, irregular, and myopic, and it is easy to fall into unsustainable practices. Therefore, it is essential that we critically investigate and demonstrate the factors for SSCs and buyer-supplier strong connection.

2.6. Gaps and contribution

However, the development of conceptual theories to illustrate the factors for SSC and buyer-supplier relationship with environmental, social, and economic performance in the context of the post-COVID-19 pandemic did not explore. Thus, the most important considerations on which supply chains can concentrate to achieve survivability during pandemics remains unanswered. Which factors play a vital role in improving the SSCS in the post-COVID-19 pandemic scenarios? During COVID-19 outbreaks, how is the buyer-supplier partnership managed? What do supply chains rely on to survive in the post-COVID-19 pandemic for the long term? Comprehensively, the study intends to look at and analyze the influential elements for SSCS during the post-COVID-19 pandemic. Thus, a thorough analysis is carried out, and the following research priorities are set in. In today's competitive business environment, a reliable and SSC is essential to business performance. However, natural (e.g., coronavirus) or man-made crises frequently interrupt the sustainable supply chain (Sarkis et al. 2020).

FMCGs and a portion of the resilient food and healthcare supply chain are among the key elements. A manufacturer must evaluate supply chain interruptions induced by a disaster such as

COVID-19 that may occur at the retailer and supplier end to maintain an SSC. Most previous studies emphasized interruptions at the supplier or retailer level (e.g., Konstantaras et al., 2019). This research contributes to the existing literature by identifying the key factors contributing to an SSC and the survival of the buyer-supplier relationship in the wake of the post-COVID-19 pandemic. In real-world situations, decision-makers must examine the supply chain's social, environmental, and economic sustainability since these components increase the supply chain's capacity to satisfy consumer demand (Mehranfar et al., 2019; Nezhadroshan et al. 2020). So, such a significant aspect is needed to assist supply chain managers in making decisions for an SSC under the post-COVID-19 pandemic circumstances. The previous work examined supply chain challenges, but there has been no thorough analysis of the required significant factors for increasing SSC survival in the post-COVID-19 pandemic. As a result, this study fills in the gaps and examines the elements to provide firms unique insight into how to rebuild their SSCs to survive in pre-and post-COVID-19 circumstances.

This research is helpful to understand the factors that contribute to SSCs during the post-COVID-19 pandemic. This study adds the knowledge of the core considerations that must be weighed to sustain an efficient buyer-supplier relationship and increase the SSC. Our study subsidizes the academic literature and delivers appropriate insights to companies as well. Moreover, the findings shed light on the effects of SSC execution on both supply chain resilience and robustness.

3. Methodology

A systematic literature review methodology provides collective insights on fields and sub-fields of inquiry by synthesizing theoretical and empirical work in a replicable and transparent process that reviews the existing literature based on a set of search criteria (Tranfield et al., 2003).

These terms were used to find out the related literature merely. Because to search the related paper in bulk and then screened the most relevant, the exact phrases used for the main criterion in the study have been considered. The terms that have

been used, evaluated by a panel of experts in the supply chain, sustainability, and resilience fields to help ensure completeness and accuracy. When confirmed, the terms were suitable and valid for exploring the factors for SSC and buyer-supplier relationship, then moved to next for literature searching. These terms were employed to relationships are built from the listed articles. Each professional must carefully review the data sheet with the questionnaire and assess each factor.

4. Results

4.1. Drivers

External stakeholders' pressure is the most significant force when a company decides to engage in sustainable practices (Mathiyazhagan et al., 2015). This pressure is higher for companies closer to consumers in the supply chain (i.e., retailers and manufacturers). Drawing upon Institutional Theory, pressures can be categorized depending on their origin in Regulatory (law and regulation), Normative (from the market environment), and Cultural-Cognitive (internal pressures). Larger firms, facing large reputational risks or selling to large MNCs headquartered in the North, tend to be more committed to sustainable practices than smaller firms with only local markets (Aboelmaged, 2012). Significant pressures also arise from major environmental incidents, which negatively affect corporate reputation. In these cases, civil society and media pressure influence companies to change their health and safety approaches towards employees and environmental protection (Silvestre, 2015a). Strong regulatory institutions, non-government organisations (NGOs), and social movements in developed countries significantly influence corporate behavior towards such behavior development (Distelhorst et al., 2015). The government acts from both a mandatory and a voluntary standpoint, engaging stakeholders and providing mechanisms that facilitate SSCM (Perry, 2012). In some countries, such as Brazil or Mexico, large buyers may not consider the regulatory framework as a crucial driver but instead focus on the economic benefits, the desire to maintain a good reputation and to improve overall competitiveness and suppliers' performance (Bouzon et al., 2015).

Once the buyer recognizes these external pressures, it transmits them to its suppliers, which may be in a developing country. This transmission is motivated by three factors. The first is risk management. For example, garment industry production is typically located in countries such as Bangladesh or Pakistan, with higher risks in terms of labor rights (Turker and Altuntas, 2014). Second, companies may seek to enhance their global reputation. Global firms with a world-known brand are more exposed to public scrutiny than local firms; any breakdown in the supply chain can significantly damage buyers' reputations (Aboelmaged, 2012). Third, companies may be motivated to act by supplier dependency. When buyers can only obtain a product from a single or limited range of suppliers, then they need to work in partnership with those suppliers to achieve continuous improvement in the supply chain (Perez-Aleman and Sandilands, 2008).

A supplier located in a developing country typically experiences three drivers that trigger its engagement in sustainable practices. The first is normative drivers that come from the buyer through procurement policies, supplier's codes of conduct, and compliance with international standards, e.g., ISO 14001. Some buyers may ask for compliance with specific industry standards, such as third-party certifications (Morris and Dunne, 2004). The second is regulatory drivers that come from regulators in importing countries, usually in the developed world. International regulation for some countries can be high, and the threat of possible trade barriers in the form of sanctions for non-compliance is a significant concern (Lo, 2010). The third is normative drivers that come from the market environment and include the desire to gain competitive advantage through cost reductions, market differentiation, and superior brand reputation (McMurray et al., 2014).

There are occasions when a driver that fits into the normative pillar becomes a regulatory one because, from the supplier perspective, buyers' policies play the same role as national environmental regulations (Jeppesen and Hansen, 2004) and could become an even more substantial factor if there are environmental regulations in place, enforced by buyers' policies (Lai and Wong, 2012). The literature suggests that public and private

regulatory regimes act more in tandem as complementary signals for SSCM than as antagonistic rivals (Distelhorst et al., 2015).

4.2. Barriers

The most frequently mentioned barrier found in the literature to implement SSCM is the generalized lack of political support in developing countries (Clarke and Boersma, 2017; Vermeulen and Ras, 2006). This includes low levels of regulation (Huq et al., 2014; Kasim and Ismail, 2012; Sandhu et al., 2012) and weak enforcement of regulations (Ehrgott et al., 2013). Some countries report a lack of financial aid (Ras et al., 2007) or incentives to increase sustainable practices, such as material recycling (Bouzon et al., 2015). As Azmat and Ha (2013) reported, countries like Bangladesh lack control, monitoring, and sanctions. In some cases, companies may prefer to pay the pollution fees/fines as these costs are lower than the clean-up or prevention costs since they do not reflect the pecuniary hostile environment externalities (Lam, 2011). Some countries, such as China, also report a knowledge gap between top government officials at the national level and officials at the provincial or rural levels who do not apply all the concepts and norms agreed at the top level (Tsoi, 2009).

Lack of policy implementation can be explained in several ways. First, policymakers find it difficult to decide on a common goal to guide what regulations need to be in place (Li et al., 2015). Second, environmental legislation addressing industry emissions in developing countries is relatively recent, commencing in the 1990s and emerging slowly after the Kyoto Protocol was established in 1997, which means that enforcement is only just beginning (Soda et al., 2015). However, the literature argues that, regardless of timing, the main barrier for policy enforcement is the insufficient resources available for inspection and monitoring (Azmat and Ha, 2013). Third, there is a challenge in adapting regulations to local contexts. It has been found that regulatory frameworks, taken from European countries, are met with high levels of non-compliance when applied to developing countries because they are not adapted to the local context. South Africa and Indonesia are cases where farmers in the wine and forestry sectors struggle to

meet European standards that do not adequately reflect production and extraction conditions in those countries (Bartley, 2010; Ras et al., 2007). Fourth, the regulatory framework tends to be more operationally focused and weak in promoting environmental sustainability (Mitra and Datta, 2014). In the case of the food industry, for instance, the relationship between food safety standards and sustainability requires better specification around which measures to include and exclude from national regulations and how to make both policies compatible (Bloom, 2015)

There is a general lack of awareness about sustainability in developing countries among suppliers and consumers (Soda et al., 2015) and weak demand from consumers for sustainable products (Ehrgott et al., 2013), which is the result of both a lack of awareness about environmental issues (Kasim and Ismail, 2012) and the low buying power in those markets, where premium-priced green products become unaffordable for mass markets (Morris and Dunne, 2004). Due to their socioeconomic conditions, consumers are more concerned with meeting their basic needs than with the quality of their purchases (Azmat and Ha, 2013). On the other hand, suppliers in developing countries lack the required knowledge, expertise, and funds to adopt sustainable practices, given that implementation is not a simple task (Ras et al., 2007; Soda et al., 2015; Syuaib, 2016). There are also complaints about the absence of guidance about compliance with sustainable standards (McMurray et al., 2014). This reflects a need for continuous training and support in the absence of buyer involvement. Pressures from other external stakeholders such as media, NGOs, and local communities are much lower compared to the ones experienced in developed countries (Sandhu et al., 2012).

Lack of adequate transport infrastructure to relay products from rural to urban areas and to export ports is a significant barrier to adopting SSCM practices and competitiveness in general. Roads in many countries are not well paved or maintained and cannot cope with business expansion and the heavy demands associated with rapid supply requirements (Bouzon et al., 2015; Lam, 2011; Silvestre, 2015b).

Outdated telecommunication networks are also reported as an additional infrastructure barrier (Li et al., 2015).

Several countries report high levels of corruption and mock compliance among companies, certification bodies, and the government in countries such as Brazil (Silvestre, 2015b), South Africa (Morris and Dunne, 2004), Indonesia (Bartley, 2010), and Bangladesh (Huq et al., 2014). Suppliers can cheat and buy certification labels from third-party auditors without implementing the required practices (Morris and Dunne, 2004). Suppliers also resist changes in regulations in their favor, through irregular payments to government agencies (Azmat and Ha, 2013); presenting fake documentation during audits in order to become certified (Huq et al., 2014); or through a lack of transparency in their operations (Vermeulen and Ras, 2006). Otanez and Glantz (2011) present an example of buyers that, despite claiming SSCM practices, keep purchasing materials produced by child laborers and with high deforestation rates.

The upfront costs of going green may be too high for companies in developing countries, and the benefits may not be apparent or quick enough to achieve (Li et al., 2015). Therefore suppliers do not think it will be economically beneficial in the long run (Kasim and Ismail, 2012). In the sense of cost reductions associated with sustainability measures, competitive advantage is non-significant (Lai and Wong, 2012), given that returns on investment are perceived to take too long (Brik et al., 2013). Suppliers do not find any financial incentives to implement sustainable practices since there is a lack of subsidies from the government or buyer companies to cover training/consultancy costs and certification labels (Li et al., 2015), while concomitantly buyers create significant pressure to reduce suppliers' prices.

4.3. Mechanisms

Mechanisms have been divided into two categories: assessment and collaboration. When talking about assessment, it is found that the purpose of some certifications is to standardize products and processes, thereby creating mass markets and price-based competition. Other standards aim to differentiate the products, thus establishing niche

markets based on quality as a form of non-price competition (Bloom, 2015). In developing countries, voluntary sustainability standards primarily reach the export-oriented sectors. Industries producing for domestic consumption have been relatively untouched by the efforts in acquiring certification, as they do not face market pressures to adopt such instruments (Bartley, 2010; Vermeulen, 2010). Many firms view certifications as critical for their public image and use them to improve their reputation or to avoid scrutiny and criticism (Bartley, 2010). However, introducing suppliers' codes of conduct and standards on sustainable practices does not necessarily improve livelihoods and working conditions for employees and smallholders in developing countries. For example, the factory-based model introduced in Pakistan for football stitching was designed to eliminate child labour, but had negative consequences for women who were no longer able to do the job from home and could not commute to the factory (Lund-Thomsen et al., 2019).

Big firms usually develop their codes of conduct and perform their monitoring and auditing activities, reporting higher levels of compliance in comparison to other factories that use third-party certification. However, the lack of third-party verification renders civil society, NGOs, and other stakeholders suspicious of the integrity of company schemes, because self-assessment may produce data that is unreliable, biased, and superficial, orientated more towards marketing purposes (e.g., greenwash) than towards achieving substantial changes (Lund-Thomsen, 2008; Otanez and Glantz, 2011; Turker and Altuntas, 2014).

Other articles report collaboration with suppliers as the key to success and achieving higher levels of compliance with internal codes of conduct (Johnson, 2004; Kanapathy et al., 2016), arguing that a supportive approach is needed, based on collaboration and education adapted to local needs (Huq et al., 2014). The engagement with local communities in value creation activities such as sourcing, production, and distribution has been identified as a success factor in SSCM (Bendul et al., 2016).

Companies seek assistance from other institutions such as NGOs and government agencies

(Dahan et al., 2010). Companies state that they need help from NGOs and local governments to ensure transparency in their suppliers' relationships because monitoring suppliers is not their core business (Perez-Aleman and Sandilands, 2008). NGOs, for example, are able to provide incentives and to enforce adoption (Bloom, 2015). MNC-NGO partnerships that actively engage suppliers in developing countries can effectively overcome supplier barriers to SSCM, by initially developing the standards with suppliers' participation and providing assistance to enable them to meet those standards. For example, NGOs can provide incentives and ships with suppliers and stakeholders (Khan and Nicholson, 2014). Companies may hold biannual compliance days to provide training and updates, supplier conventions, visits, personal cooperation, production rooms, and research, with intranet and e-communication systems to maintain up to date information between all parties (Blowfield, 2003; Turker and Altuntas, 2014; van Hoof and Thiel, 2015).

4.4. Outcomes/performance of the implementation

Several papers measure outcomes through surveys with industry representatives in Brazil, China, India, Mexico, and Vietnam (Gualandris et al., 2014). Findings typically show that companies with SSCM outperform their competitors economically (Esfahbodi et al., 2016) and report benefits such as higher productivity, more excellent employee retention, fewer operational mistakes and fewer accidents (McMurray et al., 2014; Tan et al., 2016; Tencati et al., 2008). Some outcomes fulfill the initial driver's expectations to implement sustainable practices, such as having a better reputation and gaining market shares (Bouzon et al., 2015).

It is unclear whether sustainable initiatives positively or negatively impact economic performance (Zorzini et al., 2015). Some argue that there is a direct impact on the firm's economic performance (Zailani et al., 2012) and that sustainability investments generate exceptional value to shareholders (Bouzon et al., 2015; Sen, 2009); however, this value is usually realized in the long term (Sen, 2009).

SSCM practices can install additional capabilities in the company and lead it to outperform competitors in environmental efficiency and social responsibility (Gualandris et al., 2014). There are positive outcomes associated with social initiatives; for example, suppliers are in a better position to negotiate with buyers (Huq et al., 2014); working conditions in factories improve (Distelhorst et al., 2015); companies achieve a better position as a trustworthy and socially responsible corporate citizen in the community where they operate (Park et al., 2015). However, other research finds that there is no link to better social conditions in the communities where eco-industrial parks.

In terms of operational performance, companies have been incorporating sustainability into business performance measures (Prasad et al., 2016). MNCs' codes of conduct help increase the quality and speed of operations, allowing code operating companies to receive more orders and increase revenue (Turker and Altuntas, 2014; Younis et al., 2016). The implementation of SSCM practices increases the efficiency of operations in the warehouse, distribution, and logistics (Soda et al., 2015). Some authors, however, argue that operational improvements cannot be fully attributed to SSCM. Many factors influence operational outcomes, and various components work together alongside SSCM in an organizational setup (Jaikumar et al., 2013).

Higher frequency of contact within collaborative relationships with suppliers fosters more significant levels of organizational learning about the business context, including legal, political, and social dimensions. Organizational learning enhances a company's overall ability to manage relationships with partners and creates higher levels of trust (van Hoof and Thiel, 2015). Some companies claim that the most incredible outcome of SSCM is to improve supply chain relationships (van Hoof and Thiel, 2015). Learning increases due to the development of rare and valuable capabilities during the implementation of SSCM (Gualandris et al., 2014), which in return leads to innovation and improved performance (Yang et al., 2016).

Adverse outcomes of collaboration were also found, highlighting power distribution dynamics along the supply chain. When buyers do not share

any of the implementation costs (Huq et al., 2014), it can take suppliers who cannot afford to invest in sustainable practices out of the market. Despite the benefits buyers reap from suppliers' investments in corporate social responsibility, they continue to seek lower prices in their negotiations with suppliers. Suppliers regard this behavior as unfair (Otanez and Glantz, 2011), and they claim that corporate social responsibility should not be imposed but rather be a partnership arrangement with MNCs (Tencati et al., 2008).

4.5. Discussion

From the mentioned factors above, during the unpredictable circumstance of COVID-19 waves, supply chains' instability resilience must be sustainable in surviving, stabilizing, and escaping market crashes. The efficacy of supply chains, which integrate virtual networks in dynamic structures, is frequently considered (Aubin 1991). The viability of supply chains might refer to their long-term market mobility in economies. The supply chains' sustainability in pandemics goes beyond their efficiency, earnings, or sales, and their concern for long-term viability has prompted risk management behavior (Keogh et al. 2020). Resiliency, robustness, and stability are the three sub-parameters of this primary criterion. According to the findings, resiliency and stability are the two most important considerations. All these variables must be prioritized to improve SSC survivability. Supply chain viability is a complex system with structural dynamics driven by attitude, while resiliency is driven by instability. Without explicitly considering efficiency, the supreme required asset of a supply system is stability.

The supply chain must be stable to achieve resiliency (Ivanov and Dolgui 2019). The COVID-19 pandemic has opened the way for supply chains to pursue new insights on resiliency and viability processes. Various behaviors are shown to transform buyer-supplier relationships to build sustainable survival. Supply chains are often reliant on the corporation or buyer-supplier association for their survival. The supply chain partnership works as a method for reducing the impact of the bullwhip effect. As a result, the supply chain must create an inclusive and vigorous configuration to meet

consumer demands, assisted by cooperation among supply chain members. The critical criterion of collaboration of supply chain is divided into four sub-categories: collaborative strategy, replenishment and forecasting, internal coordination, supply chain co-creation, and competitive edge.

Forecasting, preparation, and replenishment in collaboration and supply chain co-creation demonstrate that all these considerations are essential in managing the relationship of buyer and supplier and optimizing SSCs stability. FPRC (forecasting, preparation, and replenishment in collaboration) is a market operation that brings together the intelligence of many supply chains to practice forecasting and to plan to improve demand insight and performance (Ni and Sun 2018). Basic demand and supply are beyond what supply chains are built for, so FPRC can rely on estimating or evaluating demand. The supply chains should start a unique market forecast that assures projection accuracy and adequate supply for the basics that are in high demand. As the COVID-19 pandemic spreads to new places, the global and local supply chains must implement mitigation and alternative plans. The companies see sustainability as a competitive opportunity for associating with suppliers (Singhry and Rahman 2019). Supply chain co-creation in supply chains aims to enhance the process and product while making improvements. Data-driven supply chains are meeting consumer needs by delivering essential goods to shops at their doorsteps. Supply chains adopt just-in-time and order fulfillment distribution solutions for quarantine, limited-time retail operations, stay-at-home orders, and self-isolation. Supply chains are now reducing the number of goods they provide to concentrate on completing orders on schedule and in a clean and sanitary manner. Many companies have implemented same-day or next-day service delivery, with extra employees and tie-ups temporary have also been planned.

Consumers have enhanced their consumption of health and wellbeing items, products required for virus protection, and protection steps such as masks and gloves due to the terrifying situation around the world. Resource management at the local level must be considered to avoid stock-out conditions and

control order fulfillment to balance supply and demand. One of the most important things for businesses to work during a pandemic is their societal success under instability. The coronavirus has introduced a modern work philosophy focused on achieving organizational productivity by flexible working hours and remote work worldwide. This may be a chance for business operations like eBay, Google, Amazon, and others to contribute to the economy by promoting platforms for job creation and upholding their corporate duty to ensure the welfare of their workers.

5. Conclusion and Implications

This research investigates the substantial aspects for attracting the survival of SSC and maintaining the relations of buyer and supplier. There is no single aspect on which the supply chains can depend exclusively on this pandemic. Still, the current focus on market delivery resiliency, data-driven market delivery, stability, order fulfillment strategies, and supplier cooperation could be fruitful. Consumers increasingly adopt contactless or online order solutions due to fear of transmission in public spaces and social distancing, providing the basis for supply chains sustainability to develop in the post-COVID-19 era. This study looks at the prospects for supply chains, the human-machine ratio, and the use of hybrid models and operational processes. This research helps create collaborative, integrated, and supply chain sustainability during and post-COVID-19 scenarios, and companies that neglect excellent customer support' having the risk of losing business and ultimately extinction.

Pandemics seem to be the most critical attribute of market instability. COVID-19 has incorporated a lift-it-up of insubstantiality, but effective means of maintaining supply chains could have changed forever. To enhance long-term economic and social benefits, supply chains must update their strategic direction to respond to technology changes, social environment and transform their business structures, including various networks. The main drivers for FMCGs businesses to succeed and thrive in pre-and post-COVID-19 pandemic circumstances are viability, resiliency, order fulfillment/Just-in-time, stability, data analytics,

teamwork, convergence, demand forecasting, and real-time intelligence. Practical, durable supply chains engage distributors and other stakeholders in an inclusive and accountable mechanism that promotes the long-term progress of FMCGs. For FMCGs organizations' success, resilient supply chains must be designed across proper demand scheduling, monitoring, distribution network, supplier meetings, supplier cooperation, and predicting the impact of economic and social conditions. Since coronavirus has a long-term effect on supply chains, it's essential to know several shipping methods. The integration of a shipping distribution approach would reduce costs and prioritize a safe inventory stock supply strategy, which will help FMCGs supply chains survive.

This research assists in determining the most significant elements of management. The findings also help to identify the key factors that firms might use to improve supply chain resilience and robustness by assessing the combinations of SSCs. Sustainability is one of the essential characteristics, not only in terms of economic considerations but also in terms of all other factors. Supply chain, risk management, supplier evaluation, strategy implementation, and so on are only a few of the critical elements to consider when deciding. Two aspects of the research seem to be used to examine variables that affect SSCs and buyer-supplier connections. First, this study aims to look at the social, economic, and environmental impacts on enterprises to improve the long-term efficacy of SSCs. Since the COVID-19 pandemic has long-term consequences on global economies, the study indicates that supply chains must become sustainable to survive and succeed in the long run. The factors determined in this study can be used in future projects as well as for organizational decision-making. In this study, the framework incorporating SWARA will assist decision-makers in understanding the several bottlenecks that arise when moving toward sustainability and making solid relationships with buyers. It is critical to be aware of different elements beneficial to a long-term supply chain in the post-COVID-19 pandemic scenario. With the help of a particular solution, this

research helps decision-makers successfully minimize hurdles and prepare to implement robust, strong connections, and dynamic supply chain sustainability.

Supply chains in the FMCGs industry must adapt to new socio-economic needs to succeed and thrive in the long run. The social responsibilities are also exhausting FMCGs managers to improve their supply chains with several problems, such as labor shortages, uncertain competitive pressures, extended working hours for employees, maintaining social distancing across massive crowds, treating visitors' arriving without masks and gloves. If some of these issues are not overcome, it will almost certainly result in business failure shortly. As a result, viable supply chains can cope with such instabilities before and after COVID-19. Supply chains in the FMCGs industry must control demand and inventory in the short and long-term using advanced technologies such as big data analytics to manage orders based on real-time data and the Internet of Things (Raut et al. 2019) to mitigate manufacturing losses, plant shutdowns, and economic downturn. These strategies contribute to improving operating efficiency in the short term and strengthening their supply chains in the long term to cope with the post-COVID-19 pandemic conditions.

Furthermore, it is not possible to incorporate all factors into solutions that assist decision-makers in focusing on solutions that give the best results. This factor increases the likelihood of effective relationships and sustainability. In this critical situation, a supply chain that focuses on cooperation with suppliers, resiliency, robustness, and innovative data analytics for value addition is more efficient. To succeed and thrive in a post-pandemic situation, FMCGs businesses must find their way to the digital transformation of supply chain practices.

Second, attention should be paid to sign legislation to decision-makers and specialists to build up their short- and long-term activities to create an SSC. SSCs must adjust strategies accordingly as the social climate, and environmental circumstances change in most countries, such as Pakistan and India, where the

living process is constrained. As the pandemic spreads worldwide, the transformation of a new supply chain environment for online shopping, click and collect, contactless distribution services, and increased product segment intake. As a result, order fulfillment at the customer's doorstep is becoming more attractive to shoppers who want to avoid crowds, long lines, and security concerns. "Resiliency, robustness, and new data analytics for value addition" are at the top of the priority list of solutions. As a result, industries should insist on these characteristics to increase their supply chain's performance and long-term viability. Supply chains of FMCGs businesses should concentrate on resiliency and viability in a "modern standard" situation, transitioning into a digital industry to provide social and economic benefits to society and

turning into a network platform for positive impact. The COVID-19 pandemic catalyzes the creation of resilient, secure supply chains that can respond to any crisis. The study offers FMCGs insights into developing new strategies based on changing consumer trends and personality traits that would be successful in post-COVID-19 pandemic scenarios, including evolving consumer interest in social media platforms, inventory management, regular sanitization, and social media distancing, and employee knowledge of sanitation and social safety precautions. To cope with these problems, businesses spread workforce awareness activities on health and sanitation through many networking channels. The supply chain's approach to teamwork, resilience, order fulfillment, and data mining to survive in the COVID-19 pandemic is critical ■

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CÁC YẾU TỐ ẢNH HƯỞNG ĐẾN QUẢN LÝ CHUỖI CUNG ỨNG BỀN VỮNG VÀ HÀM Ý ĐỐI VỚI CÁC NƯỚC ĐANG PHÁT TRIỂN TRONG GIAI ĐOẠN HẬU ĐẠI DỊCH COVI-19

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ABSTRACT:

Các yếu tố thành công then chốt (CSFs) cho phép thực hiện thành công việc quản lý chuỗi cung ứng bền vững (SSCM) trong các đơn vị, tổ chức. Nghiên cứu này nhằm xác định các yếu tố ảnh hưởng đến khả năng tồn tại của chuỗi cung ứng bền vững (SSCS) trong và sau đại dịch COVID-19. Nghiên cứu này tập trung vào các yếu tố quan trọng cần được xem xét để điều chỉnh các hoạt động của chuỗi cung ứng bền vững. Kết quả cho thấy khả năng tồn tại của mạng lưới chuỗi cung ứng là tiêu chí thiết yếu để quản lý mối quan hệ của nhà cung cấp và người mua, cũng như tối đa hóa SSCS trong và sau đại dịch COVID-19. Nghiên cứu này sẽ giúp các doanh nghiệp, nhà sản xuất và các bên liên quan khác tập trung vào các yếu tố được nghiên cứu để đạt được triển vọng tốt hơn.

Từ khóa: quản trị chuỗi cung ứng, bền vững, sau đại dịch Covid-19.