Enhancing supply resilience in the COVID-19 pandemic: a case study on beauty and personal care retailers

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Abstract

Purpose – The COVID-19 pandemic interrupts the supply chain of products around the world. The supply chains of beauty and personal care products in Bangladesh are also heavily interrupted during this pandemic. While these products are perceived as essential by mass people, retailers are struggling to get the supply of the products and maintain a smooth delivery to the people. Considering such facts, the purposes of the study are to identify how the supply of retailers of these products is interrupted and how they can overcome the interruptions to ensure supply resilience.

Design/methodology/approach – A case study method has been used in this study. The data has been collected through interviews from 16 retailers of beauty and personal care products.

Findings – The results show that the supply of retailers of beauty and personal care products is interrupted in several ways. These include product shortage, limited delivery service, interruption of supplier payment, limited credit facility and irregularity in product delivery. To minimize the impacts of the interruptions and enhance supply resilience, retailers can undertake several strategies including intensive interactions and developing cooperation with the distributors and manufacturers, ordering bulk quantity, formulating an adjusted credit ratio and focusing on product availability over brand preference.

Research limitations/implications – The context of this study is limited to the beauty and personal care products of Bangladesh. Further study can be conducted in other countries and also supply chains of other products to enhance the generalizability of the findings of this study.

Practical implications – Supply interruptions are identified, and strategies are suggested to ensure the supply resilience of retailers of beauty and personal care products. If proposed strategies are implemented by retailers of these products, supply interruptions can be minimized.

Originality/value – The study contributes to the knowledge of the retail supply chain during a pandemic. It also contributes to the supply management and resilience of retailers. As the context is a developing country, the study also contributes to the literature on developing countries.

Keywords Supply resilience, Beauty and personal care retailers, COVID-19, Supply chain interruptions

Paper type Research paper

1. Introduction

The COVID-19 outbreak has a substantial negative impact on both public health issues such as illness and mental well-being and other economic activities such as employment and flow of commercial supply chain. The pandemic affected operations of 9,038 companies out of the listed Fortune 1,000 companies (Fortune, 2020). Economic growth has also slowed down due to the pandemic (Chalabi, 2020; ILO, 2020). According to the World Bank, the global economy may contract 5.2% (World Bank, 2020). Policymakers of all over the world are trying to find solutions to minimize the impact on the economy and commercial supply chains. Academicians are also researching how to recover the loss that businesses and their supply chains are facing during the situation. This outbreak has impacted almost all the supply chains of the globe as many players are involved from various locations in a supply chain (Paul and Chowdhury, 2020a). Indeed, supply chains face many disruptions (Paul *et al.*, 2014a, 2015a; Pettit *et al.*, 2010). Managing these disruptions and ensuring resilience is important (Kahiluoto and Makinen, 2019) to gain competitive advantages (Kwak *et al.*, 2018). The current pandemic is extraordinary and breaks all the previous records in terms of the severity of a supply chain disruption on the operation (Ivanov, 2020a, b; Lin *et al.*, 2020). All the players in a supply chain are affected by this outbreak (Chowdhury *et al.*, 2020).

Retail supply chains are also severely affected by the current pandemic. However, so far, no research has focused on the retailers considering this COVID-19 outbreak. Given that retailers are the key partners in supply chain systems because of their direct involvement to meet the customer's demand (Sparks, 2010), many previous studies, such as (Salehi Sadghiani *et al.*, 2015), suggested considering disruptions in the retail chain. Due to the limited transportation, restrictions of the government and limited operations of the distributors and wholesalers, retailers are facing problems for procuring goods from their suppliers during the COVID-19 situation. Proper management of this supply to ensure resilience is important at this stage as general customers may panic if the products are not available. This is more important for beauty and personal care products as customers perceive these products as essential. For example, a study conducted by Masory (2019) found that 72% of respondents consider the beauty and personal care products as important to them. Here beauty and personal care products mean products that are consumed by an individual for personal health, hygiene or cosmetic reasons. Therefore, practitioners of retail stores need to think how they can make their supply resilient during a disruption. In order to assist retailers in this regard during the current COVID-19, in this study we want to seek the answer to the following two questions:

(1) What are the effects of the COVID-19 on the supply of beauty and personal care retailers?

(2) What strategies might be undertaken to improve supply resilience?

Exploring the answer to such questions is vital because the demand for essential products, including beauty and personal care products, has accelerated during the COVID-19 situation (Paul and Chowdhury, 2020a). Ivanov (2020b) also mentioned that demand for some essential products such as a mask, sanitizer had increased tremendously. Top executives of a well-reputed US retailer, Target, told that demand for essential products had increased by 50% in March (Hoek, 2020). In the COVID-19 situation, people use more beauty and personal care products than normal situation due to health issues. In this study, we have considered Bangladesh as the context of our investigation. Bangladesh, like other economies of the world, has been severely affected by this outbreak (Bhuiyan, 2020). For instance, ADB has an estimation that the economy of Bangladesh would contract by 1.1% (UNB, 2020). The study considers only small retailers. Abir (2019) noted that in Bangladesh, only 1% of retail stores are organized or big stores, while 99% are small retail stores. These unorganized stores are

denoted as mom and pop shop (Mudir Dokan) by him. Generally, in the south Asian countries including Bangladesh, people collect beauty and personal care products from their nearby small retailers. If the retailers do not get regular supply, it may create an unexpected situation for retailers as well as general people. By considering small retailers of Bangladesh as the subject, the findings of this study can serve as the guide for these huge number of retailers to manage their supply side to ensure supply resilience. The findings are expected to assist the retailers in obtaining the regular product from suppliers, thereby maintaining flawless product delivery to mass people. As such, it can assist general people to get their regular essential beauty and personal care products. The findings of this study also contribute to the literature of retail supply chain, which is currently scarce.

The remainder of the paper is organized as follows: Section 2 of our paper contains literature on supply resilience, pandemic outbreak and supply resilience and supply resilience in the retail supply chain. The research methodology is explained in Section 3. Section 4 contains the findings of the study. The implication is discussed in Section 5. Conclusion and future research directions are described in Section 6.

2. Literature review
In this section, we conducted a literature review on supply resilience, pandemic outbreak and supply resilience and supply resilience of the retail supply chain. Based on the findings of the current literature, we identified the knowledge gaps to highlight the contributions of this study.

2.1 Supply resilience
Disruptions in supply chains are inevitable (Paul *et al.*, 2014b, 2015b, 2017, 2018). When a disturbed or disrupted supply chain is capable of returning to its original state, it is called resilient (Pettit *et al.*, 2010). A resilient supply chain is capable of performing operation during an unprecedented event (Blackhurst *et al.*, 2011). Besides, it is also believed that resilience is also related to a system that assists supply chains to recover and come back to its previous state quickly (Mitroff and Alpasan, 2003). Christopher and Peck (2004) defined resilience as: "the ability of a system to return to its original state or move to a new, more desirable state after being disturbed." In general, if an enterprise can endure, adjust and grow in a turbulent environment, then we can consider that it is resilient (Fiksel, 2006). According to the same research (Fiksel, 2006), other characteristics of a resilient supply chain include efficiency, adaptability and cohesion. In order to help assessing supply chain disruptions for building a resilient supply chain, Ali and Nakade (2017) proposed a model for supply chain disruptions named as conditional value at risk (CVaR) model.

The two main approaches of maintaining resilience are proactive and reactive (Wielend and Wallenburg, 2013). Reduction of probability of risk events is proactive, but in reality, we have to face risks and disruptions (Fartaj *et al.*, 2019; Paul, 2015; Saha *et al.*, 2020). Moreover, only operational risks, which originate from internal problems, of supply chains can be controlled (Chowdhury *et al.*, 2016, 2019). However, disruptions originate from external sources (Ponomarov and Holcomb, 2009) and are uncontrollable (Paul *et al.*, 2016). These supply chain disruptions have negative impacts on performance of firms and overall chain resilience. Disruptions in the supply side of the supply chain have been increasing (Bahroun and Harbi, 2016; Gunasekaran *et al.*, 2015; Paul *et al.*, 2019b; Paul and Rahman, 2018a, b). Disruptions in supply happened by many hazards such as earthquakes, hurricanes and SARS (Wagner and Bode, 2006). Both natural and human-made (terrorist attack) calamities can be the reasons of supply disruption (Islam *et al.*, 2020; Paul *et al.*, 2019b; Tang, 2006; Wagner and Neshat, 2010).

2.2 Pandemic outbreak and supply resilience

A recent study (Hudecheck *et al.*, 2020) mentioned that more than 1,400 epidemics had occurred, which hampered business activities. Moreover, Blos and Wee (2020) added two risks, rainfall and viral epidemics, in the supply chain vulnerability map (SCVMII). This clearly outlines the criticality of considering the impacts of epidemic outbreaks in supply chain resilience strategies. The recent COVID-19 outbreak further stresses the researchers to investigate supply chain resilience considering epidemic and pandemic outbreaks (Paul and Chowdhury, 2020a). While supply of all firms including small firms is affected by the current pandemic, currently, there are no clear guidelines for the manager of small firms. Holding cash for 1–3 months, finding options for relaxation of instalment of the loan, holding buffer stock, relation with key suppliers were suggested for SMEs (Hudecheck *et al.*, 2020). Ivanov (2020a) treated pandemic as an outstanding risk of supply chains. This pandemic causes disruptions in the long run, ripple effect and uncertainty to supply chains. The findings of Ivanov (2020a) help forecasting and making a plan for supply chains during a pandemic. Another study (Koonin, 2020) also suggested that an organization should plan for its customers, community, crew and continuity of business during a pandemic.

Dual disruptions are created during the current pandemic; one is demand variation, another is supply variation (Paul and Chowdhury, 2020a; Ivanov, 2020b and Koonin, 2020). It is also warned that the impact of the COVID-19 pandemic is long-lasting. Risks diminish value creation in a supply chain (Bogataj and Bogataj, 2007). Given that all the supply chains have been disrupted during COVID-19 (Paul and Chowdhury, 2020b), formulation of resilience strategies is essential to help the organization to overcome the supply chain disruptions (Ambulkar *et al.*, 2014). Due to new experiences, decision-makers would face challenges in recovery planning (Paul and Chowdhury, 2020a). Moreover, most of the literature on epidemics and pandemics emphasized on humanitarian logistics and ignored commercial organizations (Paul and Chowdhury, 2020a; Ivanov, 2020a). However, the impacts of such epidemics and pandemics are severe on commercial supply chains (Laing, 2020). It also heavily shakes the supply chain of the retail stores. Hence, the study aims at providing strategies to make the retailers' supply resilient.

2.3 Supply resilience in retail supply chain

A retailer generally has direct linkages with three supply chain members such as wholesalers, distribution centers and customers and indirect linkages with manufacturers and their suppliers (Ge *et al.*, 2019). Retailers are a crucial part of the supply chain (Fleisch and Tellkamp, 2005) because of their proximity to customers (Wang and Liu, 2007). It is clear that COVID-19 affects all supply chain partners including manufacturers, retailers, wholesalers (Sharma *et al.*, 2020). The panic buying of essential products by the end customers leads to disruption to supply chains (Yuen *et al.*, 2020) and creates demand-side shocks (Hobbs, 2020). Retailers as well as other members of supply chains are struggling hard to meet consumers' needs (De Sousa Jabbour *et al.*, 2020). While retailers have faced panic buying from consumers, they have faced disruptions in product supply from the companies during the current pandemic (Kumar *et al.*, 2020). Kumar *et al.* (2020) pointed out 12 challenges confronted by retailers, such as lack of balance in supply and demand, lack of access, lack of viability, communication issues and provided guidelines to overcome the challenges. Generally, retailers source products from the wholesalers and distributors. High dependency on these suppliers is the main reason for the disruption in retailers (Gupta *et al.*, 2020). Accordingly, Yu and Aviso (2020) emphasized the importance of finding better approaches to mitigate the effects of a pandemic.

Considering the importance of a resilient retail supply chain, this study aims to find out whether the retailer faces any sourcing problem during the pandemic and to suggest some

strategies to overcome the problems. We have considered the retail supply chain of beauty and personal care products in Bangladesh. Disruptions at the retail point are denoted as downstream disruptions (Sarkar and Kumar, 2015). Disruptions in the supply chain during COVID-19, manufacturing firms are highlighted in previous studies (Paul and Chowdhury, 2020a, b). However, no study considered the supply disruptions of retailers. Moreover, to date, no study has considered the context of beauty and personal care supply chains. We argue that managing disruption in this sector is important as some of these products are essential. The effects of unpredicted disruptions on supply side of retailers can be mitigated by implementing appropriate supply resilience strategies (Golan *et al.*, 2020). Therefore, the context of the study, exploring the effect of COVID-19 and providing supply resilience strategies for the retailers, seems appropriate and timely.

3. Methodology

The study adopts a case study methodology in obtaining and analyzing the data. The main reason for adopting a case-study-based methodology is that an in-depth and exploratory investigation is needed in this study (Yin, 2009). A case study research generally provides in-depth understandings of a topic that is less explored in the literature (Eisenhardt, 1989). Given that there are inadequate studies in the literature to answer the questions of how retailers' supply management is interrupted during a pandemic and how they can make their supply resilient, in-depth exploration is required to achieve the objectives of this study. Therefore, the case study research seems most appropriate for this study. The details of data collection and analysis are explained in the following subsection.

3.1 Data collection method

Semistructured and in-depth interviews, which are a qualitative approach, are used in this study for data collection. Managers of the retail store are the main respondents of interview questions. However, all the respondents are also the owners of the retail stores. This is very usual in a developing country like Bangladesh where owners manage their stores. We have collected the data from 16 retail firms, one respondent from each firm, where each retail firm is considered as a case. In a case-study-based research, 16 cases are considered sufficient to understand the phenomena under investigation (Yin, 2009). The 16 retail cases are selected from four divisions, namely Khulna, Barishal, Dhaka and Chittagong, to remove the location biasness. The cases are selected based on their retail locations to cover four out of eight divisions of Bangladesh and retail business experience (at least eight years to ensure the respondents are knowledgeable to answer the questions). The participating retail stores of this study have only 1–3 employees that denotes that they all are small firms. The year of experience of managing retail stores varies from 8 to 22 years for our respondents. Thus, they are knowledgeable enough to answer the questions of this study. All the respondents are involved in handling product supply. The duration of each interview is from 25 to 30 min to get a desirable understanding. Physical visit to the retail store has been done to collect the data and some interactions took place outside the retail store. The lead author of this study conducted the interviews. Before the interviews, all the respondents were well informed about the research objectives of the project to avoid any sort of misunderstanding while conducting the interviews. The interview was short but enough and comprehensive to satisfy our objectives. The detailed profile of the cases and respondents is given in Table 1.

3.2 Research context

The beauty and personal care market of Bangladesh is dominated by multinational companies such as Unilever Bangladesh Limited (Ltd), Reckitt Benckiser Bangladesh Ltd

and Marico Bangladesh Ltd. However, local companies provide limited similar kinds of products, and some importers import some other global brands of beauty and personal care and sell it in the local market (Huda and Sultan, 2013). Beauty and personal care products also come in different segments such as oral care, baby and child-specific products, fragrances, skincare or sun care specifically targeted for both male and female. Just only facewash product market is estimated to be 30.76m $ by 2024 in Bangladesh and has seen a growth of 4.5% in every year (Mordor Intelligence LLP 2019). According to Bangladesh Cosmetics and Toiletries Manufacturer Association (BCTMA) (2019), almost half a million people are associated with this industry and annual turnover reached 150bn in that year. According to the Global Islamic Economy Report (2017), Bangladesh spends more money on beauty and personal care products. Beauty and personal care products have emerged as an essential product for Bangladeshi people, thus whenever the supply chain is disrupted due to any reason, it eventually affects all the stakeholders including mass people. Maintaining a smooth resilient supply chain is why necessary most. The market related to beauty and personal care products is quite sensitive because of its nature of products. Being a developing and densely populated country, Bangladesh is a large potential market for personal and beauty care products. Hence, the context of Bangladeshi personal and beauty care products poses an ideal platform to conduct this research.

3.3 Data analysis
The study systematically analyzed the data by categorizing and comparing the interviews (Signori *et al.*, 2015). We have used within the case and cross-case analysis to investigate the phenomenon from a different perspective (Eisenhardt, 1989). To present the findings, we have used verbatim quotes, which reflect transparency and reliability (Yin, 2009). The quotes are used here to justify the effects and resilience strategies obtained via interviews.

4. Findings and discussion
This section presents the findings of the study. The findings are presented in two subsections: how the supply of retailers of beauty and personal care products is interrupted during COVID-19 and potential strategies to improve the supply resilience.

Case	Respondents	Position of interviewee	Experience (in years) of the interviewee	Employee size
Case A	R1	Owner and Manager	18	2
Case B	R2	Owner and Manager	8	2
Case C	R3	Owner and Manager	14	3
Case D	R4	Owner and Manager	16	2
Case E	R5	Owner and Manager	12	2
Case F	R6	Owner and Manager	18	1
Case G	R7	Owner and Manager	18	2
Case H	R8	Owner and Manager	17	2
Case I	R9	Owner and Manager	16	3
Case J	R10	Owner and Manager	20	2
Case K	R11	Owner and Manager	21	2
Case L	R12	Owner and Manager	22	1
Case M	R13	Owner and Manager	8	2
Case N	R14	Owner and Manager	15	2
Case O	R15	Owner and Manager	10	2
Case P	R16	Owner and Manager	12	2

Table 1.
Profile of the case respondents

4.1 Supply interruption of beauty and personal care products of retailers
This study investigates how the supply of the retailers of beauty and personal care products is interrupted during the COVID-19. As the retailer is the last person in the supply chain who deals with the ultimate customers, their supply disruption causes a huge impact on society.

Product shortage is found to be one of the main interruptions that have an impact during the COVID-19 on the supply of beauty and personal care products. The radical upstream demand for soap and liquid handwash cannot be fulfilled by the current capacity of the company, which leads to the product shortage. For example, one of the respondents, R5, mentioned, "we could not get all the SKU (Stock Keeping Unit) available at a time in the same delivery during the crisis period." Sometimes, it is found that the big retailers take more products during the delivery, which causes the product shortage to the small retailer. One of the respondents, R15 stated, "most of the time the retailer with small, ordered quantity could not get their product because of the additional requirement by the big retailer during the delivery period." The respondents identify irregularity in delivery, which is another concern that interrupts the supply. The government restricts the vehicle movement during the early stage of COVID-19 in Bangladesh. It leads to irregularity in delivery to the retailer. For instance, R4 stated, "as per government restriction, vehicle movement during the crisis period is limited. As a result, we could not get the delivery in scheduled date." In the same vine, R2 mentioned, "we could not get delivery in schedule date as per the government restriction during the crisis period."

Generally, retailers get their delivery of the products in front of their retail stores but during the crisis period, they can hardly get the delivery service in their retail stores. R7 mentioned, "we used to get the delivery service in front of our retail in a normal period but now the roads are blocked by the fence for limiting vehicle movement during the crisis period. We have to go to the wholesalers to receive the product." Sometimes, retailers need to visit the distributor to get the products to fulfill their short SKU. In this case, they use their vehicle or rented vehicle and use an alternative route for getting delivery of their own cost. For example, R12 stated, "we could not get the proper delivery service during the crisis period because of limited vehicle movement. Sometimes, we go to the distributor for products." Interruption of the payment to the supplier is found to be another reason that interrupts the supply. Usually, every retailer has a certain amount for purchasing a product for a certain period. Due to the irregularity in delivery time, sometimes retailers spend the allocated money on one product to buy another one. This is mainly because once they get the delivery of a product, they tend to buy more quantity. For example, R16 stated, "every retailer has a budget for a particular product, if the delivery could not arrive on the scheduled date, then it is difficult to maintain on-time payment." Besides, R10 mentioned, "being uncertain of the delivery during the crisis period, we cannot take the required product by giving cash on time." The respondent mentioned that the final supply disruption of beauty and personal care retailers is the limited credit service. Most of the retailers generally get the credit facility from distributors depending on the relationship as well as sales volume. Unfortunately, this credit facility from the distributor is not visible during this crisis period. R14 mentioned, "we get credit facility from distributor during the normal period but now the distributor does the cash business because of high demand for beauty and personal care products during the crisis period." In the same vein, R13 stated, "the distributors claim that they could not get credit facility from the company during the crisis period, so they are not able to give any credit facility to us." Table 2 summarizes the supply interruptions of retailers of beauty and personal care products:

4.2 Strategies to improve the supply resilience
The study not only investigates the supply disruption of retailers of beauty and personal care but also explores the strategies to tackle or minimize the disruption. Although the strategies

cannot remove the interruption but can enhance the resilience capabilities to the changing environment. The strategies are linked with each of the supply disruption reasons that interrupt the supply of beauty and personal care retailers. The strategies that are found from the interviews to improve supply resilience of retailers are discussed in details with pointwise:

4.2.1 Focus on product availability rather than brand. The respondents suggest that during such a crisis period, they focus on the product availability, rather than brand, to minimize the product shortage. Their opinion is that no customer will be returned in case of product shortage, they try to push alternative brand to meet the needs in this crisis period. For example, R5 stated, "we have found that the majority of customers are searching for the generic product rather than brand during the crisis period. So, we focus on making the product available in our retail rather than brand preference." In the same vein, R12 said, "we believe if we have available stock of whatever brand, none of the customers will return from our retail." This finding suggests that retailers always want to maximize product availability to enhance the better shopping experience of consumers (Alexander *et al.*, 2002). Retailers prefer to store similar types of products of the different brands so that they can offer those products to the customer rather than losing the customer by telling about the unavailability of products. One of the cornerstones of a successful retailer is to make a good product available in the retail store (Alexander *et al.*, 2002). The findings of this study also suggest that retailers need to put more emphasis on product availability and not to stick to one brand only (Steinhart *et al.*, 2013). May be form different brands but ensuring product readiness for the customer is the main priority.

4.2.2 Develop cooperation. To avoid limited delivery service and interruption of supplier payment, retailers feel that developing strong cooperation with the distributor and company personnel is important. For example, R9 mentioned, "we have a good relationship with the company personnel as well as distributors. When they need to fulfill their monthly target, we help them. In the same way, company personnel also take care of us regarding our product requirement and other trade facilities if they have." Besides, R11 stated, "relation is the key factor to solve any problem. We develop cooperation from the beginning of the business." This strategy suggests that the cooperation between the retailer and company personnel or other stakeholders related to product delivery is highly needed to face the supply challenges. The frameworks of cooperation and social capital theory also suggest to develop cooperation among the members (Sharma and Yetton, 1996). Effective cooperation means all parties are working for mutual benefits and agreeing on helping each other. Sharing information, assisting during the times of product shortage, prioritizing specific retailers while delivering products are the result of cooperation (Chowdhury *et al.*, 2019).

4.2.3 Order bulk quantity. The discussion with the retailers reveals that ordering bulk quantity is effective to minimize the product shortage. The extra quantity of products will minimize the risk whenever there is an irregularity of product delivery. For example, R8 mentioned, "it is very difficult to get all SKU at the same time, so, it is a wise decision to order the bulk quantity on the available SKU." Sometimes, small retailers cannot get their required

Interruptions	Case															
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Product shortage (F1)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Irregularity product delivery (F2)	*	*	*		*	*	*		*	*			*	*		*
Limited delivery service (F3)	*	*	*	*	*		*		*	*	*			*	*	*
Interruption of supplier payment (F4)	*		*	*	*		*	*	*	*	*		*	*	*	*
Limited credit facility (F5)	*	*	*		*	*	*		*	*		*	*		*	*

Table 2.
Supply interruptions of retailers of beauty and personal care products

product because of the additional requirement by big retail stores. To avoid this problem, the small retailers can order bulk quantity instead of giving orders two or three times in the same week or month. For example, R6 mentioned, "to avoid the delivery uncertainty, the small retail can give a bulk order at a time in the same week/ month rather than giving 2/3 times order in the same week/ month." In general, retailers have a targeted sales volume of products for each day and according to that they order the products in every two- or three-day intervals. Now while global pandemic hits the supply chain, the frequency of delivery becomes uncertain. Most of the time the retailer cannot get all SKU at a time. As a result, most of the respondents focus on ordering bulk quantity of the SKU that are available. A big quantity or bulk order also helps to get few other benefits including a permission for delayed payment (Yang, 2020).

4.2.4 Develop a mutual cash and credit ratio. Retailers focus on developing a mutual cash and credit ratio to avoid the limited credit facility problem. For instance, R8 mentioned, "we sit with the distributor to give a proposal of 60 percent cash and 40 percent credit ratio to survive during the crisis period." In the same vein, R4 stated, "we believe the cooperation can solve the problem. We will discuss and decide the cash and credit ratio with our suppliers." By fixing the ratio retailers believe that they can get many advantages and solve the problems related to liquidity crisis. All the supply chain partners including manufacturers and distributors are severely affected by the coronavirus pandemic. As a result, the distributor cannot give 100% credit facility like previous practice. In this regard, such a cash and credit ration can be effective to minimize the problem (Acharya *et al.*, 2013). This finding suggests that as the problem of credit facility increases, the trade-off between cash and credit lines becomes more important (Acharya *et al.*, 2013).

4.2.5 Intensive interaction. The study also reveals that retailers focus on intensive interaction to avoid the irregular delivery. For example, R3 stated, "we have a regular touch with company personnel over the phone regarding the delivery details which minimize the communication gap between us." In the same vein, R1 mentioned, "we have the contact number of the person who is responsible for delivery. Sometimes, they call us one day before the delivery which helps us to take preparation." Interaction can take place through a mobile phone or on any social media platform (Hewett and Nind, 2013). Interaction between retailers and company personnel is inevitable for doing business. When the interaction becomes intensive, frequent and social, it helps to build a personal relationship (Chowdhury *et al.*, 2019).

The aforementioned strategies are implemented by the respondents of this study. They believe that these strategies are effective for enhancing the supply resilience by minimizing the effects of the COVID-19 pandemic on the supply of beauty and personal care products.

5. Managerial implications
The COVID-19 pandemic is responsible for many difficulties in retail supply chains (Bryce *et al.*, 2020) especially when the normal business mechanism is behaving unusual (Barua, 2020) and restrictions are imposed to vehicles mobility and also people's movement (Budd and Ison, 2020). Being focused on beauty and personal care products, adaptable strategies are taken to ensure product availability from the retailer's end. Understandings of disruption caused in the supply of retailers are crucial as without such knowledge effective strategies cannot be formulated to improve supply resilience during the COVID-19. Indeed, understandings of effects in a comprehensive manner is helpful for managerial decision making (Dwivedi *et al.*, 2019; Moktadir *et al.*, 2020). This study explores and explains how the supply of beauty and personal care retailers is disrupted and put together five strategies for managers to ensure uninterrupted product flow for the business. The main lessons from the findings of this study are discussed as follows.

(1) Managers of retail stores need to focus on different brand products rather than depending on one single brand to guarantee its supply of products. Customers are adjusting their habit of using product regarding any specific brands. Retailers must store similar kinds of products of different brands so that when one manufacturing company fails to deliver products then, retailers can sell other brands' products and meet customer demand, which will minimize the supply risk of retailers to a great extent.

(2) Managers of retail stores need to follow a cooperative approach with the company personal, which can be one of the finest ways for retailers to face the current stagnant of product supply and find a viable solution for themselves. Both helping each other to fulfill their target, making future promises to look after each other, giving business advantages and coming forward when one faces difficulties to run the business operation are vital to make a successful collaboration between them. When collaboration is there, it seems easy to cope during a major supply chain interruption.

(3) Managers can order bulk quantity or order more volume than before as a safeguard to deal with the shortage of products during this crisis period. Retailers can follow this approach to improve the service level. Whenever one or two delivery misses by the company personnel, it will work as a safety stock and will not affect the product supply of the firms (Darom *et al.*, 2018; Zsidisin, 2003).

(4) Managers of the retail stores need to adapt a new ratio of credit or cash facility to overcome the problem of credit facility. Retailers generally receive the credit facility from the suppliers. However, the current pandemic situation is not ideal for this facility as all partners are in trouble. A new credit ration facility will assist to survive this turmoil situation and reduce the risk associated with the retailer's supply.

(5) Managers should develop an effective relationship and maintain frequent interaction with the individual who is responsible for delivering the product. It helps managers to know about the product information beforehand. This assists retailers to prepare for any kind of situation proactively. Managers can communicate with company personnel through social media or mobile phones. Moreover, interactions can take place face to face by following the COVID-19 social distancing rules. Managers can do some chats with the delivery person in retailers' shops or any other local shop by which useful information can be exchanged.

This global pandemic is the reason why many challenges and businesses are facing new kinds of supply risks to ensure their products in-store. The reasons found in this paper are the general problems faced by most retailers who are dealing with beauty and personal care products. The strategies formulated against the supply problems are important for managers to deal with the current situation and enhance the supply resilience in their firms.

6. Conclusion and future research directions

A resilient supply is the precondition of maintaining smooth and uninterrupted product flow from manufacturer to retailers. Global pandemic like the COVID-19 disrupts the current supply management of companies and retailers and their regular operations (Ivanov, 2020a, b). This study reveals five main effects of the COVID-19 pandemic in supply of beauty and personal care products. These include product shortage, delivery irregularity, limited services than before, supplier payment difficulties and the limited credit facility. The study also suggests some strategies to ensure supply resilience, which are focusing on various brands, developing cooperation, ordering bulk quantity, developing a credit and cash ratio and maintaining intensive interaction.

By exploring how the supply of retailers is interrupted and how retailers can manage the interruption to ensure supply resiliency, this study contributes to the knowledge of the retail supply chain during a pandemic. Such knowledge is a novel contribution of this study. Moreover, studies on the supply management of retailers are currently limited. On the other hand, many studies can be found in the supply management of manufacturers (Chowdhury et al., 2019; Yeung, 2008). This study also contributes to the supply management and resilience of retailers. Moreover, enhancing supply chain resilience in the COVID-19 situation by taking proper strategies can contribute to the survival of the retailers. As the context is a developing country, the study has also contributed to the literature on developing counties. Currently, literature on supply chain and operations management in the context of developing counties is limited (Karuppiah et al., 2020; Tumpa et al., 2019).

While the paper contributes substantially, it also has some limitations. The research context is limited to a small area. Since this is a qualitative study, some issues such as validity and generalizability are the limitations of the study (Yin, 2009). The paper is based on the interviews of the retailers of beauty and personal care products. As supply interruption can vary from one product category to another product category, future studies could potentially explore the supply resilience of retailers of other products. Moreover, a future study using a mass scale survey could be undertaken to enhance the generalizability of the findings of our study. A future study could also analyze and rank the disruptions factors and resilience strategies, found in this study, using a multicriteria decision making (MCDM) tool. MCDM is a useful tool for decision-making (Chowdhury and Paul, 2020; Moktadir et al., 2020); hence, such as study can substantially contribute to the managerial decision-making. The geographical context of research can also be shifted in future studies, that is, taking a developed country context and comparing its outputs with our findings to portray the differences between different contexts. From the comparison, maybe new strategies can be found to handle the situation more effectively.

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Appendix
Interview Protocol

Opening

Thank you so much for your valuable time. First, I would like to briefly explain the project to you. The broad objectives of this project are two: (1) to understand the effect of the COVID-19 on the supply of beauty and personal care retailers; and (2) to explore the strategies that can be undertaken to improve the supply resilience.

You are selected because you manage a retail store of beauty and personal care products. The anonymity and confidentiality of your response will be strictly maintained. You also can withdraw from this project anytime without explaining the reasons.

Interview questions

(1) How long have you been in the retail business?

(2) How many employees do you have in your firm?

(3) How does COVID-19 affect your supply of beauty and personal care products?

(4) What strategies have you implemented to improve your supply resilience?

(5) What other strategies could be undertaken in this situation?

Floating Prompts
Can you please explain in detail about this?
   That is very thoughtful; can you please continue to explain for better understanding?
   Can you please give any practical example to understand the incident to a broader extent?

Closing
Thank you very much for your interactive participation. We will give you a copy if you want for future reference. It would be appreciable if you call me for any queries.

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