

Surviving the hectic early phase of the COVID-19 pandemic: a qualitative study to the supply chain strategies of food service firms in times of a crisis

Surviving the
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pandemic

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Received 11 January 2021
Revised 6 August 2021
21 October 2021
Accepted 15 November 2021

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Abstract

Purpose – The COVID-19 pandemic and the subsequent lockdown have hit the food service industry very hard. The COVID-19 outbreak has created a sharp downturn for firms in the food service industry, compelling actors across the whole food service supply chain to rethink their strategies. The purpose of this paper is to document the impact of COVID-19 on the food service supply chain, as well as to identify crisis management strategies food service firms use during the hectic early phase of the COVID-19 pandemic to survive the current and prepare for future pandemics.

Design/methodology/approach – We performed a qualitative descriptive study using 21 semi-structured interviews with actors across the food service supply chain (i.e. farmers, wholesalers and food service providers). Data were collected to shed light on food service firms' decision making during the hectic early phase of the COVID-19 pandemic to uncover various crisis management strategies used.

Findings – By integrating the disaster and crisis pyramid and resilience theory, four core crisis management strategies to respond to the COVID-19 pandemic are conceptualized, i.e. (1) managing resources, (2) diversifying strategically, (3) prioritizing long-term outcomes and (4) bonding socially.

Originality/value – The theoretical contributions include documenting the performance impact of the COVID-19 pandemic on the food service supply chain and exploring crisis management strategies food service firms employed during the hectic early phase of the COVID-19 pandemic. Thus, functioning and survival during a pandemic, an emerging field in literature, are central to this study. Additionally, while recent research suggests that integrating crisis management and resilience literature may provide a more complete understanding of the organization–crisis relationship, these literature streams mainly developed in isolation. By integrating the literature streams of crisis management and resilience and applying these theories to the COVID-19 crisis, our study provides specific managerial guidelines.

Keywords Food service supply chain, COVID-19, Crisis, Resilience, Crisis management strategies, Resource management, Diversification, Collaboration, Communication

Paper type Research paper

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This paper forms part of a special section “Operational excellence in the supply chain of perishables at the time of the outbreak”, guest edited by Sachin Kumar Mangla, Gunjan Soni, Michael Bourlakis and Vikas Kumar.



1. Introduction

The novel coronavirus COVID-19 has shocked the world. The COVID-19 pandemic is first and foremost a human tragedy and has a growing impact on the global economy (Craven *et al.*, 2020). As countries were placed under lockdown in the early stages of the pandemic, COVID-19 had a profound impact on many service industries (Williams and Kayaoglu, 2020). Although lockdown measures varied across countries, they all have one thing in common: the food service industry, a \$3.5 trillion industry (Lock, 2021), was hit very hard (Bowen-Ashwin, 2020; Felix *et al.*, 2020; Hinchliffe, 2020; Suneson, 2020).

The impact of the lockdown was felt not just by food service providers, but also their upstream partners in the supply chain, i.e. wholesalers and farmers (Felix *et al.*, 2020) [1 and 2]. The revenue losses that food service providers, such as restaurants and cafes, suffered during the lockdown were immense with the industry witnessing monthly losses of, on average, \$40 billion in the US, \$50 billion in China, \$3 billion in UK, between €2 to €4 billion in the major economies in Europe and \$4 billion in India (Garnett *et al.*, 2020; Garrett Peel, 2020; Huang, 2020; McCarthy, 2020; Vishal, 2020). The COVID-19 crisis also left actors along the food service supply chain in a state of disarray [1 and 2]. In the early stages of the pandemic, suppliers such as farmers and wholesalers in the United States incurred, on average, monthly losses of \$14 billion, while in the EU the monthly losses varied from €400 to €900 million across different countries (Garrett Peel, 2020; Schnepf and Monke, 2020). Unfortunately, the economic hardships caused by the pandemic will endure for a few years, especially since intermittent lockdowns have resumed and are expected to continue (Kissler *et al.*, 2020; Oliver, 2020). Hence urgent managerial guidance is needed by different actors within the food service supply chain to overcome the crisis triggered by the COVID-19 pandemic (Pedersen and Ritter, 2020).

The objective of our paper is to document the impact of the COVID-19 crisis on the performance of food service firms and to identify crisis management strategies these firms employ to combat the crisis. Specifically, our research seeks to address two research questions. First, what is the impact of the COVID-19 pandemic on the daily business of food service supply chain actors? Second, what crisis management strategies do food service firms employ in the hectic early phase of the COVID-19 pandemic? Since previous research on supply chain disruptions suggests that firms need to focus on their supplier and customer base to combat these disruptions (Akkermans and van Wassenhove, 2018), we examine, in addressing our research questions, the food service firms' decision making during the early phase of the COVID-19 pandemic across different actors within the food service supply chain. Focusing on the hectic early phase of the pandemic is crucial, as it sets the stage for how business-to-business (B2B) relationships between the channel partners will evolve in later stages of the crisis (Sneader and Sternfels, 2020). We use 21 semi-structured interviews with farmers, wholesalers and food service providers, collected in April 2020, and explore a variety of crisis management strategies to respond to COVID-19.

We contribute to the fast-growing literature on the impact of the COVID-19 pandemic and literature on crisis management. First, due to the exponential effects of the COVID-19 pandemic on industry and everyday life, it has top of mind priority for academics, practitioners and policymakers (Verma and Gustafsson, 2020; Wen *et al.*, 2021). This has led to the pursuit of many diverse research streams related to the COVID-19 crisis, with research on the service industry emerging as one of the core topics (Verma and Gustafsson, 2020). However, much of the emerging literature in this research area focuses on the tourism industry (e.g. Foinas and Metaxas, 2020; Williams, 2021), educational institutes (e.g. Crawford *et al.*, 2020; Williamson *et al.*, 2020) and essential services (e.g. Abu-Rayash and Dincer, 2020; Al-Jabir *et al.*, 2020). Academic papers that concentrate on the food service industry during the COVID-19 pandemic are increasing in number, but mainly focus on demand-side shocks such as panic buying or hoarding (e.g. Addo *et al.*, 2020; Hobbs, 2020),

supply-side shocks including labor shortages and disruptions to transportation networks (e.g. [Hobbs, 2020](#)), long-run changes in the industry like the growth of the online grocery delivery sector and the emerging market demand for local foods (e.g. [Dannenberg et al., 2020](#); [Hobbs, 2020](#); [Thilmany et al., 2021](#)), and social problems such as food insecurity and food waste (e.g. [Hobbs, 2020](#); [Huizar et al., 2021](#); [Kumar et al., 2021](#)). Only a few studies have been conducted on the impact of the COVID-19 pandemic on strategic management of firms, making it difficult for managers within food service firms to decide on tactical initiatives and long-term strategies that guide them to embrace the disruption within the firm and the supply chain and meet the inherent challenges they face ([Ali et al., 2021](#); [Bhattacharyya and Thakre, 2021](#); [Ivanov, 2021](#); [Pedersen et al., 2020](#)). By studying what crisis management strategies food service firms across the supply chain employ in the hectic early phase of the COVID-19 pandemic, our study contributes to this emerging field.

Second, the COVID-19 pandemic is labeled as a crisis ([Cortez and Johnston, 2020](#)) which threatens firms' continued functioning and performance ([Tasic et al., 2020](#)). While researchers from different disciplines (e.g. organizational research, logistics, marketing) devote attention to crisis management to minimize the damage a crisis causes and to increase chances of survival, its field is still in its infancy and requires better understanding of the theoretical mechanisms at work ([Bundy et al., 2017](#)). To this end, recent research suggests that linking the crisis management literature with the resilience literature may provide a more complete understanding of the organization-crisis relationship ([Tasic et al., 2020](#); [Williams et al., 2017](#)). Indeed, a crisis should be considered as a complex phenomenon that requires firms to develop certain organizational resilience capabilities and inherent crisis management skills ([Koronis and Ponis, 2018](#)). To unravel the complex web of interactions among different actors within the food service supply chain, we draw upon the disaster and crisis pyramid developed by [Richey \(2009\)](#) and theory on resilience (e.g. [Christopher and Peck, 2004](#); [Jüttner and Maklan, 2011](#); [Scholten and Schilder, 2015](#)). By doing this, we answer the call put forward by [Williams et al. \(2017\)](#) on how firms should design resilient systems to overcome surprises (like the COVID-19 pandemic) in an effective way. Our findings allow us to derive practical guidelines.

The rest of the paper is organized as follows. First, by using literature on crisis management and resilience, we provide the theoretical background of our paper. Subsequently, we present our research context and explicate our qualitative research methodology, which is used to address the research questions. This is followed by a discussion of the results. Finally, we synthesize the findings across the interviews to derive clear and sound managerial implications for actors within the food service supply chain and conclude our paper.

2. Theoretical background

Supply chain management research is increasingly focusing on supply chains in times of crisis ([Richey, 2009](#)). A crisis is defined in a variety of ways and is frequently used interchangeably with the notion of threat or adversity ([Dutton, 1986](#), p. 502). While there is a lack of clarity on what a crisis constitutes, a crisis can be seen as a composite concept that shares six characteristics: (1) rare, (2) significant, (3) high impact, (4) ambiguous, (5) urgent and (6) involve high stakes ([James et al., 2011](#); [Zamoum and Gorpe, 2018](#)). There are many potential sources for a crisis, both internal and external ([Akkermans and van Wassenhove, 2018](#)). The COVID-19 pandemic can be classified as an external crisis ([Khojasteh, 2018](#)). Moreover, a crisis can occur within a firm, a supply chain or network, or even within an entire industry ([Laws and Prideaux, 2005](#)). In line with the study of [Akkermans and van Wassenhove \(2018\)](#), who study supply chain tsunamis, our study focuses on the supply chain and, thus, takes the firm and its associated supplier and customer base as the key unit of analysis.

2.1 Why the COVID-19 pandemic is a unique crisis

The outbreak and global spread of COVID-19 took the world by storm. However, this abruptness does not make the COVID-19 crisis unique. Rather, the COVID-19 is classified as a black swan or low probability high impact event (Cortez and Johnston, 2020; Verma and Gustafsson, 2020) because of its biological hazard and its unprecedented global scope (Cortez and Johnston, 2020). The crisis span is unknown, governments play a big role and firms lack a clear protocol to manage the COVID-19 crisis (Cortez and Johnston, 2020).

The spread of COVID-19 has an unprecedented impact on all food markets (Richards and Rickard, 2020). The containment measures during the COVID-19 pandemic cause missing links in the food supply chain, which under normal circumstances flow from farm to fork. The magnitude of the COVID-19 crisis reveals the fragility of the food service supply chain, which provides a rare opportunity for researchers to explore this supply chain and its crisis management in real time (cf. Mollenkopf *et al.*, 2021). While it is difficult to predict exactly what might happen in the food service supply chain after the COVID-19 crisis, according to Deloitte, one lesson is crystal clear: “Companies need to use the momentum of the outbreak as an opportunity to re-design their supply chain with future resilience in mind.” [3].

2.2 Supply chain disaster and crisis pyramid

Crisis management is defined as “a set of factors designed to combat crises and to lessen the actual damage inflicted” by a crisis (Coombs, 2015, p. 5). It involves four interrelated factors, i.e. prevention, preparation, response and revision (Coombs, 2015), which are incorporated in two fundamental phases that literature on crisis management identifies: (1) pre-crisis stage in which firms proactively detect the crisis before it happens (i.e. signal detection, preparation, prevention) and (2) post-crisis stage in which firms reactively repair the after effects of the crisis (i.e. damage containment, recovery and learning) (Chowdhury and Quaddus, 2016; Pearson and Mitroff, 1993; Pedersen *et al.*, 2020). Sheffi and Rice (2005) divide supply chain disruptions, which can be caused by a crisis, into three phases by dividing the post-crisis stage into responsiveness (throughout the crisis) and recovery (after the crisis). To empirically explore the implications of COVID-19 to the supply chain, we build on the supply chain disaster and crisis pyramid (DCP) developed by Richey (2009), which helps understanding the readiness and recovery abilities of firms that are facing a crisis (see Figure 1). The framework is based on four

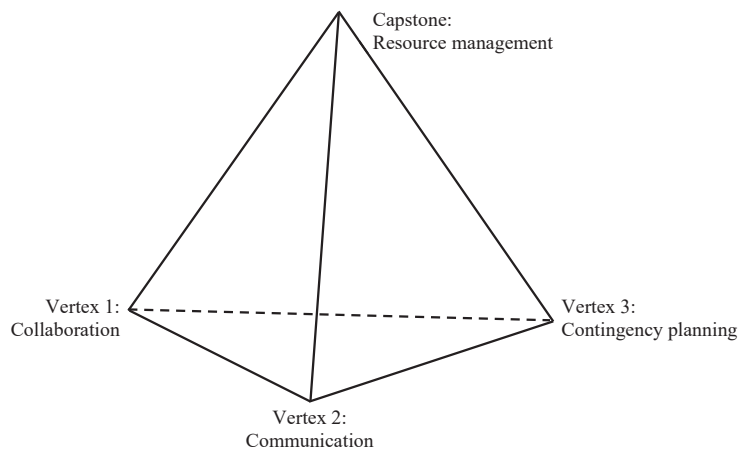


Figure 1.
Disaster and crisis
pyramid

Source(s): Richey, 2009

mature theoretical perspectives: the resource-based view (RBV) of the firm, communication theory, competing values theory and relationship management theory. The capstone of the disaster and crisis pyramid is resource management. The three vertices are collaboration, communication and contingency planning (Richey, 2009).

2.2.1 DCP capstone. Resources play a vital role within firms and supply chains (Richey, 2009). First, supply chains facing a crisis need to correctly manage their available resources (e.g. human, financial) to mitigate the negative effects of the crisis. Specifically, firms need to be able to reconfigure, realign and reorganize their resources in response to a crisis (Ambulkar *et al.*, 2015; Kumar *et al.*, 2021). Second, resource slack is posited to affect crisis management (Modi and Mishra, 2011). Particularly firms with lower resource slack are less likely to adapt to environmental challenges (Abernathy, 1978), such as the COVID-19 pandemic. Finally, as firms across the supply chain focus on their core competencies, they are often forced to become more dependent on their partners (Richey, 2009). This suggests that, in times of a crisis, resource dependency cannot be ignored. However, only a few scholars have considered the role of resource dependence in crisis situations (Bundy *et al.*, 2017). Two theoretical dimensions of resource dependence are power imbalance and mutual interdependence (Casciaro and Piskorski, 2005; Su *et al.*, 2014), leading to a focus on control, power and vulnerability (Bode *et al.*, 2011).

Bode *et al.* (2011) examine how firms respond to supply chain disruptions, which can be due to a crisis, and identify two coping strategies, i.e. buffering and bridging. Buffering is external to the focal relationship between two actors within a supply chain, because it is focused on reducing dependency (Bode *et al.*, 2011; Su *et al.*, 2014). Su *et al.* (2014) distinguish between exploitative buffering and explorative buffering. While the focus of exploitative buffering strategies is on reducing the importance of specific supply chain partners by improving efficiency and cutting costs, the focus of explorative buffering strategies is on gaining business from alternative supply chain partners or new markets (Garnett *et al.*, 2020; Su *et al.*, 2014) for which service innovation is crucial (Senbeto and Hon, 2020). Bridging is internal to the focal relationship between two actors within a supply chain and is an effort of one supply chain partner to increase power by directing resources in a way to control or coordinate another supply chain partner (Bode *et al.*, 2011; Su *et al.*, 2014).

2.2.2 DCP vertices. Because multiple actors within the supply chain are affected by a crisis, collaboration is the first important vertex of the DCP (Richey, 2009). Richey (2009, p. 623) states that in times of a crisis, “collaboration will likely be the glue that holds organizations together.” Collaboration refers to interdependent relationships in which firms strive for mutually beneficial outcomes (Jap, 2001) and touches upon different aspects of relationships between supply chain actors, including trust, commitment, loyalty, opportunism and long-term orientation (Richey, 2009). In line with the study of Estrada-Guillén *et al.* (2020), it is likely that supply chain actors have to use their emotional intelligence to be able to monitor one’s own and the other’s feelings and use this information to guide decision making. Not only functional engagement (e.g. concentrating efforts on supply chain processes) but also emotional aspects (i.e. intangible, emotional elements of doing business with each other) are important because it will foster relationship quality (Estrada-Guillén *et al.*, 2020).

Communication is the second vertex of the DCP, because supply chain disruptions demand effective communication (Richey, 2009). Communication includes the formal and informal exchange of information between actors within a supply chain (Hung and Lin, 2013) and lies at the heart of relationship development (Hung and Lin, 2013; Trada and Goyal, 2020). Communication is critical for maintaining value-enhancing relationships within supply chains (Trada and Goyal, 2020), which are essential when facing a crisis. Mohr and Nevin (1990) state that a communication strategy consists of frequency (i.e. the amount of contact between actors within the supply chain), bidirectionality (i.e. one vs two-way exchange of information), modality (i.e. formal versus informal exchange of information, regularity) and

content (i.e. meaningful, timely information). With regards to content, [Sheng et al. \(2006\)](#) and [Trada and Goyal \(2020\)](#) make a distinction between instrumental communication (i.e. exchange of information that is directly related to the operations of the supply chain) and social communication (i.e. sharing of personal, non-work related information between actors within a supply chain).

The final vertex of the DCP is contingency planning. Competing values theory is used as the grounding theory for supply chain disaster and crisis research ([Richey, 2009](#)). Actors within a supply chain have both joint and conflicting strategic goals, and their own strategy, leadership style and cultural positions to reach these goals. At least two factors will affect the supply chain's ability to mitigate the negative consequences of a crisis ([Richey, 2009](#)). First, adaptability should be valued over stability. Second, the supply chain partners should prioritize an internal orientation that emphasizes integration rather than an external orientation that focuses on rivalry.

2.3 Supply chain resilience

Because of the unique nature of the COVID-19 pandemic, firms were unprepared ([Cortez and Johnston, 2020](#)). As the Food and Agriculture Organization of the United Nations (FAO) states in their report ([Cullen, 2020](#)): "The world was awfully unprepared for the pandemic." Without having the benefits of preparing for the crisis in the first phase (i.e. pre-crisis stage), firms directly enter the second phase (i.e. post-crisis stage). Consequently, firms have to rely on their response abilities to mitigate the impact of the crisis. The COVID-19 pandemic serves as a clear warning. It is impossible to predict how or when a crisis will hit. As a result, supply chain resilience is receiving increasingly more attention ([Birkie and Trucco, 2020](#); [Datta, 2017](#); [Gölgeci and Kuivalainen, 2020](#); [Scholten and Schilder, 2015](#)). Hence, we extend the DCP framework by including resilient supply chain characteristics.

Supply chain resilience is a proactive, holistic approach that develops the capacity to prepare and adapt in response to unforeseeable disruptions ([Chowdhury and Quaddus, 2016](#); [Scholten and Schilder, 2015](#); [Sembeto and Hon, 2020](#)), such as the COVID-19 pandemic. Enhancing resilience involves the reduction of uncertainty and vulnerabilities ([Datta, 2017](#)). [Ambulkar et al. \(2015\)](#) define resilience as "the capability of the firm to be alert to, adapt to, and quickly respond to changes brought by a supply chain disruption" (p. 112). Adaptability is key because the desired state after the crisis is different from the original, pre-crisis state ([Christopher and Peck, 2004](#); [Ponomarov and Holcomb, 2009](#)). This also makes supply chain resilience more than a reactively deployed capability. Indeed, supply chain resilience enables the actors within the supply chain to resist difficulties but also to gain an advantage from the disruption by moving to a new, more desirable state after being disturbed ([Gölgeci and Kuivalainen, 2020](#); [Jüttner and Maklan, 2011](#)).

To organize our discussion on resilient supply chain characteristics, we use the well-accepted framework of [Jüttner and Maklan \(2011\)](#), who discuss four different characteristics of resilient supply chains: (1) flexibility, (2) velocity, (3) visibility and (4) collaboration. Flexibility enables firms to deal with high levels of uncertainty ([Scholten and Schilder, 2015](#)) and ensures that firms effectively respond to changes caused by a crisis ([Jüttner and Maklan, 2011](#)). While flexibility places a strong emphasis on effectiveness, velocity focuses on the need for efficiency ([Christopher and Peck, 2004](#); [Jüttner and Maklan, 2011](#); [Scholten and Schilder, 2015](#)). Higher supply chain velocity refers to a faster pace of implementing flexible adaptations and determines the speed a supply chain is able to recover from a crisis ([Jüttner and Maklan, 2011](#)). Visibility reflects timely access to and sharing of information that is of key importance throughout the supply chain ([Christopher and Peck, 2004](#); [Jüttner and Maklan, 2011](#); [Scholten and Schilder, 2015](#)). Because supply chain resilience is a supply chain-wide construct, multiple actors are involved making supply chain collaboration important ([Christopher and Peck, 2004](#); [Datta, 2017](#); [Jüttner and Maklan, 2011](#); [Kumar et al., 2021](#);

Scholten and Schilder, 2015). Collaboration can take different forms, including information-sharing, goal congruence, joint decision-making, resources-sharing, incentive alignment, collaborative communication and joint knowledge creation (Cao *et al.*, 2010; Kumar *et al.*, 2021; Scholten and Schilder, 2015).

3. Methodology

3.1 Research context

To address this study's objective, and answer the two main research questions, we use data from the food service industry. In particular, the food service supply chain that is central to our study consists of the following actors: farmers, wholesalers and food service providers. We chose this context for several reasons. First, panic-buying and fear of contagion are driving many consumers to make use of (online) food delivery services during the COVID-19 crisis (Dishman, 2020; Southey, 2020). While this increased popularity may boost consumer acquisition and reorder rates, it also implies changes to the B2B relationships within the food service supply chain. Second, the business of food service is very dynamic which drives industry growth. The food service industry accounts for a substantial portion of the world economy (\$3.5 trillion in 2020) and is forecasted to grow to \$4.2 trillion in 2027 (Lock, 2021), but is one of the hardest hit by the COVID-19 pandemic (Hinchliffe, 2020; Suneson, 2020).

3.2 Research design

We adopted a qualitative approach. This approach suits the purpose of our study because our study concentrates on the supply chain as the key unit of analysis, focusing on the various actors within the chain, as well as the complex web of interactions between them (Jaspers, 2007). For analyzing qualitative data, inductive and deductive approaches could be used. These two approaches are positioned on a continuum (Kennedy and Thornberg, 2018), ranging from starting with collecting data and discovering patterns and themes and deriving theoretical concepts from these data (inductive) to beginning with a compelling theory and using the theoretical knowledge to interpret and analyze the qualitative data (deductive) (Kennedy and Thornberg, 2018). In line with previous qualitative work that uses a more theory-driven (deductive) approach to understand phenomena (e.g. Crabtree and Miller, 1992; Jaspers, 2007; Jiang *et al.*, 2016; Xu, 2018), including the COVID-19 pandemic (e.g. Do *et al.*, 2021; Kumari *et al.*, 2021), we adopt a deductive approach. Specifically, we adopt theories on crisis management and resilience as an analytical lens when analyzing the qualitative data but simultaneously we stay open for the data to discover new themes (cf. Kennedy and Thornberg, 2018). By taking this approach, we are able to understand the "what" and the "how" nature of a phenomenon (Kennedy and Thornberg, 2018), which matches our research aim to obtain deeper insights into what the consequences of the COVID-19 pandemic and the resulting lockdown measures are for the food service supply chain and how the different actors within the food service supply chain respond to the crisis.

3.3 Data collection

Semi-structured interviews are used to collect data from different actors within the food service supply chain. We relied on the DCP and resilience theories to develop a template (see Appendix) that we based our semi-structured interviews on (Crabtree and Miller, 1992; Jiang *et al.*, 2016). The interviews commenced with introductory background questions (e.g. the respondent's function within the firm, working experience), also serving as an icebreaker. Then, the interviews proceed by asking questions on the main topics of interest, which are explicated in the semi-structured interview guide (see Appendix). Each topic is discussed based on an opening question, main questions, follow-up questions and probes. To exemplify,

when discussing the topic “communication”, respondents were first asked to comment on their opinion on the role of communication, in its broadest sense, during the early phase of the COVID-19 pandemic. Then main questions are used to direct respondents to the relevant aspects of communication (e.g. frequency, content). For example, we asked respondents their opinion on how the COVID-19 outbreak affected the frequency of communication with up- and downstream supply chain partners. Follow-up questions and probes were used to request clarification of respondents’ statements and to move to a deeper level of discussion (Galetta, 2013).

3.4 Sampling

To match the sample to the objectives of our research, we recruit interviewees by applying a purposive (stratified) sampling strategy (Palinkas *et al.*, 2015), focusing on food service firms in developed countries. The sample is stratified by the position the respondent has within the food service supply chain. Specifically, we assured to include responses from different actors within the food service supply chain, ranging from upstream (i.e. farmers) to downstream actors (i.e. wholesalers, food service providers). The search for interviewees started with an existing contact we had with a food service provider (FSP2). This food service provider gave a clear overview of the (main) actors within the food service supply chain. Based on this knowledge, the researchers leveraged other existing contacts within the food service industry. Moreover, an Internet search is done to identify other prospects and, subsequently, the prospected supply chain actors were contacted by phone to invite them to participate in the study. The selection of the interviewees was based on their position in the food service supply chain (i.e. farmers, wholesalers and food service providers), the size of the firm (ranging from small players in the supply chain to market leaders) and the main activities and focus of the firm (ranging from specialized firms (e.g. meat, fruit, vegetables) to diversified firms). These selection criteria were set to ensure that our sample covers a broad spectrum of the food service supply chain and, thus, provides us the most valuable insights regarding the functioning of food service firms during COVID-19 and their crisis management strategies employed for surviving the hectic early phase of the pandemic. Key informants were selected based on their position within the firm, i.e. CEO, director or account manager. All interviews are conducted in April 2020, either face-to-face or by phone.

The study is based on a sample of 21 semi-structured interviews across the food service supply chain, which is considered acceptable for this type of research (Palinkas *et al.*, 2015). Interviews, during the lockdown, were conducted with farmers ($n = 8$), wholesalers ($n = 9$) and food service providers ($n = 4$). The sample size is unequally distributed among the different actors across the food service supply chain, which is caused by more in-group heterogeneity between farmers and wholesalers. Since farmers and wholesalers tend to specialize in one or a few products (e.g. farming pigs, asparagus or wholesaling meat, vegetables, respectively), the impact of COVID-19 varies. Hence, to get the entire picture, we interviewed more farmers and wholesalers. Table 1 shows an overview of the interviewees and selected firm characteristics.

Please note that the interviewed firms are unrelated to each other. A notable exception is WS8, a market leader in its country, which is a (partly) supplier of fruit and vegetables for all food service providers in our sample.

3.5 Data analysis

Because the semi-structured interviews can be viewed as multiple case studies, we made a write-up of every case which serves as a base for our further analysis (Eisenhardt, 1989). We validated that the write-ups were an accurate reflection of the interviews by giving interviewees the opportunity to comment on them. We then use a deductive template analysis

Firm ¹	Supply chain position	Firm size (# of employees)	Interviewee's position	Years of sector-specific experience	Sales impact ²
F1	Farmer (pig meat)	3	CEO	>10 years	0
F2	Farmer (asparagus)	60	CEO	>10 years	0
F3	Farmer (cow meat)	4	CEO	>10 years	-95%
F4	Farmer (vegetables)	4	CEO	<5 years	+25%
F5	Farmer (vegetables and fruit)	1	CEO	>10 years	-100%
F6	Farmer (cow meat)	2	CEO	>10 years	-40%
F7	Farmer (artichoke)	1	CEO	>10 years	-80%
F8	Farmer (vegetables)	1	CEO	>10 years	0
WS1	Wholesaler (vegetables and fruit)	150	Manager communication	>10 years	-95%
WS2	Wholesaler (meat)	9	CEO	>10 years	-85%
WS3	Wholesaler (vegetables and fruit)	300	Account manager	>10 years	-85%
WS4	Wholesaler (meat)	4	CEO	>10 years	-80%
WS5	Wholesaler (vegetables and fruit)	17	Workfloor manager	>10 years	-80%
WS6	Wholesaler (pastry)	1	CEO	<5 years	-100%
WS7	Wholesaler (meat)	17	CEO	>10 years	-85%
WS8	Wholesaler (omnipresent)	1,700	Head of communication	>10 years	-70%
WS9	Wholesaler (vegetables and fruit)	35	CEO	5-10 years	-80%
FSP1	Food service (online food delivery)	65	CEO	>10 years	+25%
FSP2	Food service (online food delivery/ lunchroom)	35	CEO	5-10 years	-40%
FSP3	Food service (catering/ restaurant)	125	CEO	>10 years	-100%
FSP4	Food service (restaurant)	10	CEO	5-10 years	-100%

Note(s): ¹ Firm identity disguised for confidential reasons

² The presented sales figures were provided by the interviewees during the interviews

F = farmer; WS = wholesaler; FSP = food service provider

Table 1. Characteristics of interviewees and selected firm characteristics

and theory-driven coding (Boyatzis, 1998; Crabtree and Miller, 1992; Jiang *et al.*, 2016; Xu, 2018). Subsequently, we use pattern matching to connect codes and identify themes in the data (Hyde, 2000). In particular, to organize the interview data in a meaningful and useful manner, the data were initially coded according to the themes that correspond to the main questions of the interview. These *a priori* codes, which are expected to be highly relevant to the current analysis, are modified if they did not prove to be useful or appropriate to the actual data. To exemplify, for the code flexibility, which is defined as the firm's ability to deal with high levels of uncertainty (Scholten and Schilder, 2015), we merged different subcodes as these reflect the broader theme of flexibility. While WS5 literally speaks about flexibility: "Next to creativity, *flexibility* is important as restaurants prefer to order per day and would like to avoid high levels of stock," WS6 also refers to flexibility but uses the term adaptation: "I have seen my *adaptation* level being reinforced, to be able to search for new alternatives and solutions overcoming any difficulties." WS8 introduces another term to show the need for flexibility: "If you want to move forward, you need high levels of *maneuverability* and be

entrepreneurial.” These illustrative quotes have in common that they pertain to flexibility and are coded as such. Moreover, new themes are defined to be able to include all available data in our template. After careful consideration of each transcript, and after all transcripts had been coded, we reached a consensus on the final template. This template served as the basis for the interpretation of the data and writing up of our findings.

4. Results

The findings below are based on the insights from the semi-structured interviews. First, we document the impact of the COVID-19 pandemic on the daily business of food service supply chain actors. Second, based on the identified themes, we discuss different crisis management strategies that food service supply chain actors employ to survive the hectic early phase of the COVID-19 pandemic. Finally, we elaborate on lessons learned by the different actors within the food service supply chain.

4.1 The impact of COVID-19 on daily business

The food service industry has been hit hard by the COVID-19 pandemic and the resulting lockdown measures taken to contain its spread. All interviewees agree on the disastrous impact of the COVID-19 crisis on the food service supply chain. As highlighted by one of the interviewees: “To me, this whole situation with the COVID-19 crisis feels like a war situation, in which you are forced to shut down and there is nothing you can do.” (FSP4).

While COVID-19 strains the food service supply chain as a whole, individual actors report different performance implications. While some actors report negative consequences (sales drops ranging from 40 to 100%), other actors do not see much change or even gain business (up to 25%) during the crisis (see Table 1). The main cause of these divergent performance implications lies in the actors’ position in the chain. If the customer base mainly consists of food service providers, the more negative the impact of the crisis: “The hardest lockdown measure was that all restaurants and commercial activities had to radically be shut down. I experienced almost 100% of losses since that day, the worst I have experienced in my whole life.” (F5) If the customer base includes parties that deliver to the grocery retail sector (e.g. slaughterhouses), buying associations that deliver directly to end consumers, or end consumers, actors are more positively impacted by the crisis: “Sales to supermarkets have more than doubled in comparison to the normal situation.” (F2).

We find support for the positive effect in secondary data obtained from an online food delivery service provider, whose business is affected by lockdown measures. As the firm’s customer base mainly consists of end customers, and the firm thus relies on business-to-consumer (B2C) relationships, they report a 25% growth in sales: from 305 orders per day before the crisis to 379 orders per day during the crisis, where we define the start of the crisis as the moment the government installed the lockdown. Interestingly, new customers are different from the existent customer base, which implies that new customer segments arise (i.e. more customer heterogeneity). This growth can be explained by the closure of restaurants which force consumers to consume their meals at home. Consequently, sales of food service providers such as restaurants are redistributed to other channel partners, effectively indicated in the following quote: “People’s need for food will stay; if people cannot visit restaurants, they will consume more at their homes, which is beneficial for supermarkets.” (F1).

Next to the varying degrees of financial pain for food service firms, the COVID-19 pandemic has a drastic impact on the operations of food service firms. Two consequences of the COVID-19 pandemic are noteworthy. First, the COVID-19 pandemic forces firms to shed labor and cut wages. As one interviewee notes: “Recently, I hired two new employees, but due

to the crisis I had to let them go.” (F5) While national governments try to limit rises in unemployment by providing subsidies to food service firms for covering the costs of reducing employees’ working hours (e.g. furloughing employees), interviewees are not confident about the long-term potential of this solution: “A lot of employees are at home. Because the government provides subsidy to cover (part of) the wage costs of these temporarily laid off employees, we do not need to fire these employees. However, this situation cannot last for a long time.” (FSP3) Second, the COVID-19 pandemic leads to changes in the food production and consumption systems. The lockdown measures imposed by national governments force consumers to in-home consumption of food, which severely affects the food service supply chain. To exemplify, a wholesaler of meat indicates that “because of COVID-19, cows are not effectively utilized for meat anymore because, due to restaurants being shut, wholesalers are reluctant to order meat, implying that slaughterers are not able to sell high-quality meat.” (WS7) This disruption of the supply chain could imply food loss and waste. As another example, due to the high uncertainty created by COVID-19, supply chain actors are facing problems in decision making regarding production planning: “Farmers have to decide now on how many calves to breed; if wrong decisions are made (due to uncertainty), we face the risk of having a shortage of meat later this year.” (WS7).

Regardless of whether supply chain actors report negative or positive performance implications on daily business, all supply chain actors agree that action needs to be taken to ensure the food service industry survives the crisis.

4.2 Crisis management strategies to respond to a crisis

Based on the interviews, we identify four core crisis management strategies that food service firms employ to respond to the COVID-19 pandemic. The key strategies along with their frequency of occurrence (expressed in percentages) are presented in [Table 2](#).

First, resource management is crucial. In particular, our results underscore the value of resource slack (rather than resource efficiency). Resource slack enables supply chain actors to survive an extended period without any or only some income. Moreover, it provides firms time to adapt to the crisis: “It surely is a financial story. You need a financial buffer, otherwise it is difficult to survive these times.” (FSP1) Supply chain actors who are not harmed or even benefit from the crisis do not care as much about resource slack but indicate that they are in need of other resources. An often-mentioned resource is the availability of personnel: “What is important now is that we have more land and personnel available, so we can actually benefit from the increase in demand.” (F4) This is in sharp contrast with other supply chain actors, who face a redundancy of manpower: “95% of our 150 employees are currently at home.” (WS1).

Theme	Items (frequency)
Resource management	Resource slack (88%) Other resources (80%)
Resource dependency	Reorganize available resources (67%) Explorative buffering strategy (67%) Continue explorative buffering strategy in the future (64%)
Collaboration	Glue (76%) Long-term orientation: Joint goal of survival (67%) Presence of power difference (19%)
Effective communication	Frequency (67%) Social communication content (52%) Initiator communication (67%)

Table 2.
Key findings in terms
of crisis management
strategies

Further, supply chain actors agree that they should be able to reorganize their available resources in response to the crisis, which comes down to flexibility. In this regard, the interviewees point to different possibilities. For example, with respect to food service providers, a restaurant owner indicates that personnel (i.e. human resource) is used for other tasks, such as cleaning activities: "Because our personnel are available, we give them other tasks than they are used to. As a result, our restaurants have never been as clean and well maintained as they are now." (FSP3) As another example, one interviewee indicates using the crisis as a time to invest financial resources into making the firm's processes more efficient: "As it is not busy, we have decided to automate the kitchen so that we can benefit from improved efficiency when the crisis is over." (FSP1) Reorganizing available resources is also considered important by the other actors within the food service supply chain. One wholesaler states: "Now that we started to deliver to consumers instead of businesses, our personnel from the warehouse also has to deliver the meat to the homes of consumers." (WS5) and a farmer indicates: "We now sell barbecue packages directly to consumers, which implies that someone has to schedule when consumers can pick up the packages at the company and serve the customer. As a result, this person is unable to perform his or her core task." (F3) Rather than shifting resources internally, supply chain actors also take an external perspective. One wholesaler indicates: "Logistics play a key role within our company but currently many of our trucks are not used, and truck drivers are redundant. Consequently, we decided to help local food banks with delivery and manpower (as they lack sufficient volunteers, typically older, more vulnerable people who stay at home during the pandemic)." (WS8).

The second core crisis management strategy is related to resource dependency. Based on the interviews, we conclude that most actors within the food service supply chain cope with the crisis by using an explorative buffering strategy. Indeed, many interviewees indicate exploring the possibilities for serving new markets: "We updated our Facebook page and did some advertising with the aim of selling directly to end consumers and delivering the meat to their homes." (WS5).

Interestingly, many actors throughout the whole food service supply chain choose to transition from a B2B to a B2C model. In other words, food service supply chain actors situated upstream in the supply chain increasingly sell directly to the end consumer. One wholesaler explains: "Because we are not able to deliver to restaurants, we decided to extend our opening hours of our stores for consumers with three days, now we are five days open instead of two days." (WS4) Directly selling to end consumers not only helps firms to cope with the current crisis. Supply chain actors expect that this strategy will help them prepare for the next crisis: "We intensified our online sales to consumers, and this is now growing rapidly. We really see the benefits of widening our scope of activities, which we will continue after the crisis, to be more secure." (WS2) There are two reasons a few actors explicitly argue against an explorative buffering strategy. First, these actors believe that a conflict of interest within the supply chain can arise by pursuing an explorative buffering strategy: "We do not want to deliver to the customers of our customers because this would lead to a bad working relationship with this supply chain partner once the crisis is over." (WS7) Second, these actors argue that an explorative buffering strategy will not last in the long run because it does not fit with their core business: "I think it is important to stay close to my core business; investments in non-core businesses will not last in the future, making it a waste of time and resources." (FSP4).

While the majority of the interviewed supply chain actors use an explorative buffering strategy, our data indicates that food service firms took a large array of measures to cut costs and improve efficiency, which are characteristic of exploitative activities and thus constitute the execution of exploitative buffering. Food service firms especially focus on product assortment strategies to cut costs and improve efficiency. Regarding assortment planning,

firms decide to offer a smaller assortment: “To save costs we had to shrink our assortment and customers could only order until 15:00 instead of 01:00.” (WS3) In addition, supply is more aligned with demand: “From offering a broad and deep assortment, we now order demand driven.” (WS1).

Collaboration is a third crisis management strategy that can be derived from our interviews. The results underscore the theoretical presumption that collaboration is the glue that holds organizations together in times of a crisis. Especially trust and loyalty are considered important aspects: “When collaborating, it is very important that you can build upon each other, so you can make plans together to adapt to the changed situation, now and in the future.” (WS4).

In addition, interviewees indicate that keeping a long-term orientation is important to survive a crisis, without room for power differences. Survival of the food service industry and the focal food service supply chain is of utmost importance: “I try to help restaurants deliver food to consumers’ homes. I provide this help to maintain a good relationship with them, even though it is more profitable to sell directly to consumers.” (F7) Some actors within the supply chain are helping chain partners for free, with the main goal of survival in mind: “We started several initiatives for free as we have resources available that other actors within the chain could use. Although we do not gain from these initiatives, we realize that we need to work together.” (WS8) Thus, actors within the supply chain realize that they should give priority to this joint goal of survival: “Our relationship within the chain has been strengthened in terms of values such as mutual support and joint commitment, reinforcing our belief that we should fight this crisis together.” (WS6) While most interviewees share this belief, few actors (all small in size) indicate they have the impression that bigger supply chain partners have taken advantage of their power. To illustrate, one of the interviewees indicates: “After the lockdown was imposed by the government, a large supermarket chain decided to not collect the calves, leaving me with all the risk. This was not as agreed in the contract.” (F6).

A fourth core crisis management strategy is effective communication. Due to the crisis, the majority of food service supply chain actors communicate less frequently: “Because business is hurt by the COVID-19 outbreak, there is less need to have contact with my suppliers and customers.” (WS2) Although the frequency of communication is low, the interviewees indicate that if communication takes place it is more social than instrumental in nature, which is highly appreciated: “We see that since the lockdown is in place that there is a more emotional, collaborative way of communicating.” (WS6) Further, interviewees notice that most of the time wholesalers initiate contact with their customers (i.e. food service providers) because wholesalers are highly dependent upon customers returning after the crisis: “We initiate contact with our customers by calling them all, as we value our current and future relationship with them.” (WS3).

While effective communication within the supply chain is crucial for surviving a crisis, internal communication could foster a healthy workplace in the long term and is, therefore, relevant as well when coping with a crisis, like the COVID-19 pandemic. Because the future is uncertain, employees are looking for safety and feel the need to stay connected with the firm. Targeted, personal messages ensure that the workforce stays connected: “Now that our employees are mainly at home, we send them cards to give them the feeling that they are valued, heard, and engaged.” (WS1) Career development could also be used to increase employee engagement: “To develop our employees’ capabilities, we offer employees the opportunity of taking online workshops.” (FSP4).

Typically, food service firms simultaneously use (a number of) these strategies rather than concentrating on one specific strategy. Therefore, based on our data, we may conclude that firms do not put all their eggs in one basket during a crisis like the COVID-19 pandemic. Further, we notice that seemingly similar supply chain actors cope differently with a crisis. To illustrate, two farmers in our sample share similar firm characteristics (F3 and F6),

i.e. small-sized companies involved in breeding cows for meat production, but they employ different crisis management strategies to respond to the COVID-19 pandemic. While F6 clearly indicates that he does not know how to transform his business and blames the government of not providing any help, F3 decided to create a web shop where he offers barbecue packages to end customers. Next to the web shop, he decided to start barbecue workshops and rent out his sheds for storage of caravans to attract new clientele. Thus, it seems that F3 possesses more entrepreneurial capabilities, such as persistence, creativity, risk taking and optimism. While it could be that F3, compared to F6, feels a more urgent need to take action because of the huge negative sales impact of COVID-19, being entrepreneurial is perceived as being crucial in surviving the COVID-19 pandemic by several of the interviewees.

4.3 Lessons learned

Many interviewees, throughout the whole food service supply chain, indicate that the main lesson learned is that they have to create a financial buffer. This buffer serves as a financial safety net to survive an extended period due to external circumstances, such as the lockdown measures to contain the spread of COVID-19. As one interviewee explained: “The one thing I have learned is that I want to have a financial buffer, so I can survive at least half a year without any sales.” (FSP4).

Further, some of the interviewees indicate they would like to exploit the possibilities offered by new technologies, such as ecommerce. By broadening their business scope, they hope to be better prepared for a crisis by being less vulnerable: “We build a digital platform for restaurants through which consumers can buy meal kits. We guide restaurants with a website and videos that show how consumers should prepare the food. We will continue this initiative after the crisis.” (FSP4).

While all interviewees are convinced that lessons should be learned from this crisis, more than 80% agree that the COVID-19 pandemic is a unique crisis with a world-wide impact that nobody was able to predict. This makes the interviewees feel helpless. They feel nothing can be done but wait until the crisis is over: “This crisis is something you could not anticipate on, there is not much you can do. So, we just have to wait for better times.” (WS9).

5. Discussion and implications

The COVID-19 coronavirus which swept through the world has changed the way we lead our lives and disrupted most industrial activity. This research shines a spotlight on a sector that is very essential in these times but is hard hit: the food service industry. Central to our study is the food service supply chain, which includes a variety of actors, i.e. farmers, wholesalers and food service providers. We investigate the impact of the COVID-19 pandemic on the food service industry and how the actors within the food service supply chain respond to the COVID-19 pandemic. We focus on the early stages of the crisis, as it sets the tone for how the B2B relationships between the different channel actors evolve.

We first highlight the performance consequences of the COVID-19 pandemic on the food service industry. Interestingly, while the majority of interviewees report substantial losses from 40 up to 100%, some interviewees benefit during the crisis (up to a 25% sales increase). In theory, this unbalanced profit distribution may lead to a shift in power and control and, moreover, will create tension and strain existing trust between supply chain partners (Das and Teng, 1998). However, from the interviews we conclude that rivalry (i.e. actor’s desire to improve its profit share) makes way for empathy. Indeed, regardless of the performance impact of the COVID-19 crisis, supply chain actors attempt to be altruistic, which results in the development of trust based on goodwill (Horak and Long, 2018).

Besides financial losses, also broader implications of the COVID-19 pandemic are reported. Concerning manpower, food service firms fear high unemployment rates. Unemployment harms the psychological, economic and social well-being of individuals and communities (Blustein *et al.*, 2020), which may have long-lasting consequences for the food service industry. Further, changes in the food production and consumption systems are indicated. Specifically, the rise of in-home consumption of food (and the decrease of out-of-home consumption) leads to operational problems in the food service supply chain, such as overproduction, which, in turn, may lead to food loss and waste.

Subsequently, we identify core crisis management strategies to respond to COVID-19 through the lens of two theories, i.e. crisis management and resilience. Crisis management and resilience efforts are highly interdependent and intertwined (Tasic *et al.*, 2020; Williams *et al.*, 2017). Indeed, crisis management and resilience adhere to the same challenge, i.e. the challenge of coping with a crisis (Williams *et al.*, 2017). In essence, a firm cannot be resilient without effective crisis management (Tasic *et al.*, 2020) but there is little integration across these literature streams (Williams *et al.*, 2017). By integrating the literature streams of crisis management and resilience, and applying these theories to the COVID-19 crisis, our study contributes to recent calls for research on how ordinary firms should become more resilient to overcome unexpected crisis situations in an effective way (Williams *et al.*, 2017).

In particular, we integrate the disaster and crisis pyramid developed by Richey (2009) and resilience theory (e.g. Christopher and Peck, 2004; Jüttner and Maklan, 2011; Scholten and Schilder, 2015). This integration of research streams enables us to conceptualize four core crisis management strategies to respond to a crisis, like the COVID-19 pandemic. Resource management plays a key role in the first two strategies. First, supply chain actors should strike a balance between being lean and being resilient. With the desire for leaner supply chains, firms focusing on cutting costs, strict selection between core and non-core activities, and waste reduction (Maslaric *et al.*, 2013) face higher vulnerability when a crisis occurs. That is why our results emphasize the value of resource slack, which provides firms a buffer against the negative impact of a crisis (Modi and Mishra, 2011). This finding underscores the assertion that integrating crisis management and resilience literature makes salient several theoretical mechanisms that they have in common (Williams *et al.*, 2017). Specifically, when facing a major disturbance like the COVID-19 crisis, resilience theory prescribes organizations to engage in flexible decision-making processes, and do so effectively (flexibility) and efficiently (velocity). Flexibility and velocity are enhanced by the availability of resources, a major theme within the crisis management literature. Indeed, when organizations have no resources available or are unable to immediately make time-sensitive decisions (i.e. changing organizational routines), organizational capabilities for adjustment and flexibility erode (Williams *et al.*, 2017). Second, supply chain actors should reduce their resource dependency. Our results show that firms prefer doing so by means of explorative buffering (Su *et al.*, 2014), and especially serving new markets, which is also known as diversification. While diversification may be beneficial for different reasons (e.g. larger target market, risk reduction due to a more diverse business portfolio, development of different capabilities), it may also lead to negative consequences as it increases operations costs as well as managerial and organizational complexity (Nath *et al.*, 2010). While the interviewed supply chain actors preferably use an explorative buffering strategy, food service firms also use exploitative buffering. To cut costs and improve efficiency, food service firms especially focus on product assortment strategies such as offering smaller assortments and better aligning supply and demand.

Both crisis management and resilience theory share common ground by considering collaboration important when a crisis occurs, and our results point to collaboration as a third crisis management strategy. Collaboration occurs when supply chain partners work closely together to create mutually beneficial outcomes (Jap, 2001). In line with theory, our results show that collaboration is perceived as the glue that holds organizations together

(Richey, 2009). The crisis makes firms realize that market pressures and marketplace dynamics (fostered by the COVID-19 pandemic) require a collaborative business model, which is defined as “a supply chain-wide systematic approach based on mutual trust and commitment, and a shared vision with joint goals and objectives” (Spekman and Carraway, 2006, p. 18). By envisioning the long-term goal of survival, the firms in our sample underscore the importance of a collaborative business model. Indeed, they are willing to work together with their supply chain partners to understand each other’s viewpoints by sharing information and resources in order to achieve joint goals (Skipper and Hanna, 2009). Additionally, the supply chain partners show empathy toward each other by pursuing both functional engagement and emotional intelligence (Estrada-Guillén *et al.*, 2020).

The fourth crisis management strategy we identify is effective communication. Again, the integration of crisis management and resilience theory makes salient the underlying theoretical mechanisms. Specifically, the visibility aspect of resilience theory is highly dependent on communication, the second vertex of the DCP. Indeed, organizations are only able to have timely access to required information and to share information with supply chain partners if the communication strategies of the different actors are aligned in terms of frequency, bidirectionality, modality and content. As prior literature indicates, communication may be instrumental and social in nature (Sheng *et al.*, 2006; Trada and Goyal, 2020). In times of crisis, supply chain actors embrace social communication that enhances personal ties and bonds. Stronger personal ties foster trust, thereby enabling them to manage a crisis more effectively (Trada and Goyal, 2020). In addition, social communication enables the supply chain to operate more cohesively in response to a crisis because it increases the likelihood that different actors within a supply chain work together to address different perspectives and adapt to crisis situations (Sheng *et al.*, 2006).

The effectiveness of the four strategies that our study conceptualizes, i.e. (1) managing resources, (2) diversifying strategically, (3) prioritizing long-term outcomes and (4) bonding socially, is highly dependent on the organizational resilience capabilities and inherent crisis management skills of food service firms. For example, concerning the management of resources, literature argues that adding redundancy (i.e. keeping resources in reserve) could be regarded as a capability to be more resilient (Sheffi and Rice, 2005). Building in flexibility requires firms to develop organic capabilities (Sheffi and Rice, 2005), such as resource reconfiguration (see, e.g. Parker and Ameen, 2018). When considering the strategy of strategic diversification, we speculate that firms are in need of entrepreneurial capabilities and skills, such as improvisation and bricolage. It enables firms to improvise and apply creativity in problem-solving (Duchek, 2020). For prioritizing long-term outcomes, we expect that the capability to develop and implement solutions is highly relevant, as developing solutions in times of a crisis require firms to combine sensemaking and acting (Duchek, 2020). Moreover, supply chain leadership capabilities, in which the overall performance of the supply chain network is central, are crucial (see, e.g. Shin and Park, 2021). To socially bond with supply chain actors, firms should effectively use their communication skills. In particular, in times of a crisis, the capability to frequently exchange timely, relevant and accurate information across the supply chain is crucial. While the objective of this study is to document the impact of COVID-19 on the food service supply chain, as well as crisis management strategies food service firms use during the hectic early phase of the COVID-19 pandemic, we urge researchers to identify and empirically assess which organizational resilience capabilities and inherent crisis management skills are needed to successfully employ the conceptualized crisis management strategies.

5.1 Managerial implications

Our findings give rise to four managerial implications that are relevant not just during the early stages of the COVID-19 crisis but also for its later stages, as it threatens to rumble on for a few years.

- (1) *Strike a balance between being lean and resilient.* While having excess resources is seen as a form of waste, in times of crisis it provides firms with a financial buffer. Firms that have a strong financial situation are not only able to rely on their financial safety net but can also undertake long-pending organizational makeovers. For instance, periods of lockdown may provide firms with the opportunity to revisit old processes (e.g. IT systems, personnel, physical refurbishment) and to streamline them.
- (2) *Diversify, but only if you can maintain it in the long run.* Diversification, by means of serving new markets, may be a worthwhile strategy to pursue during a crisis. It helps firms in generating some income, when “normal” sales have dropped extensively. However, in developing and actively pursuing a diversification strategy, firms should realize that it could lead to internal (e.g. complexity, resource allocation) and external (e.g. taking business away from supply chain partners) frictions.
- (3) *Prioritize long-term relationships and industry survival over short-term gains.* A crisis always leads to winners and losers, firms that benefit and firms that suffer. Winners are likely to benefit more from building long-term relationships with their less fortunate counterparts by showing empathy rather than maximizing personal gain. Empathy can manifest itself in flexibility (e.g. send same-day payments or allow later payments), sharing of resources (e.g. financial or non-financial support) and social communication (e.g. show concern for well-being of supply chain partners). This will help in accomplishing the joint goal of industry survival.
- (4) *While social distancing is central to this crisis, continue social bonding.* Many people are stuck at home due to periods of lockdown, which imply that firms’ employees mainly work from home. While many firms take initiatives to let their employees connect while they work from home, much less attention is paid to their supply chain partners. However, when faced with a crisis, firms are encouraged to utilize the crisis as an opportunity to socially bond with their supply chain partners. Eventually this leads to the creation of supply chain-wide activities where openness and trust are key.

5.2 Limitations and future research directions

This paper provides valuable insights into crisis management strategies of supply chain actors in response to a crisis like the COVID-19 pandemic. We expect that the identified crisis management strategies, based on how B2B relationships evolved at the early stages of the crisis, are relevant and applicable at later stages of the crisis as well. However, as the crisis unfolds and goes through different stages, measures taken to contain the pandemic, such as restriction of movement, might impact the individual supply chain actors and the relationships between the actors. Literature shows, for example, that the pandemic and the governmental measures have led to mental health issues as well as political polarization (Green *et al.*, 2020; Jiang *et al.*, 2020; Pfefferbaum and North, 2020). Our study is unable to account for the impact of these issues on the relationships between the channel actors. Future research could investigate how these factors impact the crisis management strategies we propose. For example, can social communication have an enduring effect on supplier–buyer collaboration, or do mental health and weariness issues hinder this form of communication? To what extent does the polarized political landscape impact the altruistic behavior of actors in the supply chain in that do they continue to place the interests of the collective ahead of their own?

5.3 Conclusion

If the COVID-19 crisis has shown us anything, it is how complicated supply chain operations and relationships have become. This paper focuses on the food service industry to study what

the consequences of the pandemic and the initial set of lockdown measures were for the food service supply chain, and how the different actors within the food service supply chain responded in the hectic early stages of the crisis. We derive many actionable insights that farmers, wholesalers and food service providers can use to survive the ongoing crisis, but which can also provide valuable lessons for other service industries.

Notes

1. <https://www2.deloitte.com/nl/nl/pages/consumer/articles/food-covid-19-and-the-food-industry.html>
2. <http://www.oecd.org/coronavirus/policy-responses/food-supply-chains-and-covid-19-impacts-and-policy-lessons-71b57aea/>
3. <https://www2.deloitte.com/nl/nl/pages/consumer/articles/food-covid-19-reshaping-supply-chains.html>

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Table A1.
Semi-structured
interview guide

Research issues	Sub-issues
General information	<ul style="list-style-type: none"> - Firm's role in the food service supply chain - Interviewees' function within the company - Interviewees' experience within the food service industry
Main consequences DCP	<ul style="list-style-type: none"> - Consequences of COVID-19 pandemic on daily business - Noticeable changes over time - Resource management (i.e. necessity or redundancy of human, financial, informational, technological, physical resources) - Collaboration (i.e. commitment, trust, loyalty, opportunism, long-term orientation, relationship magnitude) - Communication (i.e. frequency, directionality, modality, content) - Contingency planning (i.e. joint versus conflicting strategic goals)
Resilience	<ul style="list-style-type: none"> - Flexibility (i.e. internal adaptability, supply chain adaptability) - Velocity (i.e. speed of making decisions within the firm and the supply chain) - Visibility (i.e. timely access to and sharing of information) - Collaboration (i.e. information-sharing, goal congruence, joint decision-making, resources-sharing, incentive alignment, collaborative communication and joint knowledge creation)
Actions	<ul style="list-style-type: none"> - Measures the firm take to cope with the crisis - Measures the supply chain take to cope with the crisis
Takeaways	<ul style="list-style-type: none"> - Main lessons learned - What should have been done differently

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