

Buyer-supplier relationships and their strategic importance during pandemic-like disruptions

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ABSTRACT

Since the Covid-19 pandemic disrupted many supply chains there has been a growing interest in improving the resilience of supply chains. There is however a lack of knowledge on how buyer-supplier relationships were, and ought to be, managed during such a disruption. By means of a multiple case study design of ten buyer-supplier relationships this paper provides insights into how the strategic importance of suppliers to buyers influenced the relationship during Covid-19. The findings show several new insights into the dynamics of buyer-supplier relationships during pandemic-like disruptions. Firstly, relational aspects such as communication, collaboration, commitment, price pushing from the buyer, and acceptance of difficulties are identified as noteworthy relational aspects during pandemic-like disruptions, and the dynamics of these aspects are discussed. Secondly, several influences unique to pandemic-like disruptions became apparent through the cases and are discussed in relation to the changed relational aspects. Most noteworthy, this contains the high understandability of the effects of a pandemic-like disruption which affects purchasing and supply management practices.

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Keywords

Buyer-supplier relationship, Strategic importance, Disruption, Disruption management, Covid-19, Resilience, Purchasing and supply management

1. INTRODUCTION

The outbreak of the Coronavirus Disease 2019 (COVID-19) caused a huge global crisis by disrupting many global supply chains (Araz, Choi, Olson, & Salman, 2020; Sarkis, 2021). Such a pandemic can be seen as a low-frequency-high-impact event, which is known to pose supply chain risks (Ivanov & Das, 2020). Recently, there have been calls to research pandemic-like events such as Covid-19 in the context of purchasing and supply management, because current research does not focus enough on best practices during such a disruption (Glas, Meyer, & Eßig, 2021; Ivanov & Das, 2020). The research of these best practices is part of the literature about supply chain resilience (Glas et al., 2021). There are many characteristics that are unique to a pandemic-like disruption, for example: long-term disruption existence and its unpredictable scaling, the ability to affect the entire supply chain, and the ability to spread globally (Ivanov, 2020). Therefore, current supply chain practices may work differently.

Take for example the management of critical supplier relationships. Normally these require a specific style of management, because in order to improve firm performance not all purchases and buyer-supplier relationships should be treated equally (Gelderman & Van Weele, 2003; Hespings & Schiele, 2016). Consequently, buying firms differentiate between suppliers using the concept of strategic importance, which leads to the distinction between non-strategic and strategic suppliers. Strategic importance is understood here as the extent to which a supplier warrants a closer relationship, instead of an arms-length one, because it provides a scarce resource that the buying firm needs (Moeller, Fassnacht, & Klose, 2006). In order to differentiate between suppliers, tools such as Kraljic's purchasing portfolio model are often used (Kraljic, 1983). The literature suggests that by using this kind of supplier differentiation firms can determine for which suppliers relational norms such as collaboration and trust are best suited, and for which suppliers the firm should behave more opportunistically (Hawkins, Wittmann, & Beyerlein, 2008). When the strategic importance of a supplier changes (over time), the buyer can thus alter its approach to the supplier accordingly. This is how it normally works, but in case of a pandemic-like disruption the buyer-supplier relationships may work differently. Such a disruption can change the strategic importance of suppliers drastically, by for example significantly decreasing the availability and increasing the price of supplies (Ivanov, 2020). This change in strategic importance can cause buyers and suppliers to behave differently than in normal situations. It has for example been observed that purchasing firms keep the temporary nature of a pandemic in mind when formulating their strategy for suppliers which were not strategic before (Tip, Vos, Peters, & Delke, 2022). Another example is that although firms note that the focus on relationships with strategic suppliers is key during the pandemic, there is a tendency to behave opportunistically by passing the financial pressures onto the supplier, which is an action that puts that very relationship at risk (van Hoek, 2020).

This is where a problem presents itself: the firm's relationship with a supplier that changes strategic importance because of a pandemic-like disruption may be different from our current understanding of strategic importance in buyer-supplier

relationships. Many have studied how firms manage their relationships with strategic suppliers, by for example focussing on the strategic benefits of collaboration (Chen, Sohal, & Prajogo, 2013, 2016; Chowdhury, Lau, & Pittayachawan, 2019), or the benefits of supplier satisfaction (Pulles, Ellegaard, Schiele, & Kragh, 2019; Weller, Pulles, & Zunk, 2021). There are also studies on the buyer-supplier relationship in a disruption setting, some focussing on its role in limiting the impact of a future disruption (Andres & Marcucci, 2020; Mwesummo, Nujen, & Buvik, 2021). Others even identifying the importance of buyer-supplier relationships for firms' survival during a pandemic (Sharma, Luthra, Joshi, & Kumar, 2020). However, what is missing is research into what happens with buyer-supplier relationships during a pandemic, specifically when there is a change in strategic importance. This is important because observing how strategic supplier relationships during a pandemic-like disruption might be different from normal situations is the first step in increasing the resilience of supply chains in future disruptions. I.e., we need to observe what happened during the pandemic, and then determine the effectiveness of different practices, in order to be better prepared for similar disruptions (Glas et al., 2021). Therefore, a key question that arises is:

- How does the buyer-supplier relationship change when the strategic importance of a supplier to the buyer (temporarily) changes because of a pandemic-like disruption?

The purpose of this paper is thus to examine the implications of a pandemic-like disruption on the buyer-supplier relationship. To work towards this end, a multiple case study on buyer-supplier relationships where the strategic importance of the supplier to the buyer changed during the Covid-19 pandemic is presented. This results in two main contributions. First, it highlights the buyer-supplier relationship attributes that change when the strategic importance of a supplier changes because of a pandemic-like disruption, which includes communication, collaboration, commitment, monetary relation-specific investments, price pushing from the buyer, and acceptance of difficulties. This allows for comparison with the current descriptions of buyer-supplier relationships (Ambrose, Marshall, & Lynch, 2010; Moeller et al., 2006), in order to elaborate on current theory. Second, the cases show insight into relational influences unique to pandemic-like disruptions (Ivanov, 2020) that have not been well defined so far, most notably the high understandability of the effects of a pandemic-like disruption. This contributes to creating a more specific response to pandemic-like disruptions (Glas et al., 2021). To work towards this end, first a conceptual framework is identified to approach the research question. Then the research method is presented, after which the results from the cases are given. Finally, the framework is taken together with the results to see where they overlap and contrast, apparent managerial best practices are discussed, and several future research directions are identified.

2. LITERATURE REVIEW

2.1 Disruptions and Disruption Management

Disruption is understood as the interruption of the normal flow of products within the supply chain (Craighead, Blackhurst, Rungtusanatham, & Handfield, 2007; Zheng, Shou, & Yang, 2021), which can thus decrease the availability of supply, but

does not necessarily indicate a complete stoppage of supply, contrary to some literature definitions (e.g., Mehrotra & Schmidt, 2021). Potential outcomes of disruptions are resource scarcities and shortages. Scarcity is described as: “the quality of something that is unavailable, insufficient, or not plentiful” (Cunha, Rego, Oliveira, Rosado, & Habib, 2014, p. 202). Resource shortages are another outcome of disruptions, very similar to resource scarcities, being distinctly different in the sense that a shortage is a temporary situation that can be remedied easily while a resource scarcity implies a longer timeframe (Wiedmer, Whipple, Griffis, & Voorhees, 2020). This paper is more concerned with scarcities, since a pandemic has potential for very long disruption times (Ivanov & Das, 2020). These long disruptions make for new strategic and non-strategic suppliers that warrant a different kind of buyer-supplier relationship.

In general, the literature on the management of supply chain disruptions can be split into two categories: risk mitigation (strategies before disruption) and response (strategies after disruption) (Glas et al., 2021). Although the focus here lies on the latter, it is important to at least mention risk mitigation, because the two are intertwined (Whitney, Luo, & Heller, 2014). To further explain, when the outcome of a disruption is a resource scarcity, risk mitigation strategies can become responsive strategies. So can supply risk be assessed: “(...) in terms of availability, number of suppliers, competitive demand, make-or-buy opportunities, and storage risks and substitution possibilities” (Kraljic, 1983, p. 112). In case of a resource scarcity (decreased availability) firms must manage the higher supply risk, because of the long duration, and the disruption response thus becomes about risk mitigation. This shows the overlap between risk mitigation and response when discussing disruptions. Accordingly, it has been observed that purchasing portfolio models, generally meant for managing supply risk, were used to respond to the new resource scarcities because of Covid-19 (Tip et al., 2022).

That being said, the stream of literature that is concerned with the response to supply chain disruptions is called supply chain resilience. Resilience is defined as the ability of a system to return to its original (or better) state after a disruption (Christopher & Peck, 2004). Consequently, supply chain resilience is defined as: “The adaptive capability of a supply chain to prepare for and/or respond to disruptions, to make a timely and cost effective recovery, and therefore progress to a post-disruption state of operations – ideally, a better state than prior to the disruption” (Tukamuhabwa, Stevenson, Busby, & Zorzini, 2015, p. 5599). Although this concept also includes the response to disruption, it still includes pre-disruption strategies, but it differs from risk mitigation in that its general focus is on the process after disruption. Various resilience strategies have been proposed, such as temporary sourcing diversification in case of disruption (Whitney et al., 2014), and a quantitative approach to supplier selection and order allocation after disruption (Lee, 2017). Despite the fact that the literature discusses a wide range of these practices, we can identify four capabilities of the firm to be most important for improving resilience: flexibility, agility, redundancy, and collaboration (Shekarian & Parast, 2021).

The research into how buyer-supplier relationships change during a pandemic is closely linked to the supply chain resilience research into how collaboration can be used as a response to

disruption. Collaboration is defined here as the voluntary helping of other partners to achieve common goals or one or more private goals (Castañer & Oliveira, 2020). Numerous studies have identified the importance of supply chain collaboration in responding to supply chain disruptions (Andres & Marcucci, 2020; Craighead et al., 2007; Duong & Chong, 2020). Most studies generalize their discussion towards supply chain collaboration, but the benefits of a collaborative relationship for responding to disruptions are also identified for the buyer-supplier relationship specifically (Sharma et al., 2020; van Hoek, 2020). The main motivation for the buyer to use relationship-centric approaches as a response to disruption is the assurance of supply (van Hoek, 2020).

2.2 Strategic and Non-Strategic Buyer-Supplier Relationships

2.2.1 Role of Strategic Importance in Buyer-Supplier Relationships

Due to the increased recognition of buying firms that their relationships with suppliers can be a source of competitive advantage (Esper & Crook, 2014; Jap, 1999), supplier relationship management has been recognized as a strategic concern for the buyer (Moeller et al., 2006). When talking about disruption events, the focus lies on the strategic benefit of supply assurance that can be attained through relation-centric approaches. Two (overlapping) descriptions of the strategic role of the buyer-supplier relationships for supply assurance are discussed within the literature.

One stream of literature discusses the benefits of a well-managed buyer-supplier relationship for implementing a supply assurance strategy, e.g., multiple sourcing (Hoffmann, Schiele, & Krabbendam, 2013). This is often discussed in the context of supply risk management (Chen et al., 2013, 2016; Mwesumio et al., 2021). However, a well-managed buyer-supplier relationship remains central for the implementation of these strategies (Chen et al., 2016; Mwesumio et al., 2021). The other stream of literature considers the buyer-supplier relationship as a more direct instrument for supply assurance. So is it argued that by investing in a better buyer-supplier relationship directly a better resource allocation by the supplier can be attained (Bemelmans, Voordijk, Vos, & Dewulf, 2015; Pulles et al., 2019; Weller et al., 2021). This resource allocation can come in the form of simply better availability of supplies (thus presenting a direct way of supply assurance), but can also serve as an antecedent for successful implementation of the here forementioned supply assurance strategies (Pulles et al., 2019).

In both streams of literature, the buyer-supplier relationship remains central, showing that strategic suppliers warrant a different kind of relationship than non-strategic suppliers. Consequently, buyer-supplier relationships can take on different forms, but there is no clear consensus on what the key factors are to describe them. In this paper the approach of Ambrose et al. (2010) is adopted to describe the buyer-supplier relationship. They combine a transaction cost theory and social exchange theory perspective and describe the buyer-supplier relationship by relationship-specific investments, uncertainty, commitment, trust, power, dependence, and communication. Furthermore, the relational attribute opportunism is added to this list, since it has been observed to play an important role during Covid-19 (van Hoek, 2020).

2.2.2 Integrated Framework: Strategic Importance and Relational Attributes

Taking these relational attributes together with the notion of non-strategic and strategic suppliers, an integrative framework emerges that serves as the basis for this paper. Figure 1 gives an overview of this framework from the buyer's point of view. This framework shows how the relational attributes are currently understood in explaining non-strategic and strategic relationships. It shows how relationship attributes typically change when the strategic importance of a supplier changes (signified by the two bold arrows).

The first two attributes stem from transaction cost theory. Relationship-specific investments are investments that have little to no use outside the specific buyer-supplier relationship, e.g., investments in supplier competencies, organizational conditions, trust, and commitment (Moeller et al., 2006), and can be either tangible or intangible (Jap, 1999). Consequently, this is somewhat of an umbrella term which already partly describes commitment, trust, and communication. Typically, firms put more relationship-specific investments towards strategic suppliers than non-strategic suppliers (Moeller et al., 2006). In buyer-supplier relationships uncertainty refers to unanticipated changes in the context of the relationship, and can be split into environmental uncertainty and behavioural uncertainty (Hoffmann et al., 2013). Uncertainty has been found to lower performance (Ambrose et al., 2010; Morris & Carter, 2005), and can be reduced through strategic relationships (Beverland & Bretherton, 2001; Morris & Carter, 2005). However, it has also been found that firms reduce collaborative efforts in the face of uncertainty, to limit the costs associated with later environmental or behavioural changes (Hibbard, Hogan, & Smith, 2003; Wiedmer & Whipple, 2022). Due to this contradiction, there is no simple explanation of how uncertainty influences strategic importance and buyer-supplier relationships. Nonetheless, since uncertainty is known to affect firms' strategic decision making (Vecchiato, 2012; Wiedmer & Whipple, 2022) and is high during pandemic-like disruptions (Ivanov, 2020), it should be included. Therefore, in this paper it is described as simply an influence on the buyer's determination whether a supplier demands a more non-strategic or strategic approach, signified by the thin arrow. One key example is the uncertainty regarding the duration of a pandemic-like disruption, which the buyer takes into consideration when determining whether a supplier is more strategic or non-strategic (Tip et al., 2022).

From social exchange theory stem the attributes commitment, trust, power, and dependence. Commitment can be defined as: "(...) an exchange partner believing that an ongoing relationship

with another is so important as to warrant maximum efforts at maintaining it" (Morgan & Hunt, 1994, p. 23). Trust is present when one party has confidence in the other party's reliability and integrity (Morgan & Hunt, 1994). Trust and commitment are often discussed together in literature, since they seem to be highly correlated (Kwon & Suh, 2004). Typically, firms maintain a higher level of trust and commitment towards strategic suppliers than non-strategic suppliers (Gelderman, Mampaey, Semeijn, & Verhappen, 2019). Power and dependence are also often discussed together, since the power of one party implies the dependence of another party (Emerson, 1962). Power is the ability of one party to influence or control another's actions (Hunt & Nevin, 1974). Dependency refers to one party's reliance on another party in maintaining a relationship to achieve its expected goals (Emerson, 1962). Although this description of power and dependence is slightly oversimplified (Caniëls & Gelderman, 2007), it is sufficient for this paper. Generally, in non-strategic relationships there is balanced or high buyer power, and in strategic relationships there is balanced or low buyer power (Caniëls & Gelderman, 2007). Logically, the relational attribute dependence works in the opposite way.

Finally, two attributes can be included which stem from both a transaction cost theory and a social exchange theory perspective, beginning with communication (Ambrose et al., 2010). Generally, firms communicate more with strategic suppliers than non-strategic suppliers (Paulraj, Lado, & Chen, 2008). Secondly, opportunism can be included, which can be described as: "(...) aggressive selfishness and disregards the impact of the firm's actions on others" (Hawkins et al., 2008, p. 895). One example of opportunistic behaviour is the buyer passing financial pressures on to the supplier (van Hoek, 2020). Opportunism can cause failure of strategic supplier relationships and the short-term benefits from opportunism seem to be limited (Gelderman et al., 2019). Consequently, literature suggests that opportunistic behaviour by the buyer is more common in their relationships with non-strategic suppliers than in their relationships with strategic suppliers (Hawkins et al., 2008).

All these attributes and their relationships to each other have been researched extensively within the literature, so this is only a narrow description of a way broader research area. Nevertheless, they provide a basis for the presented framework. The framework serves as a point of reference in the research whether these relational attributes, and potentially others, may have a different role in strategic and non-strategic relationships formed during a pandemic-like disruption, relative to normal situations. One last important note is that this framework describes general assumptions from both a transaction cost theory and social

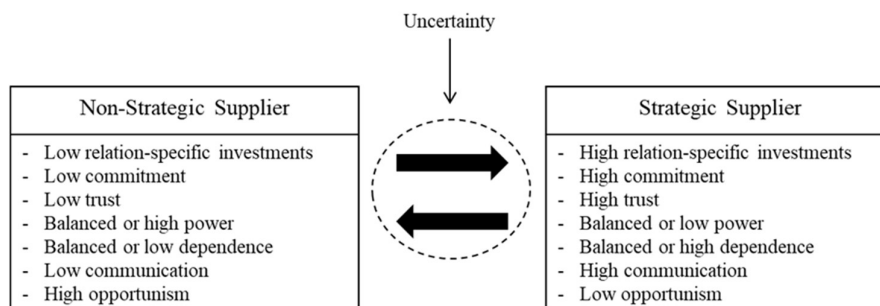


Figure 1. Framework of strategic importance and relational attributes.

exchange theory perspective, but it is naïve to strictly follow these assumptions. Buyer-supplier relationships evolve over time, so in reality strategic relational attributes may remain in non-strategic relationships, and vice versa (Gadde & Snehota, 2000; Hawkins et al., 2008). Therefore, the framework is better interpreted as a spectrum, rather than an absolute distinction.

3. METHODOLOGY

The research question answered is: how does the buyer-supplier relationship change when the strategic importance of a supplier to the buyer (temporarily) changes because of a pandemic-like disruption? This concerns both existing theory and unknown empirical context, so the aim is to achieve theory elaboration (Ketokivi & Choi, 2014). Consequently, first, the relationships of buyers with suppliers that changed in strategic importance during Covid-19 were analysed via an open approach, i.e., without looking for a pre-defined set of attributes. Afterwards, the findings were taken together with the existing framework of strategic importance and buyer-supplier relationships (see figure 1), to see where they contrast and/or fit. The best way to approach this empirical context is by a multiple case study approach. The use of cases to elaborate on theory is particularly good, because it is well suited to research areas where existing research is scarce (Dubois & Araujo, 2007; Eisenhardt, 1989). A multiple case study, as opposed to a singular case study, is appropriate because it allows examination of whether observations apply to multiple cases, creates robust theory, and enables a broader exploration of the research question (Eisenhardt & Graebner, 2007). Furthermore, a multiple case study approach has been shown to enable the research of multiple facets of a pandemic-like disruption and their complexities (Tip et al., 2022).

3.1 Case Selection

The unit of analysis in this research is the buyer-supplier relationship. Theoretical sampling was used to select cases where the particularities of a buyer-supplier relationship can be explored, since the aim is to elaborate on theory, not test it (Eisenhardt & Graebner, 2007). Theoretical sampling simply means (non-randomly) selecting cases because they are particularly good for answering the research question. Therefore, the aim was to identify cases where there has been a shift in strategic importance of the supplier to the buyer because of Covid-19. This can either be a supplier increasing or decreasing in strategic importance. The aim was to include both. This research made use of interviewees on the buyer's side of the relationship since the focus is on the strategic importance of the supplier to the buyer and how this affects the relationship. Table 1 shows an overview of all the researched buyer-supplier relationships, this table enabled sources of differences and similarities to be more effectively explored during the data analysis (Linneberg & Korsgaard, 2019).

3.2 Data Collection

Data was collected through qualitative interviews with purchasing professionals at the buying firm. Consequently, ten buyer-supplier relationships were examined through in-depth semi-structured interviews with the purchasing professionals. Each interview addressed a maximum of two buyer-supplier relationships, consequently, with some respondents, multiple interviews were conducted. In total seven interviews were conducted, the shortest being 25 minutes and the longest being 46 minutes. The interviews were split into three parts: introduction and background information, main interview, and outro part.

Table 1. Relationship characteristics.

Firm and informant information	Supplier 1	Supplier 2	Supplier 3
Buyer 1	Case: <u>B1S1</u>	Case: <u>B1S2</u>	-
- Industry: telecommunications	Country: China	Country: China	
- Country: Netherlands	Relationship length: ~ 8 years	Relationship length: unknown (since before Covid-19)	
- Informant: purchasing manager			
- Experience: ~13 years			
Buyer 2	Case: <u>B2S1</u>	Case: <u>B2S2</u>	-
- Industry: industrial machinery manufacturing	Country: Germany	Country: Netherlands	
- Country: Netherlands	Relationship length: ~ 10 years	Relationship length: ~ 10 years	
- Informant: supply chain manager			
- Experience: ~3.5 years			
Buyer 3	Case: <u>B3S1</u>	Case: <u>B3S2</u>	Case: <u>B3S3</u>
- Industry: wholesale	Country: Turkey	Country: Italy	Country: China
- Country: Netherlands	Relationship length: ~ 17 years	Relationship length: ~ 25 years	Relationship length: ~ 17 years
- Informant: purchasing manager			
- Experience: ~20 years			
Buyer 4	Case: <u>B4S1</u>	Case: <u>B4S2</u>	-
- Industry: industrial machinery manufacturing	Country: Italy	Country: Turkey	
- Country: Netherlands	Relationship length: ~ 4 years	Relationship length: ~ 10 years	
- Informant: strategic purchaser			
- Experience: ~14 years			
Buyer 5	Case: <u>B5S1</u>	-	-
- Industry: oil and gas	Country: Multinational (buyer has contact with Dutch division)		
- Country: Netherlands	Relationship length: ~ 20 years		
- Informant: procurement specialist			
- Experience: ~15 years			

The first part served as a brief introduction to the research and as an assessment of the respondent's capabilities. If the purchasing professionals appeared to have too little knowledge about their firm's buyer-supplier relationships before and during the pandemic, then they would have been excluded. The second part of the interview began with questions aimed at providing context on the buyer-supplier relationship(s) and giving general insights into the dynamics of a pandemic. Then through the subsequent (main) set of questions the respondent was asked about the relationship with a specific supplier where the strategic importance of the supplier changed because of Covid-19. First about their description of the pre-pandemic relationship and then about their description of how this changed during and after the pandemic. This allowed the data to be framed in the same way as in the framework presented in figure 1. Afterwards the differences and overlap with this framework could provide for a better understanding of non-strategic and strategic buyer-supplier relationships during pandemic-like disruptions. Consequently, if important relational aspects that can be placed into this framework became apparent during the interview, then the respondent was asked to elaborate on that. The length of this part of the interview can thus vary, also depending on how many relationships are discussed in that interview. In the third and final part, respondents could provide any additional comments. An overview of the interview questions and sub-questions can be found in table 2. If the respondent was interviewed a second time, then only sections 1, 4 and 5 were repeated.

3.3 Data Analysis

With permission of the respondents, the interviews were recorded and later transcribed. The transcripts were then analysed to develop concepts relating to strategic importance in buyer-supplier relationships. The data analysis was initiated in parallel to the data collection process. The analysis process started with inductive descriptive coding in order to ensure credible interpretations of the data (Gioia, Corley, & Hamilton, 2013). The transcripts were analysed line by line, which resulted in a wide array of codes, some describing only a few words and others multiple sentences. This resulted in codes such as: 'alternative seeking,' 'interest in supplier,' and 'attention for supplier.' The second cycle of coding created higher-level categories, and where appropriate used existing theory and concepts to anchor the results in current literature (Linneberg &

Korsgaard, 2019). For example, from the three previously mentioned codes emerged the code 'commitment.'

Finally, in order to be able to explore connections across the cases, these within-case analyses were completed with a cross-case analysis. After finishing the within-case analyses, each case was analysed again, this time focussing on differences and similarities. This resulted in a categorized overview of all different relational aspects across the cases. To allow for a better cross-case discussion, some similar within-case codes falling in the same category were recoded to a single concept. For example, the codes 'acceptance of delays' and 'acceptance of price increases' were recoded to simply 'acceptance of difficulties.' This resulted in a short list of relational aspects from all the cases combined. Finally, for each relational aspect the kind of change (increase or decrease) in each case and its causes were put together so that similarities and differences could become evident.

4. RESULTS

The research question that the findings answer is: how does the buyer-supplier relationship change when the strategic importance of a supplier (temporarily) changes during a pandemic-like disruption? The findings start from the within-case observations and work towards conclusions from a cross-case perspective, which all together establish a framework similar to the one described in section 2.2. Accordingly, table 3 shows an overview of all within-case observations including the change of strategic importance and its cause, the perceived changes in the buyer-supplier relationship and its cause, and any relevant context of the relationship. Note that to help to interpret the cases, strategic importance is split up in four levels: very low, low, high, and very high. This signifies further that strategic importance is not a black and white concept, rather it is better thought off as a spectrum. Table 4 shows the main findings from a cross-case perspective. In the subsequent sections the main cross-case findings are put into context and elaborated. These findings partly demonstrate current understandings of relational attributes and strategic importance (see figure 1), as well as contrasting areas and new insights not discussed previously.

Table 2. Overview of interview questions.

Part I – Introduction and background information	Part II – Main interview	Part III – Outro
<u>1. Introduction of the interview</u>	<u>3. How did/ or does the Covid-19 pandemic affect the company, specifically the purchasing department?</u>	<u>5. Space for comments</u>
a) Opening	a) Can you give some examples?	<u>6. Words of thanks and outro</u>
b) Reassuring anonymity of the respondent		a) Can I contact you again if I have any more questions?
c) Explaining the goal of the interview	<u>4. Can you identify relationships where the strategic importance of the supplier either increased or decreased because of the pandemic?</u>	b) Would you like to receive the results of my research?
<u>2. Personal questions</u>	a) Why did the strategic importance change?	
a) Can you describe your job?	b) Can you describe this relationship before the Covid-19 pandemic?	
b) How long have you been working here?	c) Can you describe how this relationship changed during and after the Covid-19 pandemic?	
	d) Why did this change?	
	e) Respondent may be asked to elaborate on certain relational aspects that come up during the interview	

Table 3. Overview case findings.

Strategic importance...			Buyer-supplier relationship...		Context
Case	... change	... cause of change	... change	... cause of change	
B1S1	Decrease (very high to low)	Covid-19 increased buyer's demand; buyer widened supply base to fulfil demand. Supplier's prices up because of Covid-19, buyer found cheaper suppliers for some products.	- Increased pushing on price from buyer - Increased communication & collaboration - Decreased commitment	- Increased prices from supplier - Price changes, logistics problems - Other suppliers with less of a price increase. Bigger supply base.	Buyer slowly increased the number of products bought from supplier over the years, alongside multiple collaborative initiatives.
B1S2	Increase (very low to high)	Supplier offered a more competitive price during Covid-19 than other suppliers, buyer bought significantly more from supplier.	- Increased communication & collaboration	- Higher quantities ordered, more frequent orders, logistics problems	Supplier already in buyer's supply base before Covid-19, but smaller order quantities. During Covid-19 quantities increased.
B2S1	Increase (high to very high)	Covid-19 caused supplier production capacity to fluctuate, leading to less availability of the (essential) product.	- Increased communication & collaboration - Increased inter-dependence	- Dealing with fluctuating production capacity supplier - Very open communication	Buyer used dual sourcing; the other company is equally important to the buyer. Not a lot of alternatives.
B2S2	Increase (very low to low)	Covid-19 decreased production capacity of the supplier, leading to less availability of the (generic) product.	- Increased communication - Increased acceptance of difficulties (delays)	- Fluctuating delivery times, decreased availability - Recognition that whole market is affected	Buyer anticipated problems to be temporary. Supplier tried to increase collaboration; buyer not interested.
B3S1	Increase (high to very high)	Covid-19 caused price increases of raw materials and delivery times went up drastically.	- Increased communication - Decreased commitment & trust - Increased pushing on price from buyer	- More price increases, anticipating delivery times - Perceived opportunistic price increases supplier - Perceived opportunistic price increases supplier	Supplier also has a lot of other customers.
B3S2	Increase (high to very high)	Covid-19 caused price increases of raw materials and delivery times went up slightly (relative to other suppliers).	- Increased communication - Increased commitment	- More price increases, anticipating delivery times - Buyer was impressed by how the supplier managed Covid-19.	Supplier is a (relatively) small company with few customers.
B3S3	Increase (high to very high)	Covid-19 caused scarcity of raw materials in China, which caused suppliers to lose their tax discount. Prices and transport costs went up.	- Increased communication - Decreased commitment - Increased acceptance of difficulties (price increases)	- More price increases - Price increases, at the beginning of Covid-19 perceived to be opportunistic. - Understanding of supplier operations, recognition that whole market is affected	Supplier grew significantly in size over the years because of buyer's orders. Buyer also grew because of the supplier. Now supplier has many customers.
B4S1	Increase (low to very high)	Because of Covid-19 buyer had to drop their main supplier, the back-up supplier went from providing 20% of the particular product to 100%.	- Increased communication & collaboration - Increased monetary relation-specific investments - Increased commitment - Increased inter-dependence - Increased acceptance of difficulties (delays)	- Supplier capabilities needed to be increased, buyer wanted more control, increased prices & lead times - Buyer had to build up the capabilities of the supplier - Buyer views this supplier as the safest option for coming years - Increase in business deals - Market conditions changed; Covid-19 easy to understand problem	The main supplier that was dropped was located in China. Covid-19 caused business as usual to become impossible.

B4S2	Increase (high to very high)	Covid-19 caused a scarcity for the supplier's raw material. Covid-19 also caused supplier personnel problems and longer delivery times, resulting in increased lead-times.	<ul style="list-style-type: none"> - Increased communication - Increased collaboration - Decreased monetary relation-specific investments - Decreased commitment 	<ul style="list-style-type: none"> - Scarcity of raw materials, price increases. - Trying to find more sources for raw materials - Fear of losing investment if forced to move to another supplier - Problems became so great that buyer was almost forced to drop the supplier, buyer was looking for alternatives 	Tangible and non-tangible investments over the years. There are other suppliers in the market, but since the product is customer-specific, the buyer is reluctant to move to another supplier.
B5S1	Increase (high to very high)	Covid-19 decreased production capacity of supplier, which in turn decreased availability and increased price.	<ul style="list-style-type: none"> - Decreased commitment - Increased acceptance of difficulties (delays) 	<ul style="list-style-type: none"> - Problems became so great (availability) that buyer was forced to search for alternatives. - Covid-19 easy to understand problem, buyer experiences similar problems as supplier. 	Buyer needed products specifically manufactured by supplier. Alternatives limited to distributors, resellers, and recycling old products. Other alternatives possible but require big changes in the buyer's own product.

Table 4. Cross-case findings.

Cases	Relational attribute	Influence of strategic importance
B1S1, B1S2, B2S1, B2S2, B3S1, B3S2, B3S3, B4S1, B4S2	- Communication & collaboration	Increases as strategic importance increases, but there is a separate effect of 'disruption problems' which increases communication and propensity to collaborate regardless of the change in strategic importance.
B1S1, B3S1, B3S2, B3S3, B4S1, B4S2, B5S1	- Commitment	Increases as strategic importance increases but can decrease because of perceived opportunistic behaviour or when there are disruption problems which force the buyer to look at other options.
B4S1, B4S2	- Monetary relation-specific investments	Increases as strategic importance increases if it is appropriate for the kind of supplier but can decrease when there are disruption problems which force the buyer to look at other options.
B1S1, B3S1	- Pushing on price from buyer	Decreases as strategic importance increases but can increase when buyer perceives opportunistic behaviour from the supplier.
B2S1, B4S1	- Interdependence	Increases as strategic importance increases.
B2S2, B3S3, B4S1, B5S1	- Acceptance of difficulties	Increases as strategic importance increases, at least when the difficulties are the cause of change in strategic importance.

4.1 Communication and Collaboration Because of Strategic Importance and Disruption

In most cases communication was identified as an important relational aspect that changed, and in all of those this change is a general increase in the amount of communication. Somewhat logically, communication increases when strategic importance increases. In case B4S1 for example, the respondent described the increase in communication after doing significantly more business with the supplier as regarding: “(...) *the technical know-how, if they can do what we want.*” However, the only case describing a decrease in strategic importance (case B1S1) also noted an increase in communication. The respondent related this increase to logistics problems where: “(...) *you had to tell them what to do more than before*” and price increases because: “*Every year prices change, but this year, at least at the start of Covid, it increased more rapidly than normal.*” These kind of communication increases were common across cases. Looking at these causes of the increases in communication a distinction arises between two kinds of communication: ‘regular business’ communication (e.g., product specifications) and ‘disruption problems’ communication (e.g., increased delivery times). Although the first seems to increase with strategic importance, as displayed by cases B1S2 and B4S1, the latter seems to be separate from the concept of strategic importance. In every case where communication increased, disruption problems were mentioned as a direct cause. These disruption problems can exist

in both increasing and decreasing strategic importance relationships. However, in either case, best practice seems to be to increase communication in response to these problems. Furthermore, the severity of these problems also seems to affect the increase in communication, which is illustrated in case B3S2 where the respondent indicated that there was less of an increase in communication relative to similar relationships because: “(...) *the delivery times are more acceptable.*”

In a comparable manner, the term collaboration was often identified as an important relational aspect. Similar to communication, a distinction can be made between collaboration for regular business and collaboration to solve disruption problems. Case B4S1 showcases an example of regular business collaboration, where the buyer builds up capabilities of the supplier to meet their technical requirements. Case B2S1 showcases an example of collaboration to solve disruption problems, where through joint planning and forecasting they were able to continue their business. Again, case B1S1 further shows that there are two kinds of collaboration, the respondent describing the relationship as having: “*More of a narrower collaboration between the supplier and us the last two years*” even though the supplier had become less strategically important. So, a similar conclusion as for the relational aspect communication can be made. Collaboration increases when strategic importance increases, but there is also the separate effect of ‘disruption problems.’ The more of these problems and how severer they are, the higher the degree of collaboration. However, collaboration can be seen as taking one step further

than communication, which the buyer is not always prepared to take. This is showcased by case B2S2, where the respondent described their reluctance to collaborate with the supplier because they were still not important enough to warrant such efforts and the problems were only perceived to be temporary.

4.2 Increased Commitment Because of Strategic Importance and the Influences of Opportunism and Disruption

In several cases a change in commitment was identified as a major change in the relationship. Some cases support the idea that commitment increases as strategic importance increases. For example, case B1S1 shows an instance where commitment logically dropped due to the decreasing strategic importance of the supplier to the buyer. Cases B3S2 and B4S1 show instances where commitment increased with the strategic importance. In both cases the commitment on the buyer's part increased because the buyer sees the benefits of the supplier in situations like Covid-19. The respondent in case B3S2 attributed the increased commitment to the supplier's capabilities: *"(...) we are more satisfied with them of course, because they can cope with the problems better than the other supplier."* The respondent in case B4S1 credited their increased commitment to them trying to make sure the supplier freed up capacity for them.

However, cases B3S1, B4S2, and B5S1 contradict this understanding of commitment and strategic importance. In case B3S1 the respondent argued that *"(...) on terms of price increase, price strategy, we do have the feeling that this particular supplier increased more than their competitors. And for the moment we are obliged to still buy there, because we do not have an alternative, but currently we are looking for alternatives as well."* This showcases how a decrease in trust, because of perceived opportunistic behaviour, can cause a decrease in commitment, where it is expected to increase. In case B4S2 the respondent described their alternative seeking behaviour (i.e., a decrease in commitment) as: *"(...) when the prices get really high then of course we have to look for an alternative" and "We do want to stay loyal to that supplier, and finally it worked out. But yes of course there is a friction point where you have to stop the business and have to look for another supplier."* Similarly, case B5S1 also identified having to look for alternatives not out of choice, but out of necessity. These cases show that when strategic importance increases commitment increases, but when problems causing the shift in strategic importance become so great, a critical point can be reached where the buyer must look for alternatives, even though they do not necessarily want to. Concluding, it seems that the greater the strategic importance of a supplier the greater the commitment to that supplier. However, this can be counteracted by perceived opportunistic behaviour or disruption problems so great that the buyer is forced to look at other options.

4.3 Monetary Relation-Specific Investments for Strategically Important Suppliers and Effect of Disruption

In cases B4S1 and B4S2 the change in monetary relation-specific investments was identified as an important change. In both cases the strategic importance of the relationship increased, however, in case B4S2 the monetary relation-specific investments decreased and in case B4S1 they increased. In case B4S2, the

reason for this decrease was similar to the previously discussed decrease in commitment, the disruption problems became so great that the buyer was not sure if the relationship could continue. The respondent described this as: *"Normally at the starting point you invest money, and then two or three times a year, then you will invest for new tooling for example. This was put on hold."* In case B4S1 the respondent noted an increase in several kinds of (including monetary) investments, in order to make sure the supplier could deliver. What can be taken from this is that if monetary relation-specific investments are appropriate for the kind of supplier, then this increases when the strategic importance of the supplier increases. However, similar to commitment, this can be counteracted by disruption problems so great that the buyer must consider the loss of capital if they are forced to move to another supplier.

4.4 Pushing on Price During Disruption

In two cases the respondent identified an increase in pushing on price from the buyer's side. This is understood differently from simply communicating or negotiating about the price, in that in these cases the buyer (somewhat aggressively) tries to push the price down with leverage. When respondents indicated an increase in simply communication about price this was often in more of a dialogue and trying to find the fairest solution. In case B1S1 there is a somewhat logical increase in pushing on price from the buyer resulting from a decrease in strategic importance of the supplier. The respondent described this as: *"it is not that we think they do not deserve it, because they do a lot for us and the relationship is good. But in the end price is very important in this business, so we really had to push them a bit there."* A somewhat more counterintuitive increase in pushing on price from the buyer was observed in case B3S1, where strategic importance increased. The respondent noted that some price negotiation with strategic suppliers is customary for them, but that during Covid-19 the number of negotiations went up drastically, also stating that: *"In the beginning we were a little successful there, but nowadays sometimes we don't get any result during these negotiations."* Pushing on price in this case relates back to the earlier discussed perceived opportunistic price increases by the supplier in this case. So, from this it can be assumed that as strategic importance increases, the buyer's pushing of price decreases, except when the buyer perceives that price increases by the supplier are opportunistic/ unfair.

4.5 Acceptance of Difficulties Caused by Disruption

Multiple respondents highlighted that they were more accepting of difficulties such as price increases and delays when these were the cause of increase in strategic importance. The respondents in cases B2S2, B4S1, and B5S1 all highlighted that an important change in the relationships becoming more strategic was the acceptance of delays that normally would be a cause for negotiation or even conflict. Similarly, in case B3S3 the respondent identified to be more accepting of price increases when these price increases could be led back to the same disruption problems that caused the change in strategic importance. The respondent in case B4S1 even highlighted it as the major change in the relationship during Covid-19. The respondent described it as: *"Of course there is a lot we learned from Covid. But the side effects from Covid are out of our reach, so we could not affect it a lot. We could increase communication, we could ask for specific items to be produced earlier, but still,*

it is out of our reach” and that it is a matter of experience: “*When you buy something, you experience a delay, also in your private life when you see it, you will also accept it in the business.*” The respondent in case B5S1 also explained: “*We can recognise the problems, we see it everywhere, and we are also facing it ourselves.*” This explains the increase in acceptance of difficulties by identifying that the effects of Covid-19 are so well known that they are easier to accept by the buying firm. This is a distinct aspect of a pandemic-like disruption: difficulties are easy to understand because everyone, individuals and businesses, are affected.

5. DISCUSSION

Previous studies have shown how relational attributes in buyer-supplier relationships are related to the strategic importance of a supplier (e.g., Moeller et al., 2006). Other studies have highlighted the importance of buyer-supplier relationships during (pandemic-like) disruptions (Duong & Chong, 2020; Sharma et al., 2020). However, knowledge on buyer-supplier relationships which change strategic importance because of a pandemic-like disruption is lacking. In this paper this gap was addressed by examining multiple cases where the strategic importance of a supplier changed because of Covid-19. The findings show how relational aspects such as communication, collaboration, commitment, monetary relation-specific investments, price pushing from the buyer, and acceptance of difficulties change along with strategic importance in such relationships. The findings have several implications for theory and practice.

5.1 Implications for Theory

This study provides new insights into the dynamics of buyer-supplier relationships during pandemic-like disruptions, specifically when a supplier changes in strategic importance because of the pandemic. Although the findings generally align with previous studies on buyer-supplier relationships, by studying the relationships in a pandemic-like disruption setting several important contradictions and nuances were uncovered.

Firstly, the findings partly illustrate that ‘regular business’ communication and collaboration increase with strategic importance of a supplier in order to enhance the potential for creating competitive advantage. This supports general logic from an overall relationship-specific investments perspective (Jap, 1999; Moeller et al., 2006), which communication and collaboration fall under. However, the results also show that pandemic-like disruptions cause more communication and collaboration regardless of the strategic importance of the buyer, specifically for solving the problems caused by the disruption. This contradicts the logic from a strategic importance perspective but supports the notion that collaboration and communication is best practice for increasing resilience during disruptions (Andres & Marcucci, 2020; Duong & Chong, 2020; Sharma et al., 2020). This leads to a new insight, namely that this best practice seems to not only be suitable for strategic suppliers, but also for non-strategic suppliers. The cause of this might be the pandemic’s unique aspects of long duration and ability to spread globally (Ivanov, 2020). From a strategic importance perspective, a buyer would normally not choose relational mechanisms such as collaboration and communication to solve problems in non-strategic relationships but would rather switch suppliers. However, because the entire supply-base is affected, and thus all

alternative suppliers likely face the same problems, they become valid options.

Secondly, the findings also partly illustrate that commitment increases when the strategic importance of a supplier increases. This supports findings from literature on the antecedents of commitment in buyer-supplier relationships (Morgan & Hunt, 1994; Yoon & Moon, 2019), as well as logic from the broader relationship-specific investments perspective (Jap, 1999; Moeller et al., 2006). However, the findings show two insights where this theory fails. The first being perceived opportunistic behaviour by the supplier, which decreases trust, and consequently commitment. This supports findings that opportunism is negatively associated with trust and commitment (Morgan & Hunt, 1994; Mysen, Göran, & Payan, 2011; Skarmeas, Katsikeas, & Schlegelmilch, 2002). One possible explanation for supplier opportunism could be that the environmental volatility (i.e. increased uncertainty) surrounding the relationship because of the disruption increases the supplier’s opportunism (Skarmeas et al., 2002). The second instance where commitment can decrease even though strategic importance increases is when the disruption causes so many problems at the supplier that the buyer is forced to look elsewhere.

Thirdly, similarly to the findings of van Hoek (2020), it has been observed that buyers try to push financial pressures onto the supplier during Covid-19, even though they say that the relationship with that supplier is important to them. This could be explained as opportunistic behaviour by the buyer. This kind of behaviour is not customary in strategic relationships (Gelderman et al., 2019; Hawkins et al., 2008), and therefore presents an anomaly. This paper offers two possible explanations for this phenomenon. The first being that it may be that the buyer still regards the relationship as being as strategically important as before, while in reality the strategic importance of the relationship has decreased, leading to such a contradictory statement. The second explanation that came from the findings is perceived opportunistic behaviour by the supplier. If the buyer perceives the supplier to behave opportunistically then they may be more inclined to do the same. Although this is in line with the concept of reciprocity (i.e. you get what you give) from social exchange theory (Ambrose et al., 2010; Griffith, Harvey, & Lusch, 2006), it contradicts the results of some recent literature (Steinle, Schiele, & Bohnenkamp, 2020).

Fourthly, and finally, this paper introduces the concept of ‘acceptance of difficulties’ that should be discussed separately as a relational value in case of pandemic-like disruptions. Consequently, it responds to the calls to get a deeper understanding of pandemic-like disruptions (Glas et al., 2021; Ivanov & Das, 2020). When strategic importance increases because of a pandemic-like disruption, buyers must accept that they can only do so much about the difficulties, to avoid neglecting their other responsibilities. This links disruption management to the attention-based view literature, which takes into account that managers have limited attention capacity and information, so they must select what issues to focus on (Ocasio, 1997, 2011; Wiedmer & Whipple, 2022). This can be explained as the avoidance of ‘tunnelling,’ i.e., paying too much attention to the resource scarcity, while neglecting other responsibilities and threats (Wiedmer & Whipple, 2022). Therefore, it seems that best practice is to accept the effects of a pandemic-like disruption to a certain extent. The findings illustrate that buyers can accept

the difficulties because of the pandemic's unique characteristics, which includes the disruption's ability to affect the entire supply chain (Ivanov, 2020). However, acceptance also becomes of importance due to a thus far largely neglected aspect of a pandemic-like disruption in supply chain research: the large social impact. At the end of the day managers are human, and because they experience the effects of a pandemic both at work and in their own lives, the difficulties it causes become easier to understand and thus accept.

5.2 Implications for Practice

The findings have several implications for supply managers. First, when supply managers are faced with a pandemic-like disruption, the findings demonstrate the effectiveness of increased communication about the business with their suppliers, regardless of strategic importance of the supplier. This communication can be as simple as exchanging information about available personnel, production capacity, or explaining the current state of both businesses. This is already common practice for strategic relationships, but the findings show an additional added benefit of also increasing the communication with suppliers which are found to be less strategic. This is likely due to the ability of a pandemic-like disruption to affect the entire supply base. There may be many other suppliers who can deliver the same, but if they are all facing the same problem, then switching suppliers does not resolve the problems. In a similar fashion, the findings further imply that collaboration with suppliers (e.g., joint forecasting) is an effective tool to mitigate the effects of a pandemic-like disruption. Generally, a buying firm may not be interested in collaborating with every supplier, and therefore segment suppliers. However, when the whole supply base is affected, there could be an added benefit in collaborating with less strategic suppliers. Therefore, in pandemic-like disruptions re-evaluation of supplier segmentation could be worthwhile.

Secondly, the cases showed that best practice was to accept the effects of Covid-19 to a certain extent. Purchasing managers have only a limited influence on the problems caused by a pandemic-like disruption. Consequently, completely solving these problems, such as increased delivery times and prices, is near impossible. Therefore, purchasing managers should avoid spending too much time and attention on trying to solve the problems, since it can hinder their other responsibilities.

Finally, in several of the cases the distance between buyer and supplier was discussed. In cases where the supplier was far away from the (Dutch) buyer, for example in China, the pandemic led to greater problems than with suppliers that are located closer by. In a few cases this led to the closer by suppliers becoming more strategically important. In other words, the Covid-19 pandemic has shown that some suppliers may have a strategic benefit in their distance to the buyer which had not been taken into account before said disruption.

5.3 Limitations and Future Research

This study has several limitations. For instance, the description of the buyer-supplier relationships are perceptions from the buying firm's informant. Since it is a dyadic relationship, research using interviews at both the buying and the supplying firms could have given deeper insights (Ambrose et al., 2010). It could for example have been interesting to see in case B3S1 whether the price increases by the supplier were truly of an

opportunistic nature. Also, the cases represent a disproportionate amount of increased strategic importance to decreased strategic importance relationships (nine versus one). This may have caused some important insights from a decreasing strategic importance perspective to go unnoticed. Admittedly, it could be argued that there is a higher chance of a supplier which has remained over the course of a pandemic to become more strategically important during a pandemic-like disruption than vice versa. On a similar note, the cases never go from fully non-strategic to fully strategic, or the other way around. This makes it so that there is no clear contrast between non-strategic and strategic suppliers. One final limitation is that respondents identified that the effects of Covid-19 were not truly over yet, so the long-term effects of their decisions could not be observed. Which added to this is that respondents also noted that the effects of Covid-19 and the effects of the war in Ukraine are sometimes hard to distinguish. It is hard to know where the effects of one disruption end and the effects of another disruption take over.

If given more time, similar research could focus on examining buyer-supplier relationships during disruptions from both sides (e.g., Ambrose et al., 2010) over a longer period of time (e.g., Weller et al., 2021). This could lead to deeper insights into what role buyer-supplier relationships play in disruptions. Another field of research that was not extensively discussed here, but could be very relevant, is opportunistic behaviour (Gelderman et al., 2019; Hawkins et al., 2008) during pandemic-like disruptions. It seems that opportunism is more prevalent in these kinds of disruptions. Finally, further research could identify where the observation of 'acceptance of difficulties' can be best positioned within existing literature.

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