




The role of personal relationships in supply chain disruptions: Perspectives from buyers and suppliers of logistics services

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Orientation: Firms can no longer rely on their own internal capabilities to operate in dynamic business environments but rather depend on buyer–supplier relationships to resolve and survive supply chain disruptions.

Research purpose: The purpose of this study was to explore the underlying role of personal buyer–supplier relationships in a supply chain disruption context.

Motivation for the study: Previous research studies have focussed solely on the role of business relationships in a supply chain disruption context, while neglecting personal relationships.

Research design, approach and method: A generic qualitative research strategy was used for this purpose. Eighteen semi-structured interviews were conducted with nine buyers and nine suppliers of logistics services who were involved in personal relationships during supply chain disruptions.

Main findings: The findings of this study indicate the attributes that must be present for a personal relationship to form in a supply chain disruption context, along with the various advantages and disadvantages that are derived from personal relationships in times of supply chain disruption.

Practical/managerial implications: For managers, this study identifies various attributes, advantages and disadvantages of personal relationships in supply chain disruptions, therefore equipping managers to extract value from personal relationships in supply chain disruptions.

Contribution/value-add: Academically, this study expands the literature by being one of the first empirical studies to conduct research on the role of buyer–supplier personal relationships in the third-party logistics supply chain disruption context.

Introduction

Today, the business world is more intricate than ever before. This interconnectedness and interrelatedness led to the evolution of globalisation, extended supply chains, longer lead times, loss of control over resources and greater uncertainty (Agigi, Niemann & Kotzé 2016:1–3; Behdani et al. 2012:2; Habermann, Blackhurst & Metcalf 2015:493; Scholten & Schilder 2015:471). Firms can no longer rely on their own internal abilities and capabilities because of the myriad number of risks and challenges (Behdani et al. 2012:2; Revilla & Saenz 2017:3). These risks and challenges impose new realities, changes and challenges on supply chain members (Kahn, Barton & Fellows 2013:381, 384). To mitigate logistical risks, firms make use of logistics service providers to manage their logistical activities (Behdani et al. 2012:12; Macdonald 2008:35, 101, 194; Macdonald & Corsi 2013:270; Porterfield, Macdonald & Griffis 2012:401).

Logistics are crucial to the success of any firm and are an important function within the supply chain (Havenga, De Bod & Simpson 2016:6). Supply management costs account for 60% – 90% of the total expenditure of a firm; therefore, ill-managed business and personal relationships can drive up these costs (Gligor & Esmark 2015:517–518). Furthermore, the relationship between buyers and suppliers of logistics services determines whether a firm will reap the full advantage of logistics outsourcing or not (Havenga et al. 2016:6).

The role of personal relationships in supply chains has received growing interest in recent years mainly because of the advantages and disadvantages stemming from both robust and fragile

relationships (Gligor & Autry 2012:24–25; Gligor & Holcomb 2013:328–329; Nyaga, Whipple & Lynch 2010:101). Business relationships are based on rigid rules and procedures between stakeholders. These formal business relationships restrict the required flexibility that is needed to respond and survive in today's dynamic business world (Gligor & Holcomb 2013:330).

Personal relationships form between members who have a collaborative and mutual connection with each other that creates interdependence between them (Adobor 2006:475; Mocke, Niemann & Kotzé 2016:2). The advantages of personal relationships include inimitable gained knowledge, improved communication supply-chain-wide, increased problem-solving and well-established relationship trust (Chung et al. 2016:72; Mocke et al. 2016:10). Supply chain members, however, cannot underestimate the disadvantages of personal relationships (Gligor & Esmark 2015:518). The diverse mix of disadvantages include the loss of resource investments, confidentiality challenges and relationship stagnation (Adobor 2006:474; Chung et al. 2016:72,79; Meyer, Niemann & Kotzé 2017:14–15; Zhou et al. 2014:88). The main attributes of establishing personal relationships are trust, continuous communication, information sharing, commitment and mutual understanding (Lavastre, Gunasekaran & Spalanzani 2014:3387; Nadarajah 2015:111; Nyaga et al. 2010:103–104; Porterfield et al. 2012:403; Wieland & Wallenburg 2013:16).

The Business Continuity Institute has confirmed that 75% of firms worldwide experienced at least one disruption in 2013, whereby 21% of these firms suffered financial losses of more than €1 million (Van der Vegt et al. 2015:974). Supply chain disruptions are inevitable (Qrunfleh & Tarafdar 2013:571–572). Disruptions adversely affect firms' financial, operational, structural, strategic, design and relational systems (Macdonald 2008:1; Macdonald & Corsi 2013:270–272; Revilla & Saenz 2017:1; Van der Vegt et al. 2015:973). Supply chain visibility, which is achieved through collaboration, integrated personal relationships and proactive involvement of all supply chain members is paramount to mitigate the negative effects of disruptions (Behdani et al. 2012:22–24; Habermann et al. 2015:517; Macdonald 2008:45; Porterfield et al. 2012:399; Revilla & Saenz 2017:10, 12; Świerczek 2014:89). Ioanna-Maria, Fearné and Poole (2009:223) stated that: 'Good personal contacts are sometimes cultivated so that they can be resorted to and solve crisis situations'.

Previous studies have researched the role of relationships in supply chain disruptions from a business-to-business perspective (De Goede, Nel & Niemann 2018:1-21; Marasco 2008:132). Several studies determined that research tends to focus on the operational, financial and structural effects of disruptions, without assigning much attention to the relational effects (Johnson, Elliott & Drake 2013:325; Macdonald 2008:5–10; Revilla & Saenz 2017:2–3). The existing literature lacks research on the role of personal relationships in a supply chain disruption context (Gligor & Esmark 2015:517–518; Ioanna-Maria et al. 2009:218–219; Mocke et al. 2016:1–2).

The purpose of this generic qualitative study was to explore the underlying role of personal relationships in a supply chain disruption context.

The following research questions guided this study:

- What is the role of personal relationships between buyers and suppliers of logistics services in a supply chain disruption context?
- What personal relationship attributes must exist to ensure personal relationship sustainability between buyers and suppliers of logistics services in a supply chain disruption context?
- What are the advantages of personal relationships between buyers and suppliers of logistics services in a supply chain disruption context?
- What are the disadvantages of personal relationships between buyers and suppliers of logistics services in a supply chain disruption context?

This study contributes to the existing body of knowledge by being one of the first empirical studies, in the South African third-party logistics (3PL) context, to conduct research on the role of personal relationships in supply chain disruptions. It equips buyers and suppliers of logistics services to extract the value of personal relationships in the supply chain disruption context by taking into account the attributes, advantages and disadvantages of personal relationships. This will aid the mitigation of potential supply chain risks associated with personal relationships. The overall performance of firms can also be enhanced along with the establishment of robust personal relationships.

The article is structured as follows. Firstly, the literature review discusses logistics service providers in the South African context. A distinction is made between personal and business relationships with a focus on personal relationships, followed by a brief description of the supply chain disruption context. Secondly, the research strategy and methods are described. Thirdly, the findings are presented. Finally, the study's contributions, implications (both theoretical and managerial), limitations and suggestions for future research are discussed.

Literature review

Logistics service providers

Christopher (2016:249–250) defines a 'logistics service provider' as a firm who assumes responsibility for buyers' logistical activities. These activities include warehousing, transportation, distribution, financial services and several other value-added activities such as special packaging and break bulking.

In 2016, logistics costs constituted 11.8% of South Africa's gross domestic product (University of Stellenbosch 2016:3). Therefore, South Africa's logistics industry is a strategic resource for the entire economy and also a key driver for

achieving global competitive advantage (Havenga et al. 2016:6). Over the last decade, logistics service providers enabled firms to integrate their supply chains, which led to enhanced visibility and efficiency (Council for Scientific and Industrial Research 2013:35).

A significant amount of research has been conducted on the development of close and cooperative relationships between buyers and suppliers of logistics services. Studies range from the structural arrangements of buyer and supplier relationships (Knemeyer & Murphy 2005:710); to selecting a service provider (Jharkharia & Shankar 2007:275); and the importance of innovation and continuous improvement (Wallenburg 2009:79). These studies focussed mainly on business relationships and neglected the importance of personal relationships (Gligor & Autry 2012:25; Marasco 2008:132; De Goede et al.).

The development of personal relationships between buyers and suppliers of logistics services is imperative for effective and efficient communication (Gligor & Autry 2012:38). According to Zacharia, Sanders and Nix (2011:44), effective and efficient communication between a logistics service provider and the rest of the supply chain promotes supply chain integration and synergy.

The differences between business and personal relationships

Business relationships

Business relationships form between various external stakeholders in a specific business environment (Porterfield et al. 2012:1). Business relationships rely on rigid rules and procedures that are strictly work-related and no reasonable efforts are made to connect on a personal level with individual members (Gligor & Holcomb 2013:330).

Personal relationships

Personal relationships form between individuals who have a collaborative and mutual connection on an individual level, which creates interdependence between them (Adobor 2006:475; Bersheid & Peplau 1983:28; Cooper 1977:621; Gligor & Holcomb 2013:329; Grayson 2007:122–123). Close connections between members of a supply chain are usually based on common interests and an ongoing degree of business dealings with each other (Gable & Reis 2010:195; Gligor & Holcomb 2013:329). Personal relationships tend to foster better communication and business knowledge, which lead to improved performance levels between the buyers and suppliers of logistics services (Zhou et al. 2014:88). Personal relationships are usually separate from other business-specified relationships, because they form the foundation of strategic alliances between participating members (Adobor 2006:475; Gligor & Holcomb 2013:239). There are two primary reasons why personal relationships form. Firstly, the formation of personal relationships improves the overall professional interests of members and, secondly, personal relationships create friendship ties (Meyer et al. 2017:15).

TABLE 1: Differences between personal and business relationships.

Personal relationships	Business relationships
Expressive (emotion based and intrinsic)	Instrumental
Voluntary interaction	Obligation to do acts
Informal	Formal
Motivated without the expectation of receiving something in return	Reciprocity plays an important role
Intimate connections are developed	Arm's length relationships
Parties not easily substituted	Substitution is easy

Source: Adapted from Mocke, K., Niemann, W. & Kotzé, T., 2016, 'The role of personal relationships between buyers and suppliers of third-party logistics services: A South African perspective', *Acta Commercii* 16(1), p. 3. <https://doi.org/10.4102/ac.v16i1.367>; Wang, B., Childerhouse, P., Kang, Y., Huo, B. & Mathrani, S., 2016, 'Enablers of supply chain integration: Interpersonal and interorganizational relationship perspectives', *Industrial Management and Data Systems* 116(4), p. 843. <https://doi.org/10.1108/IMDS-09-2015-0403>

Personal relationships are influenced by three dimensions that facilitate trust and information exchange between members. These dimensions include (1) personal affection, (2) personal communication and (3) personal credibility (Barnes et al. 2015:38; Wang et al. 2016:843). Firstly, personal affection reflects individual feelings, sentiments and emotions that enable a closeness between individuals. Secondly, personal communication permits members to share information to create mutual understanding and closeness. Thirdly, personal credibility refers to the level of trust, confidence and reliability individuals have between each other (Barnes et al. 2015:38; Wang et al. 2016:843). Table 1 summarises the main differences between personal and business relationships.

Attributes of forming personal relationships

The main attributes of personal relationships discussed in this section are trust, continuous communication, information exchange and member commitment (Lavastre et al. 2014:3387; Nadarajah 2015:111; Nyaga et al. 2010:103–104; Porterfield et al. 2012:403; Wieland & Wallenburg 2013:4–6).

Embedded trust in a personal relationship

'Trust' refers to how ready members in a relationship are to adapt to the behaviours and actions of others (Korsgaard, Brower & Lester 2015:47; Wang, Craighead & Li 2014:374–375). This flexibility allows members to survive in unsafe and ambiguous conditions (Nyaga et al. 2010:101). Trust is the most important attribute in a successful personal relationship, without which personal relationships cannot develop (Hofer, Knemeyer & Dresner 2009:142). The development of trust is a gradual process where members increasingly share personal information and scarce resources to create a mutual bond (Korsgaard et al. 2015:55–56; Mocke et al. 2016:4; Skinner, Dietz & Weibel 2014:208).

Trust positively influences social interaction between members and increases the quality of relationships (Barnes et al. 2015:27; Skinner et al. 2014:206–207; Wang et al. 2016:841). The level of trust between members depends on the level of uncertainty, complexity, dependency and power asymmetry between them (Lavastre et al. 2014:3387; Wang et al. 2016:842). Gligor and Holcomb (2013:330) explain that trust develops once members share common characteristics and it improves when a degree of honesty and transparency exists.

Continuous communication and information sharing

Continuous communication involves the timely flow of information between members (Wieland & Wallenburg 2013:4). Communication is defined by how members speak, listen and display respect to each other (Barnes et al. 2015:27; Kahn et al. 2013:379). Ongoing interpersonal communication is a way to achieve the prerequisites of trust by creating relational principles, values and goals (Barnes et al. 2015:27).

It is important to emphasise the elements of continuous communication and information sharing in personal relationships, because it creates flexibility, cohesion and responsiveness (Anderson & Jap 2005:78; Kahn et al. 2013:379). Furthermore, it helps members survive in dynamic and turbulent work environments as it enhances the overall strength of personal ties (Barnes et al. 2015:26; Lavastre et al. 2014:3382, 3387). Gligor and Holcomb (2013:339) suggest that it may also be easier for members to share sensitive business information when they are in personal relationships.

Member commitment in personal relationships

Huo et al. (2015:890) define 'relationship commitment' as members' readiness to cultivate relationships for the purpose of obtaining or retaining resources. Therefore, the success of a personal relationship depends on the commitment of members to investing resources in the relationship (Huo et al. 2015:890). Furthermore, commitment is also characterised by members' willingness to create sustainable personal relationships and to make sacrifices for these relationships (Barnes et al. 2015:27). Robust personal relationships require long-term commitments, because relationships are often expensive to dissolve (Fawcett et al. 2015:1–2; Mocke et al. 2016:11). The time and effort required to regain resources and to repair damage from a failed personal relationship explain the large expense of relationship failure (Fleming 2014:2–3).

Advantages of personal relationships

The degree to which members understand each other increases through personal relationships. Members of personal relationships share mutual visions with each other to help address challenges and obstacles (Gligor & Holcomb 2013:342). The mutual understanding that exists between members of a personal relationship leads to efficient problem and conflict solving. Furthermore, the fluency of doing business also increases marginally (Mocke et al. 2016:10). Increased overall business performance and customer satisfaction are the overarching advantages of personal relationships (Day et al. 2013:152; Mocke et al. 2016:8; Nyaga et al. 2010:101).

Personal relationships generate knowledge that is hard to imitate and enable members to gain additional market intelligence about the business environment (Chung et al. 2016:71; Zhou et al. 2014:88). Long-term personal relationships provide sustainable business opportunities,

which increase the overall competitive advantage of firms (Gligor & Esmark 2015:7).

Trust is one of the most valuable advantages that stems from robust personal relationships (Adobor 2006:475; Day et al. 2013:152; Wieland & Wallenburg 2013:16). Well-established trust in personal relationships provides a way of reducing risks and complexities because it allows members to anticipate the potential behaviours of other members (Casadesus-Masanell 2004:375; Chung et al. 2016:71).

Disadvantages of personal relationships

Abosag, Yen and Barnes (2016:5) and Grandinetti (2017:326) refer to the disadvantages of personal relationships as those problems that may harm a personal relationship. The disadvantages of personal relationships are diverse and may include a lack of creativity, issues in developing capabilities, inconsistent power balances and complacency.

A stagnant relationship that fails to explore new strategic initiatives can have negative consequences for members of the relationship (Huo et al. 2015:887–888). A stagnant relationship restricts the ability to choose from a broad selection of suppliers and restricts information flow, which exposes the firm to potential risks (Anderson & Jap 2005:78; Zhou et al. 2014:88). Furthermore, failure to comply with the liabilities of the relationship agreement, and the maintenance thereof, poses costly and time-consuming obligations towards members (Villena, Revilla & Choi 2011:561). Members may be victims of information piracy and they might also be subject to others' misbehaviours (Adobor 2006:474; Chung et al. 2016:72–79; Day et al. 2013:152–153). These misbehaviours can include the misuse of trust and selfish behaviour. There is no guarantee that managers will operate and act solely in the interests of their co-members (Meyer et al. 2017:10; Villena & Craighead 2017:493). According to Meyer et al. (2017:8), members may be influenced by others' knowledge about each other, which can lead to withholding of confidential information. Members can ultimately find themselves in a vulnerable situation because of their dependency on each other (Macdonald 2008:194; Meyer et al. 2017:10; Mocke et al. 2016:2).

Supply chain disruptions

Firms are susceptible to a myriad of risks (Porterfield et al. 2012:400–401; Rao & Goldsby 2009:101–106; World Economic Forum 2015). Risk management is the pre-identification and management of risks through a coordinated approach amongst supply chain members. Risk management is paramount for reducing vulnerability within the whole supply chain (Porterfield et al. 2012:401). Risks that realise are called 'disruptions' (Behdani et al. 2012:7; Habermann et al. 2015:494; Porterfield et al. 2012:401) and disruptions are also described as '...unplanned events that impede the flow of materials, information, services or financial resources within and between the organisations within a supply chain' (Porterfield et al. 2012:402).

The disruption context

Blackhurst et al. (2005:4069) developed a seminal disruption management framework that consists of three phases: discovery, recovery and redesign. A similar framework, 3R, describes the disruption context in terms of *readiness*, *responsiveness*, and *recovery* (Pyke & Tang 2010:244). The current study explores the disruption context as a whole. The management of disruptions should be a structured and ongoing process as the main objectives of disruption management are to limit the impact of disruptions as they occur and to gain experience to cultivate learning (Behdani et al. 2012:7–8; Macdonald 2008:41; Nel, De Goede & Niemann 2018:10; Revilla & Saenz 2017:7).

Categorising disruptions

Disruptions differ in terms of severity, cause and duration (Macdonald & Corsi 2013:272). The occurrence of disruptions is inevitable in today's dynamic business world (Qrunfleh & Tarafdar 2013:571–572). Firms experience disruptions from many sources; therefore, there exists no right or wrong way to categorise disruptions. Table 2 summarises how several authors categorise disruptions in terms of the inherent cause.

Several researchers have investigated the snowball effect of supply chain disruptions (Agigi et al. 2016:1; Behdani et al. 2012:1; Habermann et al. 2015:493; Revilla & Saenz 2017:6; Van der Vegt et al. 2015:971). A single supply chain disruption has detrimental effects on associate supply chain members, with an eradication of the entire supply chain as the worst-case scenario (Habermann et al. 2015:493).

The effects of disruptions

Disruptions have negative effects on the financial and organisational performance of firms (Macdonald & Corsi 2013:270–272; Porterfield et al. 2012:404; Revilla & Saenz 2017:1). The negative financial and operational consequences of disruptions include a reduction in revenues, loss of sales, inventory stock-outs, higher logistics costs, budget overruns,

physical damage, decreasing shareholder value, damaged creditability and service failures (Macdonald & Corsi 2013:270–272; Revilla & Saenz 2017:1). Disruptions also require firms to change from a formal centralised organisational structure towards a more flexible decentralised organisational structure (Gaonkar & Viswanadham 2007:267; Van der Vegt et al. 2015:973). These structural changes are necessary because flexible structures enable decision-makers to make rapid changes (Van der Vegt et al. 2015:973).

Disruptions have psychological effects on employees (Bhattacharya et al. 2013:727–730). Although employees may be educated on risk management procedures, trauma can nullify all such planning initiatives (Bonanno 2008:101; Van der Vegt et al. 2015:974). However, personal affection, emotional involvement and empathy foster support to employees in tragic times (Barnes et al. 2015:38; Wang et al. 2016:843).

Strategies for mitigating disruptions

The adverse consequences of disruptions necessitate the need to mitigate disruptions. Several studies indicate that 'traditional risk management', where steps are taken before risks materialise, is no longer preferred, because strategies can never deal with all the risks that may occur (Macdonald 2008:4–10; Porterfield et al. 2012:401; Scholten & Schilder 2015:472; Van der Vegt et al. 2015:972).

Firms no longer rely on their own internal capabilities but rather depend on several supply chain members to benefit from the dynamism of the supply chain environment (Revilla & Saenz 2017:3). Firms now follow a more holistic approach by designing resilient supply chains that can recover from shocks while maintaining operations (Macdonald & Corsi 2013:271; Scholten & Schilder 2015:471–472). It is important to recognise that there is no single way to respond to disruptions. Table 3 summarises disruption mitigation strategies in terms of risk management, resilience and other strategies.

TABLE 2: Categorising disruptions in terms of the inherent cause.

Author	Natural events	Man-made: Internal	Man-made: External
Behdani et al. 2012:12	Natural catastrophes (not specified)	Production facility failures, quality problems in end product, internal information system failures, human resource problems (e.g. strikes)	Distribution network breakdowns, demand volatility, quality problems in raw materials, supplier delay, supplier bankruptcy, 3PL bankruptcy, external transportation delays, port strikes, security risks (e.g. terrorist attacks), communication infrastructure breakdowns, political instability, economic instability, regulatory risks, legal risks
Johnson et al. 2013:324	Floods, earthquakes, volcanic ash	Internal information system failures	Loss of key suppliers, external information system failures, traffic congestion, industrial disputes, political unrest
Macdonald 2008:35, 101	Hurricanes, floods, snowstorms	Product recalls, inferior manufacturing quality, improper import documents, new product development problems, internal transportation delays, strikes by private truck drivers, poor internal communication, internal information system malfunctions	Custom delays, supply chain coordination problems, supplier labour strike, port labour strike, damaged products in transit (using 3PL suppliers), inferior supplier quality, raw material shortages, supply delays (because of transportation problems), limited transportation availability, terrorism, 3PL relational problems, demand spike, war in supplier's country, external information system malfunctions, poor external communication, industrial accidents
Macdonald and Corsi 2013:270	Natural disasters (not specified)	Poor internal communication, strikes by private truck drivers, internal information system failures, internal quality problems, operational problems	Poor communication with other supply chain members, opportunism by suppliers, strikes by 3PL truck drivers, port strikes, external information system failures, terrorism, industrial accidents, supplier quality problems, changing government regulations
Porterfield et al. 2012:401	Hurricanes, floods	Shipping accidents using own fleet, production mishaps	Terrorism, shipping accidents using 3PL suppliers
Sheffi 2015:32	Hurricanes, fires, earthquakes, power outages	Internal product contaminations, internal design defects	Ageing populations, new regulations, labour union contract deadlines, industrial espionage, cyber-attacks, external product contaminations

3PL, third-party logistics.

TABLE 3: Strategies to mitigate disruptions.

Author	Risk management strategies	Supply chain resilience strategies	Other strategies
Behdani et al. 2012:17–20	x	x	Flexible strategies (supply base, product configuration, manufacturing process, transport flexibility) Redundancy strategies (redundant inventory, backup supplier, overcapacity) Control strategies (security improvements, demand management, supplier qualification screening, performance-based contracting) Cooperative strategies (collective response planning, resource sharing, information sharing)
Habermann et al. 2015:491–492	-	-	Dispersion of supply chain partners, co-locating supply chain partners
Johnson et al. 2013:324	x	x	-
Macdonald 2008:9–10	x	x	Early involvement
Macdonald and Corsi 2013:270	x	-	Buffering, bridging
Porterfield et al. 2012:401	x	x	-
Scholten and Schilder 2015:472	x	x	-
Sheffi 2015:32	x	-	Legal compliance, responsiveness to social concerns, safety measures, quality measures, security measures
Van der Vegt et al. 2015:972	x	x	-

X is an “indicator”.

The need for personal relationships within the disruption context

The integrated, globalised business environment shifted from a cost-and-efficiency focus towards the development of a more flexible, visible and collaborative supply chain. This was largely achieved through the formation of personal relationships (Johnson et al. 2013:324). Scholten and Schilder (2015:471) refer to collaboration as the ‘glue’ that holds firms together in times of disruptions. Collaboration becomes even more important in today’s globalised business environment, because of inaccurate forecasting, uncertainty and long lead times (Habermann et al. 2015:517).

The embedded trust within personal relationships enables firms to mitigate risks (Chung et al. 2016:72). Furthermore, personal relationships can also create other benefits, such as gaining market knowledge about the environment, achieving increased levels of communication, coordination, information sharing and member commitment (Behdani et al. 2012:23–24; Revilla & Saenz 2017:10). These attributes become a necessity for supply chain visibility and to effectively respond to disruptions (Barnes et al. 2015:27; Council of Supply Chain Management Professionals 2016; Skinner et al. 2014:206–207; Wang et al. 2016:841; Zhou et al. 2014:88).

It is thus crucial for buyers and suppliers of logistics services to maintain and use personal relationships to keep firms secure in the supply chain disruption context and to produce a competitive advantage (Gligor & Esmark 2015:525; Scholten & Schilder 2015:471). Disruptions force members to absorb all the capabilities of the supply chain network to enable them to adapt and grow during uncertainties and change (Scholten & Schilder 2015:471).

Methodology

Research design

This study employed a generic qualitative research design (Neergaard et al. 2009:2). Qualitative research can be implemented to explore the complexities of research questions and to create a better understanding of a topic (Leedy & Ormrod 2013:95–96). The experiences of participants, in their natural setting, can be captured and are

best described when using a generic qualitative research approach (Myers 2013:5; Neergaard et al. 2009:53; Plano Clark & Creswell 2015:289). Therefore, cross-sectional primary data were gathered by conducting semi-structured interviews. A generic qualitative research design was deemed appropriate, because the purpose of this study was to explore various perspectives of participants and to formulate a detailed understanding of how they experience the role of personal relationships in the supply chain disruption context (Percy, Kostere & Kostere 2015:76–78).

Sampling

The unit of analysis for this study was the personal relationships between buyers and suppliers of logistics services. Homogeneous sampling creates specified samples based on predetermined characteristics (Plano Clark & Creswell 2015:335) and was used to identify the most appropriate logistic supplier and buyer firms for this study. Palinkas et al. (2015:535) state that criterion sampling identifies information-rich cases through the pre-identification of specific criteria. Therefore, criterion sampling was appropriate to sample the participating individuals of logistics buyer and supplier firms. The inclusion criteria at the firm level were: (1) each firm should be a supplier or buyer of logistic services, (2) each firm should have staff involved in a personal buyer–supplier relationship and (3) each firm should have experienced a recent supply chain disruption. The following inclusion criteria were used at an individual level: (1) the individual should be a middle- or senior-level manager empowered to make decisions during a supply chain disruption, and (2) the individual should be involved in a personal buyer–supplier relationship with an individual with whom they experienced a recent supply chain disruption.

In addition to criterion sampling, the researchers used snowball sampling to expand the sample set. Snowball sampling relies on participants to identify additional members to be included in a study (Merriam 2009:79; Saunders, Lewis & Thornhill 2016:303; Zikmund 2003:384). Eighteen semi-structured interviews were conducted, one per participating firm. There are no fixed rules for the sample size of qualitative studies as it tends to vary from one study

TABLE 4: Description of the participants' profiles.

Participant's code	Organisation code	Job title	Gender	Years in industry	Years in firm	Duration (minutes)	Direct relational link
Suppliers of logistics services							
S1	SC1	Commercial executive	Female	11.0	4.0	32:30	BC5
S2	SC2	Contract manager	Male	25.0	2.0	1:12:01	BC2
S3	SC3	Transport planning executive	Male	20.0	8.0	36:17	-
S4	SC4	Divisional executive	Male	17.0	5.0	23:22	-
S5	SC5	Senior director account solutions, consumer & retail	Male	20.0	15.0	33:14	-
S6	SC6	Commercial mining manager	Female	20.0	1.0	23:23	-
S7	SC7	National sales manager	Male	13.0	5.0	37:41	-
S8	SC8	Supply chain executive	Male	8.0	8.0	39:18	BC7
S9	SC9	Customer accounts manager	Female	12.0	6.5	35:09	-
Buyers of logistics services							
B1	BC1	Logistics administrative manager	Male	5.0	4.0	1:03:04	-
B2	BC2	National logistics manager	Male	10.0	3.0	28:37	SC2
B3	BC3	Supply chain development manager	Male	22.0	17.0	43:35	-
B4	BC4	Supply chain executive	Male	20.0	3.0	24:39	-
B5	BC5	Transport services manager	Female	6.5	6.5	18:57	SC1
B6	BC6	Senior customs controller	Female	8.0	4.0	24:19	-
B7	BC7	Customer service and traffic manager	Male	6.5	6.5	34:18	SC8
B8	BC8	Strategic sourcing manager	Female	24.0	5.5	31:05	-
B9	BC9	Customer service manager	Male	6.0	3.0	17:51	-

Number of interviews: 18.

Average duration of interviews: 34.24 minutes.

Average years in industry: 14.1 years.

Average years in firm: 5.9 years.

to the next (Creswell 2012:209; Polit & Beck 2012:521; Merriam 2009:80) because data saturation happens per individual study where nothing significant and new is added to the study by additional interviews (Bowen 2008:140). This principle was used to ensure that the sample size was adequate to allow for the maximum amount of new data without collecting insignificant data.

Table 4 provides a description of each individual participant's profile.

Data collection

Semi-structured interviews are the most appropriate method to use when researchers seek a deeper understanding of a topic (Rowley 2012:262). The role of personal relationships in the supply chain disruption context is not yet well understood. Therefore, this data collection method was deemed the most suitable. Semi-structured interviews consist of a predetermined discussion guide that includes open-ended questions that encourages participants to describe their own opinions and experiences in an open and frank manner (Sandelowski 2000:338). The researchers developed a comprehensive discussion guide from the available literature.

A pilot test interview was conducted with a supply chain professional who met all the inclusion criteria. Because only minor adjustments were made to the discussion guide, the pilot test's data were included in the sample. The researchers started each interview with a brief introduction, followed by broad, easy to answer questions. The questions progressively moved to more specific and complex questions around the topic.

Eighteen semi-structured interviews were conducted. To capture the opinions and experiences of both buyers and suppliers of logistics services, nine interviews were conducted, respectively. Sixteen face-to-face semi-structured interviews and two telephonic interviews were conducted. The latter method was used because of geographic constraints. All of the interviews, except one, were conducted at the participants' workplace during business hours. One interview took place in a coffee shop after business hours.

The average duration of the interviews was 34.24 min. All 18 interviews were audio recorded after obtaining the permission of each participant. All interviews were transcribed by professional transcription services, typically within 48 h after the interview was conducted. The researchers listened to the interview recordings while reading the transcriptions to ensure accurate and verbatim transcripts.

Data analysis

Thematic analysis was used to analyse the collected data. Thematic analysis is the systematic coding of data to identify, organise and group codes into specific themes (Braun & Clarke 2012:57). The researchers identified *a priori* codes that derived from the literature to create an initial master code list. The researchers discussed the codes and themes to determine whether both agreed that it was directly related to the research questions of this study. The researchers were both actively involved in the data analysis process whereby the one constantly assessed the other's findings and perceptions. Constant assessment of each other's work contributes to the trustworthiness of the study by avoiding biased perspectives. Thereafter, familiarisation

and preliminary analysis were conducted by listening to the audio recordings while reading the transcripts. *In vivo* codes were then generated from the data and applied to code each transcript. This process was repeated for all 18 transcripts. After each transcript was analysed, the master code list was updated by combining and eliminating redundant or similar codes. Once all 18 transcripts were coded the revised master code list was organised and grouped into sub-themes and main themes.

Trustworthiness

A four-criterion framework was employed to ensure the trustworthiness of this study. It included credibility, dependability, confirmability and transferability. Firstly, credibility was obtained through data triangulation, which entails that the opinions and experiences of multiple firms were explored (Polit & Beck 2012:585; Shenton 2004:66). Additionally, to enhance the quality of the study, the researchers conducted peer-debriefing sessions with experienced individuals in supply chain management research to receive constant feedback (Bloomberg & Volpe 2016:163; Lietz & Zayas 2010:196; Polit & Beck 2012:594). Secondly, the dependability of the study is demonstrated in the detailed description of the research design and data collection method (Shenton 2004:71). Thirdly, a link was formed between the collected data and the literature to adhere to the confirmability criterion (Lietz & Zayas 2010:197). The analysis of the data for this particular study was also performed by more than one researcher to ensure a comprehensive and thorough data interpretation (Elo et al. 2014:5). Finally, transferability was achieved by including detailed descriptions of the methodology, industry, geographic areas, participating firms and participants (Elo et al. 2014:6; Shenton 2004:70). Therefore, readers should be able to make their own assumptions about the possibility of transferring the study to other or similar contexts (Shenton 2004:69).

Ethical considerations

The relevant research ethics committee at the University of Pretoria approved the study prior to fieldwork (ethical clearance number: 14039797/14017131/2017). Before the start of each interview, the participant was asked to read and

sign the informed consent form. All participants gave voluntary consent to participate in the study. Before each interview, the researchers reminded the participants that they could withdraw from the interview process at any time. The researchers also emphasised that anonymity and confidentiality would be ensured at all times. Pseudonyms were used to remove any information that could be linked to the participants (i.e. participant and company names).

Findings

This study identified three main themes, as indicated in Figure 1. These themes relate to the following: (1) the attributes that must be present for a personal relationship to form in a supply chain disruption context, (2) the advantages personal relationships in the supply chain disruption context can yield and (3) the disadvantages of having a personal relationship in a supply chain disruption context. A discussion regarding these themes follows in the next sections, accompanied by direct quotations from the participants that link with the literature.

The attributes of personal relationship in a supply chain disruption context

Personal relationship attributes are a necessity for supply chain visibility and effective responses towards disruptions (Barnes et al. 2015:27; Skinner et al. 2014:206–207). This study explored the attributes that must be present to ensure sustainable personal relationships between buyers and suppliers of logistics services in a supply chain disruption context. The main identified advantages are summarised in Figure 1 and discussed below.

Continuous communication and information sharing

Continuous communication involves personal contacts and the timely flow of information (Wieland & Wallenburg 2013:4). Supply chain disruptions are inevitable in today's dynamic business environment (Qrunfleh & Tarafdar 2013:571–572), but continuous communication and information sharing creates flexibility, cohesion and responsiveness that can help members survive (Barnes et al. 2015:26; Kahn et al. 2013:379). The interviews revealed that continuous communication leads to real-time information, visibility, feedback, as well as honest and open communication

Theme 1: Personal relationship attributes in a supply chain disruption context.	Theme 2: Personal relationship advantages in a supply chain disruption context.	Theme 3: Personal relationship disadvantages in a supply chain disruption context.
<ul style="list-style-type: none"> • Continuous communication and information sharing • Innovation • Personal credibility and personal affection • Relational alignment • Investment and commitment towards personal relationship • Trust 	<ul style="list-style-type: none"> • Improved business performance • Improved flexibility • Improved interdependence, dependability and reliability • Improved problem-solving • Personal relationships as a mitigation strategy 	<ul style="list-style-type: none"> • Emotional involvement • Information leakage • Self-interest-seeking behaviour • Stagnant personal relationships • Reduced business performance

FIGURE 1: Linking the sub-themes to the research questions.

during supply chain disruptions, as illustrated in the following:

'It's about having that open communication all the time, good news or bad news.' (B7, male, customer service and traffic manager)

'We were given an update about the investigation pretty much the whole time. The key was continuous and trustworthy communication. It is critical, that you have real time information, so that you can determine what is wrong. In our industry, after a week, something is old.' (B2, male, national logistics manager; translated from Afrikaans)

The findings are in line with those of Kahn et al. (2013:379) and Lavastre et al. (2014:3382, 3387), who found that continuous communication is critical for the creation of flexibility, cohesion, responsiveness and overall strength of personal relationships in a turbulent environment.

Innovation

Effectively managed personal relationships generate knowledge that is hard to imitate (Abosag et al. 2016:6). Buyers and suppliers of logistics services need to strive for innovative solutions that can add value to the personal relationship, especially in a supply chain disruption context. Personal relationships stimulate innovative thinking, which is evident from the following quote:

'The best ideas don't originate from a contract; they are generated through personal conversations, for example over lunch or having a very informal discussion about general stuff ... This is where you get innovation.' (B3, male, supply chain development manager; translated from Afrikaans)

Although Chung et al. (2016:71) and Zhou et al. (2014:88) determined that personal relationships can generate knowledge that is hard to imitate, they did not mention innovation per se. Therefore, innovation is an expansion of the work by Chung et al. (2016:73) and Zhou et al. (2014:88).

Personal credibility and personal affection between members

Personal credibility refers to reliability and the level of trust and confidence individuals have in each other (Barnes et al. 2015:38; Wang et al. 2016:843). Personal credibility is described below where members took the necessary steps to resolve a disruption and ensure the survival of the personal relationship afterwards:

'Things happened, it had to be resolved, it was a fault on our side, we admitted to it, sorted it out, resolved the issue and in the end carried on with the relationship.' (B6, female, senior customs controller)

Personal affection reflects the individual feelings, sentiments and emotions that enable a closeness between people (Wang et al. 2016:843). Personal affection correlates directly with the attitude of members to ensure the success of a personal relationship in the supply chain disruption context:

'It really comes down to the person. I can be dealing with you all day long and I don't like you and we're never going to connect

but I can also really click with you on Day 1 and it could... You know hit it off and chat and work around it in a more personal way as well.' (S7, male, national sales manager)

These findings are in line with previous studies (Barnes et al. 2015:38; Wang et al. 2016:843) that identified personal credibility and affection as being two of the three dimensions that influence the development of a personal relationship.

Relational alignment

Gligor and Holcomb (2013:329) state that mutual understanding, common interests, mutual goals and objectives, and cultural alignment between members influence the success of personal relationships. The following quote illustrates the mutuality between members and how it improves their reaction towards disruptions:

'So that is the importance of a strategic relationship, cultural alignment and mutually aligned goals, is that you're able to work in a difficult situation and try to overcome obstacles.' (S1, female, commercial executive)

This finding confirms the literature that personal relationships are based on the commonality between members, which includes mutual goals and objectives, as well as cultural alignment (Gable & Reis 2010:195; Gligor & Holcomb 2013:329).

Invest and commit towards the personal relationship

Relationship commitment is the readiness and willingness of members to cultivate relationships to retain or achieve resources and to make the necessary sacrifices to sustain a personal relationship (Barnes et al. 2015:27; Huo et al. 2015:890). Members of a personal relationship make the necessary efforts to understand cultural differences for the relationship to reap benefits during a disruption:

'If your supplier or your client is very Afrikaans then you're going to try and accommodate that culture. You're going to try and at least have someone in the team there that can integrate there ... You definitely get behind the wall, whatever the blockage is.' (S7, male, national sales manager)

Furthermore, the formation of a personal relationship takes time and requires commitment, because repairing damage to a relationship can be costly (Fawcett et al. 2015:1–2; Fleming 2014:2–3). Participants indicated the average time to form a personal relationship is between 6 weeks and 18 months. The following extract indicates the importance of time when establishing a personal relationship:

'The biggest challenge to support personal relationships is physical time. To support that relationship you have to provide enough time towards it in order for it to be proactive.' (S4, male, supply chain solutions and systems developer; translated from Afrikaans)

These findings are in line with those of Huo et al. (2015:890), who argued that the success of a personal relationship is dependent on the commitment of members to invest resources towards the relationship.

Trust

Trust refers to members' readiness to adapt to the behaviours and actions of others (Korsgaard et al. 2015:47). Trust is the foundation of relationships and is a critical attribute in uncertainty. This is illustrated by the following:

'I want to have that trusting relationship with that person that when things get tough that I am going to be able to trust that they are going to have my back and that they are going to share the burden of disruption with me.' (B8, female, strategic sourcing manager)

This finding confirms and adds to the statement of Nyaga et al. (2010:101), who found that trust allows members to operate in unsafe and ambiguous conditions.

The advantages of personal relationship in a supply chain disruption context

Personal relationships hold firms secure in the supply chain disruption context and produce a competitive advantage (Gligor & Esmark 2015:525; Scholten & Schilder 2015:471). Figure 1 summarises the overarching advantages identified by participants. A detailed discussion follows.

Improved business performance

Nyaga et al. (2010:101) and Mocke et al. (2016:10) concluded that the overarching advantages of personal relationships accrue to enhanced business performance and customer satisfaction. Personal relationships assist in smooth and seamless operations during a supply chain disruption, which improve the overall business performance of both the buyer and supplier. This is shown in the following quotation:

'Instead of jumping up and down or reacting badly to it, you get that support in getting it up and running as soon as possible.' (B7, male, customer service and traffic manager)

These findings confirm the benefits of personal relationships identified by Day et al. (2013:152) and Mocke et al. (2016:10), who concluded that increased business performance is one of the overarching advantages of personal relationships. The fluency of doing business also tends to increase marginally when a personal relationship exists.

Improved flexibility during disruptions

Personal relationships create friendship ties (Meyer et al. 2017:15). The participants concluded that they would often receive additional support and favourable treatment during a supply chain disruption by members with whom they share a personal relationship. The following quotations illustrate favourable additional support and favourable treatment during supply chain disruptions:

'Their company will do that for me [*support me during disruptions*] without any additional charges and go the extra mile because we have a relationship.' (S8, male, supply chain executive)

'When I ask for something that is not necessarily in the Service Level Agreement or normal, standard business procedures and that person can give it to me.' (B2, male, national logistics manager; translated from Afrikaans)

Although Meyer et al. (2017:15) state that friendship ties are created because of personal relationships, the flexibility and favourable treatment members receive during a supply chain disruption expand the literature in this context. This is mainly because of a lack of empirical research on the role of personal relationships, specifically in the South African supply chain disruption context.

Improved interdependence, dependability and reliability in the supply chain disruption context

Personal relationships form between members who have a collaborative and mutual connection on an individual level, which create interdependence between them (Adobor 2006:475). The participants emphasise that their dependability and reliability on each other improved in a supply chain disruption context. Members trust that co-members will assist them during the supply chain disruption as showcased by the following quotation:

'Becomes easier and easier to deal with the hard times, because you know that person is going to be there.' (B8, female, strategic sourcing manager)

The finding confirms the existing literature by Chung et al. (2016:71), who found that well-established trust in personal relationships provides a way of reducing complexities because members are able to anticipate the behaviours of their co-members.

Improved problem-solving during supply chain disruptions

Members in personal relationships share mutual visions that help to address the challenges and obstacles they may face (Gligor & Holcomb 2013:342). The participants indicated that being in a personal relationship helped them solve disruptions in the supply chain disruption context. Furthermore, Lavastre et al. (2014:3382, 3387) claim that information sharing enhances the overall strength of the personal relationship in turbulent work environments. Improved problem-solving occurs from proactive disruption identification, enhanced knowledge, improved information sharing and an overall increase in communication between members. The following extracts describe these advantages:

'My personal relationship ... enabled us to speak extensively about these things. They knew exactly what was going to happen and they knew exactly how long it would take us to find our feet.' (S9, female, customer accounts manager; translated from Afrikaans)

'You can have a more open conversation. If you don't have a personal relationship and when there is disruption [*it*] can be quite confrontational.' (S5, male, customer relationship manager)

'You have truthful, reliable feedback and information. You have frank and honest opinion of what's the situation on the ground.' (S6, female, commercial mining manager)

These findings confirm those of Gligor and Holcomb (2013:342), who explain that mutual understanding between members of a personal relationship leads to efficient problem-solving.

Personal relationships as a disruption mitigation strategy

Firms no longer rely on their own internal abilities and capabilities but rather depend on supply chain members, because of the complexities and dynamism of the supply chain environment (Revilla & Saenz 2017:3). Members who are involved in a personal relationship accept responsibility and accountability for their actions. Learning derives from such behaviour and members are dedicated towards relationship continuity. The following quotes illustrate these advantages:

'[B5] is in a position where they are comfortable that they would know that we would ensure that there would be the least amount of impact to their business.' (S1, female, commercial manager)

'There have been serious challenges ... I would say that [it] is ... only because of the personal relationship that we managed to survive and not lose that business.' (S5, male, customer relationship manager)

These findings confirm and add to the need for collaboration as explained by Scholten and Schilder (2015:471), who found that members should take all the capabilities of the supply chain network into consideration to adapt and grow during uncertainty. In addition, the role of personal relationships in mitigating supply chain disruptions was identified as a compelling finding in this context.

The disadvantages of personal relationships in a supply chain disruption context

The disadvantages of personal relationships refer to problems that may harm relationships (Abosag et al. 2016:5; Grandinetti 2017:326). All the disadvantages of this study are summarised in Figure 1 and detailed as follows.

Emotional involvement

Disruptions can have psychological effects on members of a supply chain (Bhattacharya et al. 2013:727–730). However, personal affection, emotional involvement and empathy foster support in tragic times (Barnes et al. 2015:38; Wang et al. 2016:843). Finding the correct balance of emotional involvement in a supply chain disruption context is an ongoing challenge. When a disruption is realised and members are too emotionally involved, biased judgement can result in irrational decision-making. After the occurrence of a supply chain disruption, members tend to be more lenient towards the appraisal of each other's performance. Therefore, lax performance appraisal results in inefficient personal relationships. These disadvantages are demonstrated by the following quotes:

'The disadvantages of a personal relationship are that it can become too personal, so when you need to make a hard decision it is harder to make that decision. Because now it becomes about the individual and not about the issue or the problem.' (B8, female, strategic sourcing manager)

'If something goes wrong and you have to make use of your service level agreements to punish them, there is the possibility of reducing the punishment and making it much smaller. This occurs because of the good personal relationship.' (B2, male, national logistics manager; translated from Afrikaans)

These findings confirm those of Macdonald (2008:194), who states that members could become too dependent on each other. Biased judgement and lax performance appraisal are an expansion of the current supply chain literature. Furthermore, too much emotional involvement needs attention, because of its relevancy in the supply chain disruption context.

Information leakage

Information sharing helps members survive in dynamic and turbulent work environments (Barnes et al. 2015:26). Members in personal relationships tend to have casual talks and share sensitive information (Gligor & Holcomb 2013:339), which can be misused within the supply chain disruption context. Blurred lines between right and wrong can emerge because members are cognisant of the fact that information is the key to managing disruptions more effectively. Leaking sensitive information can have legal implications. The following extracts explain information leakage during supply chain disruptions:

'If you have a good personal relationship, you divulge too much information. And it's very easy to again have this blurred line in between what is right and what is wrong ... You give someone information that they shouldn't be getting ...' (B7, male, customer service and traffic manager)

'You can end up in jail because of your personal relationship ... I walk out there and think to myself – you can't tell this to people.' (S9, female, customer accounts manager; translated from Afrikaans)

The findings are in line with those of Chung et al. (2016:72–79), who found that members in a personal relationship can be victims of information piracy.

Self-interest-seeking behaviour

Self-interest-seeking behaviour occurs when members in a personal relationship do not operate solely in the interests of their co-members (Meyer et al. 2017:10). Within a supply chain disruption context, members can take advantage of the existing personal relationship to get favourable treatment. Members can also misuse trust, which can lead to unethical behaviour. The risks of self-interest-seeking behaviour are detailed as follows:

'People sometimes cross the boundaries. They sometimes tend to contact you outside normal office hours ... it can become a nuisance when they want to do it all the time, not just when it's required ... I would say that's the biggest disadvantage.' (S6, female, commercial mining manager)

'The disadvantage is when you actually let a personal relationship dominate the business relationship. It can get cloudy and then you start going on hunting trips ... and that could eventually lead to the wrong part.' (S8, male, supply chain management executive)

The findings are aligned with those of Villena and Craighead (2017:205), who state that members may be subject to others' misbehaviours. Favourable treatment also contradicts the compelling advantages found by this study.

Stagnant personal relationships

Stagnation inhibits continuous exploration of new strategic initiatives (Huo et al. 2015:887–888). After the occurrence of a disruption, fragile personal relationships may occur. The findings revealed that operating in a comfort zone, being familiar with each other, too much member dependence and lost resource investments are the root causes of fragile personal relationships, despite the occurrence of supply chain disruptions. The consequences of stagnation are best described by the following quotes:

‘Another disadvantage of having a personal relationship is that people don’t move on, because they have so much fun, because it is so lekker and everybody sings kumbaya.’ (B8, female, strategic sourcing manager)

‘If you become so familiarised with each other and have such a personal relationship with each other where you say, oh well, it’s life and it just happens. [There is] nothing I can do about it ... you just have to live with it.’ (S6, female, commercial mining manager)

‘I think the risk of having a personal relationship is when people do move ... If you’ve invested in an individual and if that individual then leaves, then it’s about, you’ve got to start building a relationship again and that partially has a negative impact on, not only the personal relationship but the business relationship as well.’ (B7, male, customer service and traffic manager)

These findings confirm the fact that stagnant personal relationships may expose and exploit the focal firm to potential risks (Anderson & Jap 2005:78; Chung et al. 2016:72).

Reduced business performance

Ill-managed personal relationships drive up supply chain management costs (Gligor & Esmark 2015:517–518). Fragile personal relationships have a negative financial impact on firms. These disadvantages are explained by the following quotes:

‘It can be a personal issue that gets dragged into the business. This can have a big financial impact. (S9, female, customer accounts manager; translated from Afrikaans)

‘[If your] personal relationship is too strong, then potentially we get blinkered towards the business relationship.’ (B7, male, customer service and traffic manager)

These findings contradict the conclusions of Day et al. (2013:152), Mocke et al. (2016:8) and Nyaga et al. (2010:101) regarding enhanced business performance. Although enhanced business performance derives from personal relationships, the negative side thereof cannot be ignored.

Conclusion

Summary of findings

The purpose of this generic qualitative study was to understand the role of personal relationships in a supply chain disruption context between buyers and suppliers of logistics services in Gauteng, South Africa. This study explored the disruption context as a whole without

distinguishing between the discovery, recovery and redesign phases. This study reported and addressed findings in three areas, namely attributes, advantages and disadvantages of personal relationships in the supply chain disruption context. It found that there are no distinct differences between how the suppliers and buyers of logistic services define personal relationships. For this study, personal relationships could only be explored if participants engaged on a social basis with each other. Social engagement between the members included, amongst others, braais, golf days, international rugby matches and breakfast or dinner dates.

This study explored the attributes that must be present for a personal relationship to form in a supply chain disruption context. Five existing literature findings relating to attributes that should be present in a personal relationship were confirmed. Firstly, continuous communication leads to visible and truthful real-time information shared between members during supply chain disruptions. It confirms the findings of Kahn et al. (2013:379) and Lavastre et al. (2014:3382, 3387), who found that continuous communication contributes to cohesion, responsiveness and the overall strength of a personal relationship. Secondly, Barnes et al. (2015:38) identified dimensions that influence the establishment of personal relationships. These dimensions were confirmed by this study, namely that personal credibility and personal affection described how members’ attitudes allowed them to take responsibility to resolve and survive disruptions. Thirdly, mutuality of goals and objectives, as well as cultural alignment, improved members’ reactions toward disruptions. Mutuality between members confirms the findings of Gligor and Holcomb (2013:329). Fourthly, it took members approximately 6 weeks to 18 months to form good personal relationships. The members should invest and commit towards the formation of strong personal relationships to reap the benefits thereof during disruptions. This aspect includes efforts to understand the cultural differences of members. Huo et al. (2015:890) found that the success of personal relationships depends on commitment and investment towards it; therefore this study confirms the literature. Finally, as mentioned by Nyaga et al. (2010:101), this study found that trust serves as the foundation of personal relationships and is critical for operating in dynamic business environments. In addition, the presence of innovation was found to be an expansion of the current literature. It is crucial that innovation should be present to add value to personal relationships in a supply chain disruption context. Chung et al. (2016:73) and Zhou et al. (2014:88) found that personal relationships may generate knowledge, but they did mention innovation specifically.

Furthermore, this study reported on the advantages of personal relationships in a supply chain disruption context. These findings mostly correlate with the existing literature. It relates to the fact that personal relationships improve business performance thanks to the seamless and smooth operations they tend to create during a supply chain disruption.

This directly correlates with the findings of Day et al. (2013:152), who concluded that improved business performance and business fluency are some of the overarching benefits of personal relationships. Members tend to emphasise and improve their dependability and reliability in the supply chain disruption context because the embedded trust allows them to assist each other. Therefore, this study confirms the previous research conducted by Chung et al. (2016:71). Additionally, because the members tend to share mutual visions and information with each other, they are able to solve problems more quickly. This relates to the members being able to proactively identify disruptions and enhance each other's knowledge regarding a disruption situation (Gligor & Holcomb 2013:342). This study identified two considerable findings relating to the advantages of personal relationships in a supply chain disruption context. Firstly, the members would often receive additional support and favourable treatment during a supply chain disruption and, secondly, members who are involved in a personal relationship accept responsibility and accountability for their actions.

Finally, this study explored the disadvantages of having personal relationships in a supply chain disruption context. The disadvantages mostly confirm the existing literature. Firstly, this study confirms the findings of Macdonald (2008:194), namely that when a disruption is realised and members are too emotionally involved, biased judgement calls can lead to irrational decision-making. After the occurrence of a supply chain disruption, members also tend to be more lenient towards the performance appraisal of each other. Members being biased on their judgement and lax performance appraisals during the supply chain disruption expands the current literature. Secondly, members in personal relationships might be victims of information piracy (Chung et al. 2016:72, 77). They can misuse their personal relationships to extract confidential information within the supply chain disruption context. Blurred lines between right and wrong can emerge, because members are cognisant of the fact that information is the key to managing disruptions more effectively. Leaking sensitive information can also have legal implications for the party at fault. Thirdly, members can take advantage of the personal relationship to receive favourable treatment. Members can also misuse trust, which can lead to unethical behaviour, especially in a supply chain disruption context, where the need to act quickly is imperative. These findings confirm the research by Villena and Craighead (2017:205). They also contradict the compelling advantage found by this study, that members would often receive favourable treatment during supply chain disruptions. Additionally, the findings are in line with Anderson and Jap (2005:78) by contemplating that operating in a comfort zone, being familiar with each other, too much member dependence and lost resource investments are the root causes of fragile personal relationships in supply chain disruptions. Finally, reduced business performance contradicts the current literature of Day et al. (2013:152), Mocke et al. (2016:8) and Nyaga et al. (2010:101), who

concluded that improved business performance is an advantage of personal relationships.

Managerial implications

Firstly, this study shows managers to be more cognisant of the ability of personal relationships to act as a mitigation strategy for supply chain disruptions. The potential advantages increase the desirability of having personal relationships in today's dynamic business environment. However, supply chain members must be cognisant of the attributes that precede the development of robust personal relationships. Before contemplating personal relationships, mutually aligned goals, objectives, interests and cultures are imperative. The overall performance of relational firms can be enhanced along with the establishment of robust personal relationships. Therefore, firms should encourage their workforce to participate in relationship-building initiatives by emphasising the advantages that stems from having personal relationships. This study also made buyers and suppliers of logistics services aware of the diverse mix of disadvantages stemming from personal relationships. By having this knowledge, buyers and suppliers of logistics services are equipped to extract value from their personal relationships in the midst of a supply chain disruption context.

Limitations and directions for future research

This research study specifically focussed on the South African logistics sector, while a vast array of other supply chain sectors exist. Therefore, future research can be conducted in any other supply chain sector to determine the transferability of this study. This study's transferability can also be measured by replicating it in another country, especially other developing countries. The context (i.e. a supply chain disruption) may have inhibited the collection of detailed data. Participants may have been biased and withheld valuable information to protect themselves and maintain good face because of the data collection method (i.e. semi-structured interviews). Therefore, future researchers could consider using other methods of collecting data to prevent gaining biased information. The researchers did assure participant confidentiality; however, the fear of a confidentiality breach was evident. Existing relational policies of companies may also hinder the formation of personal relationships, especially in larger multinational companies, which resulted in fewer participants who suited the inclusion criteria of this study. Therefore, future research could be conducted on smaller national companies that do not have strict relational policies. Finally, only three direct dyadic relationships between buyers and suppliers of logistics services were explored. Different opinions and experiences could be revealed when exploring more direct dyadic relationships.

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Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

C.R. and D.V.D.B. conducted the research as part of their honours degree. W.N. and A.M. acted as the supervisors of the research and prepared the manuscript.

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