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An analysis of configurations of relationship quality dimensions to explain sources of behavioral outcomes in globalized manufacturing

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Abstract

Purpose – This paper aims to explore the role of configurations of relationship quality dimensions for explaining sources of behavioral outcomes in the globalized manufacturing industry.

Design/methodology/approach – A joint analysis of behavioral and objective performance data from globalized manufacturing links perceptual customer metrics that relate to dimensions of relationship quality (i.e. attitudinal loyalty, perceived customer orientation, customers' perceived innovativeness of the supplier and perceived customer influence on supplier innovation) with behavioral outcomes (i.e. share of wallet (SOW) and customer account profitability). Using data from a global business-to-business (B2B) customer survey together with archival performance data from a multinational mechanical engineering firm, a fuzzy set qualitative comparative analysis (fsQCA) is performed.

Findings – The fsQCA results suggest that perceptual customer metrics related to innovation can be relevant aspects of relationship quality, in line with Anderson and Mittal's (2000) satisfaction-repurchase-profitability chain framework and its adaptation to SOW. However, the underlying complexities in the different combinations of attributes in the recipe are such that they are not equifinal in leading to higher SOW or higher profitability. This paper finds indications for non-linearities between perceptual measures investigated and profitability of customer accounts, with particular relevance for the role of perceived customer orientation, perceived product innovativeness of the supplier and attitudinal loyalty.

Research limitations/implications – The analysis faces a number of limitations, starting with its reliance on cross-sectional survey data, which does not enable us to account for feedback mechanisms, for example, arising from customer perceptions regarding innovation aspects. The lack of a multidimensional conceptionalization of the perceptual customer constructs may have limited the analysis, considering also recent evidence from retail companies in the furniture sector in Spain, suggesting that the multidimensional conceptualization of relationship value explained satisfaction and loyalty levels to a greater extent than the one-dimensional conceptualization (Ruiz-Martínez *et al.*, 2019).

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Practical implications – In terms of managerial implication, the results suggest that customers perceive limited value in participating in the focal firm's innovation value chain funnel, hence customer loyalty cannot be bought using simple incentive strategies. The results with regard to customer account profitability suggest that B2B customers investigated here may distinguish when interacting with their globalized supplier in the innovation funnel: they may see a positive customer value when the innovation is a product, and thus, relation-specific, whereas they may see limited customer value when innovation is considered in more generic terms (customers' perceived influence on supplier innovation in general).

Originality/value – This paper starts from the premise that perceptual customer metrics can matter for supplier performance, as the customer relationship and customer value management research has shown. However, there is limited empirical evidence from globalized manufacturing sectors incorporating perceptual constructs in behavioral outcomes, and limited evidence assessing customer-perceived value in such sectors through alternate approaches to main-effects focused analyzes. We employ qualitative comparative analysis using fuzzy sets (Russo *et al.*, 2019) to address these gaps, focusing on two key behavioral outcomes, namely, customer account profitability and SOW.

Keywords Innovation, Customer catisfaction, Manufacturing industries, Global business, Share of wallet, Mechanical engineering, Loyalty, fsQCA, B2B customer value, Perceptual customer constructs

Paper type Research paper

1. Introduction

Perceptual customer constructs have been analyzed extensively in the customer relationship and customer-value management literature with a focus on customer satisfaction, retention and profitability metrics (Verhoef *et al.*, 2007; Flint *et al.*, 2011; Keränen and Jalkala, 2013; Lemon and Verhoef, 2016; Kumar and Pansari, 2016a; Kumar and Reinartz, 2016b; Bindroo *et al.*, 2020). To influence such metrics, companies have aimed at influencing both customer perceptions and engagement (Dwyer *et al.*, 1987; Narver and Slater, 1990; Gligor *et al.*, 2019). Notably, to influence customer-perceived value, companies have used different ways to integrate customer feedback mechanisms (Lapierre, 2000; Ulaga and Chacour, 2001). A growing literature has thus, investigated perceptual customer metrics and their impact on financial and non-financial performance indicators (Gruca and Rego, 2005; Gupta and Zeithaml, 2006; Sorescu and Sorescu, 2016). Homburg *et al.* (2013) have furthermore analyzed organizational customer outcomes, distinguishing a supplier's actual engagement in business practices (corporate social responsibility) from customers' perceptions of these business practices.

Yet, in spite of extensive work on perceptual customer constructs, and a detailed understanding of the multi-dimensional nature of customer engagement (Brodie *et al.*, 2011, 2013; Kumar and Pansari, 2015; Beckers *et al.*, 2017; Harmeling *et al.*, 2017), we still lack understanding of customer engagement (Lilien, 2016), especially in those applications of customer engagement where perceptual constructs are directly incorporated into behavioral outcomes (Kamakura *et al.*, 2002; Gupta and Zeithaml, 2006; Kumar *et al.*, 2013; Vivek *et al.*, 2019). Furthermore, in these applications, we are missing a deeper understanding of combinations of antecedents, to better explain behavioral outcomes in globalized manufacturing. The objective of our paper is, therefore, twofold. First, to address the research question: what are the possible configurations of relationship quality dimensions for explaining sources of behavioral outcomes in the globalized manufacturing industry? And second, to addresses three research gaps while answering this question. First, we aim to address the gap identified in the literature that more work with behavioral data would be preferable, especially in analyzes of share of wallet (SOW) (Buoye, 2016). Second, we seek to contribute to addressing the gap of analyzes on the role of customer innovation perceptions in global B2B manufacturing markets. And third, we address a methods application gap in the context of perceptual constructs and customer loyalty analyzes applied to

manufacturing sectors, noting that Russo *et al.* (2016) call for more research that should consider other possible combinations of antecedents of customer loyalty, while using alternate approaches to main-effects focused multivariate regression analyzes (Gligor *et al.*, 2019).

Our paper contributes toward closing the above gaps in four ways. First, by studying multiple dimensions of relationship quality jointly with behavioral and objective company performance data, while assessing metrics of relationship quality associated with innovation together with key relationship quality metrics unrelated to innovation. More specifically, we explore components of customer relationship quality with regard to behavioral loyalty (SOW) and customer account profitability, accounting for customers' perception of their influence on supplier innovation, and accounting for customers' perceived product innovativeness of the supplier. The fact that our B2B analysis also covers innovation measures from the perspective of the customer puts us apart not only from an extensive literature that has explored the relationship between customer satisfaction and customer loyalty, both attitudinal and behavioral (Fornell *et al.*, 1996, 2016; Szymanski and Henard, 2001; Gupta and Zeithaml, 2006; van Doorn and Verhoef, 2008; Walsh *et al.*, 2008; Naumann *et al.*, 2009; Williams and Naumann, 2011; Dagger and David, 2012; Kumar *et al.*, 2013; Buoye, 2016) but also from customer value management works with a focus on customer behavior toward innovations (Zhang *et al.*, 2016).

Second, we contribute to the above gaps by applying a fuzzy set qualitative comparative analysis (fsQCA), to investigate configurations of relationship quality dimensions to explain sources of behavioral outcomes. This analytical focus allows us to uncover possible complexities underlying the key constructs under investigation, thereby going beyond the study of main effects analyzes of outcome predictors, such as previous regression-based analyzes that have accounted for associations between perceptual customer metrics and performance metrics (Anderson and Mittal, 2000; Keiningham *et al.*, 2003; Kwiatek *et al.*, 2020). Our application of fsQCA, thus also contributes to the body of work on customer loyalty in the B2B context, and on customer engagement research applying fsQCA (Russo *et al.*, 2016; Santos *et al.*, 2018; Gligor *et al.*, 2019).

Third, while adopting Anderson and Mittal's (2000) satisfaction-repurchase-profitability chain framework (SRF) and its adaptation to SOW (Keiningham *et al.*, 2005; Cooil *et al.*, 2007) as a conceptual framework, our paper contributes to the literature on perceptual constructs of customer satisfaction, customer loyalty and absolute perceptual metrics (Buoye, 2016; Kumar *et al.*, 2016b; Mittal *et al.*, 2018), which is dominated by evidence from banking and services sectors, rather than providing evidence from manufacturing markets. Fourth, in light of our customer value metrics used focusing on innovation perceptions, we contribute to relationship value insights from the perspective of the customer (Ulaga and Eggert, 2006), contribute to the literature linking customer value and loyalty (Cretu and Brodie, 2007), and to the literature on collective value-in-use in the context of customer loyalty (Macdonald *et al.*, 2016; Eggert *et al.*, 2019).

Our joint analysis of perceptual constructs with behavioral outcomes is owing to customer responses to a global B2B customer survey (n = 616) associated with a multinational supplier from globalized industrial manufacturing, and to associated objective company performance data. The supplier in question is a multinational mechanical engineering firm, headquartered in Europe [1]. The global mechanical engineering sector in which this multinational operates takes a fundamental role to most branches of industry (Steiert, 2008; Gardner, 2016), and also takes a central role in the EU economy with mechanical engineering being one of the largest industrial sectors in terms

of number of enterprises, employment, production and the generation of added value (EC, 2018).

The remainder of the paper reviews relevant literature and develops corresponding propositions (Section 2), followed by a presentation of methods and results (Section 3), conclusions, limitations and opportunities for further research (Section 4).

2. Literature

In light of the complexity with respect to possible multiple paths leading to the performance outcome measures we are interested in (SOW and profitability), and before we are applying complexity theory (Spivack and Woodside, 2019) to investigate these outcomes, we first need to delineate the antecedent configurations. We do this by reviewing the relevant literature, linking key dimensions of relationship quality relevant to our globalized manufacturing supplier (i.e. attitudinal loyalty, perceived customer orientation, perceived innovativeness of the supplier and perceived customer influence on supplier innovation) with behavioral outcomes (i.e. customer account profitability and behavioral loyalty). Before we review these metrics of unobservable customer constructs and behavioral outcomes, the question of comparability and transferability of insights from business-to-consumer to B2B research arises. Homburg *et al.* (2013) emphasize the key fact that individuals make the purchase decisions in both contexts. Yet, the review from Guzmán *et al.* (2012) on B2B branding and related constructs highlights the fundamentally more complex B2B domain, typically involving more decision-makers, different communication channels and longer-term relationships with customers, with a corresponding potentially greater role for customer loyalty (Bennett, *et al.*, 2005; Rauyruen *et al.*, 2009). Furthermore, Homburg *et al.* (2013) consider the differences that may arise because of three central characteristics of organizational buying, highlighting the reliability of the supplier as a key factor, as organizational customers typically put greater emphasis on long-term supplier relationships (Mitchell, 1995). B2B work on retailer loyalty confirms this importance of supplier reliability, highlighting the relevance of technical and relational dimensions of a manufacturer's order fulfillment service quality as predictors of retailer loyalty behavior (Davis-Sramek *et al.*, 2009). Overall, the majority of B2B evidence comes from supply-chain and industrial marketing applications (Russo and Confente, 2017b), including a cross-sectional study on purchasing managers in US manufacturing industries (Eggert and Ulaga, 2010), a study on value-based selling (Terho *et al.*, 2017) and evidence from the audiology industry on the relationship between returns management and repeated purchase intent (Russo *et al.*, 2017a).

Previous customer analysis research with a focus on unobservable customer constructs has centered on customer perceptions (e.g. service quality), customer attitudes (e.g. customer satisfaction) and behavioral intentions (e.g. intentions to purchase) (Woodruff, 1997; Gupta and Zeithaml, 2006; Tomczyk *et al.*, 2016). The review provided by Gupta and Zeithaml (2006) divides this literature into three camps, those papers focusing on the link between the impact of unobservable constructs on financial performance, those focusing on the impact of unobservable constructs on observable metrics (e.g. the link between satisfaction and retention), and those papers studying the impact of observable constructs on financial performance. Our paper falls into the first camp of linking unobservable constructs with observable ones, incl. behavioral loyalty (SOW) and a focal firm's profitability of a given customer account. The following sections draw on existing theory, discussing these constructs and relationships conceptually and empirically, paving the way for deriving our propositions as part of an inductive modeling approach [2].

As our discussion of behavioral outcomes and their antecedents with respect to dimensions of relationship quality centers around customer perceptions and customer

involvement, we take Anderson and Mittal's (2000) model underlying a satisfaction-repurchase-profitability sequence (and its adaptation to SOW, Keiningham *et al.*, 2005; Cooil *et al.*, 2007) as our conceptual underpinnings. Further, we consider customers' perceived degree of involvement in supplier innovation as an intangible asset embedded in customer-supplier relationships, and assume that such relational assets can be converted into customer value (Srivastava *et al.*, 1998). This customer value is understood with respect to an ongoing B2B relationship, and hence, as value-in-use, the latter being of interest because of its embedded understanding that customers can assess the quality of the product usage process, and that this is relevant for customer loyalty (Sirdeshmukh *et al.*, 2002; Grönroos, 2011; Ritter and Walter, 2012; Macdonald *et al.*, 2016). This value-in-use perspective leads us toward a better understanding of the antecedents of the willingness of customers to engage in value creation (Grönroos and Helle, 2010; Cassia *et al.*, 2015; Macdonald *et al.*, 2016; Eggert *et al.*, 2018; Eggert *et al.*, 2019). Furthermore, customer value perceptions are not only important for a general conceptualization of customer-perceived value (Ulaga and Chacour, 2001; Flint *et al.*, 1997) but also for defining relationship value with suppliers (Ulaga and Eggert, 2006), including experienced value in use (Eggert *et al.*, 2019).

To gauge the costs and benefits of greater customer engagement and relationship value from the perspective of the focal company, suitable measurements and analytics are required (Keränen and Jalkala, 2013; Germann *et al.*, 2013; Aksoy, 2013). Suppliers have thus, frequently integrated customers into their knowledge-generating process through perception surveys (Dunphy and Herbig, 1995; Woodruff, 1997), as the derived perceptual customer metrics can provide insights into the extent to which a focal firm's value proposition and capabilities are met (Day and Wensley, 1988; Oliver, 1999; Verona, 1999; Gupta and Zeithaml, 2006; Carlson *et al.*, 2015). As part of supplier-customer relations, customer value perceptions have also proven valuable, as customer value anticipation has been found to be a strong driver of satisfaction and loyalty (Flint *et al.*, 2011).

While we aim to investigate configurations between perceptual customer metrics that relate to diverse dimensions of relationship quality and behavioral outcomes, we are particularly interested in customer innovation perceptions, as these may be particularly relevant to suppliers in globalized manufacturing. When considering the role of customer value perception in the context of a firm's innovativeness, we could expect that the integration of customer value judgment has increasing relevance in more open innovation-focused business models with greater customer interaction (Herstatt and von Hippel, 1992; Chesbrough, 2005, 2006; Ili *et al.*, 2010; Almirall and Casadesus-Masanell, 2010). Such openness may not only drive firm growth in general (Xia and Roper, 2016). An inclusion of customers in innovative processes may derive more customer-centered products (Füller and Matzler, 2007), improve mutual understanding (von Krogh *et al.*, 2000) and lead to greater innovation performance (Prahalad and Ramaswamy, 2004; Desouza *et al.*, 2008; Foss *et al.*, 2011; Kostopoulos *et al.*, 2011; Gemser and Perks, 2015; Kazadi *et al.*, 2016). While the extent of customer involvement in new product development has been found to be a function of the degree of radicalness of innovations (Candi *et al.*, 2016), a number of costs have, however, also been associated with greater market orientation (von Hippel, 1982; O'Cass *et al.*, 2012; Smals and Smits, 2012; Najafi-Tavani *et al.*, 2016). In particular, costs associated with greater customer involvement in innovation may include higher development times (Greer and Lei, 2012) and an increase in coordination costs (Almirall and Casadesus-Masanell, 2010). Furthermore, we could consider the novel introduction of business practices by a supplier as practice innovations, and thus, be interested in buyers' perceptions of such

innovations. Applying structural equation modeling, Homburg *et al.* (2013) have indeed analyzed customers' perceptions of corporate social responsibility business practices.

In preparing for the development of our propositions, the following sections draw on existing theory and concentrates on two key behavioral outcomes under investigation, behavioral loyalty (SOW) and customer account profitability. Considering our joint focus on behavioral and attitudinal loyalty, Watson *et al.* (2015) note that the very definition of loyalty lacks consensus (Day, 1969; Dick and Basu, 1994; Melnyk *et al.*, 2009), though the review by Watson *et al.* (2015) concludes that, from a conceptual standpoint, customer loyalty is a collection of attitudes aligned with a series of purchase behaviors that systematically favor one entity over competing entities (Watson *et al.*, 2015, p. 803). While we relate to both attitudinal and behavioral loyalty in the following analysis, Watson *et al.* (2015, p. 791) also note that the common research practice of using single-element measures of loyalty (i.e. only attitude or behavior) leads to mixed guidance regarding the effect of loyalty on performance.

2.1 Attitudinal loyalty, behavioral loyalty and customer account profitability

Early distinctions of attitudinal and behavioral loyalty have been put forward by Day (1969) and Dick and Basu (1994). Dick and Basu (1994) highlight previous operationalizations of loyalty through indices that include attitude and purchase frequency (Jacoby and Chestnut, 1978), as well as the anchoring of attitudinal loyalty as a relative construct in terms of an association between an object and an evaluation in attitude-behavior relations models (Ajzen and Fishbein, 1980). In summarizing the literature, Kumar and Reinartz (2018, p. 182) suggest that behavioral loyalty encompasses the observed actions that customers have demonstrated toward a particular product or service, whereas attitudinal loyalty includes perceptions and attitudes. Components of definitions of behavioral loyalty in the literature encompass customers' willingness for repurchase (Rauyruen and Miller, 2007), as well as repurchase intention, cross-buying intention and willingness to recommend (Huang *et al.*, 2017), which all point us to expect that long-term supplier relationships matter particularly in the B2B domain (Mitchell, 1995). In contrast, perspectives on attitudinal loyalty include price tolerance and the degree of self-recognized loyalty (Huang *et al.*, 2017), as well as customers' psychological attachments and attitudinal advocacy (Rauyruen and Miller, 2007; Casidy and Wymer, 2016).

Anderson and Mittal's (2000) model of a satisfaction-repurchase-profitability sequence is anchored in attitude-behavior relations models (Fishbein and Ajzen, 1975; Eagly and Chaiken, 1993; Mittal and Kamakura, 2001). Here, the theory of reasoned actions (Ajzen and Fishbein, 1980) implies that attitudes influence behavioral intentions and subsequent behavior. The importance of customer satisfaction for customer retention and facilitating behavior (repurchasing), and the link between repurchase intentions and SOW is empirically well-established in B2B markets (Hennig-Thurau and Klee, 1997; Keiningham *et al.*, 2003; Cooil *et al.*, 2007; Keiningham *et al.*, 2007; Meyer-Waarden, 2007; Voss *et al.*, 2010; Reinartz and Eisenbeiss, 2015). It is further conceptually supported by Mittal and Kamakura's (2001) model underlying a satisfaction-repurchase-profitability sequence, suggesting a non-linear relationship where loyalty investments may be recovered in the longer term. Empirically, there is evidence for a positive and non-linear relationship between customer satisfaction and SOW, from mostly banking and retail sector firms (Gupta and Zeithaml, 2006; Cooil *et al.*, 2007; van Doorn and Verhoef, 2008; Williams *et al.*, 2011; Buoye, 2016), although the evidence is nevertheless inconclusive as to the nature of the non-linear relationship (Reinartz and Kumar, 2000, 2002; Mägi, 2003; Hofmeyr *et al.*, 2008; Reinartz and Eisenbeiss, 2015). Such evidence is further complemented by experimental insights, which suggest that

customer satisfaction increases customers' willingness to pay, with increasing returns (Homburg *et al.*, 2005).

Anderson and Mittal's (2000) SRF has also received support from studies that put forward a positive association between loyalty and customer profitability (Reichheld, 1996; Reichheld *et al.*, 2000). However, the literature on customer loyalty in relationship marketing also points to a possible weakness, and thus, the complexity of the association between loyalty and profitability (Ganesan, 1994; Dowling and Uncles, 1997; Söderlund and Vilgon, 1999), while highlighting that the length of the relationship is important for explaining the positive loyalty-profitability association (Storbacka *et al.*, 1994). More recent work indicates that this association between loyalty and profitability is further nuanced (Kumar, 2016: "profitable loyalty"), noting that long-term customers can also be unprofitable, and thus, costs of maintaining a customer relationship can be central (Reinartz and Kumar, 2000; Niraj *et al.*, 2001; Reinartz and Kumar, 2002; Kumar and Rajan, 2009), while highlighting that different results on profitability are a function of whether transactional or relational customers are considered (Sharma, 2007). Further, a weak association of attitudinal loyalty in terms of repeat buying with profitability may also arise from switching costs (Burnham *et al.*, 2003; Lam *et al.*, 2004). Notable evidence on the attitudinal loyalty and profitability nexus also relates to the nature of the firm, as evidence from Edvardsson *et al.* (2000) suggests that for product firms, loyalty can have a negative effect on financial performance, while for service firms the effect can be positive. Furthermore, evidence from the Norwegian fishing industry provides weak support for a non-linear relationship between customer loyalty and higher customer profitability (Helgesen, 2006).

2.2 Customer's perceived influence on supplier innovation and loyalty

When a customer perceives scope to influence supplier innovations, we could expect this underlying democratizing of innovation (von Hippel, 2005) to contribute to a customer's increased perceived appropriability of returns to his relationship investment with the supplier (Grant, 1991; Kleinaltenkamp *et al.*, 2015), and to greater attractiveness of the customer to the focal supplier. It is, thus, of interest to note that customer attractiveness to a given supplier has been found to help attaining preferential resource allocation from the supplier (Pulles *et al.*, 2016). Using fsQCA, Wu *et al.* (2016) also find evidence for the role of such relationship investment with the supplier, in that in line with transaction cost economics, some specific asset investment positively associates with a firm's loyal behavior. Furthermore, the perceived capabilities of suppliers to innovate could also be considered an important part of a supplier's capability profile (Möller and Törrönen, 2003). These considerations suggest not only that customers' perceived influence on supplier innovation is potentially a relevant aspect of supplier collaboration but also that such increased supplier attractiveness could lead a given customer to allocate a greater revenue share to this supplier. More recent work has also shown that customer involvement in a supplier's innovation activities is reflected in customer's perceived value of the supplier-buyer relationship, which can ultimately influence behavioral value outcomes (Arslanagic-Kalajdzic and Zabkar, 2015). This finding from Arslanagic-Kalajdzic and Zabkar (2015) reinforces our expectation from the Anderson and Mittal (2000) chain framework and its adaptation to SOW (Keiningham *et al.*, 2005; Cooil *et al.*, 2007), namely, that perceived influence on supplier innovation can be positively associated with SOW.

Considering the conceptual underpinnings of Anderson and Mittal (2000), we also note that increased customer attractiveness to a focal supplier could be rationalized with attitude-behavior relations models (Ajzen and Fishbein, 1980; Eagly and Chaiken, 1993), as these models have been found to explain that customers' perceived behavioral control (customer's

perceived influence on supplier innovation, in our case) can contribute to their attitude toward remaining in a supplier-customer relationship (Guo *et al.*, 2009). Linking such attitude to remain in a supplier relationship with SOW, Blut *et al.* (2016) have shown that switching costs as part of buyer-seller relationships in B2B markets can impact SOW, while Russo *et al.* (2016) have applied QCA to demonstrate the role of switching costs in an analysis of loyalty drivers in the health-care industry. Burnham *et al.* (2003) explore a broad set of switching cost facets, to supply evidence from the insurance sector that such switching costs cannot only be of financial nature, but can also include relational and procedural costs, such as learning costs. In spite of the underlying complexities, we could, therefore, expect that switching behavior, and hence, relationship quality (Ford, 1980) is impacted by customers' perceived influence on supplier innovation: customers who perceive that they have a high influence on their supplier's innovation activities could be expected to have more confidence into the suppliers' capabilities (Hooley *et al.*, 1998) and could, thus, contribute positively with SOW in a remaining supplier relationship (Blut *et al.*, 2016).

2.3 Customer's perceived product innovativeness and loyalty

Building upon the above rationale of customers' perceived influence on supplier innovation, and the fact that increased customer attractiveness to a focal supplier can be rationalized with attitude-behavior relations models (Ajzen and Fishbein, 1980; Eagly and Chaiken, 1993) in Anderson and Mittal's (2000) SRF, we anticipate that a customer's perception of the supplier's product innovativeness is also a relevant aspect of relationship quality (Ford, 1980; Dorsch *et al.*, 1998). In particular, we expect that raising relationship quality – here through the perceived quality of the focal supplier's product innovativeness from a customer's perspective – may not only impact customer and employee engagement (Anaza and Rutherford, 2012; Kumar and Pansari, 2016a) but also entice the customer to allocate a greater share of its purchases to a given focal supplier (Rauyruen and Miller, 2007; Čater and Čater, 2010). In spite of these complexities and in light of the absence of empirical evidence on how customers' perceived product innovativeness relates to behavioral loyalty, we may nevertheless expect that distinct combinations of innovativeness-measures may lead to higher behavioral loyalty, in line with Anderson and Mittal's (2000) SRF and its adaptation to SOW.

2.4 Perceived customer orientation and customer account profitability

The overriding objective in customer orientation is the maximization of appropriable value creation relative to competition (Narver *et al.*, 1990; Jaworski and Kohli, 1993; Foss and Lindenberg, 2013). The review of Zablah *et al.* (2004) on customer relationship management (CRM) work has essentially established that CRM success cannot be achieved without customer orientation. Customer orientation has been viewed as a key component of the higher-order construct relationship quality (Dwyer *et al.*, 1987; Dorsch *et al.*, 1998; Viio and Grönroos, 2016), contributing to value creation in B2B relationships from the customer's perspective (Jolson, 1997; Singh and Koshy, 2011). Such value creation through customer orientation can be a function of market orientation (Narver *et al.*, 1990; Payne and Holt, 2001; Narver *et al.*, 2004), involving the discovery of latent customer needs, and thus, potentially affecting firm performance in positive ways (Atuahene-Gima, 1995). Recent work puts forward more evidence for the link between customer engagement and performance of the focal firm (Harmeling *et al.*, 2017; Pansari and Kumar, 2017), consolidating earlier evidence that customer orientation matters for supplier performance. This evidence originates from double-dyad interviews of Japanese firms (Deshpandé *et al.*, 1993), as well as from a study of UK small and medium size enterprises's, which identifies a positive relationship between

customer orientation and profitability (Appiah-Adu and Singh, 1998). Other work suggests that customer orientation can significantly enhance the performance of manufacturing and service firms as part of supplier collaboration (Atuahene-Gima, 1996; Wang *et al.*, 2016a). Further evidence using a fuzzy set analysis reinforces the notion that highly performing firms configure themselves around their customer orientation (Frambach *et al.*, 2016). The overall empirical evidence for a positive relationship between customer orientation and firm performance can be motivated by Anderson and Mittal's (2000) framework underlying the satisfaction-repurchase-profitability sequence (Keiningham *et al.*, 2005; Cooil *et al.*, 2007) and its projections of increasing returns to higher levels of satisfaction (Mittal and Kamakura, 2001). In light of our particular interest in perceived customer orientation of the supplier from the perspective of the buyer, the literature has highlighted varying definitions and measurement methods of customer orientation as a function of the firm perspective (Woodruff, 1997) and the customer perspective (Eggert and Ulaga, 2002; Stępień, 2017), highlighting the complexities underlying these antecedents of performance outcomes (Mittal *et al.*, 2018).

2.5 Perceived product innovativeness and customer account profitability

Analyzes focusing on a supplier's innovativeness as perceived by its customers have received far less attention compared to analyzes focusing on the role of supplier perceptions of innovation related to financial performance in supplier-buyer relationships (Ellis *et al.* (2012) and Jean *et al.* (2014) for evidence from the automobile sector; Wang *et al.* (2016a) for evidence from Chinese enterprises). This is somewhat surprising in the face of a growing literature on the measurement of customer-perceived value (Ulaga and Chacour, 2001; Ulaga, 2003; Ritter and Walter, 2012; Stępień, 2017). It is also surprising, since the conceptual analysis by Sampson and Spring (2012) has put forward an extended-capabilities view of customers as a basis for supplier-customer innovation in supply chains. Furthermore, the lack of research focus on innovativeness as perceived by customers may also be striking, as recent work has highlighted that the outcome from customization depends also on perceived customer participation (Wang *et al.*, 2016b). Yet, what does previous research suggest on the complex relationship between customer-perceived benefits related to innovation, relationship value and financial performance? Considering a supplier's product innovativeness as perceived by its customers, the creation of relationship value is likely a function of both customer-perceived benefits and costs of a supplier relationship (Ulaga and Eggert, 2006; Blocker *et al.*, 2011; Lindgreen *et al.*, 2012). Having created such relationship value, customer value could be expected to drive customer share (Cannon and Homburg, 2001; Eggert and Ulaga, 2010). Furthermore, from Eggert and Ulaga's (2010) view of customer value being a fundamental driver of customer share in business markets, we could conjecture that customer value (and perceived product innovativeness of the supplier, in our case) could also be expected to be positively associated with account profitability, as long as customers can appropriate some returns to higher supplier product innovativeness. More specifically, we might expect participation of customers in innovative practices to come at a high marginal cost to suppliers and customers early on in building and coordinating a supplier-customer relationship (Almirall and Casadesus-Masanell, 2010; Greer and Lei, 2012), but then to lead to increasing returns to customer investments in relationship value in the longer term (Mittal and Kamakura, 2001; Homburg *et al.*, 2005). Such nonlinearity might also be expected from Ritter and Walter's (2012) analysis of perceptual data from a sample of German firms, as this analysis suggests that change-related relationship functions, including customer innovativeness, can have a non-linear impact on relationship value. Taking the above rationale into account, and invoking Anderson and Mittal's (2000)

framework underlying the satisfaction-repurchase-profitability sequence (Keiningham *et al.*, 2005; Cooil *et al.*, 2007), we could expect that the extent to which customers perceive that they can influence a supplier's product innovativeness is reflected in the profitability of customer accounts. However, given the underlying complexities with respect to the possible paths that can lead to the same profitability outcome, it is not clear whether such innovativeness perception is positively reflected in the outcome measure as a function of increasing returns to relationship investment.

2.6 Propositions development

The following proposition development centers on the two key outcome measures that we aim to investigate as part of Anderson and Mittal's (2000) SRF and its adaptation to SOW (Keiningham *et al.*, 2005; Cooil *et al.*, 2007). As the literature discussed above highlights, the impacts of individual perceptual customer constructs on the two outcome measures under investigation (SOW and customer account profitability) are potentially complex, as one might mute the potential impact of another, and considering that higher levels of perceptual constructs may not necessarily lead to higher levels of outcome (SOW and profitability). This conclusion applies in particular to our central tenet, namely, Anderson and Mittal's (2000) SRF, as it has received both support from studies that put forward a positive association between attitudinal loyalty and customer profitability (Reichheld, 1996; Reichheld *et al.*, 2000), and lack of support from studies pointing to weaknesses in the association between attitudinal loyalty and profitability (Ganesan, 1994; Dowling and Uncles, 1997; Söderlund and Vilgon, 1999), pointing to further complexities underlying the customer perception implications in this context (Parasuraman *et al.*, 2020). Following applications of complexity theory (Spivack and Woodside, 2019; Wu *et al.*, 2016; Gounaris *et al.*, 2016; Woodside, 2015), we, therefore, need to take into account:

- that varying components in a "recipe" can positively or negatively impact the outcome condition as a function of the presence or absence of other components in the recipe;
- that combinations of elements are needed, such that single components can be necessary but not necessarily sufficient to predict a given outcome variable; and
- that the same outcome variable can be achieved through multiple paths in terms of different combinations of attributes in a recipe.

As we aim to assess through a configuration analysis to what extent a combination of attributes (perceptual customer constructs) discussed above lead to the same outcomes (SOW and profitability), we propose the following propositions in line with previous related analyzes (Russo *et al.*, 2016; Gligor *et al.*, 2019):

P1a. An individual attribute in a recipe can contribute positively or negatively to behavioral loyalty, as a function of the presence or absence of other ingredients in the recipe (attitudinal loyalty, perceived customer orientation, perceived innovativeness of the supplier and perceived customer influence on supplier innovation).

P1b. An individual attribute in a recipe can contribute positively or negatively to customer account profitability, as a function of the presence or absence of other ingredients in the recipe (attitudinal loyalty, perceived customer orientation, perceived innovativeness of the supplier and perceived customer influence on supplier innovation).

P2a. Simple antecedent conditions (attitudinal loyalty, perceived customer orientation, perceived innovativeness of the supplier and perceived customer influence on supplier innovation) can be necessary but insufficient for high behavioral loyalty.

P2b. Simple antecedent conditions (attitudinal loyalty, perceived customer orientation, perceived innovativeness of the supplier and perceived customer influence on supplier innovation) can be necessary but insufficient for high customer account profitability.

P3a. Disparate configurations of perceptual customer attributes (attitudinal loyalty, perceived customer orientation, perceived innovativeness of the supplier and perceived customer influence on supplier innovation) are equifinal in leading to high behavioral loyalty.

P3b. Disparate configurations of perceptual customer attributes (attitudinal loyalty, perceived customer orientation, perceived innovativeness of the supplier and perceived customer influence on supplier innovation) are equifinal in leading to high customer account profitability.

3. Methods

3.1 Data and descriptive statistics

Our database for the subsequent analysis is comprising two data sets, one perceptual data set and a second one containing information on net sales, gross profit, sales cost and actual quantities sold. The perceptual data used comes from an international B2B customer survey conducted by and outsourced to an international marketing firm with expertise in market-research (it is ISO27001 and ISO9001 certified and a member of European Society for Opinion and Market Research), on behalf of the focal multinational mechanical engineering firm. First, the survey pre-development included several workshops with participating focal company representatives (senior marketing managers), representatives from the market-research company and selected B2B company representatives (i.e. existing customers of the multinational focal company, representing different customer sizes). The survey was emailed out by the market-research company during the period January 23rd to February 15th, 2013 (proportional-stratified sampling). The survey was targeted to existing customers from seven countries (UK, Belgium, China, Denmark, Switzerland, Turkey and Finland), who were asked to reply to 54 technology and marketing-related questions, from which we have drawn all perceptual constructs for the subsequent analysis. Table 1 displays the perceptual measures and the underlying survey questions. Table 2 shows the corresponding

Perceptual construct	Item[a]
Customer satisfaction	*How satisfied are you with X overall?*
Attitudinal loyalty	*I wish to continue using X as a supplier for my future business*
Perceived customer orientation (CO)	*X is a customer-oriented company that understands my business*
Product innovativeness (PI)	*X develops innovative products*
Customer influence on innovation (CI)	*I have an opportunity to influence the development of future X products, solutions and services*

Note: [a]The use of X stands for the name of the focal company

Table 1. Perceptual constructs used for analysis

items and descriptive statistics. As Table 2 also shows, overall satisfaction and attitudinal loyalty are scoring highest, and customers perceive their influence on supplier innovation (PI) the lowest.

From the total of 5,992 customers that were contacted, 21% responded, resulting in a sample size of 1,229 responses [3]. To address common variance bias (CVB) (Podsakoff *et al.*, 2003), we implement the Harman single-factor test (Appendices A1 and A2). This test indicates that common method bias has not overly influenced survey participants' responses, as the total variance explained by a single factor did not pass the threshold of 50% (Malhorta *et al.*, 2006, 2017). Notably, as we are merging survey responses with archival performance metrics obtained from the focal multinational supplier, the measures that are used for our analysis are not only perceptual constructs but also objective measures, which is relevant in regard to CVB, as Chang *et al.* (2010) highlight that the CVB concern is strongest when both the dependent and focal explanatory variables are perceptual measures derived from the same respondent.

The correlation matrix (Table 3) suggests that questions, which are concerned with the perception of the supplier correlate on a significant level ($\alpha < 0.01$, two-tailed) to a different but exclusively positive degree. This does, however, not apply to SOW (measured in terms of customers' percentage of total procurement within the past year purchased from the focal supplier), which does not correlate significantly with several of the perception-related items, including perceived customer influence on supplier innovation. Further, a significant correlation with SOW can be observed for items regarding satisfaction and attitudinal loyalty, though at relatively low levels.

Table 2.
Descriptive statistics of perceptual data ($n = 987$) [***]

Item	Mean	SD	Skew	Kurtosis	Min	Max
Customer satisfaction	8.30	1.50	−1.87	8.07	1	10
Attitudinal loyalty	8.74	1.49	−1.99	8.50	1	10
Perceived customer orientation (CO)	8.16	1.63	−1.49	6.14	1	10
Product innovativeness (PI)	8.13	1.41	−1.07	4.98	2	10
Customer influence on innovation (CI)	6.83	2.18	−0.89	3.45	1	10
SOW	60.41	36.21	−0.3898	1.534	0	100

Notes: [***]Questionnaire scales ranging from 1–10 for all items. SOW measured on a scale from 0 to 100

Table 3.
Correlation matrix

Constructs	1	2	3	4	5	6	7
Customer satisfaction	1.000x						
Attitudinal loyalty	0.584[**]	1.000x					
Perceived customer orientation	0.599[**]	0.551[**]	1.000x				
Perceived innovativeness	0.559[**]	0.571[**]	0.626[**]	1.000x			
Perceived innovation influence	0.337[**]	0.328[**]	0.432[**]	0.461[**]	1.000		
Share of wallet	0.200[**]	0.234[**]	0.160[**]	0.129[**]	0.034	1.000x	
Fractional profitability	−0.047x	−0.032x	−0.048x	−0.018x	0.011	−0.206[**]	1.000
Mean	8.302x	8.739x	8.157x	8.133x	3.468	60.41x	0.302
SD	1.503x	1.789x	1.634x	1.409x	2.181	36.21x	0.2386

Note: [**]Correlation is significant at the 0.01 level (two-tailed)

The second data set includes information on net sales, gross profit, sales cost and actual quantities sold for the year 2013. As the goods produced by the manufacturing multinational are not perishable nor needing steady replenishment, it is unsurprising that not all customers purchased goods from the focal firm during the year 2013. In the following, we present descriptive statistics for the sales data set, including information on four items, net sales, gross profit, sales cost and quantity sold. Yet, for the purpose of the following analysis, only net sales and gross profits are used to calculate the fractional profit, as it is a metric incorporating both profit and total sales. This profitability ratio is considered for analyzing performance, since it includes the trade-off between sales costs and profitability:

$$\frac{gross\ profit}{net\ sales} = profitability\ ratio \tag{1}$$

As Table 4 shows, the removal of two outliers (excluding outliers at $p = 0.01$) reduces standard deviation, skew and kurtosis significantly. Thus, the fractional profit with outliers at the 0.99th percentile removed is used for the remainder of the analysis. The final table of descriptive statistics matching the sales data set with the stated preference data (Table 5, $n = 616$) suggests a positive view of the focal supplier: with the mean at 0.3, a slightly negative skew implies that the majority of entries are distributed higher in the increasingly profitable half of the spectrum.

3.2 Analysis

The following analysis implements a fsQCA modeling approach (Spivack and Woodside, 2019; Wu *et al.*, 2016; Ragin and Davey, 2016), with the aim of uncovering complex relationships underlying the constructs developed above as part of the propositions. FsQCA is a set-theoretic research method that explains combinations of factors (causal attributes, termed conditions, such as customer satisfaction) that generate the same result, e.g. customer account profitability (Ragin, 2009; Gligor *et al.*, 2019). Qualitative comparative

Profitability ratio	*N*	Mean	SD	Skew	Kurtosis
All entries	618	0.4171	3.18	24.25	598.7
Outlier removal	616	0.302	0.2386	−0.059	5.836

Notes: **Outliers are removed at the 99th percentile using the Mahalabonis distance-based procedure (using the STATA plugin by Weber (2010)). The removal of only two outliers reduces standard deviation, skew and kurtosis significantly. With the mean at 0.3, a slight negative skew implies that the majority of entries is distributed in the increasingly profitable half of the spectrum

Table 4. Descriptive statistics of the profitability ratio and outlier removal (two outliers)**

Item	Mean	SD	Skew	Kurtosis	Min	Max
Customer satisfaction	8.30	1.41	−1.89	8.16	1	10
Attitudinal loyalty	8.77	1.37	−1.84	7.67	2	10
Perceived customer orientation (CO)	8.13	1.59	−1.48	6.14	1	10
Product innovativeness (PI)	8.13	1.34	−0.98	4.69	2	10
Customer influence on innovation (CI)	6.82	2.13	−0.92	3.70	1	10
Behavioral loyalty (SOW)	60.70	35.11	−0.38	1.59	0	100

Table 5. Descriptive statistics matching sales data with perceptual data ($n = 616$)

analysis (QCA) research has recently expanded almost exponentially in business and management research (Russo *et al.*, 2016; Wagemann *et al.*, 2016; Gounaris *et al.*, 2016; Spivack and Woodside, 2019; Gligor *et al.*, 2019), building upon the pioneering work of Ragin (2009), as it can address the complexity of underlying relationships between various antecedents, and the issue that attribute metrics, which drive outcome measures (such as profitability) can depend on varying combinations of attributes. QCA enables us, therefore, to assess possible combinations of attributes, thereby determining the possible "recipes" that could lead to the same outcome (equifinality), in particular for complex cases where X can have a positive impact on Y, X a negative impact on Y and X and Y share no relationship (Russo *et al.*, 2016; Gligor *et al.*, 2019).

The benefit relative to multivariate regression methods is, thus, that asymmetric and complex relationships underlying the above constructs can be uncovered (Russo *et al.*, 2016; Rihoux and Ragin, 2008). This arises because the fsQCA approach assumes that the influence of attributes – e.g. customer satisfaction – on a specific outcome (customer account profitability, in our case) depends on how different attributes are combined with each other (Russo *et al.*, 2016), and thereby fsQCA addresses the limited focus on main "net effects" of antecedents of customer loyalty or other B2B constructs observed in multiple regression analysis (Spivack and Woodside, 2019; Wu *et al.*, 2016; Russo *et al.*, 2016).

In our application of fsQCA, we follow primarily Ragin (2009) [4], Russo *et al.* (2016) and Maggetti and Levi-Faur (2013). In following Russo *et al.* (2016) and Russo and Confente (2019), we first check the appropriateness of applying QCA through contrarian cases (cross-tabulations), and then define the property space, in terms of possible configurations of drivers of the outcome measure. The property space is defined through the calibration of partial memberships in sets (Rihoux and Ragin, 2008), partitioning the membership into meaningful groupings by using values between zero (no membership) and one (full membership). Since we are interested in improving our understanding of Anderson and Mittal's (2000) SRF and its adaptation to SOW (Keiningham *et al.*, 2005; Cooil *et al.*, 2007), we focus on two outcome measures, namely, behavioral loyalty (SOW) and account profitability. Taking into account our propositions as developed in Section (2), we focus on four potential outcome drivers, namely, attitudinal loyalty, customers' perceived influence on supplier innovation, customers' perceived product innovativeness of the supplier and perceived customer orientation.

To first assess the appropriateness of QCA and illustrate the complexity underlying the outcome measures of interest, we follow Russo and Confente (2019) in implementing a contrarian case analysis. We, therefore, provide two sets of cross-tabulations between outcomes and antecedents, for both of our outcome measures, behavioral loyalty and profitability (Appendix A3) [5]. Following Russo and Confente (2019), we find the existence of contrarian cases by building a contingency table, suggesting that in some cases low degrees of customer perceptions lead to high outcomes (SOW and profitability), while in others high degrees of customer perceptions lead to a low degree of behavioral loyalty and profitability, as reflected in the rather even distribution of output levels over the quintiles of the perceptual measures.

In the next step, these four items are re-coded from a Likert-type scale to continuous variables (0–1). The task involved in this re-coding is akin to calibration to transform variables into sets with three anchors (full set membership, crossover point and non-membership), as a basis to convert our Likert-type scales into fuzzy-set membership, so that these fuzzy sets permit the scaling of membership scores and allows partial membership. Following Wu *et al.* (2016) and Spivack and Woodside (2019), thresholds were set at 0.05 for non-membership, 0.5 as the crossover point, and 0.95 for full membership in our

constructs [6]. Truth tables are constructed next (Tables 6 and 8), to define the property space, reflecting the assessment of combinations empirically present in our data, where 0 is given to an attribute in case of its absence and 1 is assigned in case of its presence. To explore these combinations of the four potential outcome drivers that are consistent according to set theory (Russo *et al.*, 2016), we consider fuzzy set membership scores in the interval 0 to 1 for both profitability (Table 6: antecedent conditions for high scores in the profitability of different customer accounts) and for SOW (Table 8: Antecedent conditions for high scores in behavioral loyalty). We follow the recommendation by Maggetti and Levi-Faur (2013) and use a frequency cut-off of 3 for the truth-table, given our sample size of $n \geq 50$ (Greckhamer *et al.*, 2013), and then assign membership to profitability at a consistency level ≥ 0.8, i.e. we set the lowest acceptable consistency score at 0.80, which is above the minimum recommended threshold of 0.75 (Timmer and Kaufmann, 2019: 0.8; Greckhamer *et al.*, 2013: ≥ 0.8, Spivack and Woodside, 2019: 0.75). We are next interested in assessing the robustness of fuzzy-set fsQCA results through three tests of robustness, starting with consistency (Skaaning, 2011; Ragin, 2012; Schwellnus, 2013) [7]. Varying the cross-over points of the fuzzy set yields comparable results to the original truth table, implying a high degree of robustness of the results. The second robustness check involves testing the same model on the negated outcome (profitability: Table 7; SOW: Table 9) (Skaaning, 2011),

Attitudinal loyalty (LOY)	●	●	●	●	⊗	●	⊗	⊗	⊗	⊗	●
Perceived customer orientation (CO)	⊗	●	⊗	●	●	●	⊗	⊗	●	⊗	●
Product innovativeness (PI)	⊗	⊗	●	⊗	⊗	●	⊗	●	●	⊗	●
Customer influence on innovation (CI)	●	⊗	⊗	●	⊗	⊗	●	●	●	⊗	●
Profitability	●	●	●	●	●	●	●	●	⊗	⊗	⊗
Number	3	6	4	4	3	8	3	5	6	41	77
Raw consistency**	0.83	0.83	0.83	0.81	0.81	0.81	0.81	0.80	0.79	0.77	0.72
PRI consistency	0.24	0.28	0.24	0.26	0.30	0.30	0.31	0.28	0.33	0.33	0.27
SYM consistency	0.24	0.28	0.24	0.26	0.30	0.30	0.31	0.28	0.33	0.35	0.32

Notes: (**for further interpretation of raw consistency, the "proportional reduction in consistency" (PRI) measure and symmetric (SYM) consistency see Ragin (2012) and Schwellnus (2013)). ⊗ Causal condition absent. ● Causal condition present

Table 6. Configurations for achieving high profitability of different customer accounts

Configurations	Main configurations for profitability of a customer's account Solutions			
	1	2	3	4
Attitudinal loyalty (LOY)		⊗	●	●
Perceived customer orientation (CO)	●	⊗		
Product innovativeness (PI)	⊗		●	⊗
Customer influence on innovation (CI)	⊗	●	⊗	●
Consistency	0.81	0.80	0.80	0.80
Raw coverage	0.49	0.38	0.56	0.47
Unique coverage	0.032	0.04	0.10	0.04
Solution coverage	0.71			
Solution consistency	0.75			

Notes: (*** for more detailed interpretation of truth tables: Ragin (2012)). ⊗ Core causal condition absent. ● Core causal condition present

Table 7. Configurations for profitability of a customer's account***

confirming symmetry of the results. Following Ragin and Fiss (2008), black circles indicate the presence of a condition while crossed circles indicate its absence, and blank cells indicate that the condition is not considered in the solution. Table 6 shows 33 cases of positive association between profitability and individual perceptual items.

We note that consistency and coverage are metrics indicating the usefulness of a given model of a simple antecedent condition or a set of complex antecedent conditions (Tables 6 and 8) for predicting scores in an outcome condition (Spivack and Woodside, 2019). While coverage is akin in interpretation to R^2 in multivariate regression analysis, it measures the share of consistent memberships as a proportion of the total membership in the outcome set, hence helps to determine, which percentage of the outcome is covered through a solution (Ragin, 2006; Russo and Confente, 2019). In contrast, consistency measures the degree to which the cases share a simple or a complex antecedent condition in displaying our outcome of interest (Gounaris *et al.*, 2016). As a next step, truth-table algorithms (Quine-McCluskey algorithms; Ragin, 2009) are, therefore, used with profitability (Table 7) and behavioral loyalty (Table 9) set as the outcome variable, respectively, and attitudinal loyalty, customer orientation, influence on innovation and perceived innovativeness as antecedents to assess coverage and consistency of the resulting recipes. As Table 7 shows, we distinguish the consistency of the total solution (0.75) and consistency of the four combinations (0.71). In studying the main configurations (Tables 7 and 9), we anticipate to observe cases whereby an antecedent condition associates with the two outcome conditions under investigation in a manner potentially counter to the reported principal symmetric relationship (Wu *et al.*, 2016), as outlined by our propositions.

In summary, and as Table 7 shows, raw coverage and unique coverage suggest that the configural statements are empirically relevant to varying degrees (Ragin, 2009). [8] While individual recipe configurations are associated with a high outcome, our data does not suggest a uniform solution, nor that association with all perceptual measures involved necessarily is associated with a high outcome. Instead, we find that the presence of perceived customer orientation, and absence of perceived innovativeness and perceived influence on innovation is providing the highest consistency and raw coverage metrics (Solution 1), while the presence of attitudinal loyalty, perceived innovativeness and absence of perceived influence on innovation is providing the highest unique coverage.

To investigate matters further, a second truth table was generated only with our perceptual constructs (attributes), and with behavioral loyalty (SOW) as the outcome condition, to investigate *P2 and P3* (Tables 8 and 9). Again, we find limited evidence of interconnectedness, as consistency scores in the truth table are below the recommended 0.8 threshold. Interestingly, Table 9 is essentially suggesting the same recipe configurations as Table 7, while the most parsimonious solution is simply showing a negative association

Table 8.
Configurations for achieving high scores of behavioral loyalty (SOW)

Attitudinal loyalty (LOY)	●	●	●	●	●	●	●	●
Perceived customer orientation (CO)	⊗	⊗	⊗	⊗	●	●	●	●
Product innovativeness (PI)	⊗	●	⊗	●	⊗	⊗	●	●
Customer influence on innovation (CI)	●	●	⊗	⊗	●	⊗	⊗	●
Behavioral loyalty (SOW)	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Number	19	7	79	13	7	21	61	197
Raw consistency**	0.77	0.75	0.74	0.72	0.71	0.70	0.64	0.58
PRI consistency	0.61	0.59	0.61	0.55	0.54	0.52	0.49	0.45
SYM consistency	0.63	0.59	0.62	0.55	0.54	0.52	0.49	0.47

Notes: ⊗ causal condition absent. ●Causal condition present

between attitudinal loyalty and behavioral loyalty, albeit still at coverage levels of 0.52 and consistency levels at 0.63. Furthermore, as Table 10 suggests, a reduction in the consistency level to the minimum of 0.75 as suggested by Spivack and Woodside (2019), does yield a truth table indicating a positive association between attitudinal loyalty, customer influence on innovation and behavioral loyalty as the outcome, albeit at the obvious trade-off with regard to the robustness of the solution.

3.3 Discussion of results

When considering all of the above fsQCA results in the context of Anderson and Mittal's (2000) SRF and its adaptation to SOW (Keiningham *et al.*, 2005; Cooil *et al.*, 2007), it is striking that our analysis indicates a lack of a clear connection between the discussed perception metrics, in particular attitudinal loyalty, and SOW. Considering the truth table for profitability (Table 7), we find evidence for potential non-linearities between the profitability of a customer account and perceptual metrics. Indeed, customers who score the highest across all reported perceptual metrics cannot be clearly associated with a high profitability outcome. However, none of the perceptual metrics could be excluded from being potentially associated with a high profitability outcome either.

In other words, the results suggest that profitability does not have a "symmetric" relationship with attitudinal loyalty, perceived customer orientation, perceived influence on innovation and perceived innovativeness. Nevertheless, different configurations of the

Configurations	Solutions			
	1	2	3	4
Attitudinal loyalty (LOY)		⊗	●	●
Perceived customer orientation (CO)	●	⊗		
Product innovativeness (PI)	⊗		●	⊗
Customer influence on innovation (CI)	⊗	●	⊗	●
Consistency	0.69	0.78	0.64	0.72
Raw coverage	0.25	0.21	0.35	0.28
Unique coverage	0.04	0.01	0.10	0.07
Solution coverage	0.51			
Solution consistency	0.62			

Notes: ⊗ core causal condition absent. ● Core causal condition present

Table 9. Configurations for LOY, CO, PI, CI – behavioral loyalty (SOW)

Configurations	Solutions
	1
Attitudinal loyalty (LOY)	●
Perceived customer orientation (CO)	⊗
Product innovativeness (PI)	⊗
Customer influence on innovation (CI)	●
Consistency	0.74
Raw coverage	0.30
Unique coverage	0.30

Notes: ⊗ core causal condition absent. ● Core causal condition present

Table 10. Main configurations for profitability of behavioral loyalty (share of wallet), low consistency

perceptual metrics, such as the presence of customer orientation and the absence of perceived innovativeness and perceived influence on innovation can still be associated with high levels of profitability for a given customer account.

Furthermore, since our paper started out by aiming to also contribute to the literature on value-in-use in the context of customer loyalty, we need to consider the above findings also in the context of the value-in-use literature. First, building on the finding by Macdonald *et al.* (2016) that customers also assess the quality of the joint resource integration process with their supplier, we could conjecture that perceptual measures associated with innovation investigated here are largely irrelevant to customers for assessing the quality of this joint resource integration process, except for perceived innovativeness in the context of profitability. Second, if we view value-in-use as inherently multidimensional due to the diversity of customer goals (Macdonald *et al.*, 2016), our results could be interpreted such that other dimensions matter more to customers relative to perceptual innovation measures. For example, Sirdeshmukh *et al.* (2002) investigated one particular dimension of value-in-use with regard to value perceived through service delivery. Similarly, we could take the multi-dimensionality of the definition of value-in-use with regard to all customer-perceived consequences (Macdonald *et al.*, 2016), to argue that perceptual innovation measures investigated here reflect only one dimension of value perception, hence that other customer-perceived consequences are more relevant than those associated with innovation (e.g. perceived risk of supply chain disruption). Consider also that this multi-dimensionality of value-in-use has been further elaborated by Grönroos (2011, p. 242), who distinguishes three dimensions of what value a customer can create out of the support provided by a supplier. First, the effects on the customer's growth- and revenue-generating capacity; second, the effects on the customer's cost level; and third, effects on perceptions. Among these effects on perceptions, Grönroos (2011) distinguishes four dimensions, namely, increased trust in the supplier, increased commitment to the supplier, increased comfort in supplier interactions and increased attraction of the supplier. In our case, if we consider the support provided by the focal supplier in terms of innovation-related feedback mechanisms (the potential for participatory innovation as reflected in a customers' perceived influence on supplier innovation, and customers' perceived product innovativeness of the supplier), it seems that in the case of our focal globalized supplier, none of the four dimensions put forward by Grönroos (2011) have been affected positively by affiliating customers more closely with the supplier's innovation value chain (trust, commitment, comfort and attraction). In other words, the evidence from configuration analysis that individual innovation-perception-related attributes are largely insufficient for high behavioral loyalty or high customer account profitability could be viewed as an indication that customers perceive limited value in participating in the focal firm's innovation value chain (funnel).

Furthermore, when we consider these results regarding perceptual customer constructs of innovation as derived from the globalized industrial manufacturing sector, the question is how they contrast with results derived from service sector firms. Previous service sector analyzes (Kelly, 1992; Hartline *et al.*, 2000; Alam and Perry, 2002) suggest that customer orientation plays a more important role to service firms, relative to tangible product firms. Further, if we consider not only the nature of the industry (service versus manufacturing) but also the nature of the very manufacturing sector itself, our results may be interpreted in the context of Bowen *et al.*'s (1989) classic analysis of customer orientation in the manufacturing sector. In the context of Bowen *et al.*' (1989) Proposition 1, for manufacturing firms in mature markets, the technical dimensions of customer service may be less important in attaining competitive advantage than for manufacturing firms in emerging or growth markets.

Bowen *et al.* (1989, p. 87) suggest that mature markets may limit the significance of the technical dimension of customer service, such as repair services, but enhance the significance of relational dimensions, such as those where customers suggest new product designs and applications. If we consider our empirical evidence from a focal multinational manufacturing firm operating in mature markets, then our conclusion that perceived customer influence on supplier innovation by itself is largely an irrelevant relational attitude dimension with respect to the outcome variable behavioral loyalty would seem to go counter Bowen *et al.*'s (1989) Proposition 1. Furthermore, it is of interest to contrast this conclusion with Bowen *et al.*'s (1989, p. 88) second proposition that: extensive customer service may be required when manufacturing firms are initially entering a market and are trying to overcome the first-mover advantages held by established sellers, which is based on their rationale that in cases where services accompany products, services may reduce the purchase risk in novel markets. As our evidence comes from a long-established global manufacturing enterprise, which could be characterized as operating in highly mature markets, where limited first-mover advantages of competitors need to be overcome, our empirics seem to support the second Proposition of Bowen *et al.* (1989).

On the matter of lack of relevance of individual customer perceptual metrics put forward in the context of Anderson and Mittal's (2000) SRF and its adaptation to SOW (Keiningham *et al.*, 2005; Cooil *et al.*, 2007), the fsQCA analysis has provided us with novel insights, as it has helped to uncover underlying complexities in the relationship between perceived product innovativeness of the supplier and SOW, which could not be uncovered through modeling that focuses on main effects only. Furthermore, the fact that the same recipes (combinations of attributes) have been uncovered for both outcomes, i.e. that equifinality has been identified for both SOW and profitability, may in fact lend support to Anderson and Mittal's (2000) SRF and its adaptation to SOW.

From a practical managerial perspective, keeping in mind the nature of the industry under investigation (globalized mechanical engineering), the overall conclusion from fsQCA analysis that equifinality does not necessarily lead to higher outcomes (SOW and profitability) may partly be explained by the fact that the product outputs from this industry have typically a longer shelf life and life cycle (compared to, say, information technology software), hence the frequency of re-purchases is likely lower and the role of customer orientation potentially less relevant in spite of high customer account profitability.

From a practical management perspective, we conclude that B2B customers investigated here value the independence between them and their supplier in the innovation funnel more, compared to their potential influence (costs) on and in the innovation funnel. In other words, those customers who perceive to have a great degree of influence on the supplier's innovation funnel may place more confidence into their own perceived innovation-related capabilities and value-in-use, rather than into the supplier's ability to drive the innovation funnel in conjunction with customers' influence on supplier innovation.

4. Conclusions

This study has explored the role of configurations of relationship quality dimensions for explaining sources of behavioral outcomes in the globalized manufacturing industry. We started from the premise that in spite of extensive work on perceptual customer constructs, and a detailed understanding of the multi-dimensional nature of customer engagement, we still lack understanding of customer engagement in those applications of customer engagement where perceptual constructs are directly incorporated into behavioral outcomes (Gupta and Zeithaml, 2006; Kumar *et al.*, 2013; Vivek *et al.*, 2019). Furthermore, in these applications, we are missing a deeper understanding of combinations of antecedents, to

explain behavioral outcomes in globalized manufacturing through alternate approaches to main-effects focused analyzes. We, therefore, use QCA using fuzzy sets (fsQCA) (Russo and Confente, 2019) to address these gaps, focusing on two key behavioral outcomes, namely, customer account profitability and SOW. Conceptually, our study draws from Anderson and Mittal's (2000) framework underlying a satisfaction-repurchase-profitability sequence and its adaptation to SOW (Keiningham *et al.*, 2005; Cooil *et al.*, 2007). It provides evidence from the global mechanical engineering sector, contributing to our understanding of the value of customer engagement in new product development and innovation, as well as contributing to the debate on the relationship between perceptual constructs and behavioral metrics in B2B markets. Taken together, our results corroborate earlier cross-industry evidence that "more attention to perceptual constructs is not always better" in terms of supplier performance (Leverin and Liljander, 2006; Ritter and Walter, 2012; Tang and Marinova, 2020).

The fsQCA results suggest that the underlying relationships are complex and potentially non-linear and that customer perceptions of a supplier's product innovativeness may be relevant for profitability, and thus, a relevant yet limited dimension of relationship quality. We, therefore, conclude that the focal manufacturing supplier has partly been successful in supporting the customer base to create joint value (Grönroos, 2011; Grönroos *et al.*, 2010).

Considering the extent to which customers perceive value in the opportunity to be involved in the supplier's innovation value chain, in terms of customers' perceived influence on supplier innovation, the fsQCA results suggest that when taking into account a causal asymmetric perspective, such perceptions of influence on innovation within the focal company do not matter as a relevant dimension of relationship quality. This leads us to conclude that customers may place more confidence into their own perceived innovation-related capabilities and value-in-use, rather than into the supplier's ability to drive the innovation funnel in conjunction with customers' influence on supplier innovation. Further explanations for the lack of relevance of customer influence on supplier innovation could be drawn from the nature of the sector under investigation (globalized mechanical engineering with limited evidence of outbound open-innovation practices) and from the significant size of the focal multinational firm under investigation, as previous work has shown that inbound open innovation practices are more common than outbound practices in large firms (Chesbrough and Brunswicker, 2013).

Furthermore, considering customer perceptions of the supplier's product innovativeness in the context of SOW, the fsQCA results also point to asymmetries and complexities, yet they do not support customer perceptions of supplier innovation being relevant for relationship quality. This lack of support for the sufficiency of individual attributes, such as customers' perceived influence on supplier innovation in the recipes investigated, provides some support for the view that other values than customers' perceived influence on innovation may be more important in CRM (Smals and Smits, 2012; O'Cass and Ngo, 2012) in our globalized manufacturing industry context. Similarly, the finding that a simple innovation-related antecedent condition (customers' perceived influence on supplier innovation) can be necessary but insufficient for high behavioral loyalty may suggest that customers place greater value on other supplier competences, such as the focal firm's perceived ability to deal with customer risk concerns (Meunier, 2014), including supply disruption risks (Ellis *et al.*, 2010). A customer's need for supply chain reliability as reflected in established products may thus, need to be counterbalanced by the perceived risk that switching to alternate suppliers (Russo *et al.*, 2016; Chebat *et al.*, 2011) or to more innovative products entails for customers. Such

perceived risks (costs) of switching have been found to be increasingly important as customer-organization relationships deepen (Bell *et al.*, 2005), and especially in the context of product innovation (Salies, 2011).

Further, our finding that distinct perceptual attribute combinations are not equifinal in leading to high profitability in globalized manufacturing could be considered in the context of earlier mixed empirical evidence from the banking, telecoms and automobile sectors, which identified both positive and negative relationships between attitudinal loyalty and profitability (Dwyer *et al.*, 1987; Reinartz and Eisenbeiss, 2015).

4.1 Managerial implications

In terms of managerial implications, the results with regard to customer account profitability suggest that B2B customers investigated here may distinguish when interacting with their globalized supplier in the innovation funnel: they may see a positive customer value when the innovation is product, and thus, relation-specific, whereas they may see limited customer value when innovation is considered in more generic terms (customers' perceived influence on supplier innovation in general). The finding that single specific and product-focused perceptual innovation measures for relationship quality can be necessary but insufficient for high SOW (and of limited relevance for high profitability) to occur suggests that value-in-use in the globalized manufacturing sector is less likely generated through simple incentives and strategies that compete on price. As Edvardsson *et al.* (2000) have also shown, service-focused companies have natural incentives to compete on service quality attributes rather than on price, as this pays off financially. Thus, our evidence from globalized manufacturing seems to be in line with an overwhelming body of evidence (Watson *et al.*, 2015; Kranzbühler *et al.*, 2020; Gremler *et al.*, 2020), suggesting that customer loyalty cannot be bought using simple incentive strategies but may be built with relational strategies (commitment, trust and satisfaction).

Further, our analysis suggests that those managers in charge of CRM in complex globalized manufacturing companies may benefit from a more detailed yet complex understanding of the relationships between perceptual innovation customer concepts and outcome measures investigated here: turning customers into performance-relevant advocates may not only require more involving relational strategies but also be also more effectively achieved through the use of big data-driven analytics (Kennedy, 2006; McColl-Kennedy *et al.*, 2019). We, thus, concur with Reinartz and Eisenbeiss (2015) that the linkages in the satisfaction-loyalty-profit chain are "more complex than originally assumed," especially in practice. The implication is that a better understanding of the complex and potentially non-linear relationships between innovation-related perceptual customer concepts and behavioral metrics could contribute toward more effective customer targeting, and thus, competitive advantage, as the costs and benefits of customer engagement become more transparent and long-term engagement of customers in the innovation funnel become mutually validated.

4.2 Limitations and directions for future research

Our analysis faces a number of limitations, starting with its reliance on cross-sectional survey data, which does not enable us to account for feedback mechanisms, for example, arising from customer perceptions regarding innovation aspects (Smals and Smits, 2012). Future work may, therefore, more extensively focus on feedback mechanisms related to customer innovation perceptions, distinguishing specific types of user-producer interaction that have been identified by Nahuis *et al.* (2012), while also taking into account the types of

technologies that differ in the degree to which they are customizable to user demands (Nahuis *et al.*, 2012; Wijekoon and Salunke, 2018).

Our cross-sectional approach suffers also from its implicit assumption that the underlying constructs are static, which goes counter to some evidence that conceptualizing and measuring customer-perceived value is individually, subjectively and socially constructed and evolves dynamically (Payne and Holt, 2001; Stępień, 2017; Zietsman *et al.*, 2020). Recent works on the service-profit chain building upon longitudinal data point to such interesting potential dynamic relationships, taking into account customer perceptions of service performance (Strydom *et al.*, 2020). Building upon these insights, future work that integrates perceptual customer metrics with financial and non-financial performance indicators could focus on such dynamically constructed customer-perceived value, thereby extending applications of episodic value co-creation further (Friend *et al.*, 2020).

Future longitudinal research on customer-perceived value associated with innovation measures could also include an assessment of customers' perceived risks in supplier-customer relations (Ellis *et al.*, 2010; Meunier, 2014) via the integration of big data analytics at interconnected touchpoints, extending recent works on the role of big data analytics on customer relationship performance and sales growth (Hallikainen *et al.*, 2020) to the context of B2B consumers' innovation and risk perceptions.

A further potential limitation arises due to the imperfect matching of the behavioral and perceptual data underlying our analysis, as the former was collected about 12 months after the latter.

Furthermore, and although we are aware that, ideally, in an analysis of perceptions and SOW, perceptions should be treated as relative in terms of accounting for the fulfilment that customers perceive from various suppliers (Keiningham *et al.*, 2015b, 2017), data limitations have prevented us from empirically accounting for such relative constructs as the Wallet Allocation Rule (Aksoy, 2014; Keiningham *et al.*, 2015c; Buoye, 2016; Aksoy *et al.*, 2017).

The sector-specific nature of our data set naturally raises questions of transferability of our results (Homburg *et al.*, 2013), an issue that nevertheless has been resolved in previous single-firm, single-industry studies (Keiningham *et al.*, 2003). In our case, in light of the globalized mechanical engineering sector's overall and technological importance to the economy (Steiert, 2008; Gardner, 2016; EC, 2018) and considering the global reach of the customer base underlying our analysis, we consider our results relevant for a significant part of companies active in globalized industrial sectors. Nevertheless, future works on other sectors would clearly be useful for cross-industry comparison.

Furthermore, our constructs capturing customer loyalty likely have their limitations in imperfectly capturing customer loyalty, considering Watson *et al.*'s (2015, p. 807) conclusion that: many of the promises associated with building customer loyalty remains unrealized. We find evidence in support of the premise that this failure stems, in part, from a systematic divergence between the conceptualizations (what is customer loyalty?) and measurement (how is it measured?) of loyalty.

In particular, the lack of a multidimensional conceptualization of our perceptual customer constructs may have limited our analysis, considering also recent evidence from retail companies in the furniture sector, suggesting that the multidimensional conceptualization of relationship value explained satisfaction and loyalty levels to a greater extent than the one-dimensional conceptualization (Ruiz-Martínez *et al.*, 2019). Therefore, future research integrating behavioral and objective performance data could broaden the input data and constructs used, and apply a multidimensional conceptualization of relationship value to provide further empirical assessments.

As a result of the above extensions, a better understanding of perceptual B2B customer metrics may contribute toward enhancing supplier performance, as well as delivering further tangible and intangible benefits to customers.

Notes

1. The focal firm in question is a diversified mechanical engineering enterprise that shares similarities in product portfolio and global reach with companies such as Bosch Rexroth AG, Linde AG, Eaton Corporation, Parker-Hannifin Corporation or Emerson Climate Technologies.
2. Following Colquitt and Zapata-Phelan (2007) and Bacharach (1989), this involves drawing on existing theory guiding us toward the development of propositions. In reviewing trends in theory building in management research, Colquitt and Zapata-Phelan (2007, p. 1285) highlight: "empirical articles that follow the inductive model do not include a priori hypotheses as a starting point, instead emphasizing the creation of propositions that can be tested in future studies."
3. The initial phase of survey pre-development and workshops led to the identification of those customers that would subsequently be targeted for surveying, notably as a function of the importance of customers during the past three years (in terms of sales average across the past three years). This led to the fact that, in several cases, multiple company representatives were contacted to represent a given customer firm, hence that multiple responses are associated with a given customer. Because of the central role of SOW in the following analysis, we only considered a sub-sample of these 1,229 ID's, namely, those who had provided SOW information (in conjuntion with all other perceptual constructs used in the following analysis), resulting in 987 ID's. For the subsequent analysis, we then merged the survey data set with the sales data set via uniquely identified individual ID's, resulting in 618 joint datapoints, which reflect the varying relative importance of customer firms. Thus, in the merged data set, which is based on 618 datapoints (cutomer firms), we consistently used simple averaging across the ID's that belong to a given customer, to place equal weight to each representative of a given customer firm. This averaging reflects, therefore that in several cases multiple employees (i.e. multiple contact points associated with given customer firm), and hence, multiple decision-makers responsible for purchasing decisions are behind the perceptual constructs of the 618 customer datapoints, contributing thereby to reducing CVB (Podsakoff *et al.*, 2003; Chang *et al.*, 2010). When there were missing responses in the survey data set, we used a simple imputation method (sample mean for the respective questions), following Enders (2010). Considering the descriptive statistics for pre- and post-imputation (not shown here, available from the authors upon request), there is evidence for overall consistency after applying this imputation.
4. www.socsci.uci.edu/~cragin/fsQCA/
5. The software SPSS provides this calculation via the following steps: •TRANSFORM → RANK CASES → RANK TYPES → Ntiles: 5 After the quintiles of the variables of interest are obtained, the second step is to create a cross-tabulation among these variables to relate and investigate the relationships. A 5 * 5 table is created using the same software via the following steps: •ANALYZE → DESCRIPTIVE STATISTICS → CROSS-TABS
6. Our calibration of the seven-point Likert dimensions is not based on a fixed number for the crossover point, but follows previous works in taking into account the median score and distribution for each attribute (Russo and Confente, 2019).
7. The more heterogeneity in the survey responses we have, the lower consistency scores we can expect. Overall, consistency is akin to correlation coefficients in regression analysis (Woodside, 2015). We apply several measures of consistency, namely, raw consistency, the "proportional reduction in consistency" measure and symmetric consistency (Ragin (2012) and Schwellnus (2013)).

8. According to Ragin (2009), raw coverage provides information on the degree of overlap of the size of the configuration set and the outcome set, relative to the size of the outcome set, whereas unique coverage partitions raw coverage to identify overlapping explanations.

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Appendix

Table A1. SPSS Harman single-factor test for fractional SOW model

Total variance explained						
	Initial eigenvalues			Extraction sums of squared loadings		
Component	Total	% of variance	Cumulative (%)	Total	% of variance	Cumulative (%)
1	6,990	43,685	43,685	6,990	43,685	43,685
2	1,230	7,689	51,375			
3	1,176	7,349	58,724			
4	0.917	5,730	64,453			
5	0.764	4,773	69,227			
6	0.723	4,516	73,743			
7	0.616	3,853	77,596			
8	0.554	3,464	81,059			
9	0.516	3,225	84,284			
10	0.482	3,013	87,297			
11	0.420	2,623	89,920			
12	0.412	2,575	92,495			
13	0.342	2,140	94,635			
14	0.318	1,988	96,623			
15	0.277	1,734	98,357			
16	0.263	1,643	100,000			

Note: Extraction method: principal component analysis

Table A2. SPSS Harman single-factor for fractional profitability model

Total variance explained[a]						
	Initial eigenvalues			Extraction sums of squared loadings		
Component	Total	% of variance	Cumulative (%)	Total	% of variance	Cumulative (%)
1	7,220	42,472	42,472	7,220	42,472	42,472
2	1,326	7,801	50,273			
3	1,123	6,604	56,877			
4	0.902	5,305	62,181			
5	0.847	4,982	67,163			
6	0.672	3,955	71,118			
7	0.659	3,876	74,994			
8	0.603	3,547	78,541			
9	0.536	3,155	81,696			
10	0.491	2,888	84,585			
11	0.479	2,817	87,402			
12	0.437	2,569	89,971			
13	0.410	2,413	92,384			
14	0.359	2,110	94,494			
15	0.350	2,056	96,550			
16	0.316	1,859	98,409			
17	0.271	1,591	100,000			

Notes: Extraction method: principal component analysis. [a]Only cases for which include = 1 are used in the analysis phase

Table A3.
Cross-tabulation of quintiles of cases for share of wallet and attitudinal loyalty

Attitudinal loyalty (LOY)		Share of wallet 1	2	3	4	5	Total
1	Count	50	20	19	22	10	62
	% within Loy	80.6%	32.3%	30.6%	35.5%	16.1%	100.0%
2	Count	63	44	37	53	20	217
	% within Loy	29.0%	20.3%	17.1%	24.4%	9.2%	100.0%
3	Count	51	44	50	84	50	279
	% within Loy	18.3%	15.8%	17.9%	30.1%	17.9%	100.0%
5	Count	63	49	48	113	97	370
	% within Loy	17.0%	13.2%	13.0%	30.5%	26.2%	100.0%
Total	Count	227	157	154	272	177	987
	% within Loy	23.0%	15.9%	15.6%	27.6%	17.9%	100.0%

Table A4.
Cross-tabulation of quintiles of cases for share of wallet and perceived customer orientation

Perceived customer orientation (PCO)		Share of wallet 1	2	3	4	5	Total
1	Count	75	42	45	50	33	245
	% within PCO	30.6%	17.1%	18.4%	20.4%	13.5%	100.0%
2	Count	64	50	41	65	33	253
	% within PCO	25.3%	19.8%	16.2%	25.7%	13.0%	100.0%
4	Count	48	37	42	91	62	280
	% within PCO	17.1%	13.2%	15.0%	32.5%	22.1%	100.0%
5	Count	40	28	26	66	49	209
	% within PCO	19.1%	13.4%	12.4%	31.6%	23.4%	100.0%
Total	Count	227	157	154	272	177	987
	% within PCO	23.0%	15.9%	15.6%	27.6%	17.9%	100.0%

Table A5.
Cross-tabulation of quintiles of cases for share of wallet and perceived influence on innovation

Perceived influence on innovation (PCI)		Share of wallet 1	2	3	4	5	Total
1	Count	55	34	28	65	33	215
	% within PCI	25.6%	15.8%	13.0%	30.2%	15.3%	100.0%
2	Count	45	33	35	66	32	211
	% within PCI	21.3%	15.6%	16.6%	31.3%	15.2%	100.0%
3	Count	48	37	42	91	62	280
	% within PCI	17.1%	13.2%	15.0%	32.5%	22.1%	100.0%
4	Count	47	29	31	64	48	219
	% within PCI	21.5%	13.2%	14.2%	29.2%	21.9%	100.0%
5	Count	40	29	32	39	34	174
	% within PCI	23.0%	16.7%	18.4%	22.4%	19.5%	100.0%
Total	Count	227	157	154	272	177	987
	% within PCI	23.0%	15.9%	15.6%	27.6%	17.9%	100.0%

Perceived product innovativeness (PPI)		Share of wallet 1	2	3	4	5	Total
1	Count	70	46	37	66	33	252
	% within PPI	27.8%	18.3%	14.7%	26.2%	13.1%	100.0%
3	Count	67	59	55	92	43	316
	% within PPI	21.2%	18.7%	17.4%	29.1%	13.6%	100.0%
4	Count	52	34	44	76	59	265
	% within PPI	19.6%	12.8%	16.6%	28.7%	22.3%	100.0%
5	Count	38	18	18	38	42	154
	% within PPI	24.7%	11.7%	11.7%	24.7%	27.3%	100.0%
Total	Count	227	157	154	272	177	987
	% within PPI	23.0%	15.9%	15.6%	27.6%	17.9%	100.0%

Table A6. Cross-tabulation of quintiles of cases for share of wallet and perceived innovativeness

Loyalty		Profitability 1	2	3	4	5	Total
1	Count	13	9	9	17	14	62
	% within Loy	21.0%	14.5%	14.5%	27.4%	22.6%	100.0%
2	Count	27	27	30	21	29	134
	% within Loy	20.1%	20.1%	22.4%	15.7%	21.6%	100.0%
3	Count	36	31	36	35	36	174
	% within Loy	20.7%	17.8%	20.7%	20.1%	20.7%	100.0%
5	Count	39	49	41	43	37	209
	% within Loy	18.7%	23.4%	19.6%	20.6%	17.7%	100.0%
Total	Count	115	116	116	116	116	579
	% within Loy	19.9%	20.0%	20.0%	20.0%	20.0%	100.0%

Table A7. Cross-tabulation of quintiles of cases for profitability and reported loyalty

Perceived product innovativeness (PPI)		Profitability 1	2	3	4	5	Total
1	Count	23	25	30	35	30	143
	% within PPI	16.1%	17.5%	21.0%	24.5%	21.0%	100.0%
3	Count	47	41	38	32	40	198
	% within PPI	23.7%	20.7%	19.2%	16.2%	20.2%	100.0%
4	Count	32	32	30	32	33	159
	% within PPI	20.1%	20.1%	18.9%	20.1%	20.8%	100.0%
5	Count	13	18	18	17	13	79
	% within PPI	16.5%	22.8%	22.8%	21.5%	16.5%	100.0%
Total	Count	115	116	116	116	116	579
	% within PPI	19.9%	20.0%	20.0%	20.0%	20.0%	100.0%

Table A8. Cross-tabulation of quintiles of cases for profitability and perceived innovativeness

Table A9.
Cross-tabulation of quintiles of cases for profitability and perceived influence on innovation

Perceived influence on innovation (PCI)		Profitability					Total
		1	2	3	4	5	
1	Count	16	26	29	26	28	125
	% within PCI	12.8%	20.8%	23.2%	20.8%	22.4%	100.0%
2	Count	12	11	8	10	11	52
	% within PCI	23.1%	21.2%	15.4%	19.2%	21.2%	100.0%
3	Count	46	36	30	39	33	184
	% within PCI	25.0%	19.6%	16.3%	21.2%	17.9%	100.0%
4	Count	19	22	16	21	18	96
	% within PCI	19.8%	22.9%	16.7%	21.9%	18.8%	100.0%
5	Count	22	21	33	20	26	122
	% within PCI	18.0%	17.2%	27.0%	16.4%	21.3%	100.0%
Total	Count	115	116	116	116	116	579
	% within PCI	19.9%	20.0%	20.0%	20.0%	20.0%	100.0%

Table A10.
Cross-tabulation of quintiles of cases for profitability and perceived customer orientation

Perceived customer orientation (PCO)		Profitability					Total
		1	2	3	4	5	
1	Count	23	27	39	29	25	143
	% within PCO	16.1%	18.9%	27.3%	20.3%	17.5%	100.0%
2	Count	47	34	16	33	34	164
	% within PCO	28.7%	20.7%	9.8%	20.1%	20.7%	100.0%
4	Count	26	32	34	40	39	171
	% within PCO	15.2%	18.7%	19.9%	23.4%	22.8%	100.0%
5	Count	39	49	41	43	37	209
	% within PCO	18.7%	23.4%	19.6%	20.6%	17.7%	100.0%
Total	Count	19	23	27	14	18	101
	% within PCO	18.8%	22.8%	26.7%	13.9%	17.8%	100.0%

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