Industrial Marketing Management 93 (2021) 161–173

Contents lists available at ScienceDirect

Industrial Marketing Management

journal homepage: www.elsevier.com/locate/indmarman

Research paper

Performance implications of the buyer-supplier market orientation fit

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ARTICLE INFO

Keywords:
Market orientation
Buyer-supplier relationships
Relationship strength
ROA
Dyadic data

ABSTRACT

Extant research examining the link between market orientation and performance offers few insights into how the interplay between a firm's market orientation (MO) and its key supplier's MO influences the firm's performance. Using archival and survey dyadic data from 876 firms (438 firm-supplier dyads), we explore the impact of MO fit (i.e., fit between the focal firm's MO and its supplier's MO) on the focal firm's performance (ROA). The findings indicate a direct and positive relationship between MO fit and ROA. This highlights the need for firms to focus both on their own MO and their key supplier's MO as sources of competitive advantage in today's business environment. The strength of the relationship between MO fit and ROA increases when the exchanged business volume increases between the focal firm and its supplier and when the respective relationship progresses in age. Furthermore, firms with MO fit perform best, followed by firms with *higher supplier MO misfit* (firm's MO is lower than its key supplier's MO), while firms with lower supplier MO misfit (firm's MO is higher than its key supplier's MO) are the laggards.

1. Introduction

Market orientation (MO) is a central concept within the business literature. Its impact on firm performance has been explored extensively (e.g., Liao, Chang, Wu, & Katrichis, 2011; Narver & Slater, 1990; Slater & Narver, 2000). The majority of MO studies focus on a single firm deploying MO and achieving performance outcomes while overlooking its suppliers' role. However, a plethora of academic studies, and industry evidence alike, suggest that firms rely extensively on their key suppliers and are influenced by the way their suppliers behave (Christopher, 2000; Stank, Davis, & Fugate, 2005).

As firms increasingly concentrate on their core competencies to better compete, they rely on their suppliers to handle various aspects of their operations (e.g., manufacturing, delivery, sales) and implement their market-oriented initiatives (Gligor, 2016). For example, Apple, a company renowned for its MO, has outsourced many of its functions and does not manufacture or deliver its own products. The firm relies on a network of over 200 suppliers located throughout the world. For iPhones, Apple utilizes Texas Instruments in the United States for semiconductors, Samsung in South Korea for processors, Toshiba in Japan for flash memory, NXP in the Netherlands for mixed-signal chips, Green Point in Singapore for plastic constructions, and Foxconn and Pegatron in China for manufacturing and assembling, to name just a few (Minasians, 2017). These examples indicate that suppliers' strategic orientations can play a pivotal role in the firm's marketing performance.

The business environment has changed significantly since the introduction of the MO concept three decades ago (Kohli & Jaworski, 1990; Narver & Slater, 1990). Although firms now rely significantly more on their key suppliers for various functions, as compared to three decades ago (Autry & Golicic, 2010; Gligor, 2014a), research has primarily investigated MO and its impact on performance at the firm level. This is despite studies indicating that competition has shifted from the firm level to the supply chain level (Lambert & Enz, 2017). Little is known about how the interplay between the focal firm's MO and its key supplier's MO affects the focal firm's performance. To expand the scope of MO from the firm level to the supplier level, we advance the *MO fit* concept, defined as the extent of match between the focal firm's MO and its supplier's MO.

Further, the relationship between MO and performance has been suggested to suffer from a "black box" challenge (Ellinger, Ketchen,

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https://doi.org/10.1016/j.indmarman.2021.01.010
Received 11 November 2019; Received in revised form 12 January 2021; Accepted 13 January 2021
Available online 25 January 2021

Hult, Elmada, & Richey, 2008). That is, some studies have found that a firm's MO is positively associated with performance, while other studies have reported non-significant or negative associations (Kirca, Jayachandran, & Bearden, 2005). Our paper contributes to this dialog by empirically exploring the possibility that it is the firm's fit with its key supplier's MO that impacts firm performance, rather than the firm's own high/low MO. That is, past studies have not accounted for the possible impact of the firm's key supplier MO on firm performance, despite the plethora of prior research that has identified interorganizational relationships as an instrumental factor that influences how firms translate their supply chain resources into performance outcomes (Claro, Hagelaar, & Omta, 2003; Durach & Machuca, 2018; Karatzas, Johnson, & Bastl, 2017). We, therefore, employ a problematization approach to challenge the assumption underlying past MO-performance studies that a firm's level of MO, alone, impacts its performance (i.e., in isolation from its key supplier's MO) (Alvesson & Sandberg, 2011).

To investigate the assumption described above, we explore the following research question: What is the relationship between MO fit and performance? Consistent with this research question, our primary objective is to examine how the fit between the focal firm's MO and its key supplier's MO impacts the focal firm's performance. That is, we examine whether both high and low levels of MO could positively or negatively impact performance, depending on the fit between the firm's level of MO and its key supplier's level of MO.

Moreover, to better understand the MO fit- firm performance relationship, we further explore the moderating role of relationship strength as an imperative internal factor related to the focal firm-supplier dyad. Dyadic survey and secondary data were collected from 876 firms to obtain 438 focal firm-supplier dyads to adequately address the study's research question. In the process, we also examine whether firms have greater performance when their MO is lower than their key supplier's MO (*higher supplier MO misfit*), matches it (*fit*), or exceeds it (*lower supplier MO misfit*).

The rest of the paper is structured as follows: We continue by reviewing the literature pertinent to the concepts of interest. Next, we introduce the theoretical arguments for our proposed hypotheses. This is followed by a detailed description of the research methodology. Finally, we conclude by discussing our paper's theoretical and managerial contributions, as well as limitations and opportunities for future research.

2. Theoretical background

2.1. Market orientation overview

Market orientation has emerged as a fundamental concept within marketing literature (Kirca et al., 2005). Kohli and Jaworski (1990) refer to MO as the organization-wide generation of, dissemination of, and responsiveness to market intelligence. They posit that market-oriented firms are compelled to engage in active information acquisition using several channels, including customers, suppliers, and competitors, to generate intelligence. Then, the information is disseminated throughout the organization to facilitate coherent joint actions within the firm. Finally, the intelligence generated and disseminated through market-oriented activities leads to responsiveness (Kohli & Jaworski, 1990). Importantly, subsequent studies support the notion that MO is a culture that leads to the behaviors described by Kohli and Jaworski (1990) (Ellinger et al., 2008; Gebhardt, Carpenter, & Sherry Jr, 2006). Next, we will illustrate how both MO perspectives support the link between MO fit and firm performance.

The discussion and conceptualization of MO -one of the most seminal concepts in marketing- has evolved over the years (Kirca et al., 2005). For example, definitions of the concept have improved to include network orientation and supplier orientation to account for the effects of networks in which firms are embedded (Min, Mentzer, & Ladd, 2007). Likewise, as the application of MO has become increasingly ubiquitous, the positive effects of MO have diminished over time. Research increasingly noted complementary effects of other strategic orientations to MO (Baker & Sinkula, 2009), and MO of supply chain partners (Gligor, Gligor, & Maloni, 2019). These developments highlight the increasing need for firms to pay more attention to their supply chain partners' MO. Consequently, the extent of fit between the MOs of buyers and suppliers may have important implications for both parties in the buyer-supplier relationships.

2.2. Supply chain alignment

Strategic management researchers have long examined organizational alignment as a source of competitive advantage (Powell, 1992). This line of research's core premise is that organizational alignment and internal fit are essential to jointly utilize competencies embedded in different functions for increased performance. The pursuit of organizational alignment entails the enactment of strategic priorities that are responsive to, or fit, the demands of the firm's external environment (Walter, Kellermanns, Floyd, Veiga, & Matherne, 2013). That said, strategic management increasingly acknowledges that as the horizon of firms' strategy-making extends beyond organizational boundaries (Dyer & Singh, 1998), the role of alignment is also relevant to the effectiveness and competitiveness of firms' supply chains (Gligor, 2016; Lee, 2002).

Because supply chain partners tend to maximize their own (often-competing) priorities and interests, each supply chain partner's individual decisions may cause problems and disruptions in their supply chain (Lee, 2002). Hence, one of the fundamental premises of supply chain management is coordinating actors and relationships in supply chain networks by managing the tensions between firms' supply chain policies and priorities (Carter, Rogers, & Choi, 2015).

As an extension and more holistic application of the core premises of organizational alignment, supply chain alignment suggests that supply chain partners' expectations, strategic orientations, and business processes need to exhibit acceptable levels of fit with each other (Lee, 2002). Supply chain alignment results in a fit in terms of objectives, structures, and processes within and between different functions and members in a supply chain (Wong, Skipworth, Godsell, & Achimugu, 2012). Additionally, a holistic strategy and synchronizing a product's supply and demand characteristics with its supply chain design features are argued to be fundamental to the success of a firm's supply chain (Gligor, 2016). Such synchronization processes require aligning suppliers' priorities with that of the focal firm and coordinating activities and structures within the supply chain. Priorities are embodied by firms' strategic orientations (Hakala, 2011). Thus, understanding the nature of supply chain partners' MOs to achieve a better fit with the firm's own MO could benefit all parties involved.

2.3. Market orientations of buyers and suppliers: fit and misfit

As mentioned previously, we offer a buyer-supplier MO fit typology here to help better predict and explain how fit (or lack thereof) affects the focal firm's performance (see Fig. 1). In line with the definition of MO by Kohli and Jaworski (1990), the concept of MO fit indicates a fit between buyers and suppliers across three pillars of MO (i.e., the organization-wide generation of, dissemination of, and responsiveness to, market intelligence). As such, when buyers and suppliers have MO fit, they both actively engage in similar levels of information acquisition, disseminate information to support joint actions within their firm and across their supply chain, and equally emphasize responsiveness as the key pillars of customer value creation (Kohli & Jaworski, 1990).

Many firms do not have direct contact with their customers, so they depend on their suppliers to collect customer information (Fugate, Flint, & Mentzer, 2008). Therefore, it is difficult for focal firms to generate customer information without the help of their suppliers. Suppose suppliers exhibit a level of MO inferior to that of the focal firm (i.e., lower supplier MO misfit). In that case, the suppliers will not generate the information the focal market-oriented firm requires, which can

	High Firm MO	Low Firm MO
High Supplier MO	Fit	High supplier MO misfit
Low Supplier MO	Low supplier MO misfit	Fit

Fig. 1. Fit/misfit matrix.

negatively influence the focal firm's performance. In contrast, developing a high level of MO comes at a cost for the supplier, and the supplier would have to recuperate that cost through higher prices (Gligor, 2014b). As such, suppliers would pass that higher cost on to their customers (i.e., focal firms), which would ultimately hurt the focal firms' low-cost strategy and performance. This suggests that *higher supplier MO misfit* (i.e., the focal firm's MO is lower than its key supplier's MO) might also harm the focal firm.

In addition, it would be difficult for focal firms to provide their customers with high quality/customized products and services if their key suppliers produce low quality/standardized products and services. Thus, the key supplier's MO should be high when the focal firm's MO is high (Fig. 1). Similarly, it is also desirable for the suppliers' MO to be low when the focal firm's MO is low. Although a higher level of MO could be desirable from suppliers, it does come at a cost that the focal firm would have to absorb. In his highly referenced framework, Fisher (1997) emphasized the importance of firms synchronizing their supply chains (efficient vs. responsive), including key suppliers, to the nature of their products (innovative vs. functional). That is, to maximize performance, firms should not utilize responsive suppliers for functional products (Fisher, 1997). Although responsiveness is typically desirable, it comes at a cost that the supplier would eventually pass on to the focal firm (Lee, 2002). For example, a focal firm might have a low-cost strategy and low MO relying exclusively on providing low prices, thus sacrificing aspects related to MO (i.e., quality, customization, design). In this example, the low-MO focal firm would perform best when its main supplier's MO level is also low.

2.4. Linking market orientation fit to firm performance

The importance of considering the concept of MO at the supply chain (inter-firm) level has been recognized by different scholars. More recently, Francescucci et al. (2018, p.3) built on the work of Elg (2002, 2008) to introduce the concept of inter-firm MO, referring to "joint MO efforts that take place between companies and their channel partners in supply networks". The contribution of this prior research to the MO discourse is noteworthy, as it formally extends the concept of MO from the firm level to the inter-firm level, thus providing the foundation on which our current study can build. As Porter (1996, p. 73) notes, "strategic fit among many activities is fundamental not only to competitive advantage but also to the sustainability of that advantage. It is harder for a rival to match an array of interlocked activities than it is merely to imitate a particular sales-force approach, tie in with process technology, or replicate a set of product features". Marketing research has built on the strategic management literature by exploring the notion of strategic fit. However, it has primarily focused on the concept of fit within firm boundaries, rather than *across* firm boundaries. For example, Vorhies and Morgan (2003) indicate that organizing marketing activities in ways that fit a firm's strategy enhances its performance.

Bringing the notion of fit to a supply chain context, each supply chain partner's individual decisions may instigate tensions in their supply chain if left unchecked, as supply chain partners tend to maximize their own (often competing) priorities and interests (Lee, 2002). Accordingly, each partner in the supply chain may have different motives behind a lack of fit between their strategic orientations if they focus on a narrow, rather than holistic, supply chain view of their operations. Likewise, there might be different cases of buyer-supplier strategies where there is not a purpose, opportunity, or sufficient ground to match the buyer's and supplier's MO. This may be especially true in transactional exchanges between the buyer and supplier when a supplier's input to the buyer is not critical. Similarly, when buyers and sellers are independent, they may be less inclined to synchronize their strategic orientations (Campbell, 1985). Nonetheless, contemporary marketing and SCM research suggest that, in most cases, alignment and coordination between supply chain partners' strategic orientations and operations lead to greater performance outcomes (Carter et al., 2015; Wong et al., 2012).

The supply chain management literature further highlights that firms seeking to outperform competitors must match their suppliers' orientations and motivate them to act in an aligned way (Gligor, 2016; Stank et al., 2005). This suggests that firms that match their MO with their key supplier's MO ought to perform better than firms that lack a similar level of fit. Green Jr, Whitten, and Inman (2012), p. 1010) specifically emphasize this point by highlighting that "To satisfy the ultimate customers of the supply chain, the partnering firms must adopt and coordinate a market orientation at the supply chain level and execute that market orientation through strong, long-term relationships".

The strategic management literature suggests that firms are likely to achieve better performance when, in addition to internal consistency, they also achieve fit among environmental, strategic, structural, and contextual factors (Galbraith & Nathanson, 1978; Miles, Snow, Meyer, & Coleman, 1978). Fit is a central concept in the contingency theory, which focuses on the environment-organization relationship (Donaldson, 2001; Lawrence & Lorsch, 1967). The core of the strategic fit paradigm is that firms will align their internal capabilities and resources with their external environments, including their suppliers (Venkatraman & Camillus, 1984). In essence, contingency theory argues that "organizational effectiveness results from fitting characteristics of the organization…to contingencies that reflect the situation of the organization" (Donaldson, 2001, p. 1). This theory argues that there is no single best way to manage an organization. A contextually grounded approach should be adopted, primarily in the absence of an overarching theoretical framework (Mcadam, Miller, & Mcsorley, 2019).

Examining MO through the lens of contingency theory would suggest that the impact of firm MO on performance is contingent on its fit with its external environment, including key suppliers. That is, a high MO might not necessarily lead to superior performance, and a low MO might not necessarily lead to low performance. Instead, the firm's MO fit with its key supplier's MO can impact performance. Examining MO through the lens of contingency theory indicates, on the one hand, that high firm MO could lead to superior firm performance if the firm's key supplier has a matching high MO (fit)and inferior firm performance if the firm's key supplier has a low MO (*lower supplier MO misfit*). On the other hand, it suggests that low firm MO could lead to superior firm performance if the firm's key supplier has a matching low MO (fit) and inferior firm performance if its key supplier has a high MO (*higher supplier MO misfit*.) This theoretical argument is also sustained by the marketing studies that reported contradicting findings: some found that a firm's MO is positively associated with performance, while other studies have reported non-significant or negative associations (Kirca et al., 2005). In sum, it is expected that firms that align their MO with that of their suppliers (i.e., MO fit) can experience superior performance. Thus, we explore the

following:

H1. There is a direct and positive relationship between MO fit and the focal firm's performance.

2.5. The moderating role of relationship strength

Firms' critical resources are increasingly embedded in interorganizational relationships and activities (Dyer & Singh, 1998; Karatzas et al., 2017). Interorganizational relationships can be seen as "social lubricants" that can advance a firm's strategic position in the market (Durach & Machuca, 2018). Interorganizational relationships, therefore, influence firm behavior and performance (Parmigiani & Rivera-Santos, 2011). There are reasons to examine the role of MO in interorganizatonal relationships. MO is increasingly considered central to firms' operations with upstream and downstream supply chain partners (Min et al., 2007). It is pivotal to both buyers and suppliers in supply chains and allows focal firms to connect their operations with their supply chain partners. Accordingly, B2B marketing and SCM research have paid extensive interest to MO (e.g., Frösén, Jaakkola, Churakova, & Tikkanen, 2016; Hsieh, Chiu, & Hsu, 2008; Fugate et al., 2008). The overall findings of the B2B marketing and SCM research on MO indicate that MO is fundamental to both buyers and suppliers (and to relationships between them). As such, in B2B markets, MO can be seen as a proxy for relationship orientation (Gligor et al., 2019), which reflects the importance of B2B relationships and provide a further justification as to why buyers and suppliers need to align their supply chain operations and achieve greater MO fit. Thus, the extent of fit between the MOs of buyers and suppliers may have important implications for both parties in buyer-supplier relationships.

That said, interorganizational relationships vary largely on various dimensions, including relationship strength. Relationship strength is defined as the degree of closeness of the ties among organizations in a supply chain (Golicic & Mentzer, 2006). Firms neither want nor need close ties with all of their suppliers; they are likely to have much stronger ties with their key suppliers. Accordingly, relationship strength with key suppliers can be an essential factor influencing exchange activities and the way such suppliers' behavior influences buyer firms (Capaldo, 2007).

Indeed, past research on interorganizational relationships indicates that relationship strength could moderate the impact of MO fit on focal firm performance (Autry & Golicic, 2010; Flight, Henley, & Robicheaux, 2008). Relationship exchange theory argues that evolving relational norms in exchange partnerships affect various aspects of the exchange relationships (Scott, 1987). Interorganizational relationships research also indicates that the strength of the relationship between a firm and its supplier can moderate the influence of different facets of the firm-supplier relationship (e.g., fit) on the focal firm's performance (Squire, Cousins, & Brown, 2009). Thus, to enhance our framework's explanatory power, we examine the moderating role of relationship strength in the linkage between MO fit and the focal firm's performance.

Researchers have conceptualized the concept of relationship strength in various ways. For example, Capaldo (2007) builds on extant relationship theory (Dyer & Singh, 1998; Rindfleisch & Moorman, 2001) and conceptualizes relationship strength as a three-dimensional construct composed of temporal, resource, and social dimensions. Specifically, Capaldo (2007) suggests that buyer-seller relationship strength is determined by three components: relationship duration, the intensity of the interaction, and the frequency of interaction. Krause, Handfield, and Tyler (2007) conceptualize relationship strength as the length (i.e., duration) of the relationship, while Autry and Golicic (2010) capture both the 'share of the business' and the 'length of the relationship' dimensions. Consistent with prior empirical relationship studies, we conceptualize relationship strength in terms of relationship duration (i.e., age, length) and business share with the supplier.

In the case of lower supplier MO misfit, the level of product or service quality/customization offered by the supplier could be below the focal firm's expectations, and thus below the focal firm's customers' expectations. Similarly, in the case of higher supplier MO misfit, as illustrated earlier, the focal firm could incur higher costs due to higher supplier costs that it would have to pass on to its own customers. This could result in unsatisfied customers and customer defection for the focal firm, ultimately affecting the focal firm's performance. The strength of the focal firm-key supplier relationship can amplify these effects. That is, the longer the duration of the relationship, the longer the focal firm's customers could experience unsatisfactory products and services, thus possibly increasing the customer defection rate and lowering revenues. On the other hand, if the focal firm rotates its key suppliers more frequently and engages in shorter-term supplier relationships, the negative impact of those suppliers is reduced (from a timeline perspective). The focal firm can seek other key suppliers that provide a better fit, thus limiting the negative implications of a misfit.

Similarly, business volume with the key supplier can enhance the impact of MO fit on the firm's financial performance. Recent research suggests that suppliers with close ties to, and high business volumes with, buyers may significantly influence firm behavior and ensuing exchange outcomes (Gölgeci, Murphy, & Johnston, 2018; Golicic & Mentzer, 2006). In this vein, a lower level of business volume with the respective key supplier would have a less negative impact on the focal firm's customers than a higher level of business volume because of the overall reduced supplier impact on the focal firm's products and services. Thus, the following hypotheses are examined:

H2a. The age of the focal firm-supplier relationship positively moderates the relationship between MO fit and the focal firm's performance.

H2b. The share of business the focal firm has with its supplier positively moderates the relationship between MO fit and the focal firm's performance.

3. Methodology

3.1. Data

Our framework includes behavioral and performance-related variables and factors that are both internal and external to focal firms, which led us to use archival and survey data. To evaluate the construct of MO fit, dyadic (focal firm-supplier) data were collected. An email containing the link to the survey was sent out to senior-level managers at 2340 publicly listed firms that were acquired from a database maintained by a large public U.S. university. We reached 621 usable responses following reminding emails. To allow dyadic data collection, we also asked respondents to identify their key supplier and provide the supplier firm's senior corresponding executive contact information. The nominated managers with the supplier firms were then emailed the same survey (less the item asking them to identify their main supplier). We obtained 438 usable responses from the nominated suppliers that allowed us to create 438 focal firm-supplier dyads. This resulted in a final response rate of 18.7%.

On average, participants, who worked for 5.8 years in their current firms, had an average overall industry experience of 17.1 years. Moreover, the average firm in the sample of 876 (438 dyads) firms has been operational for the last 52 years, keeps $6.3 billion in assets, and corresponds to one of 33 SIC two-digit industries, which are further grouped in 102 SIC three-digit industries (see Appendix A). We handled missing data by employing the maximum likelihood method (Allison, 2003). Data were examined for skewness and kurtosis following the Cohen, Manion, and Morrison (2013) guidelines and were deemed compliant with multivariate normality assumptions. Furthermore, because the data for independent and dependent constructs were collected from different sources, common method bias is not considered a concern in this study (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

We also evaluated the threat of non-response bias. First, we assessed

non-response bias for the focal firms. A random sample of 30 non-respondents was asked to answer five non-demographic related questions (Mentzer & Flint, 1997). The questions addressed the knowledge dissemination aspect of MO; FID1 (F = 0.08, p = n.s.), FID2 (F = 0.16, p = n.s.), FID3 (F = 0.06, p = n.s.), FID4 (F = 0.22, p = n.s.), and FID5 (F = 0.20, p = n.s.) (See Appendix B and Table 2 for the description of measurement items). The answers given by respondents and non-respondents to these questions were not statistically different from each other. Second, we employed the same procedure for the supplier firms; SID1 (F = 0.17, p = n.s.), SID2 (F = 0.29, p = n.s.), SID3 (F = 0.38, p = n.s.), SID4 (F = 0.40, p = n.s.), and SID5 (F = 0.24, p = n.s.). Thus, non-response bias was not deemed as a setback to the rigor of our research.

3.2. Measures

We used archival and perceptual survey data to measure the constructs used in the study. Appendix B presents a summary of these measures.

3.2.1. Market orientation fit

Market orientation was measured through respondents' perceptual evaluation on a 5-point Likert scale (1 = "strongly disagree" and 5 = "strongly agree"). Items were adapted from Jaworski and Kohli (1993) and Morgan, Vorhies, and Mason (2009). Six items pertain to market intelligence generation, five to intelligence dissemination, and six to responsiveness to intelligence (Appendix B). Consistent with prior literature, MO was measured as a second-order reflective factor with three first-order dimensions (Jaworski & Kohli, 1993; Min et al., 2007).

Consistent with Klein, Rai, and Straub (2007), we operationalized fit (i.e., MOF) as a degree-symmetry value. That is MOF=C_{DS}; C_{DS} =(C_{DV}+C_{SV})/2. MOF scores are the reverse coded operationalization of the concept of MO fit given the nature of degree-symmetry values as calculated when using dyadic data. A comprehensive description of this measure is presented in Table 1 (adapted from Klein et al., 2007). Importantly, consistent with this operationalization, a higher MOF score indicates a worse fit (compared to a lower MOF score). For example, a MOF score of 1.2 would indicate a worse fit than a MOF score of 0.8.

3.2.2. Relationship strength

Consistent with past research, two distinct indicators were used to measure the focal firm-supplier relationship strength (Autry & Golicic, 2010; Flight et al., 2008). First, the focal firm-supplier relationship age was considered a proxy of relationship strength and calculated in years (Autry & Golicic, 2010). Second, we calculated the firm-key supplier shared business volume as a percentage of the focal firm's total business volume. For example, if the focal firm procured $1,200,000 worth of products from its key supplier in a year out of a total procurement amount of $10,000,000 from its overall supplier network throughout the same year, the numeric value for the shared business volume is computed as 0.12 (Flight et al., 2008). The relationship age with the key supplier, 1-year amount of products/services transacted with the specific supplier, and the total sum of procurements for the same year were specified by the focal firms to compute the ratio of business shared by the focal firm-supplier dyad.

Table 1
MOF formula derivations (Adapted from Klein et al., 2007).

Derivations	Definition	Formula	Assumptions
Focal Firm or Supplier Value: C_F or C_S	Summated index of the level, *li*, of each item, *xi*, that belongs to the set of items {x1, x2, … xn} used to measure construct *a* for the focal firm or supplier.	$(\sum_{i=1}^{n} Xi * l_i)/(n*L)$ Where $0 \leq l^i \leq L$	a. $C_F \geq 0$ *and* $C_S \geq 0$ b. $C_F \leq 1$ *and* $C_S \leq 1$ c. $(C_F + C_S) \leq 0$
Degree Value C_{DV}	Absolute difference index of the focal firm and supplier values of the construct *a*.	$C_{DV} = \mid C_F - C_S \mid /2$	$0 < C_{DV} \leq 1$
Symmetry Value C_{SV}	Symmetry index of construct *a* within the focal firm-supplier relationship.	If $C_F \geq C_S$ *then* $C_{SV} = C_S/C_F$, or If $C_F \leq C_S$ *then* $C_{SV} = C_F/C_S$	$0 < C_{SV} \leq 1$
Degree-Symmetry Value: C_{DS}	The index of both symmetry and value of construct *a* within the focal firm-supplier relationship.	C_{DS} =(C_{DV}+C_{SV})/2	$0 < C_{DS} \leq 1$

3.2.3. Financial performance

*Return on Assets (*ROA) is an important and factual indicator of financial performance and profitability (Gligor, 2018; Marano & Kostova, 2016). ROA was, therefore, used to measure the focal firm's financial performance objectively. Using data acquired from Compustat, we measured ROA as the focal firm's Net Income divided by its Total Assets.

3.2.4. Control variables

We control for factors that may confound the focal linkages examined in our model. First, we control for firm size as measured by the number of employees. Firm size can affect the firm's available assets for developing and realizing MO, as well as its overall profitability. Second, we control for firm age that could shape how firms behave and, thus, profit. Firm age was calculated as the total number of years since the establishment of the firm. Third, we control for historical financial performance that could have a ripple effect on how a firm performs in the subsequent year. The ROAs from three previous years (i.e., ROA_{t-1}, ROA_{t-2}, ROA_{t-3}) were employed as control variables (Shah & Shin, 2007).

3.3. Scale reliability and construct validity

The focal firm's and the supplier's MOs were measured as second-order factors with three first-order factors: information generation, dissemination, and responsiveness (Jaworski & Kohli, 1993; Min et al., 2007). The rest of the constructs in our study (i.e., ROA, relationship age, relationship shared business volume, focal firm size, focal firm age, past ROA) were measured using objective data. Scale reliability and construct validity were evaluated for the latent variables utilized to measure MO fit.

Reliability was examined using Cronbach's Coefficient Alpha. An Alpha value above 0.7 is an indicator of an adequate correlation between the items and the true scores, as well as of sufficient reliability (Churchill Jr, 1979). Results in Table 2 provide support for good internal consistency.

To examine construct validity, we estimated convergent validity, discriminant validity, and the fit of the overall model. We conducted Confirmatory Factor Analysis (CFA) through AMOS 20 that yielded the following results: $\chi^2_{(675)} = 688.012$, $\chi^2/df = 1.01$, CFI = 0.939, SRMR = 0.428, and RMSEA = 0.039, all of which indicate satisfactory fit (Byrne, 1998). AGFI of 0.951, GFI of 0.937, and NNFI of 0.929 also show a good fit (Browne & Cudeck, 1993). Furthermore, the Bentler-Bonnet coefficient for our model is 0.941 and indicates an adequate level of convergent validity. Additionally, Tables 2 and 3 show sufficient composite reliability (CR) above the suggested threshold of 0.70, and average variance extracted (AVE) that exceeds 0.50. Results in Table 2 point to all constructs exhibiting a sufficient level of convergent and discriminant validity (Fornell & Larcker, 1981; Hair, Black, Babin, Anderson, & Tatham, 1998). Descriptive statistics and the correlation matrix for all constructs used in the study are shown in Table 3.

Discriminant validity was further examined by conducting nested CFA comparison analysis. The chi-square difference test was significant when all correlations between the constructs used in our framework were restricted to 1 for the theoretical model and allowed to correlate

Table 2
Reliability results and item statistics.

Scale/Item	Cronbach alpha for scale	Alpha if item deleted	CR	Item-to-total correlation	Mean	SD	Item loadings	Average variance extracted
Firm intelligence generation (FIG)	0.822		0.823					0.819
FIG1		0.780		0.819	3.81	0.92	0.901	
FIG2		0.802		0.833	4.01	0.91	0.923	
FIG3		0.756		0.902	3.90	0.87	0.908	
FIG4		0.743		0.890	3.99	0.90	0.900	
FIG5		0.722		0.867	4.12	0.92	0.885	
FIG6		0.710		0.901	4.08	0.97	0.911	
Firm intelligence dissemination (FID)	0.845		0.847					0.795
FID1		0.820		0.900	4.04	0.90	0.901	
FID2		0.817		0.894	3.79	0.84	0.885	
FID3		0.733		0.886	4.11	0.89	0.843	
FID4		0.720		0.855	3.96	0.93	0.885	
FID5		0.748		0.820	4.03	0.80	0.842	
Firm responsiveness to intelligence (FRI)	0.802		0.804					0.760
FRI1		0.790		0.903	3.99	0.88	0.854	
FRI2		0.730		0.895	4.13	0.92	0.911	
FRI3		0.785		0.848	4.06	1.03	0.910	
FRI4		0.787		0.850	4.07	0.86	0.866	
FRI5		0.722		0.803	3.97	0.90	0.845	
Supplier intelligence Generation (SIG)	0.818		0.820					0.810
SIG1		0.713		0.900	3.27	0.86	0.909	
SIG2		0.792		0.879	3.30	0.82	0.941	
SIG3		0.707		0.867	3.19	0.85	0.879	
SIG4		0.755		0.842	3.29	0.96	0.877	
SIG5		0.780		0.911	3.23	0.90	0.886	
SIG6		0.739		0.866	3.40	1.02	0.906	
Supplier intelligence dissemination (SID)	0.787		0.789					0.786
SID1		0.711		0.833	3.21	0.90	0.884	
SID2		0.739		0.870	3.10	0.99	0.913	
SID3		0.788		0.839	3.17	0.80	0.888	
SID4		0.737		0.821	3.13	0.85	0.880	
SID5		0.793		0.894	3.25	0.93	0.868	
Supplier responsiveness to intelligence (SRI)	0.801		0.803					0.775
SRI1		0.768		0.880	3.15	0.84	0.918	
SRI2		0.756		0.851	3.03	0.90	0.867	
SRI3		0.714		0.844	3.39	0.93	0.894	
SRI4		0.747		0.902	3.33	0.98	0.869	
SRI5		0.728		0.852	3.28	0.92	0.852	

freely for the measurement model, which indicated that constructs are deemed to discriminate sufficiently (Bagozzi & Yi, 1988).

Additionally, we examined discriminant validity through the heterotrait-monotrait (HTMT) method (Henseler, Ringle, & Sarstedt, 2015), which signifies the proportion of within construct correlations to the between construct correlations. This method enables evaluating discriminant validity as a criterion and as a statistical test. HTMT values are expected to be $\leq$0.85 for theoretically dissimilar constructs, and 0.90 for theoretically similar constructs (Henseler et al., 2015). The statistical test route involves testing the possibility of HTMT being $\geq$1 in contrast to the possibility of HTMT being <1. The confidence interval must not include 1 to assure discriminant validity (Henseler et al., 2015). Every construct passed this HTMT test (Table 4). Thus, these and other results reported above point to satisfactory discriminant validity.

The threat of common method bias was greatly reduced by collecting data from independent sources (i.e., focal firm and supplier) and utilizing a mix of perceptual and objective data (Podsakoff et al., 2003). We also ran Harman's one-factor test to further evaluate this threat. The factor analysis did not yield a single-factor solution. Homoscedasticity was evaluated with the Breush-Pagan test ($p > 0.005$) and did not suggest evidence of heteroscedasticity problems. Further, we checked for influential points using Cook's distance, DEBETAS, and DFFITS.

3.4. Hypotheses testing

Two complementary approaches were utilized to test the hypotheses (Morgan et al., 2009; Ping Jr., 1995). First, hypotheses and the overall model were tested through structural equation modeling (SEM). To assess *Hypothesis 1,* the main effects model was estimated with a direct path from the second-order MO fit construct to the first-order focal firm performance (i.e., ROA 2015) construct. To assess *Hypotheses 2a and 2b,* two interactions -MOFxRelationship Age and MOFxRelationship Business Volume- were created and mean-centered. A single item indicator signifying the product of the two measures was computed (Ping Jr., 1995). Each model (i.e., main effects and moderation effects) included the control variables (firm size, firm age, ROA 2014, ROA 2013, and ROA 2012) with direct paths to focal firm performance (i.e., ROA 2015). Given the models' parameters and a threshold-level of model fit as an RMSEA of 0.08, the results in Table 5 indicate adequate statistical power to have confidence in the findings. Additionally, Table 5 reports relevant model fit statistics.

We first explored the impact of the focal firm's MO (FMO) on the focal firm's ROA and assessed the incremental variance explained by MOF to examine whether MOF possesses explanatory power beyond FMO. In the constrained model, we constrained the path from MOF to ROA, while in the unconstrained model, we removed the constraint. The chi-square test of differences between the models indicates that the match between the focal firm's MO and its key supplier's MO helps

Table 3
Correlation matrix and descriptive statistics for constructs.

	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1)MO Fit	0.65	0.08	1																
(2)Firm MO	4.005	0.93	0.49*	1															
(3)Suppl. MO	3.229	0.58	0.45*	0.31	1														
(4)ROA 2015	7.535	1.07	0.41*	0.30*	0.33	1													
(5)FIG	3.985	0.34	0.43*	0.62*	0.20*	0.21*	1												
(6)FID	3.986	0.86	0.33*	0.69*	0.31*	0.22*	0.55*	1											
(7)FRI	4.044	0.50	0.28*	0.65*	0.32*	0.27*	0.46*	0.32*	1										
(8)SIG	3.280	0.29	0.38*	0.42*	0.71*	0.20*	0.35	0.19*	0.20*	1									
(9)SID	3.172	0.75	0.29*	0.39*	0.66*	0.31*	0.21	0.23*	0.19*	0.54*	1								
(10)SIG	3.236	0.94	0.28*	0.36*	0.60*	0.18*	0.30*	0.27*	0.26*	0.45*	0.51*	1							
(11)Rel. Age	12	0.04	0.24*	0.19*	0.18*	0.22*	0.22*	0.19*	0.22*	0.17	0.20*	0.17	1						
(12)Rel. Vol.	0.198	0.02	0.21*	0.20*	0.21*	0.24*	0.26*	0.17*	0.18*	0.15	0.21*	0.02	0.05	1					
(13)Firm Age	52	14.86	0.05	0.03	0.02	0.04	0.10	0.10	0.02	0.08	0.05	0.05	0.02	0.08	1				
(14)Firm Size	68,035	4.59	0.03	0.05	0.08	0.02	0.06	0.07	0.13	0.06	0.11	0.07	0.01	0.02	0.32*	1			
(15)ROA 2012	4.02	1.11	0.32*	0.28*	0.25*	0.44	0.19*	0.21*	0.24	0.22*	0.20*	0.22*	0.11	0.06	0.26*	0.30*	1		
(16)ROA 2013	4.25	1.38	0.33*	0.35*	0.35*	0.38	0.17*	0.23*	0.23*	0.19*	0.19*	0.27*	0.07	0.04	0.28*	0.27*	0.51*	1	
(17)ROA 2014	4.30	1.13	0.29*	0.39*	0.29*	0.49	0.12	0.20*	0.29*	0.25*	0.24*	0.23*	0.14	0.02	0.31*	0.29*	0.54*	0.45*	1

* Significant at $p < 0.05$.

Table 4
Heterotrait-monotrait (HTMT) method results.

Constructs compared	HTMT value	Confidence interval
FIG and FID	0.801	0.683, 0.788
FIG and FRI	0.733	0.602, 0.722
FIG and SIG	0.813	0.644, 0.811
FIG and SID	0.696	0.683, 0.733
FIG and SRI	0.743	0.694, 0.802
FID and FRI	0.689	0.611, 0.744
FID and SIG	0.769	0.542, 0.779
FID and SID	0.802	0.645, 0.840
FID and SRI	0.786	0.695, 0.817
FRI and SIG	0.711	0.558, 0.790
FRI and SID	0.757	0.571, 0.806
FRI and SRI	0.702	0.592, 0.759
SIG and SID	0.668	0.569, 0.758
SIG and SRI	0.709	0.694, 0.722
SID and SRI	0.736	0.669, 0.753

Table 5
SEM analysis results.

Main effects model			B	Overall model fit
Paths modeled				
FMO	→	ROA 2015	0.25*	$\chi^2_{(342)}$=391.3; χ^2/df = 1.14, $p < 0.01$
SMO	→	ROA 2015	0.27*	CFI = 0.931
MO Fit[a]	→	ROA 2015	−0.38*	RMSEA = 0.041
Firm Age	→	ROA 2015	0.04	NNFI = 0.917
Firm Size	→	ROA 2015	0.10	AGFI = 0.939
ROA 2014	→	ROA 2015	0.33*	GFI = 0.927
ROA 2013	→	ROA 2015	0.27*	
ROA 2012	→	ROA 2015	0.30*	

Moderation effects model			B	Overall model fit
Paths modeled				
FMO	→	ROA 2015	0.22*	$\chi^2_{(350)}$ =365.2; χ^2/df = 1.04 $p < 0.01$
SMO	→	ROA 2015	0.25*	CFI = 0.948
MO Fit	→	ROA 2015	−0.33*	RMSEA = 0.040
MO Fit X Rel. Age	→	ROA 2015	0.28*	NNFI = 0.930
MO Fit X Rel. Business Volume	→	ROA 2015	0.23*	AGFI = 0.943 GFI = 0.931
Firm Age	→	ROA 2015	0.04	
Firm Size	→	ROA 2015	0.07	
ROA 2014	→	ROA 2015	0.29*	
ROA 2013	→	ROA 2015	0.25*	
ROA 2012	→	ROA 2015	0.27*	

* Significant at $p < 0.05$.

[a] Please note that a negative correlation score between MO fit and ROA point to a positive association between the focal variables, because greater MOF scores indicate greater MO *misfit*. Thus, the negative coefficient does actually correspond with our hypothesis 1.

explain the variance in ROA beyond the impact of the focal firm's MO ($\chi^2_{(1)} = 18.060$, $p < 0.01$). The main effects model in Table 5 provides support for *Hypothesis 1,* indicating a direct and positive relationship between MO *fit* and focal firm ROA ($\beta = 0.-38$, $p < 0.05$). Notably, a negative correlation score between MO fit and ROA point to a positive association between the focal variables, because greater MOF scores indicate greater MO *misfit*. This means, the higher the MOF score, the worse the MO fit between the focal firm and its supplier. As indicated in the moderation effects model in Table 5, adding the five interactions significantly improved model fit (Sartorra-Bentler scale chi-square test

[$\Delta\chi2(10) = 25.989$, $p < 0.01$]; $\Delta R^2 = 0.5$). The interaction terms *MO Fit X Relationship Age* ($\beta = 0.28$, $p < 0.05$) and *MO Fit X Relationship Business Volume* ($\beta = 0.23$, $p < 0.05$) are significant. These results lend support for *Hypotheses 2a* and *2b*. Among the control variables, firm size and age were not directly linked to ROA, while past ROA was positively linked to the current ROA.

Second, hypotheses were also tested using hierarchical regression analysis (Ping Jr., 1995). This method offers complementary benefits to SEM, such as ease of assessing differences between nested models and the impact of the moderating variables (Morgan et al., 2009). Step 1 comprises MO fit, the moderators, and the control variables. Results deliver additional support for *Hypothesis 1* ($b = -0.34$, $p < 0.05$) (see Table 6). Step 1 accounted for 28% of the variance of focal firm ROA.

To assess if relationship strength moderates the link between MO fit and focal firm ROA, all relevant variables were mean-centered, and the mean-centered supplier MO variable was multiplied by the other two mean-centered variables. Step 2 added the resulting two interaction terms and accounted for 6% of the variance of focal firm ROA (24% increase above Step 1). The interaction terms *MO Fit X Relationship Age* ($b = 0.30$, $p < 0.05$) and *MO Fit X Relationship Business Volume* ($b = 0.22$, $p < 0.05$) were both significant offering further support for *Hypotheses 2a* and *2b*.

Multicollinearity was not a threat (VIF = 1.008), and according to the Cook–Weisberg test, heteroskedasticity is not a threat to the validity of our results. Fig. 2 depicts the simple regression slopes. The high and low levels of relationship age and relationship business volume were respectively measured at one standard deviation above and below mean.

3.5. Polynomial regression and surface plot analysis

To offer further verification that the fit between FMO and SMO influences the focal firm's ROA, we also ran a polynomial regression analysis in addition to a three-dimensional response surface plot analysis (Edwards & Parry, 1993). Polynomial regression equations comprise higher-order terms (e.g., squares and the product of FMO and SMO) that can provide novel insights when investigating the role of the fit between FMO and SMO in ROA (Edwards, 2001).

To evaluate the impact of MO fit on ROA, we regressed ROA on the control variables and five polynomial terms: FMO, SMO, FMO*SMO, FMO^2, and SMO^2. To reduce multicollinearity threat, we mean-centered FMO and SMO before computing the interaction and second-order terms. When the higher-order terms (i.e., FMO*SMO, FMO^2, and SMO^2) are insignificant, FMO and SMO can only share a linear additive relationship with the dependent variable (i.e., ROA) (Edwards & Cable, 2009). Conversely, when any higher-order term is significant, the impact of the fit between FMO and SMO on ROA can be depicted through a three-dimensional graph that portrays response surface plots. A downward curvature must exist along the line of misfit (FMO = -SMO line) in order to observe a fit effect (Edwards & Cable, 2009). Specifically, the ROA level needs to be higher when there exists a fit between FMO and SMO than in the absence of fit. Model 1 in Table 7 shows control variables' effects on ROA. Models 2 and 3 report respectively the main effects of FMO ($\beta = 0.21$, $p < 0.05$) and SMO ($\beta = 0.24$, $p < 0.05$), and those of FMO*SMO ($\beta = 0.18$, $p < 0.05$), FMO^2 ($\beta = -0.19$, $p < 0.05$), and SMO^2 ($\beta = -0.22$, $p < 0.05$). All the higher-order terms are significant. The results in Table 7 provide further support for the impact of MO fit on the focal firm's ROA.

We plotted the relationship between FMO, SMO, and ROA in a three-dimensional graph. The response surface in Fig. 3 shows that focal firms experience the highest ROA along the line of fit (FMO=SMO line). Typically, a convex curvature along the misfit line indicates that fit is linked to a higher outcome level than misfit (Edwards & Parry, 1993). Similarly, ROA decreases as the FMO and SMO scores diverge from the line of fit (Fig. 3). This further indicates that the fit between FMO and SMO has a direct and positive influence on supplier ROA.

Table 6
Regression analysis results.

Step 1			Step 2	
	B	T (VIF)	B	T (VIF)
(Constant)	1.26	7.92	1.23	7.65
FMO	0.20*	1.10 (1.06)	0.23*	1.10 (1.03)
SMO	0.25*	1.13 (1.11)	0.25*	1.13 (1.10)
Firm Size	0.13	1.12(1.13)	0.11	0.97(1.09)
Firm Age	0.07	0.15(1.12)	0.08	0.12(0.05)
ROA 2012	0.26*	0.95(1.30)	0.25*	0.92(1.30)
ROA 2013	0.23*	1.04(1.10)	0.23*	1.02(1.15)
ROA 2014	0.28*	1.21(1.09)	0.28*	1.11(1.10)
MO Fit	−0.34*	1.18(1.33)	−0.35*	1.14(1.23)
Rel. Age	0.01	1.13(1.27)	0.01	1.18(1.21)
Rel. Business Volume	0.10	1.41(1.44)	0.07	1.21(1.35)
MO Fit X Rel. Age			0.30*	1.37(1.33)
MO Fit X Rel. Business Volume			0.22*	1.25(1.12)
Adjusted R^2	0.28		0.34	
ΔR^2			0.06	

* Significant at $p < 0.05$.

3.6. Post hoc analysis

To obtain further insights, we ran post-hoc analyses distinguishing between *lower supplier MO misfit* (i.e., the focal firm's MO is higher than its key supplier's MO) and *higher supplier MO misfit* (the focal firm's MO is lower than its key supplier's MO).

We computed the average ROA and calculated distinct regression models for each fit/misfit type. In line with our previous discussion, we judge MO fit to have been fulfilled when the focal firm's MO matches its key supplier's MO. Out of 438 focal firm-supplier dyads, only 17 exhibited exact fit. Those focal firms have an average ROA of 11.61%.

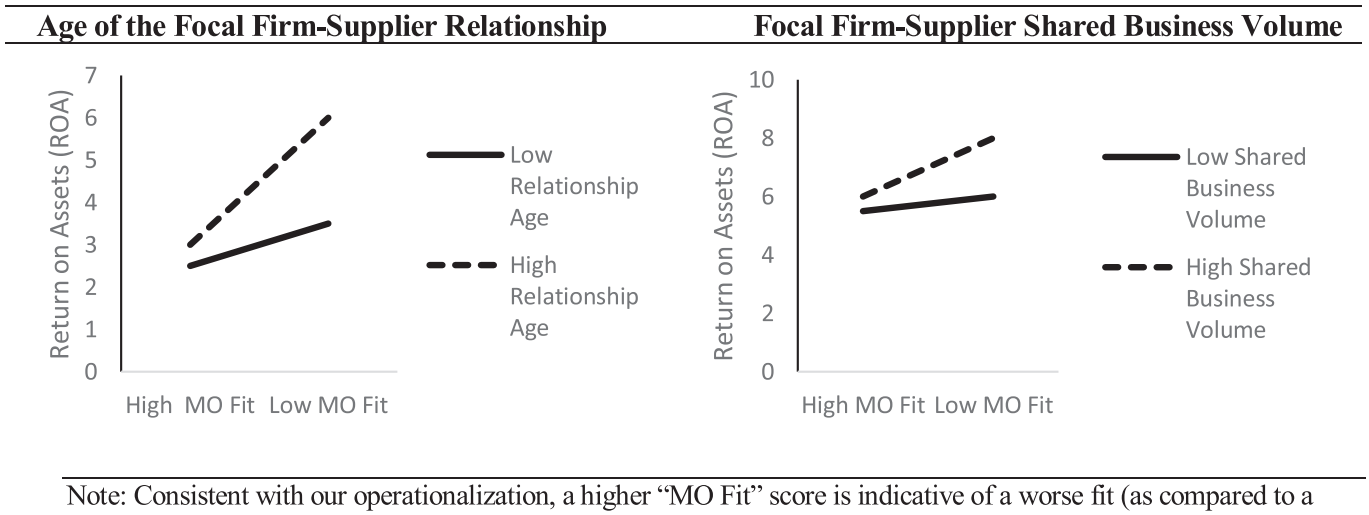
Dyads that exhibit positive MO misfit are characterized by focal firms having higher MO than their supplier's MO. Of the 438 dyads in our sample, 304 dyads exhibit positive MO misfit, and the average focal firm ROA for this subset is 6.12%. The regression results provided in Table 8 indicates that this misfit type has a stronger negative influence on the focal firm's ROA ($b = -0.46$, $p < 0.05$) in relation to the misfit in general (as depicted in the baseline regression model with all of the 438 dyads where $b = -0.35$, $p < 0.05$) and higher supplier MO misfit ($N = 117$) ($b = -0.24$, $p < 0.05$).

In contrast, 117 dyads with negative MO misfit (when the focal firm's MO is lower than the supplier's MO) display the average focal firm ROA of 8.83%. In short, the results in Table 8 point out that firms that exhibit zero misfit display the highest performance (11.61%), followed by firms that have higher supplier MO misfit (8.83%), while firms that show lower supplier MO misfit display the worst performance (6.12%).

3.7. Endogeneity

We explore the endogeneity dilemma as MO Fit may be impacted by its performance (Guide Jr & Ketokivi, 2015). We employed a two-stage least squares (2SLS) regression with instrumental variables to investigate the possibility of endogeneity bias (Bellamy, Ghosh, & Hora, 2014).

First, we identified the instrumental variables (i.e., non-significant predictors of firm financial performance) by referring to the results in Table 6. As such, we treat Firm Size, Firm Age, Relationship Age, and Relationship Business Volume as instrumental variables. Second, we regressed MO Fit on all the control variables. We did so to identify the variables that share a unique relationship with MO Fit. Relationship Age and Relationship Business Volume met both criteria. Next, a delta-F test was employed to evaluate the strength of the instruments. Our findings showed that the R^2 of this regression is 0.47, significantly higher than the R^2 of the regression with only control variables ($\Delta R^2 = 0.12$, $\Delta F^2 = 11.21$, $p < 0.01$), providing evidence that Relationship Age and Relationship Business Volume can be treated as MO Fit instrumental



Note: Consistent with our operationalization, a higher "MO Fit" score is indicative of a worse fit (as compared to a lower MO Fit score).

Fig. 2. Moderating effects.

Table 7
Polynomial regression results.

	Model 1	Model 2	Model 3
(Constant)	1.35	1.20	1.12
Firm Size	0.10	0.09	0.08
Firm Age	0.06	0.04	0.02
ROA 2012	0.25*	0.22*	0.21*
ROA 2013	0.27*	0.25*	0.23*
ROA 2014	0.34*	0.32*	0.30*
Rel. Age	0.28*	0.25*	0.23*
Rel. Business Volume	0.22*	0.21*	0.20*
FMO		0.24*	0.21*
SMO		0.25*	0.24*
FMO*SMO			0.18*
FMO^2			−0.19*
SMO^2			−0.22*
Adjusted R^2	0.11	0.33	0.44
ΔR^2		0.22	0.11

* Significant at $p < 0.05$.

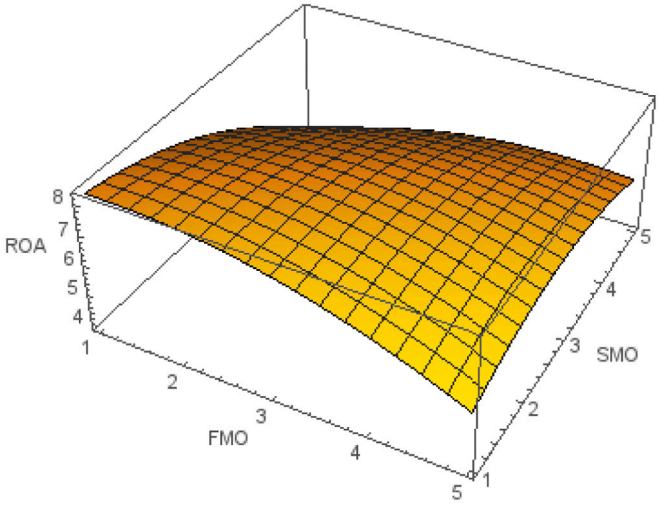


Fig. 3. Surface plot.

variables.

We then utilized the identified instrumental variables to run the initial stage of the 2SLS analysis following the residual inclusion approach (Terza, Basu, & Rathouz, 2008). The equations in the two stages were specified as follows:

$$\begin{aligned}\text{MO Fit} = {} & a0 + a1(\text{Firm Size}) + a2(\text{Firm Age}) + a3(\text{ROA2012}) \\ & + a4(\text{ROA2013}) + a5(\text{ROA2014}) + g1^*(\text{Relationship Age}) \\ & + g2(\text{Relationship Business Volume}) + v\end{aligned} \quad (1)$$

$$\begin{aligned}\text{ROA} = {} & b0 + b1(\text{MO Fit}) + b2^*(v) + d1(\text{Firm Size}) + d2(\text{FirmAge}) \\ & + d3(\text{ROA2012}) + d4(\text{ROA2013}) + d5(\text{ROA2014}) + e\end{aligned} \quad (2)$$

We ran the Durbin-Wu-Hausman test of endogeneity by performing an augmented regression through the addition of the error term from the first stage MO Fit equation to the second stage equation. The path coefficient of the MO Fit error term (i.e., b2) is insignificantly related to firm performance ($b = 0.06$, $t = 1.13$, $p = 0.28$). Given that the Durbin-Wu-Hausman test is non-significant, we re-estimated the two-stage equations by employing the substituted value for the predictor (Wooldridge, 2009). Specifically:

$$\begin{aligned}\text{MO Fit} = {} & a0 + a1(\text{Firm Size}) + a2(\text{Firm Age}) + a3(\text{ROA2012}) \\ & + a4(\text{ROA2013}) + a5(\text{ROA2014}) + g1^*(\text{Relationship Age}) \\ & + g2(\text{Relationship Business Volume}) + v\end{aligned} \quad (3)$$

$$\begin{aligned}\text{ROA} = {} & b0 + b1(\text{FMO} - \text{hat}) + b2(v) + d1(\text{Firm Size}) + d2(\text{Firm Age}) \\ & + d3(\text{ROA2012}) + d4(\text{ROA2013}) + d5(\text{ROA2014}) + e\end{aligned} \quad (4)$$

Subsequently, we regressed the residual from the second stage with predictor substitution on all control variables and instruments. Specifically:

$$\begin{aligned}e = {} & c0 + c1(\text{Firm Size}) + c2(\text{Firm Age}) + c3(\text{ROA2012}) + c4(\text{ROA2013}) \\ & + c5(\text{ROA2014}) + f1^*(\text{Relationship Age}) \\ & + f2(\text{Relationship Business Volume}) + u\end{aligned}$$

Next, we ran a chi-square test by multiplying the R^2 value from the above model by our sample size and compared it with a distribution with m-1 degrees of freedom (i.e., 'm' being the number of instrumental variables). Considering that the chi-square test is not significant ($\chi^2 = 7.203$, $p > 0.05$), we can infer that the instruments meet the exclusion restriction and are thus valid (Wooldridge, 2009). Similar analyses were executed for the moderators and the interaction terms, offering further

Table 8
Regression results.

	All firms		Firms with fit	Firms with lower supplier MO misfit		Firms with higher supplier MO misfit	
Number of firms	438		17	304		117	
Average ROA	7.54%		11.61%	6.12%		8.83%	
	B	T (VIF)	[a]	B	T (VIF)	B	T (VIF)
(Constant)	1.23	7.65		1.04	6.23	0.81	5.82
FMO	0.23*	1.10 (1.03)		0.21*	1.02 (1.01)	0.28*	1.11(1.14)
SMO	0.25*	1.13 (1.10)		0.23*	1.17 (1.02)	0.30*	1.27(1.20)
Firm Size	0.11	0.97(1.09)		0.08	0.79(1.02)	0.14	1.03(1.16)
Firm Age	0.08	0.12(0.05)		0.07	0.06(0.11)	0.01	0.17(0.11)
ROA 2012	0.25*	0.92(1.30)		0.29*	1.02(1.07)	0.33*	0.84(0.95)
ROA 2013	0.23*	1.02(1.15)		0.20*	0.97(0.90)	0.22*	1.05(1.10)
ROA 2014	0.28*	1.11(1.10)		0.36*	1.21(1.30)	0.19*	1.26(1.23)
MO Fit	−0.35*	1.14(1.23)		−0.46*	1.15(1.27)	−0.24*	1.11(1.20)
Rel. Age	0.01	1.18(1.21)		0.02	0.90(1.03)	0.01	1.43(1.23)
Rel. Business Volume	0.07	1.21(1.35)		0.04	1.25(1.05)	0.06	1.32(1.55)
MO Fit X Rel. Age	0.30*	1.37(1.33)		0.35*	1.18(1.26)	0.17*	1.10(1.34)
MO Fit X Rel. Business Volume	0.22*	1.25(1.12)		0.30*	1.13(1.24)	0.22*	1.10(1.11)
R^2	0.34			0.31		0.22	

* Significant at $p < 0.05$.
[a] Regression analysis not conducted due to a small number of observations.

evidence that the results were unlikely to be influenced by endogeneity (Angrist & Pischke, 2008).

4. Discussion and implications

Our main goal was to evaluate how the fit between the focal firm's MO and its key supplier's MO affects the focal firm's financial performance. To execute this research, we introduced the concept of *MO fit* (i.e., fit between the focal firm's MO and its key supplier's MO) and explored its impact on the focal firm's performance. We collected data from 876 firms and created 438 focal firm-supplier dyads to measure the construct of MO fit. Focal firms' financial performance was evaluated using objective, secondary data (i.e., ROA). To better understand the MO fit-ROA performance link, we also considered the moderating role of relationship strength.

Additionally, by conceptualizing fit as the extent of match between the levels of the focal firm's and supplier's MO (Venkatraman, 1989), we were able to distinguish between *lower supplier MO misfit* (i.e., the focal firm's MO is higher than its key supplier's MO) and *higher supplier MO misfit* (i.e., the focal firm's MO is lower than its key supplier's MO). This allowed us to further examine whether firms perform better when their MO is lower than their key supplier's MO (higher supplier MO misfit), matches it (fit), or exceeds it (lower supplier MO misfit).

We find that the fit between the focal firm's MO and its key supplier's MO has a direct and positive impact on the focal firm's performance. In addition, this impact increases as the relationship between the focal firm and its supplier strengthens (i.e., as shared business volume and relationship age increase). Our results also show that firms with MO fit perform best in terms of their ROA, followed by firms with higher supplier MO misfit. Firms with lower supplier MO misfits are the worst ROA performers. Next, we discuss several theoretical and managerial contributions associated with these findings.

4.1. Theoretical contributions

Our research contributes to theory in several ways. First, our findings suggest that it is no longer sufficient for firms to focus exclusively on their own MO as a source of competitive advantage; they must focus on their key supplier's MO, as well. Accordingly, researchers should also explicitly account for firm-supplier orientation fit moving forward, rather than ignoring or making assumptions about it (c.f., Alvesson & Sandberg, 2011). To this end, we make a noteworthy contribution to the literature by further expanding the scope of MO from the firm level to the firm-supplier level. Thus, we directly respond to Francescucci et al.'s (2018) call for research to further examine MO outside of firm boundaries (specifically within the firm-supplier context). To our knowledge, our study is the first to empirically examine Min and Mentzer's (2000) and Green Jr et al. (2012) theoretical claims that performance is contingent upon members of the supply chain adopting the same MO.

We also contribute to the literature examining the MO-performance relationship (e.g., Ellinger et al., 2008; Iyer, Davari, Zolfagharian, & Paswan, 2019; Jaworski & Kohli, 1993; Liao et al., 2011; Murray, Gao, & Kotabe, 2011; Narver & Slater, 1990; Slater & Narver, 2000). The relationship between MO and performance has been the subject of intense scrutiny, considering that some studies found that a firm's MO is positively associated with performance, while other studies have reported non-significant or negative associations (Kirca et al., 2005). We contribute to this dialog by offering empirical evidence that it is not the firm's high/low MO that impacts firm performance, but the firm's fit with its key supplier's MO. In essence, both high and low levels of MO could positively or negatively impact performance, depending on the fit between the firm's level of MO and its key supplier's level of MO. Specifically, our research indicates that the fit between a focal firm's MO and its key supplier's MO (i.e., MO fit) has a direct and positive impact on the focal firm's financial performance. Further, the relationship's strength increases as the focal firm and its key supplier's shared business volume increases, and as their relationship advances in age.

Moreover, we make a noteworthy contribution by introducing the concept of *MO fit* to the literature. Building on strategic management literature (Galbraith & Nathanson, 1978; Miles et al., 1978), we introduce the notion of 'fit' to MO and B2B marketing literature. This enabled us to distinguish between *lower supplier MO misfit* and *higher supplier MO misfit*, thereby offering additional insights into the MO-performance 'black box' (Ellinger et al., 2008). In relation to lower supplier MO misfit, Siguaw, Simpson, and Baker (1998) suggested that a supplier's MO should meet or exceed the focal firm's MO. We build on this study and show that focal firms perform better when their MO matches that of their key supplier. However, our findings further suggest that when key suppliers have a lower level of MO than the focal firms, the focal firms reap fewer benefits from investments they made to develop their higher level (relative to their suppliers) of MO. Our findings also conversely indicate that it is not desirable for the key supplier's MO to *exceed* that of the focal firm's (higher supplier MO misfit). Consequently, the concept of MO fit highlights the need to align the firm orientation's to that of the firm's supply chain and invest in relationships with suppliers with similar MO levels to that of the focal firm.

Finally, we advance the research on B2B marketing and interorganizational relationships (Dyer & Singh, 1998; Karatzas et al., 2017) by illustrating how relationship strength can moderate the impact of MO fit

on firm performance. Our research shows that MO fit is more crucial when the relationship between the buyer and supplier is strong to improve performance and avoid the detrimental effect of misfit between closely-knit supply chain partners. Accordingly, relationship strength matters beyond its direct effects (Capaldo, 2007; Flight et al., 2008; Golicic & Mentzer, 2006) and can be an essential contingent factor in shaping how MO fit translates into firm performance.

4.2. Managerial contributions

Our research offers several implications for managers. First, our study shows that it is not sufficient for managers to exclusively focus on their own MO to maximize firm performance. Managers also need to be keenly aware of their key supplier's MO, as the fit between their firm's MO and their key supplier's MO directly impacts their firm's financial performance. As such, managers should evaluate their key supplier's MO in the same way they evaluate their own firm's MO. If a survey is used to eliminate self-reporting bias, perhaps managers could ask former or current customers of the supplier to evaluate the supplier's level of MO and compare the results to the supplier's self-reported level of MO. Multiple perspectives should help focal firms' managers better understand the supplier's actual MO level.

Marketing managers should have an active role in managing relationships with existing suppliers. Our results indicate that the impact of MO fit on the focal firm's performance increases as the focal firm and its supplier grow their exchanged business volume, and as their relationship advances in age. Thus, while marketing managers' input is important in the supplier selection process, their involvement becomes even more critical as the focal firm-supplier relationship grows and matures. Marketing managers should collaborate internally with supply chain managers to assess and monitor their suppliers' MO. Marketing and supply chain managers should become strong champions of the importance of suppliers' MO and recommend corrective actions when needed.

While it is more obvious why focal firms would ask suppliers to increase their level of MO when the supplier's level of MO is lower than the focal firm's (e.g., quality and/or customization issues), focal firms should educate suppliers why they should seek to reduce their level of MO when it exceeds that of the focal firm (i.e., higher supplier MO misfit). On the one hand, when higher supplier MO misfit occurs, as illustrated earlier in the manuscript, suppliers would not be as efficient as they should be. Their inefficiencies/waste would be passed on to focal firms and ultimately hurt the focal firms' performance. On the other hand, when lower supplier MO misfit occurs, quality and/or customization issues could arise.

Our results indicate that, interestingly, lower supplier MO misfit has a more salient negative impact on the focal firm's ROA in relation to higher supplier MO misfit and fit. Although marketing and supply chain managers should make efforts to improve their own firm's level of MO when lower than their key supplier's (higher supplier MO misfit), they should be especially adamant when their firm's level of MO is higher than their key supplier's level of MO (lower supplier MO misfit). This is a very noteworthy finding for marketing managers. It highlights that their expected benefits from investments made internally to develop a high level of MO (consistent with the firm's strategy) could be diminished by their key supplier's lower MO levels. When lower supplier MO misfit is identified, focal firms' marketing managers should actively suggest and promote their suppliers' actions to improve their MO and align with the focal firm's MO.

4.3. Limitations and directions for future research

Our study has several limitations, as well as potential avenues for further research. First, the strength of the MO fit-performance relationship might vary by industry. To increase generalizability, we sampled multiple industries. Future research could reveal additional insights by focusing on specific industries. Furthermore, our study examined the impact of MO fit on financial performance by focusing on ROA. Future research should explore the effect on other measures of financial performance, such as Return on Sales or Profit Margin. Moreover, future research should explore additional potential non-financial consequences of MO fit. For example, future research should explore the impact on the focal firm's innovativeness, service quality, customer satisfaction, and loyalty.

We examined the MO fit-performance relationship from the focal firm's perspective and explored the impact on focal firm performance. It would be interesting for future research to explore this relationship from the supplier's perspective and reveal how MO fit impacts the supplier's performance. While we controlled for several variables, other variables could influence firm performance, as well. Thus, future research should examine the impact of MO fit on the focal firm's performance in the context of a model that accounts for additional variables. Finally, future research should examine how managers can improve MO fit. Multimethod studies using a mix of qualitative (to uncover unique insights) and quantitative approaches (to empirically test potential relationships) could further advance literature in this novel area of MO fit.

Declaration of competing interest

None.

Appendix A. Industries included in the study

SIC code	SIC industry label	SIC code	SIC industry label
13	Oil and Gas Extraction	42	Motor Freight Transportation
15	General Building Contractors	47	Transportation Services
20	Food and Kindred Products	48	Communications
22	Textile Mill Products	49	Electric, Gas, Sanitary Services
23	Apparel and Other Textile Products		Durable Goods
24	Lumber and Wood Products	51	Non-Durable Goods
25	Furniture and Fixtures	53	General Merchandise Stores
26	Paper and Allied Products	54	Food Stores
28	Chemicals and Allied Products	56	Apparel and Accessory Stores
29	Petroleum and Coal Products	57	Home Furniture, Furnishings
31	Leather and Leather Products	58	Eating and Drinking Places
34	Fabricated Metal Products	59	Miscellaneous Retail
35	Industrial and Commercial Machinery	70	Hotels, Rooming Houses
36	Electrical Equipment and Component	73	Business Services
37	Transportation Equipment	78	Motion Pictures
39	Misc. Manufacturing Industries	80	Health Services
40	Railroad Transportation	99	Non-Classifiable Establishments

Appendix B. Measurement items

Please indicate how much you agree or disagree with each of the following statements. *Five-point scale with 1 (strongly disagree) to 5 (strongly agree) scale anchors.*	
Intelligence generation	(IG1) In this business unit we meet with customers at least once a year to find out what products/services they will need in the future.
	(IG2) In this business unit we do a lot of in-house market research.
	(IG3) We poll end-users at least once a year to assess the quality of our products/services.
	(IG4) We often talk with or survey those who can influence our end-users' purchases (e.g., retailers or distributors).
	(IG5) In this business unit intelligence on our competitors is generated independently by several departments.
	(IG6) We periodically review the likely effect of changes in our business environment (e.g., regulations) on customers.
Intelligence dissemination	(ID1) We have interdepartmental meetings at least once a quarter to discuss market trends and developments.
	(ID2) Marketing personnel in our business unit spend time discussing customers' future needs with other functional departments.
	(ID3) Our business unit periodically circulates documents (e.g., reports, newsletters) that provide information on our customers.
	(ID4) When something important happens to a major customer or market, the whole business unit knows about it in a short time.
	(ID5) Data on customer satisfaction are disseminated at all levels in this business unit on a regular basis.
Responsiveness to intelligence	(RI1) It takes forever to decide how to respond to competitor price changes (R).
	(RI2) For various reasons, we tend to ignore changes in our customers' product/service needs (R).
	(RI3) We periodically review our product/service development efforts to ensure that they are in line with what customers want.
	(RI4) If a major competitor were to launch an intensive campaign targeted at our customers, we would implement an immediate response.
	(RI5) Customers' complaints fall on deaf ears in this business unit (R).
	(RI6) Even if we came up with a great marketing plan, we probably would not be able to implement it in a timely fashion (R).

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