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Outside-in marketing capability and firm performance

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ABSTRACT

Employing an outside-in strategic perspective, we address an under-researched question in the extant marketing literature: How and when do firms, by virtue of their outside-in marketing capability, manage to achieve superior performance residing in such capabilities? We find that outside-in marketing capability leads to superior firm performance via its impact on inside-out marketing capability and strategic flexibility. Outside-in marketing capability provides a basis for the firm to update its inside-out marketing capability and to flexibly allocate resources leading to a performance advantage. Our results suggest that modeling outside-in marketing capability along with inside-out marketing capability and strategic flexibility provides a more accurate picture of firm performance outcomes and enhances the efficacy of marketing capability logic with respect to firm performance. We also show that outside-in marketing capability positively affects firm performance only when transformational leadership and employee proactivity are relatively high. When transformational leadership and employee proactivity are low respectively, increasing outside-in marketing capability can have counter-productive impact on firm performance. This interaction between the marketing organization (MARKORG) elements of capabilities and human capital shows that both of these elements work together to achieve superior firm performance. The results suggest that firms stand to gain more from outside-in marketing capability by devoting resources for developing leadership skills and nurturing employee proactivity. We conclude the article by discussing the implication of this research for theory and practice, highlighting the limitations and offering future research directions.

1. Introduction

To increase the managerial relevance of business scholarship, research is needed on the relative impacts and interactions of different marketing organization (MARKORG) elements on firm performance (Moorman & Day, 2016). Imagine a struggling firm contemplating whether it should invest more resources in marketing capabilities or human capital. Within marketing capabilities, priority could be given to outside-in capability, inside-out capability or to a flexible allocation of resources in service of exploiting emergent opportunities. While any such investment may be justifiable, surprisingly little research exists regarding which allocation is likely to be the most expedient. It is important for managers to know the effectiveness of these different “routes to impact” (Jaworski, 2011) as well as their interactions, which

is the main focus of this research.

A vast body of research has consistently shown that a portfolio of marketing-mix-based inside-out marketing capabilities (such as pricing, product development, marketing communication) constitute important sources of competitive advantage (e.g., Angulo-Ruiz, Donthu, Prior, & Rialp, 2014; Morgan, Vorhies, & Mason, 2009; Vorhies & Morgan, 2005; Vorhies, Orr, & Bush, 2011). However, an emerging body of research challenges the effectiveness of these inside-out marketing capabilities, arguing that such firm capabilities are static and inadequate to adapt to increasingly complex and fast-changing market environments (Day, 2011, 2014; Mu, 2015). Scholars of this research camp contend that it is outside-in marketing capability rather than inside-out capability that ensures long-term profitability and competitiveness by helping firms adapt to volatile markets (e.g., Day & Moorman, 2010; Mu, 2015;

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Saeed, Yousafzai, Paladino, & Luca, 2015). Yet another research stream suggests that a firm's capability to appropriately allocate resources rather than mere possession of resources drives superior performance (Newbert, 2007; Priem & Butler, 2001). Scholars in this stream argue that strategic flexibility is what sustains profitability in complex and highly unpredictable environments (Grewal & Tansuhaj, 2001; Johnson, Lee, Saini, & Grohmann, 2003). In sum, there is an important gap in our understanding of 1) which capability –outside-in capability, inside-out capability, or strategic flexibility – should be focused on as a primary driver of firm performance, and 2) whether these capabilities affect performance separately or in combination, which will help us identify intermediate stages when looking for early performance impacts (Moorman & Day, 2016).

Moreover, the marketing literature generally neglects possible synergies created between marketing capabilities and human capital on firm performance despite a constant advocacy for inter-departmental coordination (e.g., Narver & Slater, 1990). The outside-in perspective suggests that though outside-in marketing capability is important for firm performance, its impact on performance should depend on how it is managed and deployed (Day, 2011; Moorman & Day, 2016; Mu, 2015). According to Moorman and Day (2016), research is needed to understand how alignment between human capital that resides in individuals and higher-order constructs such as marketing capabilities impacts firm performance. They also recommend taking a top-down (starting with leaders) or a bottom-up (starting with employees) approach to understand how human capital aligns with other MARKORG elements such as capabilities. Past research suggests that transformational leadership is required to better align firm efforts with the emergent opportunities identified through outside-in marketing capability (Adner & Helfat, 2003; Teece, 2007). Moreover, when rapid responses are needed in the face of turbulent business competition and market velocity, employees need to be more proactive in anticipating and acting upon market changes (Day, 2011; Mu, 2015; Teece, 2007). In this research, we explore the interactions of both top-down (transformational leadership) and bottom-up (employee proactivity) elements of human capital with outside-in marketing capability in impacting firm performance.

In summary, in this research, we attempt to address the following research question: How is outside-in marketing capability related to inside-out marketing capability, strategic flexibility, and the two human capital factors transformational leadership and employee proactivity in shaping a superior firm performance? By answering our research question, this study advances a more nuanced view of firm performance by looking at the relationship between three types of capabilities (outside-in capability, inside-out capability, and strategic flexibility), and their impact on firm performance as well as by exploring how human capital elements moderate the relationship between capabilities and performance. By doing so, this paper makes a number of important contributions.

First, it reconciles the divergent perspectives on the effectiveness of the two most important types of marketing capabilities (Day, 2011; Moorman & Day, 2016) and shows that outside-in marketing capability impacts firm performance by helping develop superior inside-out marketing capability. Second, though increased complexity of markets requires strategic flexibility to exploit emergent opportunities (e.g., Day, 2014; Nadkarni & Narayanan, 2007), the process of how marketing capability influences resource allocation remains unknown (Day, 2011, 2014). This research reveals the missing link between outside-in marketing capability and resource deployment and shows that outside-in marketing capability leads to strategic flexibility, which in turn, leads to superior firm performance. Third, this research offers insights into the human capital related boundary conditions of the impact of outside-in marketing capability on firm performance. We show that outside-in marketing capability enhances performance only when transformational leadership and employee proactivity are relatively high.

In the following sections, we first detail the background and

conceptual model of our research and present our research hypotheses. Then, we describe the methods employed in this research including research design and data collection, variables and measures. Next, we present the empirical results. Finally, we discuss the implications of our findings for researchers and marketers, draw conclusions, and highlight directions for further research along with research limitations.

2. Conceptual framework and research hypotheses

2.1. Outside-in perspective and outside-in marketing capability

Scholars have traditionally taken an inside-out perspective in analyzing firm performance, predominantly through the resource-based view of the firm (e.g., Barney, 2001). This stream of work emphasizes the role of firm resources as the basis for competitive advantage and performance superiority. However, possession of resources does not guarantee creation of sustainable competitive advantage (Priem & Butler, 2001). While the dynamic capability perspective overcomes the limitations of the resource-based view by emphasizing the capabilities of resource acquisition and deployment (Eisenhardt & Martin, 2000), it suffers from an implicit myopia in that these capabilities are organizational routines (Day, 2011).

In order to overcome the limitations of predominant theories, Day (1994, 2011) suggests that marketing scholars develop an outside-in perspective to analyze firm capability, resource deployment and performance advantage in an increasingly open and complex market environment. An outside-in view assumes that superior performance might lie outside of firm boundaries (Day, 2011) and opens pathways for understanding how different participants inside and outside the firm interact and create value (Mu, 2015). Further, this perspective prescribes guidelines by which firms should compete by taking advantage of insights generated from engaging with customers, sensing market dynamics and linking with partners (Mu, 2015). This outside-in approach stands in sharp contrast with the inside-out mindset, which focuses on using existing firm resources and competencies to achieve competitive advantages.

Building on the outside-in strategic view, Mu (2015) develops and conceptualizes marketing capability from an outside-in perspective. Outside-in marketing capability reflects an organization's fundamental value creating capabilities in an increasingly open market environment. It has three dimensions: market sensing, customer engaging, and partner linking (Mu, 2015). Market sensing refers to the ability of a firm to anticipate future evolution of markets and detect emerging opportunities based on information collected from its business ecosystem (Day, 2011; Teece, 2007). Customer engaging refers to the ability of a firm to create long-term intimate relationships with customers (e.g., Park, MacInnis, Priester, Eisingerich, & Iacobucci, 2010; Yim, Tse, & Chan, 2008). Partner linking refers to the ability of a firm to interact with partners and orchestrate the resources and capabilities of partners in value creation. Mu (2015) builds a comprehensive research framework and establishes the relevance of outside-in marketing capability to firm performance, but does not answer the important research question raised by Day (2011) and Moorman and Day (2016): How and when does outside-in marketing capability impact firm performance?

Day and other researchers suggest that the outside-in perspective can be used as a building block for identifying and studying firm-specific factors that explain the differences in firm performance (Day, 1994, 2011, 2014; Mu, 2015; Saeed et al., 2015). In this paper, we consider the impact of outside-in marketing capability on two such firm-specific factors (inside-out marketing capability and strategic flexibility), which lead to the differences in firm performance.

2.2. Outside-in marketing capability and inside-out marketing capability

Inside-out marketing capability refers to a set of marketing-mix-based capabilities and interrelated organizational routines such as

product management, pricing, selling, and marketing communications that firms employ to implement marketing strategies (e.g., Vorhies & Morgan, 2005). However, in order to prosper in a fast-changing and complex competitive landscape, firms must rapidly adapt inside-out marketing capabilities to changing market conditions.

We argue that it is the outside-in marketing capability of a firm that provides the knowledge structure required to adapt its functional marketing capabilities to better serve changing markets. Outside-in marketing capability enables firms to recognize the inside-out marketing capability gap (Day, 2011; Mu, 2015) – a mismatch between environmental demands and existing capacity to respond to new conditions (Huff, Huff, & Thomas, 1992). This helps firms align internal processes such as pricing, marketing planning, and new product development with market requirements (Day, 2011, 2014; Day & Moorman, 2010; Haeckel, 1999). Therefore, it is not outside-in marketing capability per se that affects performance, but rather the insights from outside-in marketing capability that enable firms to more optimally develop inside-out marketing capabilities that improve performance. Consistent with this view, prior research on the relationship between market orientation, marketing capabilities and firm performance also suggests that inside-out marketing capability mediates the positive relationship between market orientation and firm performance (e.g., Menguc & Auh, 2006; Morgan, Vorhies, & Mason, 2009; Murray, Gao, & Kotabe, 2011; Zhou, Yim, & Tse, 2005). We suggest that outside-in marketing capability acts as a precursor to inside-out marketing capability building, through market sensing, partner linking and customer engaging. Next, we will discuss how each of these three dimensions of outside-in marketing capability direct possession and deployment of marketing resources necessary for the creation and maintenance of superior customer value.

A key aspect of outside-in marketing capability is market sensing, which enables a firm to detect and anticipate changes in market conditions and uncover current capability deficiencies (Mu, 2015). As market conditions change, market sensing enables a firm to align its functional marketing capabilities with evolution of the markets that the firm serves (Levinthal & Myatt, 1994). For example, superior market sensing can provide firms with marketing insights on competition, customer needs and technological trends (Morgan, Slotegraaf, & Vorhies, 2009). Armed with these marketing insights, firms can then plan which products to develop in order to meet customer needs, determine what new marketing communications strategies to adopt, and how to build a more differentiated brand image (Wiles, Morgan, & Rego, 2012).

Customer engaging can help a firm detect discrepancies between customers' current and future needs (Day, 2011; Mu, 2015). Customer insights are then used to allocate marketing resources and adjust marketing strategy to serve changing customer needs (Mu, 2015). The underlying premise of customer engaging is that the firm has capacity to create customer value (Day, 2011; Mu, 2015). A firm that engages with customers can adjust its marketing mix in a timely manner and thus lessen the mismatch between the firm's functional capabilities and customers' expressed as well as latent needs, and thereby provide products and services that are a better fit than competitors' products (Mu, 2015).

Connections with business partners can provide a variety of knowledge and information (e.g., Achrol & Kotler, 1999; Dyer & Singh, 1998), against which a firm can evaluate its performance. Unsatisfactory performance calls existing practices (e.g., pricing and marketing communication) and strategies (e.g., marketing planning and implementation) into question since low performance poses threats for the firm and triggers a strong organizational reaction (e.g., Levitt & March, 1988). Thus, the firm is more likely to search for new ideas to challenge status quo, anticipate problems, and explore promising marketing practices and strategies. Even when performance exceeds expectation, a firm with an outside-in mindset can take an experimental approach to explore new and better means to serve customers because

success provides firms with additional resources to pursue promising ideas (e.g., Levitt & March, 1988).

In sum, we suggest that firms with more capacity to generate insights from market sensing, customer engaging and partner linking are more likely to develop superior inside-out marketing capability for performance improvement (Day, 2011; Mu, 2015). We hypothesize:

H1. *Inside-out marketing capability mediates the positive effect of outside-in marketing.*

2.3. Outside-in marketing capability and strategic flexibility

Organizations are internalized structures for strategically allocating and deploying resources (Williamson, 1975). The diversity and frequency of market changes require firms to update resource deployment to meet changing market conditions in a timely fashion (Mu, 2015). Flexibility in exploiting and orchestrating resources may explain why some firms are more successful than others (Eisenhardt & Martin, 2000). Strategic flexibility refers to the ability of a firm to respond to major changes that take place in its external environment by committing the resources necessary to respond to those changes (Grewal & Tansuhaj, 2001; Sanchez, 1995). Central to the notion of flexibility is the ability to identify options, or alternative courses of actions (Johnson et al., 2003; Zhou & Wu, 2007). By structuring a portfolio of real options, a firm can exercise flexibility to seek new business opportunities when environmental shocks occur. We suggest that outside-in marketing capability impacts strategic flexibility in several ways.

First, fast changing competitive landscape stimulates strategic allocation of resources only when managers recognize that such allocations are necessary (Mu, 2015; Teece, 2007). Market sensing helps firms continuously monitor changing environmental stimuli, reducing the gap between changing market conditions and interpretation of such market conditions by firms (Bogner & Barr, 2000). This allows firms to notice and respond to market stimuli such as competitive moves and technological changes. When changes in market conditions alter a firm's market position, the firm can sustain its competitive advantage by implementing alternative courses of actions that align with the new market requirements to deliver better customer value (e.g., Grewal & Tansuhaj, 2001; Sirmon, Hitt, & Ireland, 2007). Market sensing also enables a firm to envision new opportunities, and gather knowledge of emerging technologies, based on which the firm can renew its portfolio of strategic options, such as targeting new segments or adopting new technologies for customer value creation (Teece, 2007). For example, a firm with market sensing capability can leverage its technological strengths to quickly respond to market changes with new product offerings (Narasimhan, Rajiv, & Dutta, 2006).

Second, customer engaging allows firms to notice changes in customer needs and develop awareness of new opportunities (Day, 2011; Mu, 2015; Vorhies et al., 2011). This prevents firms from being locked into status quo behaviors in serving customers, and promotes flexible deployment of resources to meet changing customer needs (Messner & Vosgerau, 2010), leading to superior firm performance.

Third, internal firm resources are always limited and no single firm can successfully serve every market and segment, especially given the complexity of modern markets. Insights from partner linking direct how a firm strategically orchestrates networks of resources and capabilities of partners (Mu, 2015). Connecting with business partners gives a firm access to diverse resources and competencies (Dyer & Singh, 1998; Nahapiet & Ghoshal, 1998), which the firm can mix and match with internal resources to form new capabilities (Sanchez, 1995; Sirmon et al., 2007). This resource bundling generates new strategic options for the firm to diversify into new product markets or intensify its presence in served markets (Sanchez, 1995). Therefore, outside-in marketing capability greatly enhances an organization's ability to sense and respond to markets and align organizational resources with market changes to create customer value (Day, 1994, 2011, 2014; Mu, 2015).

We hypothesize:

H2. *Strategic flexibility mediates the positive effect of outside-in marketing capability on firm performance.*

2.4. *Outside-in marketing capability, transformative leadership, and employee proactivity*

Without consideration of the role of human capital in the relationship between outside-in marketing capability and firm performance, our understanding of outside-in marketing capability and firm performance would not be complete (Day, 2011; Moorman & Day, 2016). We fill this research gap by studying the interaction of outside-in capability with human capital from both a top-down (transformational leadership) and bottom up (employee proactivity) perspective. Prior human resources research has shown that transformational leadership and active employee participation in problem-solving are important factors for achieving superior performance (Detert & Burris, 2007; Foss & Lindenberg, 2013; Judge & Piccolo, 2004). We hypothesize that firms experience high levels of performance by virtue of their outside-in marketing capability only if transformational leadership is in place and employee proactivity is adequately encouraged.

Transformational leadership has been described as the leadership style most effective in influencing firm performance (e.g., Foss & Lindenberg, 2013; Judge & Piccolo, 2004; Rubin, Munz, & Boomer, 2005) and is required to match particular organizational needs with avenues for organizational change (e.g., Adner & Helfat, 2003; Sirmon et al., 2007; Teece, 2007). Transformational leadership is typically conceptualized in terms of four dimensions of leadership behavior: inspirational motivation, idealized influence, intellectual stimulation, and individualized consideration (Bass & Avolio, 1995; Judge & Piccolo, 2004). Inspirational motivation involves articulating a compelling vision of the future. Idealized influence involves engaging in actions that earn respect and cultivate pride such as discussing important values and beliefs. Intellectual stimulation pertains to stimulating followers by questioning assumptions, challenging status quo, and encouraging problem reformulation, imagination, and intellectual curiosity. Individualized consideration emphasizes paying attention to followers' needs, and showing empathy, appreciation of and support for individual followers' initiatives and viewpoints. We suggest that transformational leadership should reinforce the impact of outside-in marketing capability on firm performance for the following reasons.

First, transformational leaders are proactive in absorbing, generating and exploiting new ideas (Foss & Lindenberg, 2013; Judge & Piccolo, 2004). As a result, they can perceive emerging shifts in technology and customer demand, and respond to market changes by mobilizing resources based on insights from marketing sensing, customer engaging and partner linking (Day, 2011; Teece, 2007). The value of outside-in marketing capability is likely to be dissipated without the action of leaders who enable the necessary changes for customer value identification and creation (Day, 2011).

Second, transformational leaders adjust their behaviors to be consistent with organizational goals and contexts in their day-to-day activities (Grant, Gino, & Hofmann, 2011; Judge & Piccolo, 2004). This, in turn, nurtures a supportive, open, experimental, and creative climate for generating, sharing, and acting on insights generated via market sensing, customer engaging and partner linking (Judge & Piccolo, 2004; Teece, 2007). Such organizational culture can enhance the ability of the firm to question outmoded operating routines and develop new adaptive ones (Bass & Avolio, 1995), which help the firm to adapt to changing market conditions (Teece, 2007). Thus, transformative leadership increases the likelihood of firms to take advantage of insights from market sensing, customer engaging and partner linking to implement needed changes and resource combinations to create performance advantage.

Third, through idealized influence and individualized consideration,

transformational leaders can ensure that their employees deeply understand the strategic goals of the company and align their efforts with these goals (e.g., Rubin et al., 2005). With the support of transformational leaders, employees respond to upward influence by mobilizing attention and effort toward solving problems. This, in turn, motivates employees across the organization to search for emerging problems and opportunities and bring them to the attention of the company leaders (Grant et al., 2011; Judge & Piccolo, 2004). The reason is that motivated employees are more likely to engage in joint productive endeavors in which they choose their actions regarding joint goals and exert intelligent effort to reach those goals (Foss & Lindenberg, 2013). With transformational leaders, the firm therefore is more likely to respond to market changes and capitalize on market opportunities based on insights from market sensing, customer engaging and partner linking. We hypothesize:

H3. *The higher the level of transformational leadership, the greater the effect of outside-in marketing capability on firm performance.*

Employee proactivity refers to the dispositional employee behaviors that improve current circumstances by identifying opportunities, showing initiative, taking action, and persevering until meaningful changes occur (Detert & Burris, 2007). As the competitive landscape becomes more unpredictable, firms depend on employees to proactively advance bottom-up change by voicing constructive ideas (e.g., Van Dyne & LePine, 1998), taking charge to improve work methods (e.g., Aragon-Correa, 1998), and engaging in upward influence (e.g., Detert & Burris, 2007). Employee proactivity may help firms to anticipate and act upon threats and opportunities identified using outside-in capabilities. We suggest that employee proactivity should positively moderate the relationship between outside-in marketing capability and firm performance for the following reasons.

First, successful adaptation to changes enabled by outside-in marketing capability depends on active participation of employees (Day, 2011). Outside-in capabilities can only be effective if the required changes are undertaken by proactive employees with the cognitive and creative capacity to anticipate, envision and interpret internal and external events needed to create changes (e.g., Foss & Lindenberg, 2013). Prior research has demonstrated that proactive employees can introduce novel and divergent perspectives, and apply novel methods for problem exploration (Kirkman & Rosen, 1999). This suggests that when employees proactively engage in job related activities, they are more willing to use intelligent effort to promote changes. Thus, high levels of employee proactivity are required to undertake creative marketing strategies in response to market changes based on insights from market sensing, customer engaging and partner linking. Therefore, to the extent that organizational changes need active employee participation, bottom-up changes from proactive employees are needed to benefit fully from outside-in marketing capability.

Further, creative and novel inputs from proactive employees can help the firm to understand insights from market sensing, customer engaging and partner linking. As agents for enacting positive changes and improving existing processes in workplaces, proactive employees make innovative suggestions for changes to standard procedures even when others disagree (e.g., Grant et al., 2011; Parker, Bindl, & Strauss, 2010). For example, when proactive employees are assigned to detect market opportunities, they can produce adaptive solutions that rely on quickly created knowledge, correct errors in faulty procedures and identify new techniques for preventing errors in the future (Parker et al., 2010). Employee proactivity thus generates new insights that enable firms to better align their capability development with market demand than rivals, and ensure that the organization as a whole develops and innovates when changes are needed. The firm is thus more likely to act on market insights developed from market sensing, customer engaging and partner linking. Accordingly, firms can make the kinds of informed decisions demanded by outside-in marketing capability and stay synchronized with market changes and ahead of

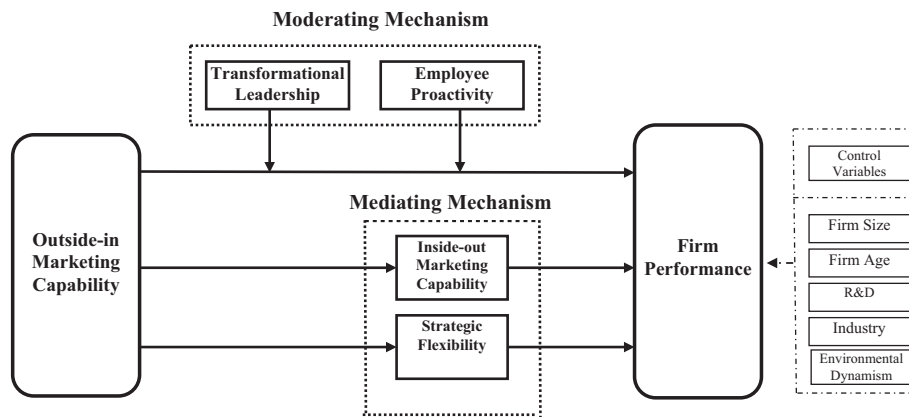


Fig. 1. Conceptual framework.

competitors. We hypothesize:

H4. *The higher the employee proactivity, the higher the effect of outside-in marketing capability on firm performance.*

In short, we propose a moderated mediation model that links different types of firm capabilities and human resource factors with firm performance. This model answers the question: In what conditions does outside-in marketing capability affect firm performance? We argue that inside-out marketing capability and strategic flexibility are the organizational processes that translate the impact of outside-in marketing capability into superior firm performance. Also, we theorize that transformative leadership and employee proactivity respectively strengthen the impact of outside-in marketing capability on firm performance. Our research framework is shown in Fig. 1.

3. Method

3.1. Research design and data collection

To improve our understanding of the hypothesized relationships and to test our hypotheses, we randomly selected 1237 firms (selected from a commercial listing of U.S. technology companies) to complete a cross-sectional survey. We included only technology firms that were independently held and that were more than five years old since accumulation of marketing capabilities takes time. Firms must be independently held since parent firms might influence the marketing capability of subsidiary firms.

Senior marketing managers and other senior executives such as vice presidents completed the survey and provided information for the study variables. Information on firm age, size, R&D input, and industry were taken from archival data (Compustat, company website or internal company data). We assured the key informants that any information that they disclosed to us would never be shared with any third party. In order to increase response rate, we promised a customized report of results once the research project was completed. We sent three reminders (two weeks apart) and made frequent calls to non-respondents (on average four calls at a 15-day interval). We received 471 completed surveys, of which 95 were dropped because of unanswered questions and non-usable questionnaires. The effective response rate was 30.4% ($n = 376$), which was comparable to the response rate of other studies directed at top managers in US. Respondents had an average 21 years of work experience. The respondent firms fell into the technology industries of biotech (21%), commercial and industrial machinery (19%), electronics (31%), and information technology (29%).

3.2. Non-response bias

To examine non-response bias, we compared early respondents and

late respondents (Armstrong & Overton, 1977) on demographic variables and found no difference between the two groups ($p > 0.05$). Also, we compared the demographic variables for everybody who received the questionnaire with those who responded. Again, no differences were found ($p > 0.05$). These test results suggested that response bias was not a concern.

3.3. Common method bias

In our data collection process, we tried to verify the validity of the perceptual measure of firm performance with the objective measures for firm performance (see dependent variable section). The analysis suggested that our perceptual measure captures what it intended to measure. This again suggested that common method variance was not a serious concern for our study. However, as both the independent and dependent variables were operationalized through self-reports, common method bias cannot be ruled out completely (Johnson, Rosen, & Djurdjevic, 2011; Podsakoff, MacKenzie, & Podsakoff, 2012). We also used three statistical approaches to check common method variance.

First, as shown in in Table 1, we added promotion focus as a marker variable (Haws, Dholakia, & Bearden, 2010; Lindell & Whitney, 2001). We adjusted the correlation matrix by the lowest positive pairwise correlation value. Thus, the results in Table 1 are a marker variable partial correlation adjusted matrix. The marker variable did not remove the significance of our key variables. This suggests that common method variance is not a serious concern for this study.

Second, in our CFA measurement model for construct reliability and validity, we examined potential common method variance by testing whether adding a single latent method factor would significantly improve model fit (Johnson et al., 2011; Podsakoff et al., 2012). To facilitate nested model comparison, we included a method factor (variance set to 1) in both models. Items in both models were allowed to load on their respective theoretical constructs. However, item loadings on the latent method factor were constrained to zero in the measurement model, but free to vary in the latent method factor model. The latent method factor model generated a good fit ($\chi^2/df = 1.58$, $p < 0.001$, root mean square error of approximation (RMSEA) = 0.004, comparative fit index (CFI) = 0.95, goodness-of-fit statistic (GFI) = 0.94, and Tucker-Lewis index (TLI) = 0.96). Our model comparison indicated that the latent method factor model did improve fit: $\Delta\chi^2/\Delta df = 1.27$, $p < 0.001$. Because the χ^2 difference test is vulnerable to sample size, Bryne (2001) recommended the GFI difference between models as an indicator of practical significance. The GFI difference between two models was 0.02, less than the 0.05 level suggested by Bagozzi and Yi (1990), indicating that common method bias is unlikely to be severe.

Third, we examined correlations between endogenous and exogenous errors in CFA. We allowed the errors of the endogenous variable

Table 1
Means, standard deviations, and correlations of all variables.

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Firmperformance	5.70	1.25	1.00										
2. Outside-in marketing capability	4.98	1.08	0.285***	1.00									
3. Inside-out marketing capability	5.13	0.59	0.219**	0.121**	1.00								
4. Strategic flexibility	4.94	1.52	0.166**	0.202**	0.142*	1.00							
5. Transformational Leadership	5.04	0.75	0.171**	0.253**	0.148*	0.115*	1.00						
6. Employee Proactivity	5.11	1.01	0.137**	0.204**	0.117*	0.163*	0.125*	1.00					
7. Firm size	9.53	1.52	0.082	0.039	0.025	0.053	0.098	0.002	1.00				
8. Firm age	3.11	0.79	0.091	-0.020	-0.071	-0.040	-0.103	0.075	0.003	1.00			
9. R&D	12.91	1.89	0.103	0.122	-0.106	0.009	-0.054	0.058	0.145*	0.002	1.00		
10. Environmental Dynamism	5.81	0.73	0.059	0.023	0.048	0.035	0.039	0.011	0.015	0.018	0.025	1.00	
11. Promotion Focus	4.39	1.03	0.004	0.002	0.005	0.008	0.003	0.002	0.005	0.001	0.006	0.007	1.00

Note: $N = 376$.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

items to covary with those of the exogenous variable items and tested for a difference in χ^2 (Molina-Castillo, Calantone, Stanko, & Munuera-Aleman, 2012). No significant differences were found. The results indicate that common method bias is not a significant issue for this study.

3.4. Variables and measures

We relied on well-established scales from the existing literature to measure this study's variables (Appendix A shows the details of the study measures and measurement property statistics). All constructs were measured using Likert-type seven point scales unless otherwise specified.

3.4.1. Dependent variable

Following the market-based assets framework outlined by Srivastava, Shervani, and Fahey (1998), we measured firm performance as a second-order variable of perceived financial and market performance relative to competitors. The measures for firm performance were adapted from Vorhies and Morgan (2005), and Im and Workman (2004). Using perceived performance scales relative to competitors permits comparisons across firms and contexts such as across particular industries. We were not able to obtain more financially sound objective measures like net profit because firms deemed them as confidential. However, we validated the performance measure reported by managers by obtaining objective performance data in terms of return on investment from company yearly reports and news reports (92 available cases). The objective measure was highly correlated with subjective measures obtained from respondents ($r = 0.89$, significant at $p < 0.001$). The convergence analysis supports the validity of the performance measure.

3.4.2. Independent variables

Our measure of outside-in marketing capability was taken from Mu (2015). This measure captures the ability of the firm to sense market changes, engage with customers and link with partners. Inside-out marketing capability was measured as a second-order set of marketing capabilities using the scale developed by Vorhies and Morgan (2005). We adapted Zhou and Wu's (2007) scale to measure strategic flexibility, which focuses on the flexible allocation and coordination of resources in response to changing environments.

We conducted confirmatory factor analysis to test the construct validity of outside-in marketing capability. Results indicate that the proposed three-factor measurement model offers a good fit ($\chi^2 = 198.29$, comparative fit index [CFI] = 0.91, root mean square error of approximation [RMSEA] = 0.03) for the data significantly better than an alternative model with all outside-in marketing capability items loading on one factor ($\chi^2 = 306.47$, CFI = 0.85,

RMSEA = 0.13). This test suggests it is appropriate to regard outside-in marketing capability as a multi-dimensional construct.

We measured inside-out marketing capability as a multi-factor variable. We subjected all measures to confirmatory factor analysis (CFA) to estimate the overall fit of a second-order factor model. We obtained the following fit index ranges: ($\chi^2 = 395.83$; comparative fit index [CFI] = 0.91; Tucker-Lewis index [TLI] = 0.95; incremental fit index [IFI] = 0.93; root-mean-square error of approximation [RMSEA] = 0.05). Results suggest that the second-order six-factor model provides the best fit. Therefore, it is proper to measure inside-out marketing capability as a higher-order factor of its six first-order factors.

We adapted the Multifactor Leadership Questionnaire (Bass & Avolio, 1995) to measure transformational leadership. We measured transformational leadership at the firm level because the level of theory—dictated by the outcome variables—was at the firm level (Rousseau, 1985). To examine the factor structure of the transformational leadership items, we conducted confirmatory factor analyses. The four-factor model provided a good fit to the data ($\chi^2 = 115.09$, $df = 76$, n.s.; RMSEA = 0.04, CFI = 0.96, and TLI = 0.97). The four-factor model fits the data significantly better than the one-factor model ($\chi^2 = 293.58$, $df = 94$, $p < 0.01$; RMSEA = 0.25, CFI = 0.31, and TLI = 0.29), supporting the discriminant validity of the transformational leadership scales.

Employee proactivity was adapted from Grant et al. (2011). Consistent with the research that converges around the view that employee proactivity can exist as a group-level phenomenon (e.g., Grant et al., 2011), we measured employee proactivity at firm level.

3.4.3. Control variables

Empirical evidence suggests additional factors might affect performance, which we explicitly control for with seven additional variables to account for the effects of extraneous variables. We include *firm age (age)*, *firm size (size)*, *R&D investment (R&D in US dollars)*, *industry dummies*, and *environmental dynamism* as control variables. Firm age equals the number of years the firm (we used logarithm of age in data analysis) has been in operations. We used the natural logarithm of the number of employees and average R&D input in the past three years as an indicator of firm size and R&D input respectively. Firm age, firm size, and firm R&D were taken from firm historical data. We also verified these data from publically available news reports and firm websites. Environmental dynamism was measured using the scales developed by Jaworski and Kohli (1993).

3.4.4. Construct validity and reliability

We conducted two overall confirmatory factor analysis (CFA) models to test the property of our measures. In the first model, we

tested a five-factor model, which included outside-in marketing capability, inside-out marketing capability, strategic flexibility, environmental dynamism and firm performance, all as separate factors. The model achieves a satisfactory fit to the data ($\chi^2 = 984.63$, $p < 0.001$; CFI = 0.937; TLI = 0.923; IFI = 0.934; RMSEA = 0.004) (Hair, Black, Babin, & Anderson, 2010) and all scale items loaded onto their corresponding constructs. Moreover, all factor loadings are highly significant ($p < 0.001$), the composite reliability (CR) of all constructs exceed the 0.70 benchmark, and all AVEs are > 0.50 . In addition, Cronbach reliability (CA) for all constructs meet the criteria. These tests demonstrate that our measures for constructs have adequate convergent validity and reliability (Fornell & Larcker, 1981).

The second CFA model includes variables outside-in marketing capability, transformational leadership, employee proactivity, environmental dynamism and firm performance. All items have significant loadings (at $p < 0.001$) on their expected constructs. The overall fit indices for the measurement model are: $\chi^2 = 1125.75$; $df = 973$; GFI = 0.93; CFI = 0.95; TFI = 0.96; RMSEA = 0.047. The overall fit of the measurement model, Cronbach alpha reliabilities and composite reliabilities suggest that our model has convergent validity.

We employed two methods to examine discriminant validity: Chi-square difference tests and comparing AVE with shared variance (Anderson & Gerbing, 1988; Fornell & Larcker, 1981). Paired chi-square difference tests for all the constructs were conducted to determine whether the restricted model (correlation fixed as 1) is significantly worse than the freely estimated model (correlation estimated freely). All the chi-square differences between the constrained and unconstrained models for all pairs of constructs are highly significant (e.g., outside-in and inside-out marketing capabilities: $\chi^2(1) = 209.44$, $p = 0.000$). This supports discriminant validity (Anderson & Gerbing, 1988). Second, the shared variances between all possible pairs of constructs were calculated to determine if they were lower than the AVE for the individual constructs. The results illustrate that for each construct, the AVE is much higher than the highest shared variance with the other constructs. This again supports discriminant validity (Fornell & Larcker, 1981). Overall, these results show that our measures possess adequate reliability and validity.

4. Analysis and results

Means, standard deviations and correlation coefficients between variables for the study are reported in Table 1.

Our theoretical model (see Fig. 1) implies a moderated mediation model (Edwards & Lambert, 2007; Hayes, 2015). Moderated mediation relationships were estimated using structural equation modeling (SEM) in Mplus 7.0, which estimates indirect relationships (as opposed to inferring them from a series of sequentially estimated regressions) and makes statistical tests of the significance of the pathways modeled. SEM approaches to testing such complex hypotheses are very powerful and robust (Danner, Hagemann, & Fiedler, 2015; Leth-Steensen & Gallitto, 2016; Homburg, Muller, & Klarmann, 2011; Marsh, Hau, Wen, Nagengast, & Morin, 2011; MacKenzie, Podsakoff, & Podsakoff, 2011; Marsh, Wen, & Hau, 2004, 2006). We created latent interaction terms by applying the matched-pairs approach (Marsh et al., 2004, 2006; Rdz-Navarro & Alvarado, 2015), in which latent interaction terms relies on multiplying the indicators of the moderator by the indicators of the predictor. The interaction terms of one indicator of the moderator and one indicator of the predictor serve as reflective indicators for measuring the latent interaction term on the construct level.

Using maximum likelihood in Mplus 7.0, we applied covariance-based structural equation modeling (SEM). The results suggest a good overall fit of the predicted model to the data ($\chi^2/df = 1.68$; CFI = 0.98, TLI = 0.99, RMSEA = 0.006) (Hair et al., 2010). The parameter estimates are provided in Table 2.

In H1, we proposed that inside-out marketing capability mediates the positive relationship between outside-in marketing capability and

Table 2
Structural equation model result.

Path	Mediated moderation model estimated coefficient
Performance outcome	
Outside-in marketing capability → Firm performance	0.237***
Inside-out marketing capability → Firm performance	0.158**
Strategic flexibility → Firm performance	0.116**
Transformational leadership → Firm performance	0.201**
Employee proactivity → Firm performance	0.149**
Inside-out × Strategic flexibility → Firm Performance	0.181***
Mediation path	
Outside-in marketing capability → Inside-out marketing capability	0.108**
Outside-in marketing capability → Strategic flexibility	0.162**
Outside-in marketing capability → Inside-out marketing capability × Strategic flexibility	0.153**
Outside-in marketing capability × Transformational leadership → Inside-out marketing capability	0.171**
Outside-in marketing capability × Transformational leadership → Strategic flexibility	0.195**
Outside-in marketing capability × Employee proactivity → Inside-out marketing capability	0.127**
Outside-in marketing capability × Employee proactivity → Strategic flexibility	0.186*
Moderation Path	
Outside-in marketing capability × Transformational leadership → Firm performance	0.287***
Outside-in marketing capability × Employee proactivity → Firm performance	0.305**
Controlled Path	
Firm age → Firm performance	-0.071
Firm size → Firm performance	0.044
R&D → Firm performance	0.101*
Environmental dynamism → Firm performance	0.136†
Industry: Bio-tech → Firm performance	0.021
Industry: Electronics → Firm performance	0.007
Industry: Information Technology → Firm performance	0.015

Note: N = 376. Standardized coefficient is reported.

† $p < 0.1$.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

firm performance. The mediation model in Table 2 shows that in the outside-in marketing capability → inside-out marketing capability → firm performance relationship, outside-in marketing capability positively affects firm performance ($\beta = 0.237$, $p < 0.001$), inside-out marketing capability positively influences firm performance ($\beta = 0.158$, $p < 0.01$), and outside-in marketing capability positively impacts inside-out marketing capability ($\beta = 0.108$, $p < 0.01$). This chain of relationships supports H1.

In H2, we proposed that strategic flexibility mediates the positive relationship between outside-in marketing capability and firm performance. Again, the mediation model in Table 2 shows that in the outside-in marketing capability → strategic flexibility → firm performance relationship, outside-in marketing capability positively affects firm performance ($\beta = 0.237$, $p < 0.001$), strategic flexibility positively impacts firm performance ($\beta = 0.116$, $p < 0.01$), and outside-in marketing capability positively influences strategic flexibility ($\beta = 0.162$, $p < 0.01$). This chain of relationships support H2.

Regarding the effects of transformational leadership on the contribution of outside-in marketing capability to firm performance, the coefficient for the interaction of outside-in marketing capability and transformational leadership is positive and significant ($\beta = 0.287$, $p < 0.01$). Therefore, we find support for Hypothesis 3 that

transformational leadership positively moderates the effect of outside-in marketing capability on firm performance. Similarly, the coefficient for the interaction of employee proactivity and outside-in marketing capability is positive and significant ($\beta = 0.305$, $p < 0.01$), supporting Hypothesis 4 that employee proactivity moderates the impact of outside-in marketing capability on firm performance.

Though we did not propose a particular hypothesis regarding the interaction of inside-out capability and strategic flexibility in the relationship between outside-in marketing capability and firm performance, the results indicate that inside-out \times strategic flexibility ($\beta = 0.153$, $p < 0.01$) positively mediate the relationship between outside-in marketing capability and firm performance. This shows that inside-out capability and strategic flexibility work in combination toward mediating the effect of outside-in capability on firm performance. Our analysis also shows that inside-out marketing capability ($\beta = 0.171$, $p < 0.01$) and strategic flexibility ($\beta = 0.195$, $p < 0.01$) mediate the interaction effect of outside-in marketing capability and transformational leadership on firm performance. Similarly, inside-out marketing capability ($\beta = 0.127$, $p < 0.01$) and strategic flexibility ($\beta = 0.186$, $p < 0.01$) also mediate the interaction effect of outside-in marketing capability and employee proactivity on firm performance. In summary, the results support our moderated mediation model.

To illustrate the moderating effects of transformational leadership and employee proactivity, we employed the “pick-a-point approach” recommended by Hayes and Matthes (2009). Figs. 2 and 3 represent associations between outside-in marketing capability and firm performance at different levels of transformational leadership and employee proactivity respectively. The proposed interactions between outside-in marketing capability and moderators are apparent.

Fig. 2 presents the moderating effect of transformational leadership on the relationship between outside-in marketing capability and firm performance at different levels of transformational leadership. When transformational leadership is 2 or lower, increasing outside-in marketing capability negatively affects firm performance, but when transformational leadership is 4 or higher, increasing outside-in marketing capability positively impacts firm performance. At 3, outside-in marketing capability has no significant moderating effect. In other words, an increase in outside-in marketing capability leads to increased firm performance only when transformational leadership is 4 or higher ($p < 0.05$).

Fig. 3 presents the moderating effect of employee proactivity on firm performance. When employee proactivity is 2 or below, increasing outside-in marketing capability negatively influences firm performance ($p < 0.05$). At 3, outside-in marketing capability has no significant moderating effect. However, when employee proactivity is at or above 4, increasing outside-in marketing capability positively impacts firm performance ($p < 0.05$). This suggests that H4 is supported.

In order to see if our results hold in the 92 cases with objective

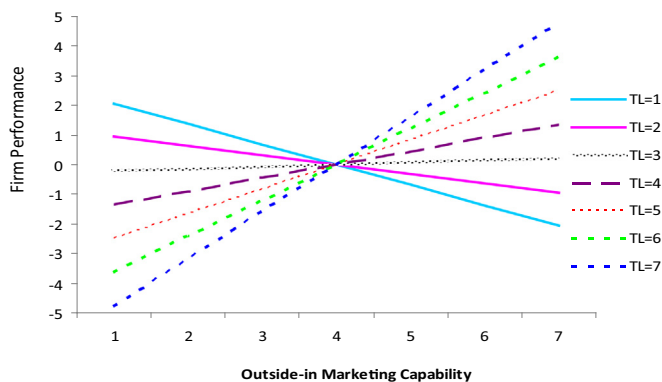


Fig. 2. The effect of outside-in marketing capability on firm performance at different levels of transformational leadership (TL).

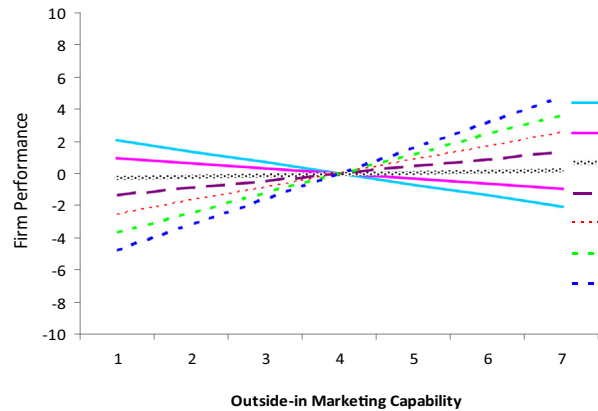


Fig. 3. The Effect of outside-in marketing capability on firm performance at different levels of employee proactivity (EP).

performance data, we employed an alternative approach suggested by Hayes (2015) due to sample size limitation. The results are reported in Table 3 and are consistent with our SEM analysis. In addition, the model was examined separately in each of the four industries: biotech, commercial and industrial machinery, electronics, and information technology. Tables 4, 5, 6 and 7 provide the results. The estimated coefficients are consistent with the SEM analysis using the full data set. These analyses suggest that our results are robust and reliable.

5. Conclusion and discussion

According to Moorman and Day (2016), it is important to study how the interaction and integration of the MARKORG elements—firm capabilities, capabilities configuration, human capital, and culture—contribute to marketing excellence and firm performance. Using outside-in strategic view (Day, 1994, 2011) as a theoretical lens, we investigate the mediating role of inside-out marketing capability and strategic flexibility, and moderating role of transformative leadership and employee proactivity in the relationship between outside-in marketing capability and firm performance. Our research has both novel theoretical and practical implications.

5.1. Theoretical implications

Our research advances the study of interaction of different MARKORG elements and firm performance in several ways.

First, our research not only shows that outside-in marketing capability is a vital source of competitive advantage but also explains the mechanism by which outside-in marketing capability impacts firm performance. In particular, we show that outside-in marketing capability enables a firm to build superior inside-out marketing capability as well as flexibly allocate resources according to changing market needs. This ability to change functional marketing capabilities and re-deploy existing resources according to changing market conditions helps deliver superior customer value which translates into superior firm performance.

Second, our research also adds to the inside-out marketing capability research stream, which calls for identification of theoretical levers for improving inside-out marketing capability (Angulo-Ruiz et al., 2014; Vorhies et al., 2011). Our results show that marketing capability for making and implementing marketing tasks such as pricing and marketing communication becomes effective when guided by outside-in marketing capability. Outside-in marketing capability provides a knowledge base upon which firms develop a distinctive combination of inside-out functional marketing capabilities that leads to high performance. Our research highlights the risk of overstating the direct effect of inside-out marketing capability and considering it a primary driver of

Table 3
Regression results of performance models.

Independent variables	Dependent variables											
	Firm performance											
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Intercept	1.027*** (0.107)	1.138*** (0.135)	1.159*** (0.109)	1.377*** (0.112)	1.184*** (0.138)	1.191*** (0.135)	1.671*** (0.118)	0.908*** (0.173)	0.853*** (0.173)	1.103*** (0.155)	0.995*** (0.182)	1.702*** (0.149)
Size	-0.409 (0.453)	-0.184 (0.411)	-0.172 (0.433)	-0.165 (0.309)	-0.161 (0.417)	-0.177 (0.422)	-0.169 (0.409)	0.038 (0.035)	0.031 (0.039)	0.043 (0.042)	0.041 (0.038)	0.043 (0.042)
Age	-0.011 (0.031)	-0.021 (0.039)	0.017 (0.038)	-0.012 (0.031)	0.041 (0.038)	0.033 (0.039)	0.018 (0.036)	0.049 (0.037)	0.041 (0.038)	0.052 (0.041)	0.050 (0.039)	0.063 (0.048)
R&D	0.319** (0.105)	0.277* (0.107)	0.302* (0.112)	0.285* (0.103)	0.208* (0.101)	0.330* (0.106)	0.275* (0.101)	0.192 (0.231)	0.187 (0.244)	0.175 (0.129)	0.168 (0.147)	0.112 (0.125)
Environmental dynamism	0.033 (0.037)	0.019 (0.025)	0.015 (0.033)	0.019 (0.025)	0.033 (0.036)	0.022 (0.031)	0.017 (0.024)	0.115 (0.103)	0.121 (0.119)	0.127 (0.151)	0.109 (0.135)	0.118 (0.205)
Industry 1: Bio-tech	0.331 (0.509)	0.403 (0.521)	0.205 (0.513)	0.385 (0.501)	0.319 (0.485)	0.307 (0.505)	0.519 (0.538)	0.485 (0.577)	0.409 (0.582)	0.285 (0.663)	0.301 (0.579)	0.372 (0.722)
Industry 2: Machinery	0.163 (0.372)	0.269 (0.355)	0.272 (0.339)	0.481 (0.381)	0.073 (0.286)	0.077 (0.295)	0.188 (0.305)	0.309 (0.507)	0.295 (0.488)	0.385 (0.653)	0.323 (0.638)	0.393 (0.551)
Industry 3: Electronics	0.112 (0.607)	0.173 (0.615)	0.109 (0.631)	0.238 (0.589)	0.279 (0.466)	0.303 (0.471)	0.118 (0.515)	0.339 (0.281)	0.301 (0.292)	0.454 (0.277)	0.341 (0.291)	0.396 (0.555)
Outside-in marketing Capability (OMC)		0.501*** (0.092)		0.109 (0.135)			0.471*** (0.078)	0.395*** (0.052)	0.107* (0.059)	0.401*** (0.101)	0.183* (0.049)	0.433*** (0.109)
Inside-out marketing capability (IMC)			0.529** (0.131)	0.407* (0.105)	0.308* (0.083)	0.051 (0.051)	0.165* (0.071)					
Strategic Flexibility (SF)			0.331** (0.085)	0.211* (0.078)	0.209* (0.064)	0.116* (0.051)	0.116* (0.051)					
Transformational Leadership (TL)						0.147* (0.051)	113 (0.065)		0.109 (0.067)		0.117* (0.044)	
Employee proactivity (EP)						179* (0.058)	0.138 (0.157)		0.012 (0.015)		0.095* (0.028)	
SF × IMC					0.185** (0.037)		0.139* (0.031)					
OMC × TL							0.405*** (0.072)		0.385*** (0.067)		0.407*** (0.083)	
OMC × EP							0.531*** (0.109)		0.258*** (0.047)		0.353*** (0.064)	
R ²	0.108	0.225	0.277	0.325	0.343	0.396	0.281	0.281	0.429	0.371	0.483	0.309
F Value	3.22***	4.15***	5.50***	5.33***	5.39***	5.21***	6.26***	4.37***	5.77***	5.19***	5.91***	5.28***

Notes: N = 92. Columns contain estimated coefficients and their associated standard errors (in parentheses).

† p < 0.1.

* p < 0.05.

** p < 0.01.

*** p < 0.001.

Table 4
Regression results of performance models (Biotech Industry).

Independent variables	Dependent variables												
	Firm performance				Inside-out marketing capability				Strategic flexibility				Strategic flexibility × Inside-out marketing capability
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	
Intercept	2.013*** (0.383)	2.175*** (0.377)	2.387*** (0.389)	2.501*** (0.407)	2.107*** (0.389)	2.393*** (0.301)	1.884*** (0.371)	1.915** (0.577)	1.751*** (0.491)	1.877** (0.602)	1.748*** (0.688)	1.659** (0.409)	
Size	-0.135† (0.593)	-0.218 (0.507)	-0.331 (0.562)	-0.218 (0.487)	-0.175 (0.508)	-0.158 (0.553)	-0.209 (0.461)	0.049 (0.095)	0.033 (0.081)	0.007 (0.087)	0.019 (0.072)	0.012 (0.050)	
Age	-0.022 (0.043)	-0.019 (0.045)	0.033 (0.041)	-0.019 (0.047)	0.025 (0.046)	0.021 (0.045)	0.022 (0.045)	0.173 (0.195)	0.151 (0.206)	0.059 (0.178)	0.109 (0.185)	0.038 (0.154)	
R&D	0.307* (0.105)	0.282* (0.103)	0.268* (0.101)	0.177* (0.081)	0.195* (0.072)	0.208* (0.077)	0.193* (0.081)	0.019 (0.031)	0.034 (0.042)	0.055 (0.025)	0.051 (0.069)	0.033 (0.025)	
Environmental dynamism	0.009 (0.033)	0.007 (0.028)	0.004 (0.035)	0.009 (0.028)	0.019 (0.031)	0.021 (0.033)	0.007 (0.029)	0.138 (0.371)	0.129 (0.257)	0.175 (0.404)	0.109 (0.373)	0.182 (0.539)	
Outside-in marketing Capability (OMC)		0.398*** (0.065)		0.105 (0.172)		0.309*** (0.085)	0.332*** (0.088)	0.412** (0.107)	0.209* (0.068)	0.501 (0.131)	0.108 (0.127)	0.451** (0.115)	
Inside-out marketing capability (IMC)			0.341** (0.064)	0.407*** (0.083)	0.201* (0.079)		0.198* (0.077)						
Strategic Flexibility (SF)			0.201** (0.049)	0.241* (0.098)	0.126* (0.049)		0.131* (0.045)						
Transformational Leadership (TL)						0.195** (0.038)	0.111 (0.085)		0.131* (0.062)		0.108 (0.065)		
Employeeproactivity (EP)						171* (0.055)	0.153 (0.179)		0.102* (0.033)		0.073 (0.042)		
SF × IMC					0.205** (0.041)		0.172** (0.039)						
OMC × TL							0.381*** (0.051)		0.269** (0.075)		0.318** (0.069)		
OMC × EP							0.195** (0.043)		0.206** (0.055)		0.225** (0.049)		
R ²	0.112	0.273	0.309	0.403	0.363	0.373	0.517	0.305	0.496	0.312	0.513	0.338	
F Value	3.11***	4.09***	4.36***	5.72***	4.69***	4.58***	6.79***	5.13***	6.85***	6.83***	6.85***	5.55***	

Notes: N = 79. Columns contain estimated coefficients and their associated standard errors (in parentheses).

† p < 0.1.
* p < 0.05.
** p < 0.01.
*** p < 0.001.

Table 5
Regression results of performance models (Commercial and Industrial Machinery Industry).

	Dependent variables												
	Firm performance						Inside-out marketing capability			Strategic flexibility			Strategic flexibility × Inside-out marketing capability
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	
Intercept	1.007*** (0.052)	1.373*** (0.059)	1.556*** (0.063)	1.278*** (0.055)	2.208*** (0.287)	1.296*** (0.061)	1.375*** (0.066)	0.728*** (0.071)	1.107*** (0.069)	0.801*** (0.085)	0.981*** (0.082)	0.885*** (0.079)	
Size	-0.301 (0.351)	-0.332 (0.382)	-0.264 (0.309)	-0.207 (0.331)	-0.172 (0.338)	-0.259 (0.407)	-0.203 (0.431)	0.083 (0.077)	0.021 (0.078)	0.009 (0.041)	0.043 (0.061)	0.010 (0.050)	
Age	-0.032 (0.047)	-0.027 (0.048)	0.018 (0.043)	-0.021 (0.051)	0.027 (0.044)	0.029 (0.039)	0.019 (0.045)	0.158 (0.242)	0.146 (0.233)	0.092 (0.198)	0.127 (0.233)	0.037 (0.177)	
R&D	0.278** (0.063)	0.195* (0.062)	0.133* (0.059)	0.192* (0.061)	0.207* (0.066)	0.281** (0.063)	0.183* (0.059)	0.141 (0.372)	0.071 (0.308)	0.171 (0.385)	0.048 (0.072)	0.059 (0.413)	
Environmental dynamism	0.035 (0.039)	0.022 (0.025)	0.023 (0.034)	0.019 (0.037)	0.039 (0.035)	0.016 (0.041)	0.025 (0.031)	0.218 (0.298)	0.113 (0.159)	0.115 (0.303)	0.131 (0.307)	0.232 (0.411)	
Outside-in marketing Capability (OMC)		0.402*** (0.054)		0.211 (0.138)		0.371*** (0.083)	0.309** (0.085)	0.304* (0.109)	0.211* (0.073)	0.385* (0.112)	0.118 (0.072)	0.293 (0.102)	
Inside-out marketing capability (IMC)				0.371** (0.103)	0.172* (0.068)		0.159* (0.057)						
Strategic Flexibility (SF)				0.281** (0.075)	0.139* (0.037)		0.141* (0.038)						
Transformational Leadership (TL)						0.193* (0.052)	109 (0.071)		0.128* (0.053)		0.117* (0.039)		
Employeeproactivity (EP)						105* (0.038)	0.033 (0.056)		0.091† (0.048)		0.109* (0.036)		
SF × IMC					0.339** (0.072)		109 (0.031)						
OMC × TL							0.303*** (0.071)		0.275*** (0.069)		0.302*** (0.075)		
OMC × EP							0.295*** (0.058)		0.313*** (0.079)		0.225*** (0.066)		
R ²	0.095	0.211	0.301	0.353	0.361	0.485	0.528	0.303	0.501	0.317	0.475	0.251	
F Value	3.13***	3.75***	4.01***	5.77***	4.78***	5.95***	7.85***	4.72***	6.54***	5.19***	5.97***	4.63***	

Notes: N = 72. Columns contain estimated coefficients and their associated standard errors (in parentheses).

† p < 0.1.

* p < 0.05.

** p < 0.01.

*** p < 0.001.

Table 6
Regression results of performance models (Electronics Industry).

Independent variables	Dependent variables												
	Firm performance						Inside-out marketing capability			Strategic flexibility			Strategic flexibility × Inside-out marketing capability
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	
Intercept	2.012*** (0.087)	1.031*** (0.086)	2.118*** (0.077)	2.775*** (0.083)	2.393*** (0.301)	2.195*** (0.086)	1.806*** (0.079)	0.755*** (0.054)	1.035*** (0.072)	0.893*** (0.068)	0.975*** (0.075)	0.982*** (0.073)	
Size	-0.209† (0.508)	-0.263 (0.509)	-0.281 (0.513)	-0.207 (0.498)	-0.158 (0.553)	-0.213 (0.485)	-0.209 (0.441)	0.014 (0.092)	0.023 (0.085)	0.017 (0.086)	0.031 (0.088)	0.021 (0.077)	
Age	-0.019 (0.039)	-0.011 (0.037)	0.010 (0.036)	-0.015 (0.031)	0.021 (0.045)	0.017 (0.038)	0.021 (0.034)	0.184 (0.273)	0.175 (0.281)	0.095 (0.302)	0.131 (0.295)	0.088 (0.199)	
R&D	0.281** (0.052)	0.115* (0.047)	0.107* (0.036)	0.148* (0.032)	0.208* (0.077)	0.153** (0.039)	0.168* (0.071)	0.057 (0.036)	0.063 (0.043)	0.081 (0.095)	0.059 (0.087)	0.019 (0.028)	
Environmental dynamism	0.021 (0.035)	0.019 (0.028)	0.015 (0.031)	0.015 (0.022)	0.021 (0.033)	0.017 (0.034)	0.018 (0.021)	0.111 (0.145)	0.108 (0.135)	0.109 (0.171)	0.112 (0.186)	0.122 (0.171)	
Outside-in marketing Capability (OMC)	0.339*** (0.061)			0.105 (0.203)	0.309*** (0.085)	0.404*** (0.058)	0.316*** (0.072)	0.382 (0.085)	0.205* (0.088)	0.208** (0.101)	0.117 (0.084)	0.372*** (0.099)	
Inside-out marketing capability (IMC)			0.402** (0.101)	0.377* (0.109)	0.198* (0.077)		0.195** (0.038)						
Strategic Flexibility (SF)			0.314** (0.081)	0.229 (0.084)	0.131* (0.045)		171* (0.055)						
Transformational Leadershipship (TL)						0.192* (0.035)	107 (0.079)		0.125* (0.044)		0.101* (0.048)		
Employeeproactivity (EP)						138* (0.044)	0.113 (0.155)		0.107* (0.048)		0.113* (0.041)		
SF × IMC					0.205** (0.041)		0.271*** (0.038)						
OMC × TL							0.361*** (0.062)		0.392*** (0.072)		0.296*** (0.068)		
OMC × EP							0.407** (0.109)		0.401*** (0.085)		0.355*** (0.081)		
R ²	0.108	0.209	0.312	0.385	0.373	0.369	0.503	0.301	0.415	0.298	0.433	0.171	
F Value	4.21***	4.83***	5.33***	6.71***	4.58***	6.32***	8.75***	4.81***	5.77***	4.53***	5.82***	5.62***	

Notes: N = 116. Columns contain estimated coefficients and their associated standard errors (in parentheses).

† p < 0.1.

* p < 0.05.

** p < 0.01.

*** p < 0.001.

Table 7
Regression results of performance models (Information Technology Industry).

Independent variables	Dependent variables											
	Firm performance						Inside-out marketing capability			Strategic flexibility		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Intercept	1.885*** (0.089)	1.362*** (0.078)	1.658*** (0.068)	2.183*** (0.072)	1.971*** (0.078)	2.035*** (0.088)	1.993*** (0.081)	0.809*** (0.045)	0.977*** (0.053)	0.872*** (0.061)	1.083*** (0.069)	0.915*** (0.069)
Size	-0.211† (0.639)	-0.246 (0.652)	-0.209 (0.631)	-0.211 (0.671)	-0.133 (0.497)	-0.205 (0.572)	-0.195 (0.581)	0.027 (0.087)	0.019 (0.082)	0.030 (0.076)	0.047 (0.082)	0.019 (0.057)
Age	-0.023 (0.045)	-0.018 (0.043)	0.015 (0.040)	-0.020 (0.036)	0.018 (0.042)	0.011 (0.043)	0.024 (0.039)	0.153 (0.282)	0.137 (0.241)	0.058 (0.319)	0.092 (0.308)	0.071 (0.163)
R&D	0.253** (0.047)	0.107* (0.043)	0.115* (0.036)	0.139* (0.041)	0.212* (0.053)	0.165** (0.043)	0.171* (0.051)	0.069 (0.043)	0.083 (0.062)	0.073 (0.087)	0.065 (0.081)	0.025 (0.075)
Environmental dynamism	0.029 (0.037)	0.031 (0.032)	0.020 (0.035)	0.021 (0.031)	0.027 (0.035)	0.019 (0.032)	0.023 (0.029)	0.109 (0.168)	0.152 (0.165)	0.137 (0.182)	0.137 (0.166)	0.117 (0.169)
Outside-in marketing Capability (OMC)	0.308** (0.057)	0.308** (0.057)	0.413** (0.109)	0.117 (0.215)	0.287*** (0.077)	0.351*** (0.065)	0.307*** (0.068)	0.417** (0.113)	0.175* (0.087)	0.438** (0.115)	0.109 (0.073)	0.381*** (0.086)
Inside-out marketing capability (IMC)				0.343* (0.101)	0.172* (0.069)		0.185* (0.041)					
Strategic Flexibility (SF)				0.218* (0.072)	0.119* (0.051)		177* (0.049)					
Transformational Leadershipship (TL)						0.188* (0.041)	129 (0.083)		0.109* (0.044)		0.118* (0.051)	
Employeeproactivity (EP)						153* (0.037)	0.109 (0.162)		0.085 (0.053)		0.092 (0.055)	
SF × IMC					0.218** (0.039)		0.251*** (0.045)					
OMC × TL							0.383*** (0.071)		0.386*** (0.073)		0.388*** (0.061)	
OMC × EP							0.412** (0.117)		0.292*** (0.085)		0.358*** (0.079)	
R ²	0.118	0.215	0.307	0.373	0.385	0.359	0.511	0.281	0.488	0.275	0.501	0.226
F Value	4.91***	4.99***	5.15***	6.57***	4.71***	5.16***	9.35***	4.93***	5.91***	4.77***	6.01***	5.38***

Notes: N = 109. Columns contain estimated coefficients and their associated standard errors (in parentheses).

† p < 0.1.

* p < 0.05.

** p < 0.01.

*** p < 0.001.

firm performance when other factors relevant to understanding the inside-out marketing capability and performance relationship are left out of the picture. Modeling outside-in marketing capability along with inside-out marketing capability provides a more accurate picture of firm performance outcomes and enhances the efficacy of marketing capability logic with respect to firm performance.

Third, our research shows that it is the outside-in marketing capability that helps firms deploy resources to match complex, changing, and ambiguous market environments and this strategic flexibility helps explain variance in firm performance. The positive effect of outside-in marketing capability on strategic flexibility suggests that capabilities based on external, market-based assets (customer engaging, market sensing, and partner linking) drive flexible allocation and deployment of firms' resources. This result is especially important because few empirical studies have examined the role of strategic flexibility in marketing capability and performance relationship. Our results show that outside-in marketing capability is needed to create new, situation-specific knowledge that triggers strategic allocation of resources to improve performance. Thus, we provide an explanation for how marketing capability influences resource allocation in uncertain environments to create differential performance advantages (e.g., Day, 2011, 2014).

Finally, our study provides a nuanced and novel understanding of the boundary conditions of the relationship between outside-in marketing capability and firm performance. We show that firms, by virtue of their outside-in marketing capability, may enhance performance only in the presence of adequate human capital in terms of transformational leaders and proactive employees. Insufficiency in human capital either at the top (i.e. leadership level) or at the bottom (i.e. employee level) could eliminate any advantage stemming from outside-in marketing capability. Firms stand to gain more by devoting resources for developing leadership skills and increasing employee proactivity. We thus respond to an under-researched question in the extant literature: How and when do firms, by virtue of their marketing capability, manage to achieve superior performance residing in such capabilities (Day, 2011, 2014; Moorman & Day, 2016)?

5.2. Managerial implications

Our study also provides important managerial implications. Traditionally, marketing managers have been advised to increase inside-out marketing capabilities to achieve performance advantage. Our results suggest that managers must also be aware of the value of outside-in marketing capabilities. In fact, our research shows that outside-in marketing capability is a primary driver of performance advantage. Going back to the example of the struggling firm introduced in the beginning of this paper, our results suggest that the most expedient course of action would be to invest in outside-in marketing capabilities followed by investments in human capital elements of transformational leadership and employee proactivity. Managers should be encouraged to engage in outside-in thinking because it leads to superior inside-out marketing capability, strategic flexibility, and performance advantage. For example, by adopting an outside-in perspective in operating its business, IBM morphed into a business solution company from a PC manufacturer (Mathewson & Moran, 2016).

Our results suggest that managers need to understand that outside-in marketing capability is required to identify gaps in inside-out marketing capabilities in order to compete in a fast-changing marketing environment. Inside-out marketing capability development must align with signals from market sensing, customer engaging and partner linking. Our results also suggest that outside-in marketing capability guides how managers should strategically allocate firm resources for both current productivity and future competitiveness. Therefore, firms need to prioritize building outside-in marketing capability as it leads to inside-out capability and strategic flexibility, both of which then lead to superior firm performance.

Our results also show that competent leadership is important for firms to realize full benefits from outside-in marketing capability. Therefore, firms need to invest resources to nurture transformational leaders. Transformational leaders create an environment for positive changes to make customer value creation more efficient and effective. Mismatch between the type of leadership and outside-in marketing capability can hinder a firm's performance. Our results also have implications for managers aspiring to lead high performance organizations in terms of underscoring the need to develop a transformational leadership style as even the best outside-in capability can be ineffective in the absence of transformational leadership.

Similarly, our findings show that if employees are not proactive, firms might not benefit from outside-in marketing capability. Therefore, it is crucial to support employees to actively voice their concerns and encourage them to make constructive suggestions for organizational changes. Doing so can augment the impact of outside-in marketing capability on performance. For employees, our research underscores the importance of being proactive as employee proactivity is not only a highly desirable quality for many jobs (Parker et al., 2010), but also essential for leveraging the outside-in capabilities of a firm.

5.3. Limitations and future research directions

Our research has its limitations. First, as in any study, it is important to focus on a parsimonious set of variables since parsimony can provide a good balance between explanatory relevance and mutual distinctiveness. Thus, this study examined a limited numbers of variables in the relationship between outside-in marketing capability and firm performance. We explored how the MARKORG elements of capabilities and human capital impact firm performance. However, the complexity of the relationships among these and other MARKORG elements (such as culture and configuration) is likely to be much greater than that captured in our model (Moorman & Day, 2016). Future research is needed to explore these other factors and their relationship to firm performance.

Second, though our empirical results support the hypothesized relationships, the cross-sectional nature of our research has limitations. Given the theorizing and empirical results, the causal direction as depicted in our model is very likely. However, due to the nature of our cross-sectional data, we cannot rule out the possibility that outside-in marketing capability and performance relationship could be reversed. For example, high firm performance can trigger adoption of an outside-in perspective. Longitudinal research design is necessary to ascertain the validity of our argument regarding the causal relations among the studied variables.

Third, the theoretical ideas developed in this study can be broadly applied to other settings and we expect that similar results will be found in other industries and business cultures. However, we tested our hypotheses using data collected from US based technology firms. This can limit the generalization of our results to firms in other settings and countries. Replication in non-technological and diverse country settings would provide us with a more complete understanding of the relationships and identify differences caused by cultural or business environments.

Fourth, research on outside-in marketing capability to date has not taken into account other capability enhancing or preventing factors such as marketing learning, integrating and coordinating capability, customer experience, branding strategy, marketing strategic choices, competition moves, product life cycle, content marketing, and online and offline business models in the relationship between outside-in marketing capability and firm performance outcome. Addressing how these factors affect the impact of outside-in marketing capability on firm performance enables researchers to connect empirical research results to the marketing capability literature in a rigorous way. Further theoretical and empirical papers should posit sound argumentation and provide sufficient empirical evidences.

Fifth, our empirical results support a positive effect of outside-in marketing capability on firm performance. However, there might be some conditions under which outside-in marketing capability might have negative or no impacts on firm performance as implied in our empirical results. For example, outside-in marketing capability might not directly contribute to some performance variables, e.g. process innovation, quality improvement, cost reduction, adaptation and anticipation, resource acquisition, knowledge creation and transfer, and production cost control. Addressing the performance outcomes of outside-in marketing capability on multiple dependent variables could provide insights since such studies can help managers avoid situations where the influence of outside-in marketing capability might be limited.

Sixth, prior research has addressed how companies develop multiple capabilities simultaneously and how these capabilities can either have complementary effects and help enhance performance (Moorman & Slotegraaf, 1999) or be counterproductive because of opposing objectives (Grewal & Slotegraaf, 2007). Thus, it is important to address how outside-in marketing capability affects performance outcomes along with other capability variables such as operations capability, technological capability, dynamic capability, and networking capability. We assume that in some circumstances, outside-in marketing capability interacts with other capabilities to enhance performance outcomes, and in other situations, outside-in marketing capability might be complementary to other firm capabilities in influencing performance outcomes. Addressing these issues could provide additional interesting results.

Last but not least, the construct of outside-in marketing capability is developed under the assumption of the complexity, velocity, dynamism and fragmentation of marketplace changes. Thus, contextual issues are of substantive importance to the understanding of the impact of outside-in marketing capability on firm performance. We assume that the nature of outside-in marketing capability to drive firm performance is likely to vary with the velocity, complexity, fragmentation or dynamism of the market. Therefore, it is essential to examine contextual factors on the performance implications of outside-in marketing capability influence. We encourage a direct, rigorous examination of the role of contextual factors in the relationship between outside-in marketing capability and performance outcomes. Research into outside-in marketing capability should emphasize these issues following the tradition of prior research in this domain in marketing and other related disciplines such as strategic management, operations management, and management information systems research.

In brief, despite the limitations of this research, this study makes an important step toward an understanding of outside-in marketing capability and firm performance. We hope this article stimulates new research on how outside-in marketing capability impacts firm performance.

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Appendix A

Firm Performance Please rate the extent to which your firm's performance relative to your competitors' performance in achieving the following outcomes

Market Performance (adapted from Vorhies & Morgan, 2005) (Cronbach Alpha (CA) = 0.925; Composite Reliability (CR) = 0.957; Average Variances Extracted (AVE) = 0.738)

1. Market share growth relative to competition effectiveness ($\lambda = 0.873$, $t = 18.205$).
2. Acquiring new customers ($\lambda = 0.827$, $t = 16.703$).
3. Increasing sales to current customers ($\lambda = 0.878$, $t = 14.577$).
4. Customer satisfaction ($\lambda = 1.00$).

Financial Performance (Adapted from Im & Workman, 2004) (CA = 0.893; CR = 904; AVE = 0.759)

1. Profitability ($\lambda = 0.904$, $t = 19.056$).
2. Return on investment (ROI) ($\lambda = 0.910$, $t = 17.404$).
3. Return on sales (ROS) ($\lambda = 0.822$, $t = 22.105$).
4. Reaching financial goals ($\lambda = 1.00$).

Outside-in Marketing Capability (adopted from Mu, 2015)

Market Sensing (CA = 0.804; CR = 0.839; AVE = 0.727)

To what extent, does your firm do the following?

1. Continuously scan and sense emerging market trends and events ($\lambda = 0.887$, $t = 21.138$).
2. Quite alert to changing market conditions ($\lambda = 0.952$, $t = 17.369$).
3. Everyone in our company is sensitized to listen to latent problems and opportunities in the market ($\lambda = 0.918$, $t = 25.519$).
4. Anticipate market trends and events accurately before they are fully apparent ($\lambda = 1.00$).
5. Effectively listen to, understand, and rapidly respond to relevant marketplace conversations ($\lambda = 0.849$, $t = 11.307$).

Customer Engaging (CA = 0.849; CR = 0.887; AVE = 0.709)

To what extent, does your firm do the following?

1. Provide reliable and timely responses to customers' needs ($\lambda = 0.834$, $t = 8.325$).
2. Proactively respond to customer expectations ($\lambda = 0.882$, $t = 10.405$).
3. Invest resources necessary to closely connect with customers ($\lambda = 0.815$, $t = 9.083$).
4. Attend seriously to customers' views, ideas, and circumstances ($\lambda = 0.795$, $t = 7.515$).
5. Take customers' viewpoint to consider how to design and improve business process ($\lambda = 0.827$, $t = 9.739$).
6. Effectively interact with customers ($\lambda = 0.841$, $t = 10.355$).
7. Are able to immerse in customer reality ($\lambda = 0.809$, $t = 9.257$).
8. Focus on customer from the customer's point of view ($\lambda = 0.883$, $t = 11.273$).

Partner Linking (CA = 0.859; CR = 0.885; AVE = 0.672)

To what extent, does your firm do the following?

1. Are quite accessible to partners (e.g., distributors, retailers, research universities and institutions, suppliers) when needs arise ($\lambda = 1.00$).
2. Have a formal system in place that can help us find right partners (e.g., distributors, retailers, research universities and institutions, suppliers) with which to work ($\lambda = 0.872$, $t = 12.384$).
3. Dynamically fine-tune and adjust our relationships with partners (e.g., distributors, retailers, research universities and institutions, suppliers) over time ($\lambda = 0.903$, $t = 9.605$).
4. Effectively coordinate and orchestrate partner relationships (e.g., distributors, retailers, research universities and institutions, suppliers) over time ($\lambda = 0.895$, $t = 13.255$).
5. Effectively mobilize partners resources (e.g., distributors, retailers, research universities and institutions, suppliers) to create value for customers ($\lambda = 0.808$, $t = 8.776$).

Inside-out Marketing Capability (adopted from Vorhies &

Morgan, 2005)

Pricing (CA = 0.848; CR = 0.907; AVE = 0.514)

1. Using pricing skills and systems to respond quickly to market changes ($\lambda = 0.937, t = 9.475$).
2. Knowledge of competitors' pricing tactics ($\lambda = 0.871, t = 14.104$).
3. Doing an effective job of pricing products/services ($\lambda = 0.767, t = 13.795$).
4. Monitoring competitors' prices and price changes ($\lambda = 1.00$).

Product Development (CA = 0.891; CR = 0.937; AVE = 0.558)

1. Ability to develop new products/services ($\lambda = 0.903, t = 15.407$).
2. Developing new products/services to exploit R&D investment ($\lambda = 1.00$).
3. Test marketing of new products/services ($\lambda = 0.837, t = 17.346$).
4. Successfully launching new products/services ($\lambda = 0.970, t = 14.532$).
5. Insuring that product/service development efforts are responsive to customer needs ($\lambda = 0.852, t = 14.634$).

Marketing Communication (CA = 0.871; CR = 0.903; AVE = 0.527)

1. Developing and executing advertising programs ($\lambda = 0.805, t = 8.305$).
2. Advertising management and creative skills ($\lambda = 0.896, t = 11.824$).
3. Public relations skills ($\lambda = 0.879, t = 14.445$).
4. Brand image management skills and processes ($\lambda = 1.00$).
5. Managing corporate image and reputation ($\lambda = 0.866, t = 14.646$).

Selling (CA = 0.925; CR = 0.947; AVE = 0.715)

1. Giving salespeople the training they need to be effective ($\lambda = 0.827, t = 7.403$).
2. Sales management planning and control systems ($\lambda = 1.00$).
3. Selling skills of salespeople ($\lambda = 0.908, t = 13.116$).
4. Sales management skills ($\lambda = 0.934, t = 11.804$).
5. Providing effective sales support to the sales force ($\lambda = 0.905, t = 12.027$).

Marketing Planning (CA = 0.841; CR = 0.905; AVE = 0.682)

1. Marketing planning skills ($\lambda = 0.824, t = 21.039$).
2. Ability to effectively segment and target market ($\lambda = 0.912, t = 10.381$).
3. Marketing management skills and processes ($\lambda = 0.816, t = 11.374$).
4. Developing creative marketing strategies ($\lambda = 0.964, t = 10.159$).
5. Thoroughness of marketing planning processes ($\lambda = 1.00$).

Marketing Implementation (CA = 0.857; CR = 0.931; AVE = 0.548)

1. Allocating marketing resources effectively ($\lambda = 0.941, t = 15.083$).
2. Organizing to deliver marketing programs effectively ($\lambda = 0.846, t = 11.069$).
3. Translating marketing strategies into action ($\lambda = 0.917, t = 12.130$).
4. Executing marketing strategies quickly ($\lambda = 1.00$).
5. Monitoring marketing performance ($\lambda = 0.890, t = 11.070$).

Strategic Flexibility (adopted from Zhou & Wu, 2007) (CA = 0.915; CR = 0.932; AVE = 0.702)

1. The flexible allocation of marketing resources (including advertising, promotion and distribution resources) to market a diverse line of products/service ($\lambda = 0.891, t = 15.963$).
2. The flexible allocation of production resources to manufacture a broad range of product/service variations ($\lambda = 1.00$).
3. The flexibility of product/service design (such as modular product design) to support a broad range of potential product applications ($\lambda = 0.868, t = 13.121$).
4. Redefining product/service strategies in terms of which products the firm intends to offer and which market segment it will target ($\lambda = 0.872, t = 10.963$).
5. Reconfiguring chains of resources the firm can use in developing, manufacturing, and delivering its intended products/service to targeted markets ($\lambda = 0.765, t = 9.021$).
6. Redeploying organizational resources effectively to support the firm's intended product/service strategies ($\lambda = 0.967, t = 14.124$).

Environmental Dynamism (adopted from Jaworski & Kohli, 1993).

Technology Turbulence (CA = 0.85, CR = 0.91, AVE = 0.67).

1. It was difficult to forecast technology developments in our industry ($\lambda = 0.84, t = 11.34$);
2. The technology environment was uncertain (1.00);
3. Technological development was predictable (reversed) ($\lambda = 0.75, t = 8.72$);
4. The technology environment was complex ($\lambda = 0.71, t = 11.28$).

Market Turbulence (CA = 0.88, CR = 0.90, AVE = 0.73).

1. Customer needs and preferences changed rapidly (1.00);
2. Product demands and preferences were uncertain ($\lambda = 0.85, t = 9.95$);
3. It was easy to predict change in Customer needs and preferences (reversed) ($\lambda = 0.77, t = 12.34$);
4. Market competitive conditions were unpredictable ($\lambda = 0.72, t = 10.85$).

Promotion Focus (marker variable, adopted from Haws et al., 2010, CA = 0.813).

1. When it comes to achieving things that are important to me, I find that I don't perform as well as I would ideally like to do (Reversed).
2. I feel like I have made progress toward being successful in my life.
3. When I see an opportunity for something I like, I get excited right away.
4. I frequently imagine how I will achieve my hopes and aspirations.
5. I see myself as someone who is primarily striving to reach my "ideal self"—to fulfill my hopes, wishes, and aspirations.

Transformational Leadership (adapted from Bass & Avolio, 1995)

Idealized Influence (CA = 0.907; CR = 0.915; AVE = 0.728).

1. Provide an appropriate behavioral model to follow ($\lambda = 0.834, t = 9.060$).
2. Facilitate the acceptance of group goals ($\lambda = 1.00$).
3. Are able to get others committed to his/her dream of the future ($\lambda = 0.909, t = 16.137$).
4. Encourage employees to be "team players." ($\lambda = 0.895, t = 10.259$).

Inspirational Motivation (CA = 0.831; CR = 0.905; AVE = 0.737)

1. Articulate a compelling vision of the future ($\lambda = 0.845, t = 15.480$).

- Express their confidence that we will achieve our goals ($\lambda = 0.891$, $t = 11.963$).
- Insist on only the best performance ($\lambda = 1.00$).
- Don not make it clear that they expect a lot from us all of the time (Reversed) ($\lambda = 0.909$, $t = 16.137$).

Intellectual Stimulation (CA = 0.801; CR = 0.875; AVE = 0.802)

- Seek differing perspectives when solving problems ($\lambda = 0.746$, $t = 6.808$).
- Challenge us to think about old problems in new ways ($\lambda = 1.00$).
- Have stimulated us to rethink the way we do things ($\lambda = 0.858$, $t = 8.047$).
- Have ideas that have challenged us to reexamine some of our basic assumptions about our work ($\lambda = 0.844$, $t = 8.481$).

Individualized Consideration (CA = 0.858; CR = 0.917; AVE = 0.716).

- Don't show respect for employee personal feelings (reversed) ($\lambda = 0.758$, $t = 5.747$).
- Treat us as an individual rather than just a member of a group ($\lambda = 1.00$).
- Spend time teaching and coaching us ($\lambda = 0.877$, $t = 14.980$).
- Behave in a manner that is thoughtful of employee personal needs ($\lambda = 0.805$, $t = 10.303$).

Employee Proactivity (adapted from Morrison & Phelps, 1999; Van Dyne & LePine, 1998; and Grant et al., 2011) (CA = 0.815; CR = 0.905; AVE = 0.837).

- Actively attack problems ($\lambda = 0.867$, $t = 11.318$).
- Search for a solution immediately whenever something goes wrong ($\lambda = 0.938$, $t = 13.573$).
- Whenever there is a chance to get actively involved, they take it ($\lambda = 0.986$, $t = 14.916$).
- Try to bring about improved procedures for the work ($\lambda = 1.00$).
- Use opportunities quickly in order to attain goals ($\lambda = 0.851$, $t = 15.421$).
- Speak up with new ideas or changes for work procedures or projects ($\lambda = 0.829$, $t = 15.095$).
- Are particularly good at realizing ideas ($\lambda = 0.902$, $t = 14.457$).
- Feel comfortable discussing work-related issues with their supervisors ($\lambda = 0.791$, $t = 8.415$).
- Feel that their supervisors openly accepts ideas for improving work procedure ($\lambda = 0.913$, $t = 10.205$).

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