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Effective sense-and-respond strategies: Mediating roles of exploratory and exploitative innovation

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ABSTRACT

Integrating the dynamic capabilities view of the firm with ambidexterity theory, this article proposes a sense-and-respond performance framework, in which technology- and market-sensing capabilities drive explorative and exploitative innovation activities, which then determine firm performance in an emerging market. With a sample of 150 Vietnamese firms, this study shows that exploratory and exploitative innovations are salient *modi operandi* through which the effects of technology-sensing and market-sensing capabilities affect firm performance. No performance-related empirical evidence supports the proposed complementarity between exploratory innovation and exploitative innovation. Instead, the findings imply that a firm's ability to compete in a complex market depends on its possession of adaptive capabilities.

1. Introduction

A single, permanent, competitive advantage likely is unattainable today (McGrath, 2013). Instead, if they hope to grow, firms must generate recurring competitive advantages that culminate in their sustained marketplace leadership. Such advantages depend on efficient systems of resource appropriation that can reconfigure and renew continually (Day, 2014), to enable the firm to capitalize on its unique, valuable capabilities (Wernerfelt, 1984). Marketing capabilities built on market-based assets and resources (Srivastava, Shervani, & Fahey, 1998) are among the most important drivers of firm performance (Takata, 2016); they also can transform into dynamic marketing capabilities. This latter category refers to resources that help shape the environment by enabling the firm to sense and respond to changes, which it does by recombining its resources (Day, 2011), exhibiting its innovativeness, and generating complex effects for firm performance (Menguc & Auh, 2006). The resulting adaptive capabilities support the firm's efforts to understand and adjust rapidly to dynamic markets (Day, 2014).

Firm innovativeness refers to a "firm's capacity to engage in innovation through the introduction of new processes, products, or ideas" (Hult, Hurley, & Knight, 2004, p. 429). It entails both exploitative and exploratory innovation. Exploitative innovation leverages current capabilities to develop products and services to serve existing customers better; explorative innovation identifies new customers through the use of disruptive or new technologies (He & Wong, 2004). Both types are important to firm performance, but "ambidextrous firms" that can integrate them, rather than trade off between the two activities, may achieve the best market performance (O'Reilly & Tushman, 2008). Firms that focus more on exploitative innovations often find themselves disrupted by new entrants; firms that only pursue explorative innovation may fail to leverage their existing capabilities. Therefore, combining the two activities may produce an optimal balance. The direct effects of marketing capabilities such as technology and market sensing on firm performance are relatively well understood (e.g., Narver, Slater, & MacLachlan, 2004; Slater & Narver, 1995), but the mediating roles of explorative and exploitative innovation and the impact that marketing capabilities may have on their efficacy have not been studied before.

Most research in this stream also refers to stable economies, usually observed in developed markets. However, increasing numbers of firms are seeking growth opportunities in emerging markets (Eyring, Johnson, & Nair, 2011). An emerging market is a product of an emerging economy, which refers to a country that is experiencing rapid economic development, with government policies that support economic liberalization and a free market system (Arnold & Quelch, 1998). Emerging markets are highly dynamic and heterogeneous (Hoskisson, Eden, Lau, & Wright, 2000), and they create distinct competitive landscapes that require different tools for successful navigation compared with those in developed economies. For example, emerging markets are

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characterized by turbulence and high levels of competitive intensity (Kim & Atuahene-Gima, 2010). The consumer populations are large, diverse, and heavily fragmented, due to idiosyncratic, localized consumption patterns (Dawar & Chattopadhyay, 2002). The intensity of emerging markets requires incumbents to develop innovations consistently while still offering high price-to-performance ratios (Agnihotri, 2015). In addition, enhanced competition forces firms to innovate in their customer service (Freeman, Edwards, & Schroder, 2006) and leverage their marketing assets to support customer relationships (e.g., Gupta, Malhotra, Czinkota, & Foroudi, 2016). The speed and innovation required to compete in emerging markets requires a shift from reactive "make-and-sell" strategies to adaptive "sense-and-respond" strategies that can continuously identify and act on emerging trends (Jayachandran, Hewett, & Kaufman, 2004). That is, competing firms must adjust their strategies to match emerging contexts (Subramaniam & Hewett, 2004) and create market offerings that reflect the alignment of their competences with local needs (Meyer & Tran, 2006). These conditions raise important questions related to the influence of marketing capabilities, and market- and technology-sensing capabilities in particular, on a company's explorative and exploitative innovations: how do explorative and exploitative innovations, linked to the extent of firm ambidexterity, affect firm performance? The present study extends prior research considering the performance of firms in emerging markets, which offer unplanned opportunities to the firm and also demand agility and adaptability.

Effective sense-and-respond strategies are critical for firms operating in global contexts, and their applications are essential components of business success (Drucker & Maciariello, 2008). However, little guidance for implementing such strategies is available; this area is underresearched, with very few scholars having examined technology- or market-sensing capabilities (e.g., Ngo & O'Cass, 2012). Fewer still explore integrated frameworks of complementary adaptive processes that might assist firms in anticipating and responding to rapid market shifts and nonlinear disruptions (Day, 2011, 2014). None has done so in the important context of emerging markets. Yet a better understanding of how to develop adaptive capabilities to balance exploration and exploitation is increasingly urgent, as managers struggle to compete (Srinivasan, Lilien, & Rangaswamy, 2002). Accordingly, we examine the extent to which technology- and market-sensing capabilities directly and indirectly, through their impact on the success of exploratory and exploitative innovations, contribute to firm performance in emerging markets. In addition, we seek insights into firm adaptive capabilities, in the form of a balance between explorative and exploitative innovation activities, and their impact on firm performance. As our major contribution, we propose an integrated framework that outlines the process by which firm capabilities affect firm performance. Leveraging the dynamic capabilities view of the firm and ambidexterity theory, we propose that developing effective sense-and-respond strategies requires specific configurations of sense-and-respond capabilities. After we establish the theoretical foundations for the research hypotheses, we provide a description of the data collection process in an emerging market. We then present the results, with a discussion of the findings and research limitations, and conclude with some further research directions.

2. Conceptual model and hypotheses

Innovation is a main driver of firm success (Sharma, Davcik, & Pillai, 2016). The success and survival of a firm depend on its ability to exploit its current capabilities while searching for new competencies (Raisch, Birkinshaw, Probst, & Tushman, 2009). Exploitative activities that leverage current capabilities yield incremental innovations; radical innovations or breakthroughs usually reflect the explorative activities of the firm. Although prior literature points to an inherent tension between exploitation and exploration, firms that are able to balance these two activities effectively are ambidextrous (Andriopoulos & Lewis, 2009). Organizational ambidexterity has received considerable attention, due to its importance to firm success. However, we do not have a clear sense of how firm marketing capabilities might help support both exploitative and explorative activities. Firm capabilities, and by extension marketing capabilities, are responsible for performance variance among firms. Marketing strategy literature further specifies that it is dynamic marketing capabilities that determine firm performance (Morgan, 2012; Vorhies, Morgan, & Autry, 2009). Day (2011, p. 187) suggests "two dimensions for thinking about capabilities: whether the orientation is from inside-out or the outside-in and whether the function is primarily to exploit existing resources or to explore new possibilities." Capabilities enable a firm to be adaptive (Teece, 2007). Advocates of the dynamic capabilities view of the firm suggest that to stay in synch with market changes, firms require dynamic capabilities that can create, extend, or modify the existing resource base (Teece, 2007; Teece, Pisano, & Shuen, 1997). Dynamic capabilities may be considered a category of resources that enable the activation of adaptive processes that can help firms balance valuable, rare, inimitable, and non-substitutable resources (Barney, 1991) that are exploitative in function. However, the dynamic capabilities view of the firm is traditionally myopic in its inside-out approach (Day, 2011, 2014). In the context of sense-and-respond competencies, new classes of adaptive capabilities need to be created that facilitate an outside-in orientation to encourage and support balanced exploration and exploitation efforts (Day, 2011).

In an operational setting characterized by rapid technological change and complex market pressures, developing technology-sensing and market-sensing capabilities is an initial step in narrowing the gap between environmental changes and organizational capacity. A firm requires technology-sensing capabilities to identify technological opportunities proactively, then must link them with effective market-sensing capabilities to generate market insights about customers, competitors, and channel members (Morgan, Slotegraaf, & Vorhies, 2009; Srinivasan et al., 2002). This study advances prior theoretical contributions by examining the extent to which technology-sensing and market-sensing capabilities align with explorative and exploitative innovation to enhance firm performance. In line with extant literature, the framework leverages the interface of ambidexterity and firm capabilities to explicate the mediating role of explorative and exploitative activities between firm marketing capabilities and firm performance (Fig. 1).

Emerging economies are characterized by relatively unstable political systems, legal frameworks, and market structures, which elevate the strategic challenges for firms (Agnihotri, 2015). Thus Zhou and Li (2010, p. 227) suggest that "firms armed with high adaptive capability effectively can cope with environmental changes and achieve superior performance." That is, an organization's ability to acquire knowledge regarding new technology developments may be developed either internally or externally (Srinivasan et al., 2002). Technology sensing allows firms to be more technologically opportunistic and navigate the market with greater speed than competitors (Sarkees, 2011). The resulting advantages include heightened adaptability and a capacity to create valuable new technical solutions and differentiated products (Agnihotri, 2015). In this view, such a capability constitutes a unique

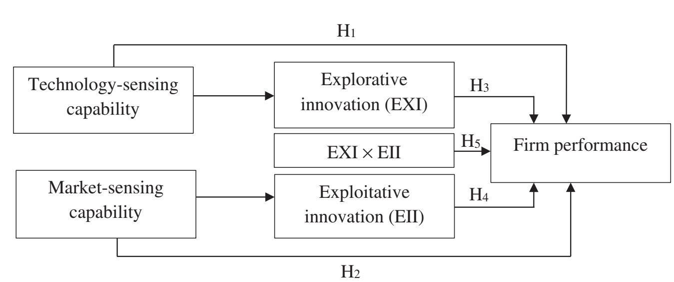

Fig. 1. Proposed conceptual framework.