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## The interplay of leadership, absorptive capacity, and organizational learning culture in open innovation: Testing a moderated mediation model

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## ABSTRACT

Researchers have used several constructs to explain the success and failure of organizations' open innovation initiatives. Building upon the resource-based view of the firm, we develop a model to explain how leadership interacts with absorptive capacity and organizational learning culture to influence open innovation outcomes. The model is tested empirically using data sourced from managers working in diverse sectors in India. Results reveal that empowering leadership leads to enhanced open innovation outcomes through the intervention of organizational learning culture. Results, however, do not confirm a significant impact of the interaction of organizational culture and absorptive capacity on open innovation. A discussion of these findings along with implications for theory and practice is presented.

### 1. Introduction

Open innovation continues to be a favorite research area in the strategic management domain (Elmquist et al., 2009). While open innovation research has focused on identifying the factors that foster or impede open innovation (Naqshbandi et al., 2015), several aspects of open innovation management still remain under-studied (West and Bogers, 2017). Dahlander and Gann (2010) pointed out that as the emergence of open innovation models challenges firms to move past their traditional innovation paradigms, institutions would need to adopt more contemporary approaches to innovation management. Hence, shifting to modern modes of innovation invites firms to a corresponding shift in their leadership models from traditional to the contemporary (Robbins and O'Gorman, 2015).

Contingency leadership theory posits that the leadership style adopted is contingent on a firm's circumstances and set performance targets (Graeff, 1983; Sims et al., 2009). In this regard, the traditional leadership styles and their association with innovation has been the focus of several studies (Jung et al., 2003). Certain leadership styles, such as transactional leadership, directive leadership, and aversive leadership have been found to act as barriers to innovation (Avolio et al., 1999; Podsakoff et al., 2006; Sims et al., 2009). This is because these leadership styles are characterized by control, compliance, low flexibility and low innovation among employees (Sims et al., 2009), hence creating impetus for the identification of an appropriate leadership style that can foster open innovation success (Von Krogh and Von Hippel, 2003).

As open innovation deals with the inflows (inbound open innovation) and the outflows (outbound open innovation) of knowledge that involve knowledge exploration and exploitation (Xia and Roper, 2016), it requires human capital that is capable of selecting, acquiring, transforming and utilizing knowledge for innovative purposes (Tirabeni et al., 2015). Hence, open innovation requires leaders who can effectively manage human capital (Lee and Cole, 2003; Lerner and Tirole, 2001). This is possible when leaders encourage followers to participate in knowledge-based activities (Whelan et al., 2011). Additionally, in order to promote open innovation, leaders are required to trust and encourage followers to participate in innovative activities (Fleming and Waguespack, 2005). A leadership style characterized by encouragement and trust in followers to participate in innovative activities is termed as empowering leadership (Arnold et al., 2000; Sims et al., 2009; Zhang and Bartol, 2010). West and Bogers (2017) contend that the open innovation activity of an organization is interpreted, decided, and implemented by its employees. In this context, empowering leadership fosters creativity and flexibility among followers, resulting in "very high innovation" through followers' development and self-confidence (Sims et al., 2009). As empowerment is one of the crucial factors for achieving innovative outcomes (Sok and O'Casey, 2015), the first objective of this study is to examine the role of empowering leadership in open innovation success. Existing studies support the view that empowering leadership promotes innovation, however, an extant review of the literature indicates that not much is known about the role of leadership in promoting open innovation. This is particularly important since the role of leadership in open innovation is expected to differ from

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its role in the closed innovation paradigm. The leadership in the open innovation paradigm is expected to not only use the knowledge of people working in their company but also of those working in other companies. Similarly, in the open innovation model, the leadership must recognize the value of external R&D, identify best external ideas and research and control profits by creating contracts with other external entities.

In addition to examining the direct relationship between empowering leadership and open innovation, this study also proposes a mediating mechanism through which empowering leadership influences open innovation. Extant literature has highlighted mediating variables that intervene the relationship of leadership and innovation, however, the mediating mechanism of how empowering leadership will influence open innovation is yet to be explored. Past studies argue that leaders encourage followers to build and maintain a sense of community (Fleming and Waguespack, 2005), which helps them in developing knowledge-based networks where members can exchange knowledge with each other (Whelan et al. (2011). Recent research (e.g. Kratzer et al., 2017) has shown that innovation takes place in an institutional environment characterized by rules and regulations that might support or impede innovation. Since the open innovation paradigm relies on external relationships for innovation, an appropriate internal environment is a must before building relationships with external partners. Building such an internal environment can be a direct result of a leader's action. Against this backdrop, empowering leaders are known to create a culture in the firm where knowledge exploration and exploitation is encouraged (Jönsson et al., 2015). Such a culture where members have shared norms of exchanging knowledge and ideas with each other, one that promotes knowledge exploration and exploitation, is termed learning culture (Bierly and Daly, 2002; Lee and Choi, 2003; Lee and Cole, 2003; Yang, 2007b). In view of this, the second objective of this paper is to examine the mediating role of organizational learning culture in empowering leadership-open innovation relationship.

Furthermore, while a learning organizational culture promotes knowledge inflows and outflows (Lee and Choi, 2003), a firm's open innovation performance relies on its ability to explore and exploit knowledge (Naqshbandi, 2016), also known as absorptive capacity (Zahra and George, 2002). Past literature suggests that absorptive capacity is often a precondition for open innovation success (Kokshagina et al., 2017) and that firms are likely to develop a better understanding of their knowledge resources and commercialize them in the presence of higher levels of absorptive capacity (Carayannis, 2012). As a result, this study argues that a firm with a learning organizational culture is in a better position to enhance its open innovation outcomes when it has the capability to explore and exploit the relevant knowledge and resources (i.e. it possesses absorptive capacity). Firms with a suitable open innovation culture that are incapable of sourcing, acquiring, transforming and utilizing the knowledge may be unable to achieve success in open innovation. Hence, the third objective of this study is to examine the moderating role of absorptive capacity in the relationship between organizational learning culture and open innovation.

The rest of the papers unfolds as follows: the second section presents background and hypothesis development; the third section presents the methodology used. This section is followed by hypothesis testing and a discussion of the findings. The last section highlights the theoretical and practical contributions of the paper along with limitations and future research directions.

## 2. Background and hypothesis development

### 2.1. Empowering leadership and inbound open innovation

Inbound open innovation involves firms to source, evaluate, acquire and integrate knowledge into their internal systems and processes (Gassmann and Enkel, 2004). This process requires competent and proficient leaders with appropriate expertise to identify and determine

which potential knowledge sources are to be acquired and experimented with in order to effectively meet the firm's innovative strategies (Dahlander and Gann, 2010). Hence, firms require experts who are knowledgeable, motivated, confident and authorized to generate new knowledge and make decisions regarding its acquisition and use.

Past studies advocate that leaders play a critical role in shaping their subordinates' motivation to accomplish set tasks (Ribiere and Sitar, 2003). This also applies to inbound open innovation whereby leaders are expected to support their followers to create and acquire new ideas and integrate them with the firm's internal systems and processes. Of the various leadership styles, empowering leadership is known to instill confidence and trust in followers, encourage them to apply participative decision making and motivate them to perform better (Arnold et al., 2000; Zhang and Bartol, 2010). Empowering leadership is characterized by features that stimulate followers to explore innovative ideas, including leading by example, participative decision making, coaching, informing and showing concern for the members (Arnold et al., 2000). Such a leadership develops a vision and clarifies the contributions that followers are expected to make to align organizational efforts with strategic goals (Conger and Kanungo, 1988). This, in turn, instills confidence in followers and engages them in knowledge-based activities that contribute to accomplishing organizational goals. Moreover, participative decision making by leaders allows followers to share their ideas and collaborate with each other, which in turn promotes effective knowledge flows (Singh, 2008). Additionally, leaders encourage the pursuit of knowledge activities by providing recognition and rewards to knowledge workers (Rosen et al., 2007). Hence, by empowering the followers, leaders promote the creation and internalization of knowledge (Burke et al., 2006; Nonaka and Takeuchi, 1995; Yang, 2007b), which consequently promotes innovation (Gagné, 2009). In this way, leaders empower the followers to develop and acquire new ideas by exemplifying, by motivating through rewards and incentives, by clarifying the role expectations and by allowing the followers to make decisions on their own (Nonaka and Takeuchi, 1995; Rosen et al., 2007; Singh, 2008; Yang, 2007a).

Hence empowering leadership fosters a trusting environment. Such an environment enables followers from various functional departments to communicate effectively to understand market trends, evaluate the external market opportunities constructively and collaboratively, and appraise the expected benefits likely to be brought about by acquiring external knowledge (Bligh, 2017). A trusting environment also extends the followers' ability to incorporate external knowledge and integrate it successfully into organizational processes (Burke et al., 2006). Empowerment also means that the organizational culture allows its employees to take risks (Bligh, 2017), and has tolerance for failures (Manso, 2017); an important requisite for innovation. Several studies have shown that empowerment and trust positively affect innovation capability on both the individual and firm levels (Çakar and Ertürk, 2010; Ertürk, 2012). Khazanchi et al. (2007) stated that innovation requires flexibility, empowerment, control and efficiency, all at the same time. The empowering leadership style fosters an enabling culture together with appropriate structures and systems which results in favorable organizational outcomes (Ugwu et al., 2014). Based on the above discussion, it is inferred that empowering leaders facilitate the acquisition and creation of knowledge that promotes inbound open innovation in firms. This leads to the following hypothesis:

**H1.** Empowering leadership is positively associated with inbound open innovation.

### 2.2. Empowering leadership and outbound open innovation

Outbound open innovation refers to the exploitation of knowledge which allows firms to diffuse, utilize and transform knowledge for commercialization purposes (Chesbrough, 2003). To do this effectively, firms need to pay attention to the management and utilization modes of

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