

# Offshoring and Organizational Innovation: The Moderating Roles of Absorptive Capacity and Inter-Functional Integration

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## Abstract

The paper extends previous research on the relationship between offshoring and organizational innovation. Building on prior research that suggested a curvilinear relationship between offshoring and innovation, the paper aims to increase our understanding about the relationship by introducing two moderators. It proposes that when offshoring, organizations with higher absorptive capacity are more likely to innovate than those with lower levels. Additionally, it suggests that organizations with higher levels of inter-functional integration are expected to benefit more from offshoring than those with lower levels. The paper concludes with discussions on managerial implications as well as areas for future research.

**Keywords:** absorptive capacity, functional integration, innovation, offshoring

## 1. Introduction

In competitive markets, organizations need to outperform their rivals to survive and grow. Growth and differentiation are results of multiple organizational factors and strategies that organizations pursue to achieve the ultimate goal of having a competitive advantage (Porter, 1985). For organizations, innovation is an important source of differentiation (Nelson & Winter, 1982). Offshoring, defined as the assignment of business functions to locations outside of the firm's national borders in support of domestic business operations (Kenney, Massini, & Murtha, 2009; Lewin, Massini, & Peeters, 2009), has been related to innovation in the literature. Although ample research has been conducted on the relationship between offshoring and innovation, the consensus over the consequences of offshoring is still lacking (Doh, 2005; Farrel, 2005). It should be noted that in this paper, the focus is on offshoring of primary functions only. In particular, I focus on primary functions that are related to generating new knowledge (i.e., R&D, engineering, and production). Focusing on primary functions is more appropriate, since secondary functions (e.g., accounting and human resource) are not directly associated with the knowledge underlying innovation (Mihalache, Jansen, Van Den Bosch, & Volberda, 2012).

Two opposing points of view dominate the literature on the consequences of offshoring as it relates to innovation (Mihalache et al., 2012). Some studies suggest a positive relationship, in which offshoring primary functions is found to increase organizations' innovativeness. On the other hand, other studies conclude that, with the increase of administrative costs and the difficulty of integrating offshored and home-based units, offshoring primary functions is negatively related to innovation. Thus, in an attempt to increase the understanding of the relationship between offshoring and innovation, Mihalache et al. (2012) conducted a study on 4,000 Dutch firms and found support for their hypothesis that the relationship between offshoring and innovation is curvilinear. They argue that too much offshoring will make an organization's expertise stagnant, as it does not contribute much in product development. The authors also suggest that too much offshoring brings the difficulty of integrating the different units. They further introduce some top-management-team (TMT) attributes as moderators in the relationship between offshoring and innovation.

A relationship, especially one in which competing arguments are possible, can be clarified by contextualizing it, mainly by introducing moderating variables. While Mihalache et al. (2012) examine the impact of some moderators, their study left some unanswered questions, especially those related to the role of knowledge transfer in the offshoring-innovation relationship. This paper builds on Mihalache et al. (2012) and contributes to the literatures of offshoring, knowledge transfer, and innovation by introducing knowledge transfer as a mediator between offshoring and innovation, and by discussing factors that affect the mechanism of knowledge transfer between offshored and home-based units. The literature shows that acquiring knowledge from a foreign country

is one of the goals of offshoring (e.g., Chung & Yeaple, 2008). The acquired knowledge from offshored units then needs to be transferred and shared among organizational units to stimulate their ability to generate new knowledge and eventually contribute to their innovativeness (Kogut & Zander, 1992; Tsai & Ghoshal, 1998). In addition to the mediating role of knowledge transfer, this paper proposes two important factors that moderate the offshoring-innovation relationship.

First, I propose that absorptive capacity (Cohen & Levinthal, 1990) moderates the relationship between offshoring and innovation. Specifically, I argue that organizations with higher absorptive capacity are better positioned to capitalize on the knowledge available in foreign countries. Second, because functional units are geographically dispersed, the role of integration becomes vital between offshored and home-based units. Inter-functional integration facilitates knowledge transfer and information flow between offshored and home-based units to serve the overall objective of organizational innovation (Teece, 1996). While offshoring at a moderate level might generally have a positive impact on organizational innovativeness, absorptive capacity and inter-functional integration provide a better understanding of when and what organizations are more likely to innovate as a result of offshoring innovation-related functional units.

The remainder of the paper is structured as follows. Next, I provide a brief theoretical background about offshoring, knowledge transfer, and their influence on innovation. Then, I present several arguments that explain the role of absorptive capacity and inter-functional integration in the relationship between offshoring and innovation.

Finally, I conclude with a discussion of the paper's core idea, along with managerial implications, limitations, and future research.

## **2. Theoretical Background and Propositions Development**

### *2.1 Offshoring, Knowledge Transfer and Innovation*

The unit of analysis in this paper is at the firm-level, so the term "innovation" in this paper refers to organizational innovation. The literature provides different definitions of innovation, but almost every definition of innovation includes at its core the concept of "newness" (Gupta, Tesluk, & Taylor, 2007). For example, Tushman and Moore (1982) defined innovation as new products and processes, while Van de Ven (1986) defined it as a new idea, which may be a recombination of old ideas, a scheme that challenges the present order, a formula, or a unique approach. Others have adopted the "Schumpeterian" way in viewing innovation as emerging from the active combination of people, knowledge, and resources (Dougherty, 1992; Hargadon & Sutton, 1997; Kogut & Zander, 1992). It is important to distinguish between the various types of organizational innovation to identify their determinants (Downs & Mohr, 1976). Therefore, because the interest in this paper is on technical innovation, I follow Damanpour (1991) and define organizational innovation as new products, services, or processes developed by an organization to gain a competitive advantage in its industry.

Offshoring has been much discussed in the literature as an antecedent of innovation (e.g. Pisani & Ricart, 2018; Rosenbusch et al, 2019; Steinberg, Procher, Urbig, 2017), but there has been no consensus on the consequences of offshoring from an organizational innovation perspective. First, some empirical studies suggest that offshoring is positively related to innovation (Li, Zhou, & Zajac, 2009; Nieto & Rodriguez, 2011; Rosenbusch et al, 2019). Proponents of this point of view argue that offshoring allows firms to enhance their innovativeness by leveraging location-specific knowledge and competencies of foreign countries (Mihalache et al., 2012; Steinberg et al, 2017). It has been argued that knowledge and technology differ across locations since they depend on location-specific factors (Cantwell, 1989). Consequently, acquiring new knowledge that is not available in an organization's home country is a primary offshoring motive (Quinn, 2000; Chung & Yeaple, 2008). Thus, organizations can increase the breadth of their knowledge by combining their own knowledge with that of other countries. Dewar and Dutton (1986) assert that diverse sources of knowledge are positively related to innovation. Also, offshoring gives organizations a cost advantage provided by other cheap-labor countries (Lewin & Peeters, 2006). This enables organizations to perform knowledge creation activities at lower costs, compared to their competitors. For example, many US organizations have shifted their productions to Mexico or China for cost-related purposes, while keeping other functions that require high skills at home. The cost advantage is specifically helpful in producing frugal innovation (Zeschky, Widenmayer, Gassmann, 2011).

Second, a competing perspective argues exactly the opposite. According to this perspective, offshoring actually hampers an organization's innovativeness. For instance, Markides and Berg (1988) argue that administrative costs might eventually offset the advantages of offshoring. Such costs include costs of logistics, costs to avoid communication barriers, and costs to avoid quality problems, to name a few. In addition, research suggests that there are high risks associated with offshoring as governmental regulations in foreign countries are hardly stable

and thus the advantages of offshoring are not guaranteed to last. Changes in the legal systems or labors' rights of the host country, for example, could end an organization's offshoring plans before it is completed. Further, organizations could eventually lose their competitive advantage by transferring their know-how to firms in foreign countries. For example, Dell lost tremendously by giving up its expertise to ASUSTeK, a Taiwan-based electronic company that used to manufacture for Dell (Christensen, Grossman, & Hwang, 2009). Also, when multiple functions are performed in different countries, the process of knowledge transfer can be burdened by geographical, cultural, and institutional barriers (Kotabe, 1990; Lane & Lubatkin, 1998).

Contributing to the ongoing debate, Mihalache et al. (2012) suggest that the

relationship between offshoring and innovation is curvilinear, arguing that offshoring is beneficial to an extent, and after that, it hampers innovation due to factors related to coordinating all the offshored functions with the home-based functions along with other administrative and financial hurdles. The literature shows that organizations tend to offshore part of their primary functions mainly for two reasons. First, they look for cost advantages provided by cheap-labor countries (Lewin & Peeters, 2006). Second, they seek access to specific knowledge not available in their home country (Cantwell, 1994; Chung & Yeaple, 2008; Quinn, 2000). Thus, consistent with Mihalache et al (2012), I propose the following:

*Proposition 1: There is an inverted U-shaped relationship between offshoring and organizational innovation.*

This suggests that organizations are more likely to benefit from offshoring when they possess elements that enable them to acquire, transfer the knowledge and integrate it with home-based units. The literature shows that absorptive capacity and inter-functional integration are significant attributes of knowledge acquisition and transfer (Cohen & Levinthal, 1990; Kogut & Zander, 1992). I discuss below the influence of both factors in the offshoring-innovation relationship.

### *2.2 Absorptive Capacity*

The extent to which an organization benefits from the knowledge it is exposed to in foreign countries depends on its ability to exploit and use it. Cohen and Levinthal (1990) introduced the term "absorptive capacity" to describe an organization's ability to recognize the value of new information, assimilate it, and apply it to commercial ends. They argue that the ability to exploit external knowledge is a critical component of innovation capabilities. They emphasize that an organization's absorptive capacity is a byproduct of the level of existing related knowledge and that it can be increased by investing in R&D. Thus, because acquiring new knowledge is a primary objective of offshoring, organizations with higher absorptive capacity are more suited to capitalize on newly acquired knowledge and to generate new ideas or products. That is, organizations with existing knowledge related to the desired knowledge in the foreign country are more likely to innovate as a result of offshoring. Additionally, as a major factor in organizational learning (Cohen & Levinthal, 1990; Lane & Lubatkin, 1998), absorptive capacity is critical for organizations as they acquire new knowledge. The literature shows that high levels of absorptive capacity help organizations break the barrier of causal ambiguity associated with new knowledge (Inkpen, 2008). Therefore, I argue that without an acceptable level of absorptive capacity, organizations are less likely to benefit from knowledge acquired from offshoring, and hence, less likely to innovate. This is further supported by Szulanski (1996), which found that lack of absorptive capacity was a major barrier to knowledge transfer and learning. Therefore:

*Proposition 2: Absorptive capacity moderates the inverted U-shaped relationship between offshoring primary functions and organizational innovation in such a way that the positive effect of offshoring on innovation for an organization with higher levels of absorptive capacity is stronger than an organization with lower levels of absorptive capacity.*

### *2.3 Inter-functional Integration*

Inter-functional integration, also known as "intra-organizational integration" or "internal integration," refers to the coordination, collaboration and communication among functional areas within the organization (Basnet, 2013; Griffin & Hauser, 1996; Kahn, 1996; Teece, 1996). Prior research in the literature of organization theory, strategic management, and supply chain management has linked inter-functional integration to innovation and high performance (e.g., Millson, 2015; Pisano & Teece, 1988; Kahn, 1996; Teece, 1996). Kahn (1996) argues that new product development is a result of successful interaction and collaboration among functional units. Moreover, Teece (1996) suggests that integration, by facilitating the flow of information among functional units, helps organizations' innovativeness. The necessity of inter-functional integration becomes even more important when an organization offshore some of its primary functions, due to geographical distances between offshored and home-based functional units.

The coordination among functional units in multinational firms is one of the most critical issues that, if not managed effectively, could negatively affect firms' innovativeness (Kotabe, 1990). Farrell, Laboissiere and Rosenfeld (2006) infer that the process necessary for coordinating globally dispersed functional units is a major managerial challenge. Moreover, Mihalache et al. (2012) argue that too much offshoring can dampen firm innovativeness since the geographical disaggregation of functions can make the integration of knowledge more difficult.

Based on the aforementioned arguments, I propose that inter-functional integration moderates the relationship between offshoring and innovation. That is, in a moderate level of offshoring, the higher the inter-functional integration in an organization, the more innovative the organization is.

*Proposition 3: Inter-functional integration moderates the inverted U-shaped relationship between offshoring primary functions and organizational innovation in such a way that the positive effect of offshoring on innovation for an organization with higher levels of inter-functional integration is stronger than an organization with lower levels of inter-functional integration.*

Figure 1 below shows the proposed relationship between offshoring and organizational innovation, and the moderating roles of absorptive capacity and inter-functional integration.

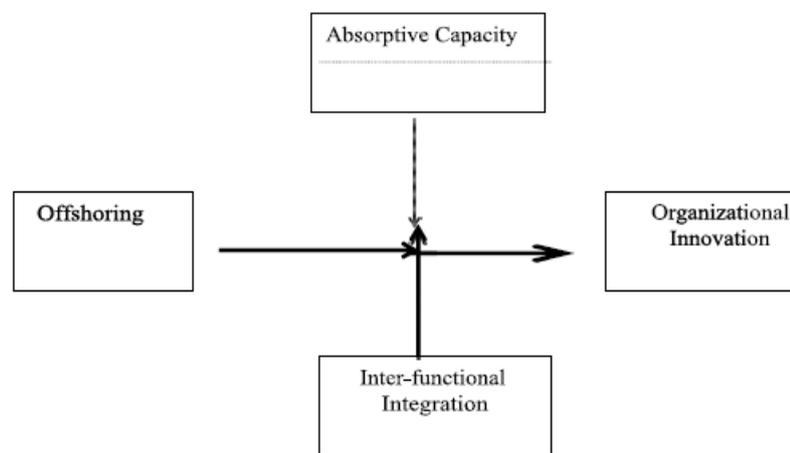


Figure 1. The Mediating Role of knowledge transfer and The Moderating Roles Of Absorptive Capacity and Inter-functional Integration In The Relationship Between Offshoring and Innovation

### 3. Discussion and Conclusion

Despite the rich literature of the offshoring-innovation relationship, the consequences of offshoring have not been agreed upon. Some studies show a positive relationship, in which offshoring primary functions is found to increase organizations' innovativeness. On the other hand, other studies conclude that, with the increase of administrative costs and the difficulty of integrating offshored and home-based units, offshoring primary functions is negatively related to innovation. Building on a study by Mihalache et al. (2012), in which they suggest a curvilinear relationship between offshoring and innovation, this paper contributes to the literatures of offshoring, and innovation by discussing the moderating roles of absorptive capacity and inter-functional integration. Thus, the paper gives an explanation of what attributes could help organizations to fully benefit from relocating primary functions to foreign countries as part of their innovation plans.

In addition to the theoretical contributions, the paper provides some managerial implications. Generally, this paper supports the argument that offshoring primary functions can help organizational innovativeness when offshoring is limited to a certain extent (Mihalache et al., 2012). The main managerial implication of this paper, however, is that it explains how organizations can better benefit from relocating primary functions. One of the primary objectives of offshoring is to acquire new knowledge from a foreign country (Steinberg et al, 2017). Therefore, managers should invest in R&D to increase their absorptive capacity, as the latter enhances organizations' abilities to assimilate new knowledge gathered from foreign countries, and to eventually transfer it

to commercial ends. Further, it suggests that organizations should implement an effective integration system among its functional units. Additionally, because offshoring results in functional units operating from different countries, inter-functional integration becomes necessary for organizations to coordinate their innovative activities. Inter-integration can be improved by an organizational culture that supports collaboration and communication among functional units, as well as by investing in technology that assists the coordination among them (Inkpen, 2008). While this paper deepens our understanding of the offshoring-innovation relationship, there are other areas that future research can address to further contribute to the literature on offshoring and innovation.

First, future research should empirically examine the propositions of this paper to support or refute its arguments. While the extant paper presents arguments that support its main propositions, empirical examination should validate the points raised in this paper. Second, although recent research has examined different moderators, such as institutional factors (Pisani & Ricart, 2018; Rosenbusch et al, 2019), future research might be directed to discuss the impact of other organizational or environmental factors that could also affect the innovation consequences of offshoring. The literature shows several environmental factors that might have an influence on the offshoring-innovation relationship. For example, when offshoring, organizations face the high risk of instability in governmental regulations in foreign countries (Markides & Berg, 1988). Moreover, organizations must deal with other geographical, cultural, economical, and institutional barriers that might affect their offshoring strategies (Lane & Lubatkin, 1998; Markides & Berg, 1988). Therefore, future research studying the moderating role of such environmental factors in the offshoring-innovation relationship would shed some light on this relatively ambiguous relationship.

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