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Organizational innovation, technological innovation, and export performance: The effects of innovation radicalness and extensiveness

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ABSTRACT

This study focuses on the relevance of different types of innovation for firms' export performance. Despite ample research on the innovation–performance relationship, previous studies have mainly focused on technological innovations, leaving the effects of organizational innovations relatively unexplored. Hypotheses on the relationship between organizational and technological innovations and firm export performance are tested by structural equation modelling using data from 218 Swedish export ventures. The results indicate that organizational innovation enhances export performance both directly and indirectly by sustaining technological innovation. Moreover, by fine-graining our analysis of the mediating role of technological innovation, according to its radicalness and extensiveness, for organizational innovation, we show how the latter enhances both the radicalness and extensiveness of technological innovation although, notably, only extensiveness is actually beneficial for export performance. This study helps alleviate the scarcity of research examining the links among different types of innovation in relation to export performance and contributes to international business and marketing literature by generating new evidence regarding the mechanisms through which organizational and technological innovations may improve export performance.

1. Introduction

Scholars have acknowledged the significance of exporting in the global economy (Dhanaraj and Beamish, 2003; Singh, 2009). Exporting, one of the most common means of entering international markets, enables firms to employ non-utilized operating capacity, increase production efficiency and, in turn, profits, and to ensure survival in a highly globalized marketplace (Guan and Ma, 2003; Katsikeas, Piercy, & Ioannidis, 1996; Matanda and Freeman, 2009; Sousa, Martínez-López, & Coelho, 2008). Cavusgil and Zou (1994, p. 4) define export performance as "the extent to which a firm's objectives . . . with respect to exporting a product into a foreign market, are achieved through planning and execution of export marketing strategy." A firm uses export marketing strategies to manage the interplay of internal and external forces to meet the objectives of the export venture (Leonidou, Katsikeas, & Samiee, 2002). Accordingly, the determinants of export performance can be classified into internal factors (e.g., the characteristics of the firm and its management, and the export marketing strategy) and external factors (e.g., the characteristics of foreign and domestic markets) (Brouthers, Nakos, Hadjimarcou, & Brouthers, 2009; Katsikeas, Leonidou, & Morgan, 2000; Sousa et al., 2008).

Changes in the environment generally trigger changes in the firm's strategies. Contingency factors are variables exogenous to the focal firm that represent situational characteristics that the firm is not able to control or manipulate. Response variables represent the organizational or managerial actions in response to contingency factors. Therefore, firm performance depends on the appropriate matching of response variables to the given contingency factors (Lawrence and Lorsch, 1967; Robertson and Chetty, 2000). In this context, the fit between internal and external factors is expected to enhance firm export performance (Leonidou et al., 2002; Zeithaml and Zeithaml, 1988). According to Sousa et al. (2014), understanding the determinants of export performance is a crucial area of research not only for academics but also for practitioners and policymakers: "successful export operations are crucial to both the firm and national prosperity" (p. 501). Pla-Barber and Alegre (2007) argue that knowledge of the internal determinants of export performance, specifically innovation, is contradictory and warrants further research. This research focuses

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on the firm's innovation strategy employed in its export strategy, as a response factor to the contingencies presented in a foreign market environment (Damanpour, Walker, & Avellaneda, 2009; Robertson and Chetty, 2000; Sousa et al., 2008).

Despite much research on the innovation–performance relationship, previous research has mainly focused on one type of innovation, i.e., technological innovation (Damanpour & Aravind, 2011). However, Damanpour and Aravind (2011) argue that the adoption of a single type of innovation or even a set of innovations of "only one type" may not enable firms to fully realize the positive effects of innovation on performance. Aiming to better understand how firms cope with changes and uncertainties in the international environment to achieve superior export performance, we suggest the necessity to further examine the effects of introducing different types of innovations. Specifically, we argue that when studying the innovation–performance relationship it is important to consider both technological and organizational innovations together.

Previous research argues that organizational innovation can act as the prerequisite for and facilitator of the efficient use of technological innovation (Armbruster, Bikfalvi, Kinkel, & Lay, 2008; Damanpour and Evan, 1984). Damanpour et al.(2009, p. 651) state that "changes in the technical (operating) system of the organization should be coupled with changes in the social (administrative) system in order to optimize organizational outcome." However, the relationships among different types of innovation have rarely been investigated (Camisón and Villar-López, 2014; Damanpour and Aravind, 2011; Gunday, Ulusoy, Kilic, & Alpkan, 2011; Sanidas, 2005). Thus, drawing upon the literature on socio-technical system theory (Damanpour and Evan, 1984; Damanpour et al., 2009), the present study seeks to develop and empirically test a framework that links different types of innovation and export performance. Specifically, we examine the relationship between organizational and technological innovations and the direct and indirect effects of those innovations on export performance.

Moreover, to further enhance our understanding of this complex relationship we put forward a second important distinction in terms of innovation dimensions, i.e., the degree of innovation radicalness and the extensiveness of innovations. Both these dimensions are researched in the area of technological innovation, and they contribute to explaining performance. Innovation radicalness refers to the degree to which innovations depart from existing structural and technological principles (Damanpour and Aravind, 2011), while innovation extensiveness[1] refers to the number of innovations that a firm adopts within a given period (Damanpour, 1991). According to Reinders, Frambach, & Schoormans (2010, p. 1127), the adoption of radical innovations is "crucial for firms to enhance their competitive position and to safeguard their long-term success." However, previous research has revealed that innovation extensiveness also enhances firm performance (Damanpour and Gopalakrishnan, 1998; Gopalakrishnan, 2000).

Thus, to further develop our understanding of the relationship between organizational and technological innovation we intend to specifically examine the influence that organizational innovation has on the radicalness and extensiveness of adopted technological innovations, and whether these two distinct dimensions may influence export performance in different ways.

This study contributes to the international business and innovation literature by showing the different effects of both technological and organizational innovation on export performance. This knowledge is important because past research offers very little empirical evidence of the relationship between organizational innovation and firm performance (Mol and Birkinshaw, 2009). Moreover, this study shows also how organizational innovation influences indirectly export performance through technological innovation. This result supports previous arguments that the adoption of organizational innovation creates an appropriate environment and facilitates the adoption of technological innovation, which, in turn, enhances firm performance (Damanpour and Evan, 1984; Damanpour, Szabat, & Evan, 1989). Finally, to the best of our knowledge, this is the first study that simultaneously investigates the differential effects of innovation radicalness and extensiveness on export performance. Our study sheds new light on these two dimensions of innovation by determining which is more subject to organizational innovation influence and which is more important for export performance.

2. Theoretical background and hypothesis development

Innovation is a multifaceted construct that encompasses the generation, development, and implementation of an idea or behavior that is new to the adopting organization (Damanpour, 1996). During the innovation process, ideas are transformed into new products or services, new process technologies, new organizational structures, or new managerial approaches (Damanpour & Aravind, 2011; Damanpour & Evan, 1984).

A variety of innovation typologies have been proposed (Damanpour et al., 2009). The technological–organizational typology[2] is popular among management researchers and refers to a general distinction between the firm's technological and administrative systems, in which the former mainly produces changes in the firm's operating system and the latter mainly influences its management systems (Damanpour and Aravind, 2011). According to Damanpour and Evan (1984, p. 394), technological innovation refers to "the implementation of an idea for a new product or a new service or the introduction of new elements in an organization's production process or service operation."

Unlike technological innovation, the concept of organizational innovation is described by a variety of definitions. For instance, Birkinshaw et al. (2008, p. 829) define organizational innovation as "the generation and implementation of a management practice, process, structure, or technique that is new to the state of the art and is intended to further organizational goals." Damanpour and Evan (1984) talk instead about "administrative innovation" as innovation that occurs in the social system of an organization (e.g., new rules, roles, procedures, and structures); while Hamel (2006, p. 3) refers to the term "management innovation" as "a marked departure from traditional management principles, processes, and practices or a departure from customary organizational forms that significantly alters the way the work of management is performed." In this research, we have adopted the definition proposed by Damanpour and Aravind (2011, pp. 429–432) in which organizational innovation refers to "new approaches in knowledge for performing the work of management and new processes that produce changes in the organization's strategy, structure, administrative procedures, and systems," which should benefit the organization's teamwork, information sharing, coordination, collaboration, learning and innovativeness (Gunday et al., 2011).

Another established important distinction in terms of innovation typologies is the degree of innovation radicalness. Innovation

[1] Innovation extensiveness has also been referred to as innovation rate and magnitude (Damanpour and Evan, 1984; Gopalakrishnan, 2000).

[2] Technological innovation is also called 'technical' innovation. Organizational innovation has been referred to as administrative, managerial, management and non-technological innovation (Damanpour & Aravind, 2011; Damanpour & Evan, 1984; O'Cass & Weerawardena, 2009).