



Management innovation and firm performance: An integration of research findings



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ABSTRACT

While the effect of technological innovations (TI) on firm performance is established, the performance contributions of management innovations (MI) are as yet undetermined. Theoretical discourse on the motivation for the adoption of MIs questions their performance outcome, and an integration of empirical research of the MI-performance relationship is lacking. This study thus examines three questions: (1) is the adoption of MI beneficial to organizations; (2) is the impact of MI on performance at par with that of TI; and (3) what are the potential sources of inconsistency in the MI-performance relationship? We quantitatively integrated the empirical findings using 52 independent samples from 44 articles published in peer-reviewed journals via two different procedures—support score and meta-analysis—for complementarity and reliability. The results from both procedures indicate that: (1) MI positively affects performance; (2) the direction and strength of the effect of MI on performance does not differ from that of TI; and (3) industrial sector (manufacturing vs service) and construct measurement (both innovation and performance) moderate the MI-performance relationship. We discuss the implications of our findings for future research on innovation and performance in organizations.

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1. Introduction

Management Innovation (MI) is the introduction of a new structure, process, system, program, or practice in an organization or its units (Evangelista and Vezzani, 2010; Lam, 2005; Whittington, Pettigrew, Peck, Fenton, & Conyon, 1999; Zahra, Neubaum, & Huse, 2000). The potential role of MI for strategic change, organizational renewal, and effectiveness has been noted by scholars in multiple disciplines. For instance, economic research points out MIs are both economically and socially important as they could impact productivity and employment (Edquist, Hommen, & McKelvey, 2001; Sanidas, 2005). Strategy and management research also offer that MI could influence organizational conduct and outcome as product and technological process innovations would (Itner & Larcker, 1997; Luk et al., 2008). Yet, the importance of innovation as a driver of firm competitiveness and performance, while generally accepted for technology-based product and process

innovations, has not been equally recognized for non-technological organizational innovations (Bloom & Van Reenen, 2007; Damanpour & Aravind, 2012; Tether & Tajar, 2008; Volberda, Van Den Bosch, & Heij, 2013). Indeed, some scholars portray the diffusion of new managerial techniques and practices as faddish, and argue that the primary motivation for the introduction of nontechnical innovations is to gain external legitimacy and reputation rather than to create internal value (Abrahamson, 1996; Staw & Epstein, 2000; Wang, 2010). Therefore, whether or not the adoption of MI is beneficial to firm performance remains an open research question.

Innovation is ultimately a practical construct and its relevance hinges on whether it would produce desirable results for the adopting organizations. Despite a considerable number of academic studies, however, an integrative analysis of the performance consequences of MI has not yet been conducted. This study addresses this research need and aims to contribute by investigating whether MI affects firm performance. We systematically identify the empirical studies on the association between MI and performance and aggregate their findings via two quantitative methods. We also examine the sources of inconsistencies in the findings by testing

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the role of four substantive (level of analysis, country, industry, and type of performance) and two methodological (measurement of innovation and performance) moderators. Since the efficacy of MI has usually been compared with technological innovation (TI), we also conduct a comparative analysis of the influence of TI versus MI on firm performance and test whether the direction or the extent of their effects are different.

We use two quantitative integration procedures to integrate research results based on both bivariate and multivariate analyses, and to test the robustness of our findings. First, we use a procedure based on the percentage of significant statistical tests that support the association between MI and performance (Boyne, 2002; Damanpour, 2010; Light & Smith, 1971). This procedure (henceforth “support score”) incorporates the results from the studies that conduct multivariate analyses and report regression coefficients. Then, we use a meta-analysis procedure to aggregate the results from the studies that report correlation coefficients (Calantone, Harmancioglu, & Droge, 2010; Camison-Zornoza, Lapiedra, Segarra, & Boronat, 2004; Chen, Damanpour, & Reilly, 2010; Rosenbusch, Brinckmann, & Bausch, 2011). Each method has its weaknesses and strengths¹; together, they provide more reliable results than each alone. By aggregating evidence on the effect of MI on performance for the first time, the results of this study provide new insight for both research and practice. For research, it informs the contrast between rational and institutional perspectives, identifies several sources of inconsistency of the MI-performance association, and guides future research on the role of innovation types for organizational outcome.

The next section provides a theoretical overview of innovation in organizations and distinguishes MI from TI. This is followed by a section on the relationship between MI and firm performance from rational and institutional perspectives, the two prominent theoretical views by which the relationship is explained. Then we introduce our sample, describe the two analytical techniques that are used to integrate research findings, and present the results. Finally, we discuss the implications of our findings for theory and research on innovation and performance in organizations.

2. Theoretical overview

Innovation has been studied in many academic disciplines, where the terminology, level of analysis, and research methodology differ. At the organizational level, innovation is viewed as a multi-level, multistage construct (Sears & Baba, 2011), conceptualized as a process as well as an outcome, and grouped into several types. To carve out MI from the expansive innovation literature, we provide a brief overview to lay down the theoretical foundation for the selection of empirical studies and integration of their findings.

2.1. Definition of innovation

According to Damanpour (1991: 566), innovation is defined as “adoption of an internally generated or purchased device, system, policy, program, process, product, or service that is new to the adopting organization.” Newness or novelty is a common term in the definitions of innovation across disciplinary fields. It is a relative term as the unit of adoption differs by the level of

¹ While the meta-analysis allows for the computation of effect size, it relies on integrating the findings from the studies that have conducted bivariate analyses only. The support score procedure does not allow computing effect size; however, it aggregates the results from the studies that have conducted multivariate analyses where the influences of factors other than innovation on performance have been accounted for. Therefore, the findings based on the two procedures are complementary and more accurate than each alone.

analysis, which can be a person, project team, organizational unit, organization, industry, or a larger social system. The relative unit of adoption explains the differences between innovation and its sister concepts such as creativity, invention, organizational and technological change. This study focuses on the level of organizational unit (e.g., division, business, function) and the organization. We define *innovation* as the introduction of a new product, service, or process to the external market or the introduction of a new device, system, program, or practice in one or more internal units (Klein & Sorra, 1996; Walker, Damanpour, & Devece, 2011). The intention to engage in innovation is to respond to the competitive or institutional environment and to help the organization cope with emerging external or internal contingencies.

Organizations both generate and adopt innovation. *Generation* is a process that results in an outcome—a new product, service, technology, or practice (Hollen, Van Den Bosch, & Volberda, 2013; Schilling, 2013). The organization that generates the innovation may do so for its own use (e.g., R&D unit develops a new technology for use in the production unit) or for supply to the market. *Adoption* is a process that delineates how an organization acquires and uses a technology, product, policy, or practice for the first time (Damanpour & Wischnevsky, 2006; Walker, 2008; Wolfe, 1994). The outcome of the adoption process is the assimilation of the new program in the organization's operations and activities. Desirable performance outcomes may result from both generation and adoption.

2.2. Technological and management innovation

Most studies of innovation, especially those conducted by economists and technologists have focused on technology-based products and process innovations (Armbruster, Bikfalvi, Kinkel, & Lay, 2008; Evangelista & Vezzani, 2010; Tether & Tajar, 2008). The importance of product and process innovations can be attributed to Schumpeter's early work on the role of “new products” and “new methods of production” for economic growth and firm prosperity (Fagerberg, 2005; Schumpeter, 1934). *Product innovations* are usually defined as new products or services introduced to meet an external user need, and *process innovations* are defined as new elements introduced into a firm's production or service operation to produce a product or render a service (Damanpour, 2010; Schilling, 2013; Utterback, 1994). Together they constitute *technological innovations* as used in this study.

The distinction between TI and MI corresponds generally with the distinction between technology and social structure (Evan, 1966). At the firm level, TIs are associated with technical core or technical system of an organization and MIs are associated with the social core or the social system (Daft, 1978; Damanpour & Evan, 1984; Tether & Tajar, 2008). In other words, while TIs are primarily introduced to change the organization's operating system, MIs are mainly introduced to affect the management system (Han, Kim, & Srivastava, 1998; Montes, Moreno, & Morales, 2005).

The term MI used here corresponds with the terms administrative innovation, organizational innovation, and managerial innovation as were applied in previous research (Birkinshaw, Hamel, & Mol, 2008; Kimberly, 1981; Kraus, Pohjola, & Koponen, 2011; Walker et al., 2011). Damanpour and Aravind (2012) reviewed these terms and found that they overlap significantly in both definition and use. Researchers' disciplinary fields often determine use of a certain term, and the techniques and practices portrayed by these terms provide new knowledge for structuring the organization, devising strategies, and performing the work of management (Damanpour & Aravind, 2012, pp. 427–432). We thus define *management innovation* as the introduction of a new

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