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Innovativeness, operations priorities and corporate performance: An analysis based on a taxonomy of innovativeness

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ABSTRACT

The paper analyzes the relations among the manufacturing firm's innovativeness, operations priorities, and corporate performance. As opposed to common practice in the literature in which these relations are analyzed on a dichotomous (high vs. low) classification of innovativeness mostly based on product and/or process innovations, a taxonomy based approach is used here. Our findings demonstrate that leading innovators simultaneously compete effectively on multiple operations priorities and obtain the best corporate performance. This research also demonstrate that incorporating shades of grey via the more elaborate taxonomy based approach reveals hidden relations that were otherwise buried in the data.

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Introduction

In an early literature review on innovativeness, Midgley and Dowling (1978) posit that for the majority of existing research at the time, innovativeness is conceptualized as the degree to which an individual adopts an innovation relatively earlier than others. This temporal conception of

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innovativeness later changed and other conceptualizations became more popular. For example, Hurley and Hult (1998) define innovativeness as the notion of openness to new ideas as an aspect of a firm culture and propose an input based operationalization of innovativeness, i.e., innovativeness is measured based on its antecedents. In contrast, Damanpour and Evan (1984) assert that an innovation is realized after implementation of a new idea. In line with this assertion, Damanpour (1991) defines innovativeness as the rate of adoption of innovations and indicates that it is operationalized in many studies as the number of innovations adopted within a given period. This conceptualization of innovativeness has led to numerous studies that have an output based measure of innovativeness (Ellonen et al., 2008; Tellis et al., 2009; Man, 2009), i.e., innovativeness is measured based on realized innovations.

Even though earlier researchers in innovation management literature have mostly focused on two types of innovations, namely product and process innovations, recently other types of innovations began to receive more attention. The OECD Oslo Manual (2005) defines four different innovation types: product, process, marketing, and organizational innovations. Furthermore, the product innovation is considered in two components: incremental and radical product innovations. This recent multi dimensional approach to innovation has enriched discussions and enhanced its role particularly in corporate performance and strategic management.

On the other hand, there has been a broad agreement on the composition of the operations priorities, namely, cost, quality, flexibility and delivery/dependability (Hayes and Wheelwright, 1984; Voss, 1995; Boyer and Lewis, 2002). Even though Leong et al. (1990) introduced innovation as the fifth operations priority, it is yet to receive the same level of attention by the research community as have the former four dimensions (Nair and Boulton, 2008; Avella et al., 2011). Therefore, in this research we adopt the more general approach which positions innovativeness out of the operations priorities set yet nevertheless investigates their interactions.

Business researchers acknowledge both innovativeness and operations priorities among the most attractive subject areas of corporate performance and strategic management (Damanpour, 1987; Hayes et al., 1988; Boyer and Lewis, 2002; Sum et al., 2004). Some researchers have focused on the role of innovativeness on firm performance (e.g., Zahra and Sidhartha, 1993; Damanpour et al., 1989; Günday et al., 2008; Man, 2009; Bolívar-Ramos et al., 2012). On the other hand, another stream of research investigates the relationship between operations priorities and innovativeness (Utterback and Abernathy, 1975; Baldwin and Johnson, 1996; Alegre-Vidal et al., 2004). Nevertheless, the relationship between operations priorities and firm performance has been the most widely studied; foundations have been laid by seminal works such as Skinner (1969, 1978), Hayes and Wheelwright (1984) and Miller and Roth (1994).

The literature regarding the first two relationships (namely, (1) innovativeness and performance (2) innovativeness and operations priorities) utilizes the traditional dichotomous approach (high innovativeness/low innovativeness) where innovativeness is operationalized with a single dimensional measure in their analysis. However, as discussed earlier, the multidimensional nature of innovativeness makes treating it with a single dimensional measure actually problematic. For example, there can be firms that are highly innovative in terms of various dimensions, say, incremental product innovations and process innovations but nonetheless perform badly in other types of innovations. A reductionist approach would lead to categorize such firms (which can be summarized as *average innovative*) together with firms that actually perform on average in all innovation types. Therefore, a taxonomical approach based on multi dimensional clustering has the potential to not only better represent reality than do the more traditional single dimensional and dichotomous approaches but also reveal otherwise hidden relations.

As a matter of fact, such studies which are based on taxonomy of operations priorities do exist and focus on the relationship between operations priorities and firm performance (Miller and Roth, 1994; Kathuria, 2000; Sum et al., 2004; Prajogo et al., 2014). However, even though some taxonomies of innovativeness are available in the literature (Avermaeta et al., 2004; Lehtoranta, 2005; Balcerowicz et al., 2009), they are not used to determine the relationship between innovativeness and operations priorities or how the firms perform in different innovativeness clusters. Furthermore, the taxonomies of innovativeness available in the literature are based on only product and process innovations, and only one of them (namely, Balcerowicz et al., 2009) utilizes formal cluster analysis. Hence, there is

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