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Leveraging high-involvement practices to develop mass customization capability: A contingent configurational perspective

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ABSTRACT

This study focuses on the four human-resource-management (HRM) practices that characterize high involvement (HI), the most advanced approach to employee involvement. These practices push power, information, rewards, and knowledge down to the lowest level of an organization. The impact of these practices on a manufacturing firm's mass-customization capability (MCC) is examined, along with the way this impact is influenced by the degree of product customization (DPC) that the firm provides to its customers. Based on survey data from 195 manufacturing plants in three industries and eight countries, the study finds empirical evidence that these practices improve MCC when they are adopted jointly and, at the same time, DPC surpasses a certain threshold value. The same practices, when implemented independent of one another, do not have statistically significant effects on MCC. Furthermore, as DPC drops below the threshold, the effect of this configuration of practices becomes non-significant at conventional *p* levels and gradually decreases until it turns into a negative effect, which comes closer to statistical significance when the DPC reaches its minimum. This study is the first to examine the effects of HRM practices on MCC by taking full advantage of the contingent configurational perspective that is strongly advocated in the strategic HRM literature. The results of this study extend the debate on the organizational enablers of MCC and, at the same time, add to the well-established discussion on the performance outcomes of HRM practices in general and HI practices in particular.

1. Introduction

Mass customization (MC) denotes the ability of a company to provide customized products and services that fulfill each customer's idiosyncratic needs without considerable trade-offs in cost, delivery, and quality (Pine, 1993; Liu et al., 2006; Squire et al., 2006). The concept of MC encompasses different MC strategies, ranging from the provision of a catalogue of pre-engineered variants, produced and delivered using pre-engineered processes, to the design of customer-specific products, manufactured and distributed through processes that are modified per customer order (MacCarthy et al., 2003). In the latter case, all stages of the value chain—spanning from design to distribution—are performed based on customer specifications, while in the former case, known as catalogue MC (MacCarthy et al., 2003), no stage of the value chain is carried out to customer specifications. The variable that captures the scope of the value-chain activities that are performed based on customer specifications is generally referred to in the MC literature as the degree of product customization (DPC) that is provided to customers (e.g., Duray et al., 2000). While differing in this variable, what these different types of MC strategy have in common is the "focus on customer preferences" (Fogliatto et al., 2012: 16). The escalating heterogeneity of customers' demands, along with intensifying competition, has made the development of MC capability (MCC) an increasingly urgent challenge for a growing number of firms (Huang et al., 2008; Markillie, 2012).

The MC literature has long acknowledged the importance of designing specific human resource management (HRM) systems for MC (e.g., Pine, 1993; Beaty, 1996; Kakati, 2002). In particular, the integration of thinking and doing through employee involvement has been indicated as an important ingredient of a successful MC strategy ever since the term "mass customization" became popular in the literature (e.g., Pine, 1993; Lau, 1995; Tu et al., 2001; Liu et al., 2006; Leffakis and Dwyer, 2014). However, while "the literature on MC enablers has increased exponentially" (Fogliatto et al., 2012: 17), the research on the HRM practices that enable MC has lagged behind (Sandrin et al., 2014). In particular, the debate has not yet incorporated the distinction—well acknowledged in the HRM literature (e.g., Bowen and Lawler, 1992)—between three different, increasingly advanced approaches to employee involvement, each appropriate for a specific context. Consequently,

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where the extant MC literature advocates employee involvement, it is unclear whether it recommends suggestion involvement, job involvement, high involvement, or each and every one of these according to the specific type of MC strategy that is being pursued.

To contribute to clarifying this issue, the present study focuses on the coherent set of HRM practices that characterize high involvement (HI)—the most advanced form of employee involvement (Lawler, 1986)—and addresses the following research questions: What is the impact of the HI practices on MCC? Is their impact the same for different types of MC strategy, characterized by different values of DPC? Is their impact the same when they are implemented in isolation as when they are adopted jointly? Theoretically, we answer these questions by adopting the contingent configurational perspective that is strongly advocated in the strategic HRM literature (SHRM), whereas the only previous study that developed hypotheses concerning the effects of HRM practices on the organizational-performance dimension of MCC implicitly adopted a universalistic view. Empirically, we test our main hypothesis—grounded in the abovementioned perspective—against a series of hypotheses that reflect the universalistic view of SHRM. Survey data from 195 manufacturing plants in three industries and eight countries were analyzed using, for triangulation purposes, two different procedures of moderated structural equation modeling (MSEM) as well as moderated hierarchical multiple regression analysis. The results of all these analyses consistently support our main hypothesis and collectively suggest that HI practices improve MCC when they are adopted jointly and, at the same time, DPC surpasses a certain threshold value. These findings enhance the current understanding of the conditions under which the HI practices improve MCC. These results are of practical importance as well, since the costs of implementing the HI practices "are not trivial" (Boxall and Macky, 2009). Consequently, the companies that pursue an MC strategy need to know whether these costs pay off in terms of enhanced MCC and, if so, whether this is true for any type of MC strategy or only for certain types, characterized by certain values of DPC. Furthermore, such companies need to understand whether the HI practices should be implemented jointly to improve MCC or a piecemeal approach would be equally effective.

The remainder of this paper is organized as follows. In Section 2, we review the relevant literature and in Section 3, we develop the competing research hypotheses. In Section 4, we present the method we used to test these hypotheses and, in Section 5, we report the results of the analyses we performed. Finally, in Section 6, we discuss the theoretical and managerial implications of the study, as well as its limitations and directions for future research.

2. Literature review

2.1. Strategic human resource management

Strategic human resource management (SHRM) emphasizes the importance of focusing on people as the primary source of a firm's competitive advantage and is defined in this study as "the pattern of planned human resource deployments and activities intended to enable the firm to achieve its goals" (Wright and McMahan, 1992: 298). This definition highlights two important features that distinguish SHRM from traditional HRM. First, the expression "human resource deployments and activities intended to enable the firm to achieve its goal" underlines the need for alignment between HRM practices and business strategy. This alignment is called *vertical/external fit* and reflects what can be called the contingency perspective of SHRM (Huselid, 1995; Delery and Doty, 1996). Second, the expression "pattern of planned human resource deployments and activities" underscores the need for internal consistency among HRM practices. This alignment is called *horizontal/internal fit* and reflects what can be called the configurational perspective of SHRM (Huselid, 1995; Lepak and Snell, 1999). By combining these two expressions, the SHRM definition adopted in this study emphasizes that an HRM system should have both vertical and horizontal fit in order for a company to achieve its goals (e.g., Dyer, 1985; Schuler and Jackson, 1987; Wright and McMahan, 1992; Truss and Gratton, 1994). In other words, this definition reflects what can be called the contingent configurational view of SHRM (Lepak and Snell, 1999).

2.2. High involvement: the most advanced form of employee involvement

Employee involvement is a fundamental ingredient of the HRM systems proposed in the SHRM literature. McMahan et al. (1998) stated that "almost all authors measuring strategic HR [i.e., human resource] practices in the past few years have implicitly relied on the employee involvement/empowerment concepts without explicitly acknowledging this" (McMahan et al., 1998: 197). It is important to note that employee involvement, as well as the HRM systems inspired by this concept, can be conceptualized in different ways, and that the related empirical measures show considerable variability across studies (Wood and Wall, 2007).

The conceptualization of employee involvement adopted in this study is based on the work of Lawler and his colleagues (e.g., Lawler, 1986; Lawler and Mohrman, 1989; Galbraith and Lawler, 1993), which has found widespread recognition and application in subsequent studies on employee involvement (e.g., McMahan et al., 1998; Guerrero and Barraud-Didier, 2004; Richardson and Vandenberg, 2005). According to this conceptualization, employee involvement is characterized by the way the following four features are positioned in an organization: i) power to make decisions that influence organizational direction and performance, ii) information about business results and goals, iii) rewards tied to performance and growth in capability, and iv) relevant knowledge of the work and the business, gained from ongoing training and development (Lawler, 1992; Richardson and Vandenberg, 2005). When these features are concentrated at the top of the organization, traditional, control-oriented management exists (Lawler, 1988). As additional power, information, rewards, and knowledge are pushed down to the lowest level of an organization, three different approaches to employee involvement can be distinguished (Lawler, 1988; Bowen and Lawler, 1992): suggestion involvement, job involvement, and high involvement. Suggestion involvement represents a small departure from the traditional, control-oriented approach to HRM, as lower-level employees are encouraged to contribute ideas through formal suggestion programs or quality circles, but managers retain the power to decide whether or not to implement these suggestions. On the other hand, job involvement gives lower-level employees considerable freedom in deciding how to do their work. Accordingly, they receive information and rewards focused on and based on job and/or team goals and performance. Finally, with HI, lower-level employees are encouraged not only to make decisions concerning how to conduct their jobs, but also to participate in the business as a whole. Accordingly, they receive information and rewards focused on and based on the goals and performance of the organization as a whole. With HI, people at the lowest level of the hierarchy are expected to take responsibility for the performance of the organization as a whole, not just for how they do their jobs or how effectively their team performs. Consequently, this approach to employee involvement is also referred to in the literature as organization-level involvement (Wood and Wall, 2007).

In the employee involvement literature, the HRM practices through which a certain approach to employee involvement is put into practice are usually referred to as power, information, rewards, and knowledge, and are, therefore, collectively denoted by the PIRK acronym. Accordingly, we will designate the four HRM practices that characterize HI as power-HI, information-HI, rewards-HI, and knowledge-HI, and we will refer to them collectively as the PIRK-HI practices.

2.3. Mass customization and high-involvement practices

The literature on the development of MCC has grown considerably during the last two decades (Da Silveira et al., 2001; Fogliatto et al., 2012). The interested reader is referred to Fogliatto et al.'s (2012)