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New product internal performance and market performance: Evidence from Spanish firms regarding the role of trust, interfunctional integration, and innovation type

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Abstract

This study examines the influence of the organizational climate in the marketing–R&D relationship during the new product development (NPD) process on new product performance. Two key variables—trust and interfunctional integration—serve to measure this interfunctional climate. This article distinguishes between internal and external success, such that three dimensions—"met cost goals," "met time goals," and "product advantage"—represent dimensions of internal success, whereas a market dimension represents external success. Furthermore, this research determines whether the type of innovation, in terms of newness, moderates relationships among these variables. According to surveys of R&D directors from 178 innovative Spanish firms that introduced 345 products, (1) trust is positively associated with interfunctional integration; (2) firms in which interfunctional integration exists obtain better cost, time, and product performance; (3) each dimension of internal success is positively associated with greater market success; and (4) newness moderates the intensity of the positive association between the met time goals and market success variables.

Keywords: New products; Interfunctional integration; Trust; Internal performance; External performance; Newness

1. Introduction

Innovation represents one of the most important sources of competitive advantage for organizations. Aware of the relevance of new product development (NPD), various researchers analyze the factors that contribute to the success of such a process and thus identify a wealth of determinants, including process, strategic, environmental, and organizational (Henard and Szymanski, 2001; Montoya-Weiss and Calantone, 1994; Pattikawa et al., 2006). Because developing new products requires a multidisciplinary process, most recent works study "interfunctional integration" as one of the determinants of new product performance, understood as the cooperation and communication among different areas involved in the innovation process, especially marketing and R&D.

However, these two dimensions likely are not the only variables that constitute the interfunctional climate that affects innovation performance; for example, the relationship between marketing and R&D may be characterized by the presence of other, more affective factors. According to relationship marketing theory, trust represents one of the most relevant relational variables, so an analysis of the interfunctional climate and its effects on performance might be stronger if it considers trust as a determinant of cross-functional integration. Therefore, the first objective of this research is to analyze the influence of the organizational climate that exists between marketing and R&D during the NPD process on the successful operational execution of the project (internal performance in terms of cost, time, and product advantage), as well as how this internal performance affects the results achieved by the new product in the market (external performance). We measure organizational climate using two basic constructs: interfunctional integration and trust.

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Furthermore, some of the relationships among these variables probably are moderated by the type of innovation, because the uncertainty and task complexity related to the development process varies depending on the nature of the innovation (i.e., radical or incremental). Previous evidence shows that more complex tasks call for more cooperation and coordination among the team members (Akgun et al., 2005), so the role of interpersonal trust should be more relevant in fostering interfunctional integration. Moreover, the type of innovation likely moderates the relationship between internal and external new product success, because firms face different degrees of internal and environmental uncertainty, depending on a product's newness. External success probably depends more on the successful internal operational execution of those new products that are new to the firm but not to the market. With such products, the lower market uncertainty means success depends less on environmental factors. In contrast, because internal uncertainty is high, the degree to which the firm achieves cost, time, and product performance will affect its final market success. Thus, the second objective of the study involves determining whether the type of innovation influences the intensity of the relationships of (1) trust and interfunctional integration and (2) internal new product performance and external new product performance.

The study is structured as follows: first, we provide an overview of new product performance and interfunctional integration literature, in combination with relationship marketing literature, to conceptualize the basic constructs of our research. Second, we describe the possible moderating effect of type of innovation. Third, we explain the methodology we used to conduct the analysis and discuss the empirical results. Fourth, we comment on some conclusions from this study, as well as the main limitations and possible lines of further research.

2. New product performance

Performance remains an outstanding topic of innovation literature. Although the multidimensional nature of performance cannot be questioned (Griffin and Page, 1993, 1996; Hart, 1993), there is little consensus about the most appropriate way to measure it. Specifically, three confusing aspects emerge.

First, different management approaches use different indicators. As Blindenbach-Driessen et al. (2005) point out, the marketing literature on innovation considers the relationship between the organization and the market and assesses new product performance from an external perspective, focusing on the achievement of market objectives. In contrast, the operations management literature emphasizes the use of operative measures that assess the development effort from an internal perspective, such as development time or achieving cost objectives.

Second, a lack of consensus marks the grouping of such indicators. Most studies consider a classification based on different potential outcomes of the development process. For example, Cooper and Kleinschmidt's (1987) work identifies three dimensions of a new product performance: *financial, market impact* (which refers to the superiority of the product and the extent to which it offers benefits not provided by the competitors), and the so-called *opportunity window* (if the new product opens a new business opportunity for the firm), whereas Griffin and Page (1996) distinguish three other dimensions: *financial* (achievement of financial objectives), *customer acceptance* (degree of customer acceptance), and *product* or *technical* (degree of suitability). Huang et al. (2004) obtain four key success dimensions: *financial*, *objective market acceptance* (financial measures of consumer acceptance and satisfaction), *subjective market acceptance* (perceptual measures of consumer acceptance and satisfaction), and *product* or *technical* (contribution to technical success).

However, other recent works adopt an alternative viewpoint when they group the performance dimensions (Alegre et al., 2006; Blindenbach-Driessen et al., 2005; Tatikonda and Montoya-Weiss, 2001; Valle and Avella, 2003). These latter studies distinguish two basic performance dimensions, project (or *internal*) and market (or *external*) success, in an attempt to combine different management approaches. The internal success measure reflects the effectiveness of the NPD process and agglutinates indicators traditionally related to project management, such as time, development costs, or the degree of product superiority (Valle and Avella, 2003), whereas external success refers to the commercial result of a development project and thus reflects financial performance and the degree of acceptance and satisfaction perceived by consumers of a new product (Blindenbach-Driessen et al., 2005). However, with few exceptions (Blindenbach-Driessen et al., 2005; Tatikonda and Montoya-Weiss, 2001), these works consider the dimensions at the same level, without analyzing the relationship that may exist between them.

An in-depth analysis of these and other similar classifications reveals clearly that both perspectives—internal versus external success on the one hand, and the traditional approach on the other—are not incompatible. Thus, if we consider the three dimensions of Griffin and Page's (1996) study, one of the most widely acknowledged and cited works of the innovation literature, we find two consecutive levels of new product success: internal and external success. Specifically, the first two dimensions, financial and customer acceptance, represent the degree of external success attained by the new product in the market, whereas the technical dimension refers to the development process and thus to internal success. Moreover, we can expect a relationship between internal and external success (Blindenbach-Driessen et al., 2005; Tatikonda and Montoya-Weiss, 2001) because internal success cannot represent the final objective; rather, the final result stems from market success, and internal success provides a means to achieve market success.