



Rationality in supplier selection decisions: The effect of the buyer's national task environment

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ABSTRACT

Our study sheds light on two fundamental questions in supply management: First, does adherence to highly rational decision processes help buyers make better supplier selection decisions? Second, is the influence of procedural rationality on decision effectiveness moderated by buyers' (differently dynamic) task environments? We empirically test these questions using a sample of 150 supplier selection decisions taken in China and 150 decisions taken in Germany, countries that expose buyers to dynamic decision environments and stable decision environments, respectively. Our findings suggest that the influence of decision process rationality is stable across decision makers' task environments. Both in China and in Germany, such process rationality is positively related with higher decision quality, and no significant differences in relationship strengths emerge between the two country samples.

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1. Introduction

The supplier selection decision is critical to firm success in that it directly affects production costs, product quality, and supply lead times (Cousins and Spekman, 2003; de Boer et al., 2001; Kannan and Keah Choon, 2002; Murray et al., 2005). The academic literature has included extensive discussion addressing the question of how the process leading to such decisions can be made more rational and which analytic procedures should be employed in this regard (Anderson et al., 2011; de Boer et al., 2001; Kaufmann et al., 2009). Special attention has been given to the trade-off between various selection criteria, as well as the development of mathematical optimization routines to arrive at the optimal supplier choice (de Boer et al., 2001). An implicit assumption behind much of this literature is that greater use of analytical procedures necessarily leads to better decision outcomes. This assumption is not implausible, given that scholars from the fields of strategic management and organizational science have found that rationality-driven decision processes frequently lead to higher decision effectiveness

(Elbanna and Child, 2007b; Papke-Shields et al., 2006). However, findings from the field of psychology show that the type of decision as well as the decision maker's task environment (Dess and Beard, 1984; Kerstholt, 1994) play a crucial role in the effectiveness of different decision-making approaches. In particular, investigations of decision-making approaches among military and disaster relief personnel show that in situations with greater time pressure, a high degree of uncertainty, but with re-occurring cause–effect relationships, decision processes relying on intuitive rather than analytical approaches can yield better outcomes (Barclay and Bunn, 2006; Kahneman and Klein, 2009; Vanharanta and Easton, 2010). Investigating how these findings apply to the supply management context and tying in with the terminology from the psychology literature, we refer to such situational factors in decision making as the decision maker's (in our case, the buyer's) task environment.

Several researchers have emphasized that the benefits stemming from rational decision processes might vary depending on how dynamic the decision environment is (Forbes, 2007; Hough and White, 2003; Miller, 2008). In highly dynamic contexts, the time-lag between data gathering, analysis, and decision making can make the result of analytical procedures outdated when the results of the conducted analysis are available (Miller, 2008). Also, analytical procedures typically rely on the quality of the available information, but as decision environments become more dynamic, the accuracy of the information tends to decline as time restrictions limit opportunities for data validation (Hough and White, 2003). Applying purely rational decision procedures might

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in such cases lead to an illusion of rationality, so that decisions ultimately are misguided rather than supported by analytical procedures.

Studying the role of these perspectives in the supply management discipline, we address two questions: (1) Does adherence to highly rational decision processes help buyers make better supplier selection decisions, and (2) is the influence of procedural rationality on decision effectiveness moderated by buyers' (differently dynamic) task environments? The second question is particularly relevant, given that purchasing strategies are becoming increasingly global (Gelderman and Semeijn, 2006; Quintens et al., 2006a, b) and that multinational enterprises (MNEs) frequently establish local purchasing teams in different regional supply markets (Loppacher et al., 2006; Monczka et al., 2006; Trent, 2004). Our study therefore acknowledges the "pressing need for theory and research to examine what is etic and emic about behavior in organizations" (Gelfand and Christakopoulou, 1999, p. 249). We test our model with a sample of 150 supplier selection decisions made in the dynamic task environment of an emerging economy (China) and compare them with a sample of 150 supplier selection decisions made in the more stable task environment of the mature German economy.

The remainder of our paper is organized as follows. In Section 2, we provide an overview of the literature on supplier selection decision making. In Section 3, we outline the theoretical framework and hypotheses. In Section 4, we describe the applied methodology, including our approach to ensure data equivalence as a necessary prerequisite for rigorous cross-country research (Hult et al., 2008). In the final sections (Sections 5 through 8), we analyze and discuss our findings, suggest avenues for future research, and derive managerial implications.

2. Supplier selection decision making

Supplier selection is one of the most important responsibilities of the supply function (Carr and Pearson, 1999; Choi and Hartley, 1996), as well as a strategic task for the buying firm overall, because for most companies, purchasing costs frequently represent more than 50% of their total cost position (de Boer et al., 2001; Kaufmann and Carter, 2006). Although the supplier selection process differs between firms and purchase items (Verma and Pullman, 1998), certain elements of the decision process can be observed in most supplier selection situations. The process is initiated with a clarification of needs and the definition of specifications for the items to be purchased (Monczka et al., 2005). Following these steps, potential suppliers are identified, and information required for making the supplier choice is gathered (Lasch and Janker, 2005). The actual evaluation and decision phase has an important position in the entire process (Lasch and Janker, 2005). Various studies have focused explicitly on supplier evaluation and the application of the decision criteria (Choi and Hartley, 1996; Kannan and Keah Choon, 2002; Pearson and Ellram, 1995). To measure the quality of the decision outcome, typically both the financial performance and the non-financial performance of the selected suppliers are assessed (Cai and Yang, 2008; Ruamsook et al., 2007). Financial performance has a strong focus on cost (Talluri, 2002), including total cost and target cost. Non-financial performance addresses delivery and quality aspects (Verma and Pullman, 1998).

Despite the large number of studies dealing with supplier selection decisions, the exposed role of the individual supply manager in the decision process has rarely been recognized. Aware of this shortcoming, several researchers have called for a behavioral research approach to the analysis of purchasing decisions (Carter et al., 2007; Mantel et al., 2006). In particular,

the study of supplier selection decisions has typically assumed that buyer behavior is driven by an economic utility model (Mantel et al., 2006). However, research dealing with human decision-making has for a long time pointed out that actual buyer behavior is generally inconsistent with these models because of the human's bounded rationality (Qualls and Puto, 1989), and subjective expected utility maximization is only one of many decision rules people actually use (Payne et al., 1993). Decision-makers have limited capabilities and resources to acquire and process information (Simon, 1997). Thus, they tend to use simplifying heuristics to deal with complex problems (Tversky and Kahneman, 1974). Supply management researchers have made inroads into distinguishing supplier selection procedures that have higher degrees of procedural rationality from ones that have lower levels (Kaufmann et al., 2009). In light of the increasingly complex decision making in supplier selection processes (with some supply markets exhibiting hyper-volatility), investigations of whether higher degrees of procedural rationality necessarily lead to the selection of higher performing suppliers are warranted.

Moreover, what is known about supplier selection decision-making is based primarily on studies conducted in Western countries. The literature outside the purchasing and supply management context often concludes that different country settings affect the way that organizational decisions are made (Elbanna and Child, 2007a). Meanwhile, researchers have only recently called for the study of the influence that different national contexts have on supply management decision making, and in particular, how buyers' decision making is affected by mature versus dynamic task environments, such as in the latter case in rapidly growing economies (Kaufmann et al., 2009). Responding to this call, we develop a research model that we test in two differently dynamic buyer task environments, China and Germany. (See Section 3.1 for our conceptualization of the buyer task environment construct.)

3. Theory and hypotheses

Our model investigates the relationship between procedural rationality in supplier selection decisions and the quality of the decision outcome (measured as both financial and non-financial supplier performance) and tests for a moderating effect of the buyer's task environment on this relationship. The model builds on concepts from different literature fields, in particular the concept of procedural rationality (Dean and Sharfman, 1993a) from the decision-making literature, and applies them to fit the specific context of supplier selection decisions (see Fig. 1).

3.1. Conceptualization of central constructs

3.1.1. Procedural rationality

To characterize the decision process that firms use to select their suppliers, we focus on the concept of procedural rationality. In doing so, we adopt the definition of Dean and Sharfman (1993a, p. 589), who define procedural rationality as "the extent to which the decision process involves the collection of information relevant to the decision, and the reliance upon analysis of this information in making the choice." Similar conceptualizations have been proposed by Fredrickson and Mitchell (1984) using the term comprehensiveness, by Schwenk (1995) referring to decisional rationality, by Priem et al., (1995) referring to the degree of rationality, and by Miller and Friesen (1983) coining the term, "extent of analysis."

Procedural rationality has long been recognized as a key dimension of the decision-making process, and as having substantial

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