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Rational and intuitive decision-making in sourcing teams: Effects on decision outcomes

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ABSTRACT

According to dual process theory, individual decision-making can be based on rational procedures and experience-based intuition, and the decision-making approach can influence decision outcomes. We investigate how the application of rational procedures and experience-based intuition affects the outcomes of supplier selection decisions taken by cross-functional sourcing teams. Specifically, we examine whether the selected supplier's cost and quality/delivery/innovativeness performance is higher when more team members use a highly rational and/or a highly experience-based decision-making approach. From data on 54 teams, we find that the use of rational procedures enhances cost performance. Conversely, when sourcing team members use their experience-based intuition, the decision is more likely to result in satisfactory supplier performance along all tested performance dimensions.

1. Introduction

With purchasing spend representing more than 50% of total expenses for many firms, supplier selection constitutes one of the most strategic tasks of the purchasing function (Azadegan et al., 2013; Choi and Hartley, 1996). The significance becomes even more evident when considering that both supply risk and innovative capacity of the buying firm also strongly depend on the reliability and quality of its supply base (Azadegan and Dooley, 2010). The importance of supplier selection and the range of issues to be considered in the decision have induced many organizations to implement cross-functional sourcing teams. These teams combine diverse knowledge and skills to take various aspects of the supplier selection into account (Driedonks et al., 2010).

The majority of studies dealing with supplier selection decisions (Kaufmann et al., 2012b; Weber et al., 1991) assume that analytical processes drive sourcing team decision-making. Sourcing teams gather a substantial amount of information and process this information through structured analyses and various decision aids (Dean and Sharfman, 1993; Kaufmann et al., 2012a), both of which benefit from an extensive evaluation of alternatives (Miller, 2008). However, with the ongoing globalization, outsourcing trends, fiercer competition, shorter product life cycles, larger and more globalized supply bases, and more complex products and services (Autry et al., 2013; Azadegan et al., 2013; Harland et al., 2003), sourcing contexts have become increasingly dynamic (Ellis et al., 2010) and complex (Wu and Pagell, 2011). Under such circumstances, data available as a decision basis is often incomplete and becomes outdated rapidly (Miller, 2008). This can make it more difficult for firms to identify, diagnose, and respond to risks or new requirements in the supply base (Azadegan et al., 2013). Furthermore, as firms increasingly depend on external sources of innovation, sourcing teams need to select suppliers on the basis of current and future innovation capabilities for which quantifiable information is often scarce (Schiele, 2006). Under such circumstances and with the goal of predicting future supplier performance, sourcing teams may resort to experience-based intuition to complement analytical processes, particularly for those aspects of supplier performance that are harder to evaluate through rigorous analytical processes. Decision makers using experience-based intuition make their decision based on cognitive conclusions drawn from previous experiences (Burke and Miller, 1999). Intuitive decisions are made rapidly and without awareness of how the conclusions are reached. This approach may allow for a more holistic perspective and may take into account criteria (e.g., future innovation capability of the supplier, relationship with the supplier) for which little or no tangible information is available (Hodgkinson et al., 2009; Salas et al., 2010). Therefore, intuitive decision-making is associated with positive decision outcomes in highly dynamic environments or decisions for which objective information is rapidly outdated or simply not available (Akinci and Sadler-Smith, 2012; Dane and Pratt, 2007).

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In suggesting that both rational and experience-based decision-making approaches have their benefits in supplier selection, we follow the dual process theory. This theory, which describes human cognition in terms of two distinct systems (i.e., rational and intuitive), has emerged in recent years across a variety of disciplines (Salas et al., 2010). Dual process theory suggests that both rational and experience-based decision-making can increase decision-making quality. The theory also suggests that decisions are rarely either rational or experience-based, because both systems can function in parallel and interact in complex ways, and therefore the best decisions may arise from a combination of both processes (Evans, 2008; Salas et al., 2010). Accordingly, we test the effect of teams applying rational and intuitive approaches. More specifically, we examine sourcing team composition with respect to the emphasis that team members put on rational procedures and/or experience-based intuition in their supplier selections.

While behavioral aspects in supply management (Carter et al., 2007; Hada et al., 2013; Katsikopoulos and Gigerenzer, 2013; Riedl et al., 2013) have received research attention, the supply management literature has made very little inroads into addressing the role of experience-based intuition in procurement decision-making or, more specifically, the role of intuition in supplier selection. Thus, we aim to contribute to the supply management literature by providing first insights into the outcomes of (partly) intuitive decision-making in sourcing teams. In doing so, we are the first to suggest the implementation of experience-based decision-making as a complementing, novel approach in supplier selection.

2. Theory and hypotheses

2.1. Theoretical background

2.1.1. Supplier selection and supplier performance

Supplier selection is one of the most critical decisions in the supply function (Krause et al., 2001). Suppliers often act as important strategic partners in providing the buying firm with the necessary materials, components, and services to help maintain a sustainable competitive advantage (Sarkis and Talluri, 2002). In selecting suppliers, buying firms typically aim to achieve high performance along multiple dimensions (Weber et al., 1991). To evaluate the performance of the supplier and thus the selection decisions, we follow past theoretical and empirical supply management research and evaluate cost, delivery, quality, and innovativeness priorities (Krause et al., 2001). To maintain consistency with recent supply management decision-making research and with research in the general management field, we cluster supplier performance into a financial and a non-financial component (Riedl et al., 2013; Venkatraman and Ramanujam, 1986).

Buyer–supplier relationships used to be focused primarily on costs (De Boer et al., 2001; Talluri, 2002), including total cost of ownership and target cost. To evaluate the effectiveness of supplier selection decisions, we therefore examine supplier cost performance as one decision outcome. Supplier cost performance reflects the buying organization's evaluation of the purchased item price, as well as the total cost of ownership of the purchased product or service, relative to expectations, after the supply relationship has been established (Kaufmann et al., 2012b). However, with the increasing importance of concepts such as just-in-time production, global sourcing, total quality management, and open innovation, buying firms also are increasingly emphasizing other selection criteria, such as quality, delivery time, and innovation capabilities (Carter et al., 2008; Sarkis and Talluri, 2002; Schiele, 2006). Therefore, we examine supplier performance in terms of quality, delivery, and innovativeness as a second set of key dimensions determining the effectiveness of supplier selection decisions (Kaufmann et al., 2012b; Ruamsook et al., 2009).

2.1.2. Intuition and rationality: Two approaches to human decision-making

Across a variety of disciplines, including general management research, scholars have begun delving deeper into the workings of human decision-making. In these fields of literature, dual process theory has emerged as one primary lens of investigation, proposing that two distinct types of systems underlie human decision-making (Kahneman, 2011; Salas et al., 2010). The first system is commonly labeled intuitive, and the second is most frequently termed rational (Salas et al., 2010). Evans (2008) provides a comprehensive review of dual process theory and identifies four dimensions along which the two types of decision-making differ: consciousness, evolutionary development, terms of function, and individual differences.

Rational decision-making procedures can be described as controlled and analytical processes that are rule based, sequential, cognitively effortful, relatively slow, and often formalized within an organization (Evans, 2008; Hodgkinson et al., 2009). Decision makers following rational procedures gather a substantial amount of information and process obtained information by following structured procedures and using decision aids (Dean and Sharfman, 1993). This comprehensiveness increases the probability of identifying strengths and weaknesses of alternatives, thus leading to better decision outcomes (Slotegraaf and Atuahene-Gima, 2011). The positive effects of rational decision-making procedures, and particularly their role in overcoming harmful decision-making biases, have been studied in fields such as strategic management (Dean and Sharfman, 1993; Elbanna, 2006) and, more recently, supply management (Kaufmann et al., 2012b; Riedl et al., 2013).

In general, intuition is an affectively charged decision, sometimes based on emotional inputs that arise from holistic associations (Dane and Pratt, 2007). Therefore, such decisions are fast, automatic, and undemanding of cognitive capacity (Hodgkinson et al., 2009; Kahneman and Klein, 2009). Experience-based intuition explicitly draws from vast amounts of expertise and domain-specific knowledge stored in long-term memory and primarily acquired through associative learning (Burke and Miller, 1999; Sadler-Smith and Shefy, 2004; Salas et al., 2010). This offers the benefit of anticipatory thinking and of taking into account criteria for which little tangible information is available (Burke and Miller, 1999; Dayan and Di Benedetto, 2011; Hodgkinson et al., 2009; Salas et al., 2010). The benefits of experience-based intuition have been the focus of research in the fields of strategic management (Hodgkinson et al., 2009; Khatri and Ng, 2000), project management (Leybourne and Sadler-Smith, 2006), new product development (Dayan and Elbanna, 2011), and accounting and finance (Hensman and Sadler-Smith, 2011), but not yet supply management research.

The behavioral supply management literature has incorporated research from the heuristics and biases approach (Kahneman and Klein, 2009) and has highlighted the weaknesses of immature intuition (Carter et al., 2007; Katsikopoulos and Gigerenzer, 2013; Riedl et al., 2013). However, with increasingly dynamic contexts (Ellis et al., 2010), the complexity of supply chains (Wu and Pagell, 2011), and the importance of intangible selection criteria, traditional rational procedures may be limited (Miller, 2008). Under such circumstances, the naturalistic decision-making literature has hinted at the benefits of experience-based intuition (Dane and Pratt, 2007; Klein, 1999).