

Comprehensiveness in Strategic Decision Making: Toward Clarifying the Construct

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The purpose of this article is to clarify the construct of comprehensiveness in strategic decision making and in doing so, to reconcile the debate on the effectiveness of the decision-making comprehensiveness in dynamic environments. We distinguish between the constructs of comprehensiveness and pace in strategic decision making and argue that comprehensiveness might not necessarily slow down the strategic decision process. Furthermore, we propose that comprehensiveness is a multidimensional construct that can be grouped into two distinct categories—procedural and cognitive—and that each of these two categories might have different effects on performance in dynamic environments.

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INTRODUCTION

The strategic decision-making literature has extensively used the construct of comprehensiveness. This literature generally defines comprehensiveness as the degree of exhaustiveness in terms of environmental scanning, consideration of multiple alternatives, and integration of the decision into the overall organizational goal and strategy (Eisenhardt, 1989 & 1990; Miller & Friesen, 1983; Mintzberg, 1990). An important and long-standing question in strategic decision-making research is whether comprehensiveness has a positive effect on firm performance in dynamic environments. Although a large body of research has been undertaken concerning this question, the performance effects of decision-making comprehensiveness in dynamic environments are still not clear, given the mixed research findings (Shepherd & Rudd, 2014). There are two conflicting views on the effectiveness of the decision-making comprehensiveness in dynamic environments. Some scholars (e.g., Fredrickson, 1984; Fredrickson & Mitchell, 1984; Mintzberg & Waters, 1985; Mintzberg, 1990) argue that comprehensiveness is too time consuming and is therefore not appropriate in dynamic environments. However, others (e.g., Bourgeois, 1985; Dean & Sharfman, 1996; Eisenhardt, 1989, 1990; Miller & Friesen, 1983) argue that this comprehensiveness leads to better quality decisions because of a more in-depth and extensive analysis of the environment. Furthermore, it provides benefits such as increased confidence, accelerated cognitive processing, and fallback positions.

We observe that both views are problematic. The scholars who argue for comprehensiveness assume that a firm has access to information to consider multiple alternatives simultaneously. In contrast, the

scholars who argue against it ignore the risk of not having alternatives to provide fallback positions in case of implementation failure. They assume that there is a need for a compromise between the speed and quality of decisions in dynamic environments. The purpose of this article is to clarify the construct of comprehensiveness in strategic decision making and in doing so, to reconcile the debate on the effectiveness of decision-making comprehensiveness in dynamic environments.

THEORY AND PROPOSITIONS

There are two broad models prevalent in the literature on strategic decision processes—the rational and incremental models (Fredrickson, 1984; Fredrickson & Mitchell, 1984; Miller, 1987). The rational model argues that strategic decisions should be made with careful planning and analysis. This model calls for a systematic process such as environmental analysis, internal organizational analysis, searching for alternatives, selecting among alternatives, and integrating decisions into the overall designing and planning of strategies (Andrews 1971; Ansoff, 1965; Chandler, 1962; Hofer & Schendel, 1978; Janis & Mann, 1977; Selznick, 1957). In contrast, the incremental model argues that due to bounded rationality and budget constraints, decision making should be an intuitive, adaptive, and spontaneous process that does not involve formal planning (Lindblom, 1952; March & Simon, 1958; Mintzberg, 1978; Quinn, 1982; Simon, 1959, 1979).

The Rational Model

Selznick (1957), in his classical book on the role of leadership, emphasizes that the role of leaders is to recognize external expectations and to match the internal organizational policies with the external social environments. Following this line of reasoning, Ansoff (1965) suggests that strategy formulation includes steps such as identifying opportunity and risk, determining companies' resources and the aspirations of senior management, and recognizing noneconomic resources. Similarly, Andrews (1971) offers a model for strategy formulation that stresses the importance of matching organizational strengths and weaknesses with external environmental opportunities and threats. According to Hofer and Schendel (1978), most strategy formulation models comprise the following steps: identification of opportunity, environmental analysis, resource analysis, gap analysis, identification of alternatives, evaluation of options, and strategic choices.

The Incremental Model

According to the incremental model, strategy formulation should be an adaptive or evolutionary process rather than based on formal analysis or planning. While strategy formulation does have patterns, these patterns are realized, as opposed to intended (Mintzberg, 1978). Organizations follow an adaptive mode where clear goals do not exist; and organizations make decisions in incremental, disjointed steps instead of formal planning and following integrative comprehensiveness (Quinn, 1982).

Comprehensiveness

Comprehensiveness in decision making is a fundamental feature of the rational model of decision making and the feature that distinguishes it from the incremental model (Fredrickson & Mitchell, 1984). In the literature, many scholars have used the term comprehensiveness and rationality interchangeably (e.g., Goll & Rasheed, 1997; Langley 1989; Mueller, Mark, & Vincent, 2000; Priem, Rasheed & Kotulic, 1995). Comprehensiveness involves investigating multiple alternatives, carefully analyzing the costs and benefits of different alternatives, making detailed plans for implementation and integrating the decisions into overall strategy, or integrative comprehensiveness (Eisenhardt, 1989, 1990; Jannis & Mann, 1977; Miller & Friesen, 1983). Advocates of the rational model, while agreeing that comprehensiveness can be time consuming, argue that the advantages of comprehensiveness outweigh its disadvantages because without comprehensiveness, there are no rules to guide firms in their search for opportunities (Ansoff, 1988) or no alternatives to fall back on in case of implementation failure (Eisenhardt, 1989).

In the past few decades, strategic management scholars have moved their emphasis away from comparing rational and incremental decision processes to focus on the environmental context of the comprehensiveness-performance relationship (Goll & Rasheed, 1997). For example, Mintzberg (1973), Mintzberg, Raisinghani, & Theoret (1976), and Nutt (1976 & 1984) find that organizations use either approach to strategic decision making depending on the contingencies. Their inductive research shows that organizations use a variety of different types of strategic decision making that depend on the situational conditions. Prior studies have shown that contingencies such as organizational characteristics (e.g., Elbanna & Child, 2007; Miller, 1987), environmental conditions (e.g., Anderson & Paine, 1975; Hough & White, 2003), decision-specific characteristics (e.g., Elbanna & Child, 2007; Nutt, 1976), and top management team characteristics (e.g., Clark & Maggitti, 2012; Souitaris & Maestro, 2010) could influence the choice of one model over the other.

Concerning these contextual factors, one of the most heated debates is on the comprehensiveness-performance relationship under the conditions of high environmental dynamism (Rajagopalan, Rasheed, & Datta, 1993; Shepherd & Rudd, 2014). One reason for this could be that there are still so many contradictions in the findings of the scholars who have focused on the dynamism aspect of the environment and that these scholars are still conducting empirical studies to find conclusive evidence regarding the nature of this relationship. This article, therefore, focuses on the dynamism aspect of the environment in determining the nature of the comprehensiveness-performance relationship while clarifying the comprehensiveness construct.

Comprehensiveness and Environmental Dynamism

Duncan defines dynamism as “the degree to which the factors of the decision unit’s internal and external environment are in a continual process of change” (Duncan, 1972, p.316). He finds that dynamic environments require the consideration of a variety of different factors in decision making over time since the environment changes constantly. As such, a dynamic environment is generally defined as an environment that changes rapidly and frequently, and hence is highly uncertain.

The literature on decision making in dynamic environments has focused on two key points. First, since dynamic environments change constantly, it is critical to make fast decisions in such an environment. For example, Eisenhardt (1989) stresses the importance of making fast decisions in dynamic environments by arguing that slow decision making might result in opportunity loss and a decreased grasp of the situation, particularly in such environments. Also, a number of articles on decision making emphasize the importance of considering multiple perspectives in dynamic environments in order to deal with the uncertainty imposed by such an environment for quality decision making (e.g., Eisenhardt, 1989 & 1990). As such, scholars have long debated whether the comprehensive model of decision making is appropriate for dynamic environments that require additional planning and analysis or whether the uncertain nature of such environments calls for adaptive, unstructured decision making in order to be timely and less costly.

A number of scholars have conducted empirical studies to show that successful decision making in dynamic environments calls for comprehensiveness. Eisenhardt (1989, 1990) argues that fast decision-makers use more, rather than less, information than slow decision-makers in a dynamic environment. She stresses the importance of making comprehensive decisions in dynamic environments by arguing that such decisions provide a deeper analysis of the environment and provide greater confidence to act. She also argues that since dynamic environments are highly uncertain, the consideration of multiple perspectives provides fallback positions in case of unexpected environmental changes. Consistent with this view, Miller and Friesen (1983) find that dynamic environments should be studied very carefully and, hence, require greater analysis and innovation. Similarly, Bourgeois (1985) finds that obtaining high performance in dynamic environments requires the assessment of a large number of goals. Priem et al. (1995) also indicate that the uncertain nature of dynamic environments requires greater scanning and analysis of a greater number of alternatives.

On the other hand, there is another group of scholars who hold an opposing view. These scholars argue that the uncertainty and volatility in dynamic environments calls for quick decisions, and therefore,

making comprehensive decisions is risky since it might dramatically slow down the decision process (Fredrickson, 1984; Fredrickson & Mitchell, 1984; Mintzberg, & Waters 1985; Mintzberg, 1990). Fredrickson (1984) criticizes the rational approach to decision making in dynamic environments by arguing that scholars who favor rationality ignore the fact that gathering information to consider multiple alternatives is too time consuming. Mintzberg and Waters (1985) and Mintzberg (1990) also criticize the main assumption of the rational model that assumes that a firm has access to all the necessary information about its environment and can use such information to make comprehensive decisions.

Clarification of the Comprehensiveness Construct

We first distinguish the comprehensiveness construct from the pace construct, and then clarify the comprehensiveness construct by classifying its dimensions into two different categories: procedural and cognitive.

Comprehensiveness and Pace of Strategic Decision Making

The speed or pace of decision making is defined as “the time between the first reference to deliberate action, such as scheduling a meeting or seeking information, to the time in which a commitment to act was made” (Judge & Miller, 1991, p. 455). Critics of the rational process have often criticized comprehensiveness because a comprehensive analysis in dynamic environments slows down decision making. These critics argue that dynamic environments require fast decision making (Fredrickson & Mitchell, 1984; Lindblom, 1952; March & Simon, 1958; Mintzberg, 1978; Quinn, 1982; Simon, 1959 & 1979). Following this logic, some researchers have failed to distinguish between the comprehensiveness and the pace constructs and have included items such as “time spent by top managers on analyzing key decisions” (Miller & Friesen, 1983) and “the extent to which choices among alternatives are made rapidly” (Priem, et al., 1995) in their operationalization of the comprehensiveness construct. Other scholars, who have not directly used an item for pace, have based their critiques of a comprehensive analysis in dynamic environments on the grounds that such processes tend to slow down decision making (Fredrickson, 1984; Fredrickson & Mitchell, 1984; Mintzberg, 1978).

While scholars have generally agreed that following comprehensive decision making can result in better decisions, some have opposed the idea of following comprehensive processes in dynamic environments based on the grounds that such process might slow down the decision process. However, we argue that making comprehensive and fast decisions simultaneously is possible. The quality of decisions does not need to be compromised to make fast decisions.

Specifically, the speed of strategic decision making is captured by the construct of pace, which has its own sets of antecedents such as the cognitive ability of decision-makers (Eisenhardt, 1989; Hitt & Tyler, 1991; Wally & Baum, 1994); organizational structural antecedents, such as centralization, formalization, and size (Baum & Wally, 2003; Fredrickson & Iaquinto, 1989; Wally & Baum, 1994); and process specific antecedents, such as the use of experienced counselors, the use of real-time information, and the experience levels of the people involved (Eisenhardt, 1989; Judge & Miller, 1991).

Whether comprehensiveness slows down the decision process or not depends on the antecedents to speed or pace. Comprehensive decision making can be highly effective in dynamic environments because the complexity of such environments requires greater, in-depth analysis (Bourgeois, 1985; Dean & Sharfman, 1993; Eisenhardt, 1989, 1990; Miller & Friesen, 1983). However, due to the fast-paced nature of dynamic environments, timely decisions must be made. Therefore, an optimal situation in dynamic environments is to make comprehensive decisions without compromising on speed.

In summary, this discussion makes two points: First, pace is not a subdimension of the comprehensiveness construct; and second, the relationship between comprehensiveness and pace is not a simple, or direct relation, that is, comprehensiveness might not necessarily slow down the decision process because the construct of pace has its own set of antecedents that influence whether firms can make fast or slow decisions. Therefore:

Proposition 1: Pace is not a salient dimension of the comprehensiveness construct.

Proposition 2: The comprehensiveness construct and the pace construct can have separate antecedents and can vary independently of each other in different contexts.

Dimensions of the Comprehensiveness Construct

Critics of the rational model have also criticized the model based on the grounds of bounded rationality (March & Simon, 1958). They argue that it is impossible to be completely comprehensive and follow a rational model of decision making. As such, their arguments are based on the conceptualization of comprehensiveness as a formal process that covers all aspects of sequential decision making (both in terms of breadth and depth of analysis; see Lindblom, 1952; Mintzberg, 1978; Simon, 1959, 1979). However, advocates of the comprehensive process also recognize the limits to rationality and the disadvantages of using formal approaches. For example, Ansoff (1988) argues that while formal planning might have disadvantages such as the commitment of time and money, its advantages outweigh the disadvantages. Similarly, Eisenhardt (1989,1990) argues that comprehensiveness is a multidimensional construct where some of its dimensions result in effective decision making but not all do.

Therefore, the conceptualization of the construct of comprehensiveness in this article assumes that the comprehensiveness of decision making “reflects a desire to make the best decision possible *under the circumstances*” (Dean & Sharfman, 1993, p. 589). Thus, the comprehensiveness construct is not based on the rational model in the economic theoretical sense (see Simon, 1959, 1979). It is defined in terms of the “extent” to which firms use *depth of analysis*, the “extent” to which they consider the *range of alternatives* available under the circumstances in making strategic decisions, and the extent to which firms *integrate decisions* into the overall decisions. These terms do not mean that firms should consider or conduct an in-depth analysis of each and every alternative that exists for the situation in order to be comprehensive.

Much of the research has combined various dimensions of the comprehensive construct to come up with a comprehensive scale. In contrast, we break down the construct into two broad categories—procedural and cognitive—each consisting of multiple dimensions. We argue that a separate scale is required to capture each of these categories, because each might have different effects on performance in dynamic environments.

Procedural Comprehensiveness

Procedural comprehensiveness comprises two main sub-dimensions: (1) the use of formal methods to generate a breadth of alternatives and (2) the use of a sequential process to conduct a comprehensive analysis (i.e., formal, sequential procedures for covering depth of analysis and formal procedures for integrating strategies).

Some of the items used to operationalize comprehensiveness strongly focus on formal and systematic aspects associated with a formal analysis. Examples of such items are “breadth of reports or summaries prepared” (Fredrickson, 1984; Fredrickson & Mitchell, 1984); “application of operations research techniques such as linear programming and simulation to make major production, marketing and financial decisions” (Priem, Rasheed & Kotulic, 1995); “a systematic search for opportunities and problems, and a systematic consideration of costs and benefits while planning” (Goll & Rasheed, 1997); “formalized, systematic search for and evaluation of opportunities for acquisitions, new investments, new markets, etc.” (Priem, et al., 1995); and “breadth of techniques used to generate alternatives” Fredrickson, 1984; Fredrickson & Mitchell, 1984).

Such items fall under the umbrella of procedural comprehensiveness, which we define as the extent to which firms’ decision-makers use *formal planning procedures* such as reliance on operations research techniques, formal reports, and forecasted information and formally follow *sequential processes* such as identification of opportunity, environmental analysis, resource analysis, gap analysis, identification of alternatives, evaluation of options, integration of alternatives, and making strategic choices in making decisions (Hofer & Schendel, 1978; also see Van De Ven, 1992, for an excellent explanation of different types of process).

Such formal methods of analysis can be carried out simply as a part of routine or for symbolic and ritualistic purposes (Meyer & Rowan, 1977); this type of formality is not always beneficial in dynamic environments and can act as a structural constraint or lead to useless paperwork (Langley, 1989 & 1990). For example, Wally and Baum's (1994) empirical research shows that formalized decision-making structures, which they conceptualize as "the degree to which firms engaged in long-term, explicit planning" (1994, p. 941) reduces the pace of decision making that, in turn, decreases the firm's performance (Baum & Wally, 2003). Similarly, Mueller et al.'s (2000) empirical research shows that formal analysis used for persuasion and communication purposes instead of for informational purposes results in lower levels of performance in dynamic environments (see also Langley, 1989,1990).

In summary, procedural comprehensiveness comprises all of the dimensions of the construct that involve the use of formalized procedures to make strategic decisions. Such procedural comprehensiveness can decrease the pace of decision making and thus can be detrimental to the firm's performance in dynamic environments in which the decision-making speed is particularly critical.

Cognitive comprehensiveness

Cognitive comprehensiveness includes two main sub-dimensions: (1) the use of informal planning methods to generate alternatives and (2) the use of a non- sequential process to conduct the comprehensive analysis (i.e., reliance on cognitive procedures for conducting depth of analysis and integrating strategies). Some of the items in the literature on the comprehensiveness-performance relationship in dynamic environments focus on aspects of comprehensiveness that require cognitive abilities to collect, analyze, and process large quantities of information simultaneously as needed. Examples of such items include "number of alternatives considered simultaneously" and "use of real-time information"; (Eisenhardt, 1989; Judge & Miller, 1991); "effectiveness of group at focusing on crucial information and ignoring irrelevant information" (Dean & Sharfman, 1996); "breadth of participants' expertise" (Fredrickson, 1984; Fredrickson & Mitchell, 1984); and "the number of alternatives which are considered simultaneously in decision making" (Judge & Miller, 1991).

Such items fall under the umbrella of cognitive comprehensiveness, which we define as the extent to which firms' decision-makers rely on informal methods to generate information and use informal, nonsequential planning methods. In other words, in order to be comprehensive, strategic decision making does not need to be a sequential, formal process where a group of people follow a step-by-step procedure as indicated in the normative models of decision making. Instead of collecting forecasted information, a firm can use real-time information (Eisenhardt, 1989). That is, firms can collect internal and external information on an on-going basis, and the firm's decision-makers could use this information when and as needed instead of considering alternatives sequentially. Further, the firms can consider multiple alternatives simultaneously (Eisenhardt, 1989; Souitaris and Maestro, 2010; Wally & Baum, 1994).

Firms carry out such informal methods of analysis specifically for informational purposes instead of as a part of ritual. We propose that this type of informational comprehensiveness is beneficial in dynamic environments since it enables decision-makers to study these environments more carefully. The simultaneous consideration of multiple alternatives provides fallback positions in case of implementation failure (Eisenhardt, 1989, 1990). For example, Mueller et al.'s (2000) empirical research shows that a formal analysis used solely for informational purposes results in higher levels of performance in dynamic environments (see also Langley, 1989,1990; Wally and Baum, 1994).

As mentioned earlier, in cognitive comprehensiveness, instead of relying on formal methods of analysis, decision-makers rely on their intuition and cognitive abilities to guide them (Khatri & Ng, 2000). This reliance means that comprehensive processes take place in the minds of decision-makers, rather informally. That is, decision-makers might still use all of the steps involved in comprehensive strategic decision making but not sequentially. For example, Carley (1986) argues that decision making is a two-stage process where the first step involves frame development, and the second step involves frame evaluation. In frame development, decision-makers collect large quantities of information on an on-going basis; and in the second stage, decisions are actually made from the evaluation of the initial frame. However, the author suggests that "the movement from the information gathering process to the

evaluative process is an abrupt transition, forced perhaps by outside forces” (1986, p.143). Cognitive ability is required to recognize when this movement should take place and when to use the relevant information from the frame. For example, Wally and Baum’s (1994) empirical research indicates that decision-makers who rely on their cognitive ability and intuition tend to make faster and hence better decisions. Similarly, Hitt and Tyler (1991) find that managers with higher cognitive complexity have more discretion in strategic choices because they are aware of more alternatives and can differentiate between various dimensions. Therefore, we propose the following:

Proposition 3: Procedural comprehensiveness and cognitive comprehensiveness are salient sub-dimensions of the comprehensiveness construct.

Proposition 4: The performance effects of salient dimensions of the comprehensiveness construct, procedural comprehensiveness, and cognitive comprehensiveness can vary independently of each other in dynamic environments.

DISCUSSION AND CONCLUSION

In this article, we distinguish between comprehensiveness and pace in strategic decision making and posit that the relationship between comprehensiveness and pace is not a simple or direct relationship. Thus, we call into question the assumption that comprehensiveness slows down decision making because pace in decision making has its own set of antecedents. Additionally, in contrast to previous research that has conceptualized comprehensiveness as a unidimensional construct, we propose that comprehensiveness is a multidimensional construct that can be grouped into two distinct categories — procedural and cognitive—that may have different effects on a firm’s performance in dynamic environments. Indeed, the conceptualization of the comprehensiveness construct in the past research might have contributed to conflicting results on the performance effects of the decision-making comprehensiveness in dynamic environments.

By clarifying the comprehensiveness construct and proving a possible reconciliation of the debate on the effectiveness of the decision-making comprehensiveness in dynamic environments, we make an important contribution to the decision-making literature. In doing so, our article also offers important insights for managers to better understand the nature and effectiveness of comprehensiveness in strategic decision making.

The propositions we develop may offer additional areas for future research. First, empirical tests of these propositions will be important steps. Specifically, we believe that the starting point is to establish the construct validity of comprehensiveness. Future research could conduct a factor analysis to determine scales that could capture various dimensions of the procedural and cognitive categories of the comprehensiveness construct. In addition, since we propose that comprehensiveness does not have a direct relationship with the pace of decision making because pace is a separate construct with its own sets of antecedents, future research could test this proposition by studying whether controlling for factors that affect pace can influence its relationship with comprehensiveness, or the relationship between comprehensiveness and performance in dynamic environments. Furthermore, future research should examine whether the factors associated with procedural comprehensiveness have a negative effect on a firm’s performance in dynamic environments and that those associated with cognitive comprehensiveness have a positive effect on performance in dynamic environments as we propose in this article. We expect that in-depth case studies as well as quantitative explorations could explore the relevance of our propositions.

Another important avenue for future studies is to explore how firms can make comprehensive decisions without compromising on the speed. Despite calls from the literature for such research, little has been conducted to examine firms’ capabilities that enable such decision making (Shepherd & Rudd, 2014). It would be beneficial to incorporate the insights from multiple areas that inform strategic decision-making research, such as the literatures on information and communication technology, cognitive theory, and behavioral theory. In particular, a research opportunity could be developing a framework that allows for simultaneous consideration of alternatives at a high speed. We believe that the

social network literature may provide important insights into this strategic issue. Given that effective information search requires weak ties and strong ties facilitate the transfer of fine-grained information as indicated in this literature (Gulati, Dialdin, & Wang, 2002; Hansen, 1999), it would be interesting to explore whether comprehensive decisions can be made at a fast pace if a firm maintains effective external and internal social networks that can provide it with real-time information on an on-going basis and allow for in-depth analyses of diverse alternatives at a high speed.

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