RUNNING HEAD: Strategic consensus

COMING TO CONSENSUS ON STRATEGIC CONSENSUS: A MEDIATED MODERATION MODEL OF CONSENSUS AND PERFORMANCE

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ABSTRACT

Prior studies of strategic consensus and firm performance have yielded inconsistent results. We synthesize and account for these divergent findings using a mediated moderation model. Results based on a sample of manufacturing companies in Spain suggest a pattern of mediated moderation such that the relationship between competitive method consensus (i.e., means) and organizational performance, which is moderated by environmental dynamism, is mediated by consensus on objectives (i.e., goals or ends). These results provide an alternative explanation for prior inconsistencies in research results regarding the consensus-performance relationship and point to the need for a more complex conceptualization of the relationship among competitive method consensus, consensus on objectives, organizational performance, and the organization's surrounding environment.

KEYWORDS

Competitive method consensus, consensus on objectives, environmental dynamism, functional strategies, manufacturing strategy, purchasing strategy

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Strategic management has been described as a process that aims to improve a firm's performance relative to competitors (Hoskisson, Hitt, Ireland, & Harrison, 2008). A prominent element of this process is how executives decide on what strategies (i.e., methods) and goals (i.e., objectives) their firm should pursue. Strategic consensus is a construct that refers to the degree of agreement among managers on these organizational priorities. Research in this area has focused on both the determinants of consensus, as well as the implications of consensus for performance. There has been an ongoing stream of inquiry regarding these issues for the past three decades, but results to date are largely equivocal. Given the centrality of consensus to executive decision making (Finkelstein & Hambrick, 1996), there is a need for new research that offers both theoretical and methodological refinements to resolve these inconsistent results (Kellermanns, Walter, Lechner, & Floyd, 2005: 721).

As with many strategic management topics, one possible explanation for inconsistent results across studies is the reliance on "black box" models that posit a direct and simple linear effect between two variables (e.g., Farmer & Aguinis, 2005). In a review article, Hitt, Boyd and Li (2004: 8) concluded that "Particularly in the context of firm performance, linear models have produced disappointing results, regardless of the predictor." Consequently, several authors have advocated a contingency approach when trying to link consensus and performance (Dess & Origer, 1987; Dess & Priem, 1995; Kellermanns et al., 2005; Priem, 1990). While multiple studies have explored this possibility through the use of environmental dynamism as a moderator, results in this area have also been inconclusive.

We propose that a major stumbling block in research to date is the need to unpack

consensus into separate elements. While this approach was used in early studies on this topic (Bourgeois, 1980; Dess, 1987), subsequent research has either combined elements of consensus into a composite measure, or studied only a subset of consensus. We return to the original framing of consensus as agreement on competitive methods (i.e., means) and objectives (i.e., goals or ends). Using this two-dimensional definition, we apply the industrial organization (IO) model of strategy (Porter, 1980, 1985) to develop a theoretical rationale for why the elements of consensus must be studied in a causal sequence.

Drawing on this theoretical improvement, we develop a model that incorporates causal sequencing of consensus, and the previously hypothesized moderating role of dynamism, as predictors of firm performance. We test our theoretical rationale in a structural equation model that incorporates both mediation and moderation. Our results explain and synthesize empirical results obtained in prior studies and also offer new insights regarding the theoretical connection between consensus, unpacked as competitive methods consensus and consensus on objectives, and firm performance.

LITERATURE REVIEW AND HYPOTHESES

What is strategic consensus, and why is this topic important? At its most basic level, consensus has been described as simply "the agreement of all parties to a group decision" (Dess & Origer, 1987: 313). In the context of corporate strategy, consensus has been labeled as "agreement among strategy makers on a firm's goals and the competitive methods appropriate for achieving them" (Dess & Priem, 1995: 401). More recently, Kellermanns and colleagues (2005: 721) described strategic consensus as "the shared understanding of strategic priorities among managers."

Strategic consensus is an important variable for both upper echelon and group process

theories (Knight et al., 1999). One of the key conceptual elements in the study of upper echelons is the process used when making strategic decisions. Finkelstein and Hambrick (1996) singled out consensus as one of the most notable aspects of management team process. Similarly, research framed in the teams literature also emphasizes the role of strategic consensus (e.g., Dooley, Fryxell, & Judge, 2000; Knight et al., 1999). Agreement among executives is believed to affect firms at both the individual (e.g., reduction in uncertainty and ambiguity; Iaquinto & Fredrickson, 1997) and organizational (e.g., profitability and growth; Dess, 1987) levels. Thus, strategic consensus is a unique construct in that it has been studied from both a micro and a macro perspective (Aguinis, Boyd, Pierce, & Short, in press). However, despite its widespread relevance, there are substantial gaps in our understanding of the implications of strategic consensus for organizational outcomes.

Table 1 summarizes the main features of empirical tests of the link between consensus and performance. As shown in this table, studies suggest a null effect of consensus on performance (West & Schwenk, 1996); a negative effect (Bourgeois, 1985); a mixed effect (Homburg et al., 1999); and a positive effect (Bourgeois, 1980; Dess, 1987; Pagell & Krause, 2002; and Joshi et al., 2003). In addition, three of these seven studies reported results that were not fully supportive of hypotheses. Given that 43 percent of studies reported null, inconsistent, or disconfirming results, it is arguable whether there is any clear trend in work to date. In short, given the broad variation in the results of these studies, it is difficult to draw strong conclusions from work to date regarding the nature of the consensus-performance relationship.

One shift in recent research on consensus has been to move the focus of agreement to different levels of the organizational hierarchy. Traditionally, the strategic management literature has focused on top managers as key actors of the decision-making process and therefore the

tendency has been to conceptualize consensus scope almost exclusively in terms of top management teams (e.g., Bourgeois, 1985; Dess, 1987; West & Schwenk, 1996). However, Kellermanns et al. (2005) advocated the inclusion of managers at all levels of the hierarchy because middle- and functional-level managers also play a substantive role in strategy making (Wooldridge, Schmid, & Floyd, 2008). In addition, other studies have actually examined consensus as reported by functional-level managers (Boyer & McDermott, 1999; Homburg et al., 1999; Pagell & Krause, 2002) or across various levels (Floyd & Wooldridge, 1992; Lindman, Callarman, Fowler, & McClatchey, 2001; Stepanovich & Mueller, 2002).

Some studies have attempted to resolve the inconsistency in findings across studies through the inclusion of dynamism as a moderator variable. Environmental dynamism refers to the degree of contextual instability and turbulence and it is considered to be highly relevant to both strategic management and organizational performance (Dess & Origer, 1987). Table 1 includes a summary of results of the three prior studies that have tested the moderating role of dynamism. Homburg et al. (1999) found that dynamism moderated the relationship between consensus and performance. In contrast, West and Schwenk (1996) reported that dynamism was not a statistically significant moderator. In yet a third study, Pagell and Krause (2002) used a related moderator, perceived uncertainty, which was found to be statistically nonsignificant at the traditional .05 level (i.e., $p = .054$). Pagell and Krause (2002) found consensus to have the greatest effect on performance in high uncertainty environments, whereas Homburg and colleagues (1999) found that the consensus-performance relationship was strongest in low dynamism environments. In other words, the three prior studies which have examined the potential moderating effect of dynamism/uncertainty report inconsistent results regarding both the magnitude and directionality of the effect of dynamism.

Not only do these studies report inconsistent results, but the magnitude of effects is weak as well. In the West and Schwenk (1996) analysis, for example, the addition of dynamism interactions contributes only .007 to overall explained variance in performance. Similarly, the interaction term in the model by Homburg and colleagues (1999) added, on average, just .03 to the model R-square for different performance measures. There are methodological explanations for the relatively low levels of explained variance (Aguinis, Beaty, Boik, & Pierce, 2005). However, a possible substantive explanation is that the degree of association between consensus, dynamism, and performance is quite weak, and that extant studies are an accurate representation of the underlying ties between these constructs. Alternately, another substantive explanation is that the pattern of weak and inconsistent results may indicate the need for further conceptual development to better explain the relationship between this set of variables. In particular, we argue that it is critical to unpack consensus into multiple components. Additionally, by treating consensus as a pair of discrete topics, we introduce the logic of a causal chain, where the order of consensus elements is driven by the industrial organization model of corporate strategy. To explain our contribution to theory more fully, we begin with a discussion of the strategic consensus construct. Next, we examine how changes in theorizing regarding the strategy process offer insights into the causal sequencing of consensus components.

Unpacking the consensus construct

Early studies on consensus parsed the consensus construct into two distinct components: (a) how the firm chooses to compete and (b) the initiatives it chooses to undertake. How a firm chooses to compete has been described variously as competitive methods (Dess, 1987; Dess & Priem, 1995) or means (Bourgeois, 1980; West & Schwenk, 1996). The initiatives that a firm chooses to pursue have been labeled as objectives (Dess, 1987; Dess & Priem, 1995) or

goals/ends (Bourgeois, 1980; West & Schwenk, 1996). While the sources for these sets of labels are both widely cited, Dess (1987) has received more citations on an annual basis than Bourgeois (1980). Therefore, for the greatest consistency with other papers, in the remainder of our manuscript we will use the labels competitive methods consensus and consensus on objectives.

In past research, the conceptualization and operationalization of strategic consensus has usually taken on either the competitive methods or objectives form, but not both, and the two constructs are often interchanged or treated as synonymous (Joshi et al., 2003; Pagell & Krause, 2002; also, see Table 1). However, competitive methods and objectives capture different aspects of consensus and, thus, they should be studied individually but also contemporaneously. For example, Homburg et al. (1999) investigated consensus regarding the choice of strategy (i.e., use of low-cost versus differentiation). While Homburg et al.'s underlying construct is analogous to competitive method consensus, it also takes on a narrower focus than Dess's (1987) competitive methods. Additionally, consensus on objectives was not part of Homburg et al.'s (1999) research design. In a similar vein, Pagell and Krause (2002) created a measure of consensus that has attributes of both competitive methods and objectives.

Inconsistencies in the definition of consensus are mirrored in the measurement schemes of these variables as well. The measurement approach used in the bulk of studies (e.g., Bourgeois, 1980, 1985; Dess, 1987; West & Schwenk, 1996) is to develop a standardized list of corporate goals (e.g., profitability, sales growth, and market share) and competitive methods (e.g., reputation, new product development, and innovation), and then determine the degree of agreement in how executives of a common firm rate the importance of these items. Other studies have taken a narrower view, focusing on agreement regarding certain aspects of competitive methods (e.g., Homburg, et al., 1999; Pagell & Krause, 2002) or agreement on manufacturing

priorities (Joshi, et al., 2003). Table 1 provides more detail on the measurement schemes of individual studies, including representative examples of the indicators used in each article.

Initial studies have reported that competitive method consensus and consensus on objectives have distinct implications for firm performance. Bourgeois (1980), for example, found that methods (i.e., "means") had a more powerful effect than objectives (i.e., "ends") as a predictor of performance. Similarly, Dess (1987) tested multiple versions of firm performance, and reported that the two aspects of consensus yielded different findings in terms of the magnitude, significance, and even directionality of the connection between consensus and performance. For example, Dess (1987) reported that method consensus had a significant, positive relationship with sales growth, but a negative, non-significant relationship with CEO assessment of performance. Additionally, West and Schwenk (1996) speculated that their null findings could be attributed to a masking effect resulting from their combination of both elements of consensus into a single, composite measure. Failure to include both aspects of consensus leads to several possible explanations for misleading or confusing results. First, because the two aspects of consensus may covary, the inclusion of just one component may lead to an omitted variable problem and overstate the actual effect of a given component. Second, the use of different consensus components across studies makes it difficult to isolate the cause of differences from one study to the next. Third, as we discuss in the following section, there may be a causal sequence among the elements of consensus which has not been studied to date.

The causal sequence of consensus

In this section, we argue that inconsistent findings to date may be explained by the need to unravel the causal priorities between consensus elements. As scholars have revised theoretical models of how strategy processes should work, the expected relationship between methods and

objectives consensus has also evolved. However, consensus-performance studies have not empirically examined the causal connection between the two components of consensus. In the following paragraphs, we demonstrate how changes in theory over the past decades have proposed different causal chains between methods and objectives consensus. The question of causal order between methods and objectives consensus represents an important, yet unexplored, question in explaining firm performance.

In the early development of strategic management as a field, the dominant approach was for a firm to focus first on objectives, and then decide how to compete. This process has been described variously as formal, normative, or grand strategy (e.g., Ansoff, 1965). Armstrong (1982: 198), for example, developed a strategic planning process model that was based on a review of research conducted in the 1970s that showed specification of objectives as a precursor to choice of strategy (i.e., competitive methods). Similarly, Bourgeois (1980) offered a conceptual causal chain starting with objectives, leading to means, followed by content, which in turn drove firm performance. Additionally, Bourgeois (1980: 230) commented: "The normative planning literature usually suggests that…the negotiation of goal structures should take place before an elaboration of strategies to attain them is undertaken. Others have presented planning frameworks in which the determination of corporate goals is explicitly posited as the first step." Thus, based on this perspective, there is a clearly implied priority that managers must first come to consensus on objectives before initiating discussion on methods used to achieve them.

A second model of the strategy process proposed that consensus on objectives and methods evolve concurrently versus sequentially; see, for example, Figure 2 in Bourgeois (1980: 229) and Figure 3 in Dess and Origer (1987: 324). In this alternative framework, strategy is an iterative process where "goals are not necessarily either stabilized or agreed upon prior to the

consideration of alternatives; rather, goals and means interact and adjust in light of what is currently feasible and politically acceptable" (Bourgeois, 1980: 229). This perspective is described variously as incrementalism (Quinn, 1978, 1980), adaptive (Mintzberg, 1973), and emergent strategy (Mintzberg & Waters, 1985). Thus, based on this perspective, consensus on objectives and methods should not develop sequentially but, rather, simultaneously.

A more recent and third way of conceptualizing consensus has been influenced by the industrial organization (IO) perspective from economics. Michael Porter (1981) explained how the IO approach reversed the conventional wisdom regarding objectives and methods (i.e., "strategies"). In order to survive a somewhat deterministic environment, IO theorists argued that a firm must first agree on a strategy (e.g., low cost or differentiation), and then subsequently decide on objectives. Accordingly, a key distinction of the IO approach is the primacy of competitive methods. The earliest strategy process models viewed method consensus as a secondary concern, essentially as a path to a predetermined objective. Then, the incrementalist viewpoint rejected the notion that firms have the ability to correctly identify their strengths (Mintzberg, 1990: 182). Thus, Porter's (1980, 1985) argument that a firm begins the strategy process with a discussion of how to compete (low cost versus differentiation, in his terms) represents a substantial theoretical departure from the other two strategy process models. Based on this third perspective, an initial condition therefore is that the heads of each of the functional areas first agree on the overall business strategy (i.e., competitive method consensus) and, consequently, they have a thorough understanding of the strategic implications of their functional decisions (i.e., consensus on objectives) (Aguinis, 2009). Competitive method consensus may therefore be a relevant driver of consensus on objectives (Pagell & Krause, 2002) as it may favor cooperation and cohesiveness. Additionally, it establishes a shared mental framework or

dominant logic (Prahalad & Bettis, 1986) that facilitates knowledge and expertise transfer and trust in the organization.

Porter's subsequent essay "What is strategy?" offered further insights regarding the sequencing of objectives and methods. Specifically, Porter (1996: 62-63) introduced the notion of operational effectiveness, which "…means performing similar activities *better* than rivals perform them…operational effectiveness competition shifts the productivity frontier outward, effectively raising the bar for everyone. But, although such competition produces absolute improvements in operational effectiveness, it leads to relative improvement for no one." Examples of operational effectiveness initiatives include the adoption of lean production, use of managerial methods such as benchmarking, or the purchase of cutting edge equipment. While each of these items has the potential to improve firm efficiency, pursuing goals along these lines will lead to little long-term benefit if they are readily imitated by competitors (Brooks, 1998; Porter, 1997). Stated differently, simply agreeing on a set of goals or objectives is insufficient to positively influence firm performance. Rather, Porter argues that "strategic positioning means performing different activities from rivals or performing similar activities in different ways" (1996: 62).

Consider, for example, two different firms: one that took the traditional approach of focusing first on objectives, and another that came to consensus first on competitive methods, and then on objectives. While each of these firms might have high levels of consensus on objectives, only the latter firm has the proper sequence to develop a sustainable edge relative to competitors. Further, consider two additional firms, both of which who have initially developed consensus regarding competitive methods. One of these firms has subsequently achieved consensus regarding objectives, while the other firm still has disagreement in this area. Should

we expect comparable performance for these latter two examples? Although operational effectiveness is not the basis for a firm's strategy, "improving operational effectiveness is a necessary part of management" (Porter, 1996: 78). While acknowledging that the improvement of operational effectiveness is key to firm survival, Porter (1997: 6) subsequently noted that an emphasis solely on operational effectiveness is "an inherently destructive and unwinnable way of competing. We've got to do more than just incorporate best practice." In other words, it seems that competitive method consensus must take place first and then be followed by consensus on objectives for positive effects on organizational performance to be realized. In sum, we offer the following hypothesis:

Hypothesis 1. Consensus on objectives will serve as a mediator variable (i.e., explanatory or intervening effect) of the relationship between competitive method consensus and organizational performance.

Moderating Role of Environmental Dynamism on the Competitive Method Consensus-Performance and Consensus on Objectives-Performance Relationships

An important implication of our literature review summarized in Table 1 is that the relationship between consensus and performance is more complex than a simple first-order (i.e., direct) relationship. Stated differently, the presence of contextual (i.e., moderating) variables may also be responsible for the fluctuations in the observed consensus-performance relationship across studies. This assessment is consistent with the recommendation of Kellermanns et al. (2005), who noted the need to consider the potential moderating effect of contextual variables that may explain variations in the direction and strength of the consensus-performance relationship.

Environmental dynamism (i.e., the degree of environmental instability and turbulence) is

a contextual variable that has been theoretically proposed as a moderator of the consensus-performance relationship (Dess & Origer, 1987; Homburg et al., 1999; West & Schwenk, 1996). However, as we described earlier, the three prior studies which have examined the potential moderating effect of dynamism/uncertainty report inconsistent results regarding both the magnitude and directionality of the effect of dynamism. While we use the same logic as these prior studies, we expect to find different results via the combination of (a) unpacking the consensus construct into competitive methods consensus and consensus on objectives, (b) considering the contemporaneous effect of both method and objectives consensus, and (c) integrating our causal logic from Hypothesis 1 with the proposed moderating effect.

When environments are highly dynamic, consensus may inhibit an organization's ability to recognize the need for change, to question the existing strategic direction, and to explore new alternatives. Furthermore, the process of achieving consensus itself could slow down the response to unexpected changes and, therefore, can contribute to losing competitive advantage (Homburg et al., 1999). Conversely, less consensus and a wider diversity of divergent opinions regarding an organization's strategy could be advantageous in dynamic contexts because it may lead to more innovation, flexibility, and creativity. Some research on strategic decision-making theory suggests that to promote organizational learning, managers must actively encourage the development of different and conflicting views while simultaneously searching for shared understanding (i.e., "unified diversity") (Fiol, 1994). Eisenhardt's (1989) study about high-velocity environments found that fast decision makers stimulated conflict in their teams because it improves innovative thinking and creates a fuller understanding of options, but they also promoted a quick resolution. On the other hand, slow decision-makers waited for consensus. While we propose that dynamism will moderate the effect of both elements of consensus on

performance, we do not expect that the effect will be identical across variables. Coming to consensus on how to compete and what goals to choose are distinct tasks, just as strategy formulation and strategy implementation are distinct tasks (e.g., Dess, 1987; Homburg, et al., 1999). Further, as we noted previously, the two elements of consensus have reported different empirical direct effects with performance; differences which are likely to also be reflected in our moderation analysis. Thus, while we expect that the directionality of the moderating effect of dynamism will be the same for both elements of consensus, we also expect the specific findings to be distinct. Therefore, we offer the two following hypotheses:

Hypothesis 2. Environmental dynamism will have a moderating effect on the consensus on objectives-performance relationship such that the consensus-performance relationship will be positive when dynamism is low but will be negative when dynamism is high.

Hypothesis 3. Environmental dynamism will have a moderating effect on the competitive method consensus-performance relationship such that the consensus-performance relationship will be positive when dynamism is low but will be negative when dynamism is high.

METHODS

Sample

We tested our hypotheses by targeting all manufacturing companies in Spain with 100 or more employees in three industrial sectors: industrial and commercial machinery (Standard Industrial Classification [SIC] 35), electronic and other electrical equipment (SIC 36), and transportation equipment (SIC 37). These sectors are prevalent and are associated with high output figures in many developed countries (Organisation for Economic Co-Operation and Development, 2009).

We drew an initial list of companies from the Dun & Bradstreet 2004 database of the 50,000 largest Spanish companies. We reduced the initial list by eliminating (a) companies that had disappeared or been acquired, (b) companies that, in spite of being classified into the three sectors, were only devoted to distribution and installation but not to manufacturing, (c) companies that did not have purchasing responsibilities because decisions were made by a parent company, and (d) companies whose manufacturing manager took on purchasing responsibilities so that purchasing was not explicitly recognized as a separate function from manufacturing in the organizational structure. Thus, the target population included a total of 417 public firms.

Data Collection Procedures

Data collection consisted of administering two separate questionnaires, one to each of two independent samples including (1) the head of purchasing, and (2) the head of manufacturing at each company. We focused on these two functional areas because they deal with fundamental activities in the value chain; also, their ability to manage their links constitutes a source of competitive advantage (Porter, 1985). In addition, these managers have good knowledge of the external context and the relative performance of the company and have been a primary source of data in many studies (e.g. Chen, Paulraj & Lado, 2004; Ward & Duray, 2000).

Survey implementation was based on the general principles recommended by Dillman (1978). Instruments were refined based on input from academic colleagues and results from a pilot study using a cross-industry sample of 9 firms. The revised instrument was then administered to the entire population. To maximize the response rate, we personally called each purchasing and manufacturing manager to solicit their participation. Each respondent then received a questionnaire with a cover letter and a pre-paid return envelope. About three weeks later, we called nonrespondents and sent a second copy to each of them, this time via email.

These telephone calls and emails were repeated up to two more times for nonrespondents, with a minimum lapse of two weeks between communications. This process, which we carried out over a period of four months, allowed us to gather data from both the purchasing and the manufacturing manager for 102 (24.46%) companies: 39 machinery manufacturers, 35 electronic equipment manufacturers, and 28 transportation equipment manufacturers. Some respondents noted that they did not have enough information about organizational performance and, consequently, their partially completed questionnaires were not included in the analysis.

We conducted archival analysis and wave analysis to assess the potential impact of non-response bias (Rogelberg & Stanton, 2007). We compared participating versus nonparticipating firms with respect to number of employees and annual sales; with an ANOVA revealing no statistically significant differences. In terms of wave analysis, we compared the 50% of companies that returned the surveys first versus the 50% of companies that returned their surveys last. We examined each of the variables measured in our study both separately for purchasing and manufacturing managers. Results indicated no statistically significant differences between early and late surveys. In conclusion, these results combined with the relatively high response provide evidence to rule out a serious response bias threat.

Measures

Competitive method consensus. Purchasing and manufacturing managers were asked to rate their opinion of the relevance given by the company to each of the items included in Table 2 using a 7-point scale ranging from 1: *no importance* to 7: *great importance*. These items reflect key aspects of the generic competitive strategies of differentiation and cost leadership proposed by Porter (1980, 1985). In spite of its simplicity, there is ample evidence that Porter's (1980, 1985) scheme of generic strategies subsumes more complex competitive strategies and allow for

sufficient discrimination among various strategic configurations (Campbell-Hunt, 2000; Hambrick, 1983; Kim, Nam & Stimpert, 2004; Kotha & Orne, 1989; Miller & Dess, 1993). In addition, Porter's (1980, 1985) generic strategies have been used previously to assess strategic consensus (Homburg et al., 1999). Additionally, as shown by a comparison of Tables 1 and 2, there is considerable overlap between our choice of indicators and prior studies.

To compute a company-level index of competitive method consensus between purchasing and manufacturing, we first obtained the city-block, also labeled "Manhattan," distance between the profiles of responses from both managers. This consists of calculating the sum of the absolute differences between the two responses for each individual item. Then, we reverse-coded the resulting index by subtracting the highest value reached in the sample and changing the sign, thereby obtaining a positive index of strategic consensus. This procedure is equivalent, for the case of two respondents, to the calculation of the standard deviation of responses used in strategic consensus research (e.g., Bourgeois, 1980; Dess, 1987; Knight et al., 1999). Because some researchers have operationalized competitive method consensus using the Euclidean distance (e.g., Venkatraman, 1989), we also computed this index and correlated it with the city-block scores, resulting in $r = .97$ ($p < .001$). Thus, given the high degree of agreement, we decided to conduct all analyses based on city-block scores.

Consensus on objectives. To measure consensus on objectives, we gathered data from the purchasing and manufacturing managers regarding the relative importance placed on the functional priorities proposed by Hayes and Wheelwright (1984). These items are included in Table 3 (left column for manufacturing managers and right column for purchasing managers) and cover a selection of those aspects considered in the literature on purchasing strategy (Krause, Pagell, & Curkovic, 2001) and manufacturing strategy (e.g. Kathuria, Porth, & Joshi, 1999;

Ward, McCreery, Ritzman, & Sharma, 1998; Ward & Duray, 2000). We computed lack of consensus on objectives by calculating the city-block distance between the response profiles of both managers, thus considering each purchasing item in Table 3 in relation to its corresponding manufacturing item. This index was reverted by subtracting the highest value reached in the sample and changing the sign, thereby obtaining a positive index of consensus on objectives. Several studies have followed a similar approach to measure consensus in the manufacturing function (e.g. Joshi et al., 2003; Pagell & Krause, 2002; Tarigan, 2005).

Dynamism. The manufacturing managers were asked to rate the extent to which each of three statements (i.e., rate of product and process change, changes in consumer preferences, and stability of strategies and tactics of competitors) depict the environment of their respective companies in the last few years on a 7-point Likert-scale ranging from 1: *not at all* to 7: *perfectly*. Manufacturing managers were selected to provide this information because they are more familiar with the configuration of products and processes and, in the value chain, they are closer to customers, as compared to purchasing managers. The internal consistency reliability estimate for this 3-item scale was $\alpha = .92$. A confirmatory factor analysis based on one latent factor (dynamism) and three indicators (i.e., the three items in the dynamism measure) suggested excellent fit: $\chi^2 (1) = 2.66$ ($p = .10$, $n = 102$), goodness of fit index (GFI) = .98, Tucker-Lewis index (TLI) = .98, and comparative fit index (CFI) = .99. As noted in the review by Boyd and Gove (2006), there is a wide range of approaches in prior studies regarding the measurement of dynamism. There are close similarities between our measure of dynamism and the measures used in five previous studies (Bantel 1998; Bensaou & Venkatraman, 1995; Homburg et al., 1999; Lumpkin & Dess, 2001; Miller & Friesen, 1982).

Organizational performance. Organizational performance has multiple facets and

manifestations. Consequently, the recommendation is to adopt a multidimensional conceptualization and operationalization of performance (Venkatraman & Ramanujam, 1986). Commercial performance and financial performance often serve as two major manifestations of organizational performance, which can therefore be conceptualized as a superordinate construct. Accordingly, purchasing and manufacturing managers were asked to rate company performance as compared to competitors for four aspects of commercial performance (i.e., sales growth, reputation and image, customer satisfaction, market share [of the main product], and success of new product launches) and three aspects of financial performance (i.e., return of investment, profits as percent of sales, and labor productivity [sales/employees]) using 7-point Likert scales ranging from 1: *lower* to 4: *equal* to 7: *higher*. As reported by other authors (e.g., Dess, 1987; Homburg et al., 1999), we computed performance based on an average of the ratings provided by our two independent sources (i.e., head of manufacturing and head of purchasing). The internal consistency reliability for commercial and financial performance was .87 and .89, respectively.

The choice of survey measures was driven by data availability issues. Our items asked respondents to assess firm performance *relative to competitors*. While we could have obtained objective measures of firm performance (e.g., return on assets), we would not have been able to collect the industry benchmark statistics to accurately measure performance vis-à-vis competitors.

Evidence regarding the psychometric properties of the performance items has been reported in previous studies (e.g., Chen & Paulraj, 2004; Smith & Reece, 1999; Ward & Duray, 2000). Also, the use of perceptual or survey data to measure firm performance is common in studies of consensus (Kellermanns et al., 2005). In fact, the majority of consensus studies summarized in Table 1 (Dess, 1987; Homburg et al.,1999; and West & Schwenk, 1996) relied on

this form of data collection to create performance indicators used in their respective studies.

Finally, note that we asked respondents to rate performance as compared to competitors at the time when they were completing the questionnaires. Hence, respondents were using the most immediate information that they had at that time. We acknowledge that some managers might have had more recent data than others, but this does not necessarily poses a threat to the validity of the results because, within each company, each respondent used the same perceptual temporal window to assess all items included in the survey.

Control variables. Our study design included two control variables: company size (measured by number of employees) and industry (by incorporating two dummy-coded variables distinguishing the electrical equipment sector and the transportation equipment sector, respectively). These were incorporated to control for the potential effects of scale economies and unique competitive circumstances that each industry may face (Capon, Farley, & Hoenig, 1990; Homburg et al., 1999).

Data Analysis Strategy

Despite the popularity of the Baron and Kenny (1986) approach to test hypotheses about mediation, more recent methodological advances point to several limitations in this approach and to the overall superiority of a structural equation modeling (SEM) approach (Fritz & MacKinnon, 2007; James, Mulaik, & Brett, 2006; LeBreton, Wu, & Bing, 2009; MacKinnon, 2008; MacKinnon, Krull, & Lockwood, 2000; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Among other limitations of the Baron and Kenny (1986), this procedure (a) is based on ordinary-least-squares regression and assumes perfectly reliable measures, (b) is appropriate for simple models including an antecedent variable X, a mediator M, and an outcome variable Y, but not for models such as ours that combines moderating and mediating effects, and

(c) requires a statistically significant relationship between X and Y, but this condition is often not met even though there is a mediating effect due insufficient statistical power and the nature of X effects (i.e., when the indirect and direct effects of X are in opposite directions, they cancel out and give the appearance that there is no effect of X on Y).

Regarding the tests of moderating effects, we tested the hypothesized effects of dynamism through two complementary data analytic approaches with AMOS 6.0, raw data as input, and maximum likelihood estimation. First, we examined the path coefficients for the product terms (competitive method consensus X dynamism and consensus on objectives X dynamism), which carry information regarding the moderating effects (Aguinis, 2004). Second, we computed the difference in fit between models with and without the interaction term paths (i.e., an improved fit for the model with the interaction term path would provide additional supporting evidence for the hypothesized moderating effect). This approach is consistent with the recommendations by Mathieu, Tannenbaum and Salas (1992), has been implemented by others (e.g., Farmer, Tierney, & Kung-McIntyre, 2003), and is especially useful for complex models that include both mediated and moderated relationships (Cortina, Chen, & Dunlap, 2001). As a first step, this procedure involves adding up the observed indicators for each interaction-effect component, standardizing the resulting variable, and using it as a single indicator for the interaction-effect component. The path of this indicator is then fixed to the square root of its reliability and the measurement error is set as the product of its variance by one minus its reliability. Because competitive method consensus and consensus on objectives are observed variables, they required standardization only, but all the other steps were required for dynamism. As a second step, we derived correlations between the two components of each of the two interaction terms: (1) between competitive method consensus and dynamism, and (2)

between consensus on objectives and dynamism. These correlations were then used to fix the measurement properties of each of the two latent interaction terms, each of which is also based on a single indicator computed as the product of the single indicators of its two components.

RESULTS

Descriptive statistics and correlations for the variables in our study are included in Table 4. Competitive method consensus and consensus on objectives indexes and the controls are observed variables whereas dynamism, commercial performance and financial performance are latent constructs based upon three, five and three observed items respectively.

Quality of Measurement Instruments

We conducted a confirmatory factor analysis to assess the psychometric properties of the performance measure in our particular sample. A 2-factor model including commercial (5 items) and financial performance (3 items) demonstrated good fit: χ^2 (19): 23.45 (p = .22, n = 102); χ^2/df = 1.23; root mean square error of approximation (RMSEA) = .05; GFI = .95; adjusted goodness of fit index (AGFI) = .90; TLI = .99; and comparative fit index (CFI) = .99. A 1-factor model with a single latent variable underlying all 8 items resulted in significantly worse fit: χ^2_{diff} (1, n = 102) = 92.55, p < .01, providing evidence in support of the appropriateness of differentiating the two performance dimensions (cf. Aguinis & Harden, 2009). We conceptualized organizational performance as a second-order construct; that is, as a latent variable underlying the commercial and financial performance first-order constructs. This approach is empirically supported by the fact that a model coceptualizing performance as a second-order construct has better fit than an alternative model omitting this second order construct and using financial and commercial performance as first-order constructs (i.e., χ^2_{diff} [6, n = 102] = 36.76, p < .01).

For each company, we computed the James, Demarae, and Wolf (1984) interrater reliability index $r_{WG(J)}$ for the set of parallel items underlying each performance dimension (cf. LeBreton, James, & Lindell, 2005). We obtained average values of .97 and .96 for commercial and financial performance respectively. Furthermore, the correlations between purchasing-manufacturing equivalent items used for the performance measures were statistically significant ($p < .01$) and well above correlations between equivalent items used for the competitive method consensus and consensus on objectives measures.

As an additional set of analysis to assess the discriminant and convergent validity of our measures, we assessed the fit of a hypothesized model including all our variables (competitive method consensus, consensus on objectives, dynamism, size, electronic sector, transportation sector, commercial performance, and financial performance) compared to the fit of a 1-factor model including a single latent variable underlying all the 16 observed variables. The confirmatory model produced highly satisfactory fit indexes for the hypothesize model: χ^2 (81) = 79.67 ($p = .52$, $n = 102$), $\chi^2/df = 0.98$, GFI=.91, TLI =1.00, CFI= 1.00, and RMSEA = .00. A formal test comparing the chi-square values in the hypothesized and single-factor models supported the superiority of the hypothesized model: χ^2_{diff} [23, $n = 102$] = 368.59 , $p <$ .01.Moreover, all the standardized weights in the hypothesized model were statistically significant ($p < .01$) and all except for one were above .70 (all of them were above .65).

Also related to the quality of our measures, there are several reasons why the covariances found in our analyses are not likely to be the result from common method variance. First and foremost, our measures are based on two different self reports so that we have not tested any relationship of variables obtained from a single questionnaire. Second, there are not neither prevalent lay theories nor socially acceptable links between the items contained in each

questionnaire so that consistency motif and social desirability should not be potential sources of bias. Third, competitive method consensus and consensus on objectives are algebraic indexes based on differences between the ratings of two different respondents. If one respondent were affected by negative affectivity or acquiescence, that is, all her/his items were underrated or overrated, these indexes would become affected, but not systematically always in a negative or a positive direction (Brannick, Chan, Conway, Lance, & Spector, 2010). Taken together, this evidence indicates that common method variance is not a serious threat affecting the validity of our substantive conclusions.

In sum, these results combined provide evidence in support of the reliability, discriminant validity, and convergent validity of our measures, suggesting that our measures have sound psychometric properties.

Tests of Moderating and Mediating Effects and Mediated Moderation Model

The presentation of our results and order in which we test our hypotheses is somewhat non-traditional because we are interested not only in mediating (Hypothesis 1) and moderating (Hypotheses 2 and 3) effects, but also in assessing these effects simultaneously. In other words, in addition to testing moderating and mediating effects, we are interested in assessing a possible pattern of mediated moderation. Accordingly, based on Muller, Judd and Yzerbyt (2005), we first present results regarding moderating effects followed by results regarding mediation and mediated moderation.

As shown in Figure 1, the standardized coefficient for the moderating effect of dynamism on the consensus on objectives-performance relationship is -.37 ($p < .01$), which is in the predicted direction and provides evidence in support of Hypothesis 2. Moreover, an overall test of this model indicates excellent fit: $\chi^2 (98) = 112.05$ ($p = .16$, $n = 102$); $\chi^2/df = 1.14$; GFI=.88;

TLI =.97; CFI= .97; and RMSEA = .04. In addition, also in support of Hypothesis 2, a model identical to the one in Figure 1 but omitting the path for the moderating effect of dynamism on the consensus on objectives-performance relationship resulted in less satisfactory goodness-of-fit indexes: χ^2 (99) = 121.31 (p = .06, n = 102), χ^2/df= 1.23, GFI=.87, TLI =.95, CFI= .96, and RMSEA= .05. More formally, a test of the differential fit between these two models demonstrated that the model including the moderating effect has superior fit: χ^2_{diff} (1, n = 102) = 9.26, p < .01. All path coefficients in Figure 1 are shown in standardized form. In addition, Table 5 includes all unstandardized coefficients as well as standard errors.

Also as shown in Figure 1, the coefficient for the moderating effect of dynamism on the competitive method consensus-performance relationship is .01 (n.s.). However, a modified model that excludes consensus on objectives resulted in excellent fit (χ^2 [73] = 65.81 [p = .71, n = 102]; χ^2/df = .90; GFI = .92; TLI = 1.02; CFI = 1.00; and RMSEA = .00). In this model, identical to the one in Figure 1 but excluding consensus on objectives, the moderating effect of dynamism on the competitive method consensus-performance relationship is in the predicted direction (β = -.22) and is statistically significant (p < .05), which provides support for Hypothesis 3. (Table 6 includes all unstandardized coefficients as well as standard errors for this model). Moreover, this model has superior fit compared to a model that omits the moderating effect path: χ^2_{diff} (1, n = 102) = 5.82 p < .05. In sum, the data provide support for Hypothesis 3 when consensus on objectives is omitted from the model shown in Figure 1.

While our mediation hypothesis is based on current models of strategy process, there exists the possibility that earlier conceptions (i.e., the normative model of the 1970s) might actually reflect the proper causal order between method and objective consensus. Additionally, there are other theoretical perspectives which may support a competing causal structure to

Hypothesis 1. For example, Daft and Weick (1984) argued that some organizational interpretation behaviors might lead firms to emphasize specific outcomes (i.e., goal-oriented behavior) versus a general strategy. When developing causal hypotheses, it is critical to consider alternate configurations (Aguinis & Adams, 1998; Boyd, Bergh & Ketchen, 2010; Henley, Shook, & Peterson, 2006; Rodgers, 2010; Vandenberg & Grelle, 2009). Accordingly, as a supplemental test of Hypothesis 1, we also evaluated a competing model where consensus on objectives precedes method consensus. By conducting a direct comparison of the alternate causal sequences, we can conduct a more rigorous test of Hypothesis 1 and, rather than testing a hypothesized model against a null model only, we pit competing models against each other and asses which one fits the data better. This approach to theory testing moves away from, and is more fruitful than, the much-criticized null hypothesis significance testing approach (Rodgers, 2010). We emphasize that establishing causal relationships is difficult even when the research design consists of a randomized experiment (West, 2009). Because definitive proof regarding causality is virtually impossible (Aguinis, Pierce, Bosco, Dalton, & Dalton, in press), the state-of-the-science methodological approach is to assess the relative fit of the proposed causal chain to the data (Rodgers, 2010; Vandenberg & Grelle, 2009). Thus, evidence regarding causality is established in relationship to other hypothesized causal chains and not in absolute terms.

In terms of alternative models, we considered a mediated moderation model including a causal chain going from objectives to means instead of means to objectives. The alternative mediated moderation model did not receive empirical support as did the model including a causal chain going from means to objectives. Specifically, in the alternative model dynamism moderates the relationship between consensus on objectives and performance ($b = -.37$, $p < .01$), but not the relationship between consensus on objectives and performance as mediated by

competitive method consensus (b = -.04, n.s.). Second, an additional alternative model would be a reciprocal relationship between consensus and objectives and competitive method consensus (i.e., objectives→←means). However, it is not possible to test the fit of such a model because the reciprocal relationship means that both variables would be treated as endogenous variable (i.e., not caused by another variable in the model) instead of exogenous variables (i.e., caused by another variable in the model) (Hunter & Gerbing, 1982). Hence, the resulting model is unidentified and, because it does not have a unique solution, results are of little value (Berry, 1984). Third, Dess (1987) conducted a test of a possible interaction effect between means and objectives on performance. In a series of "supplementary analyses," Dess (1987) conducted six analysis of variance (ANOVAs), one for each of six different measures of performance. Dess (1987) reported results of only one of the 6 analyses (Dess, 1987, Table 4) because "it yielded the strongest results of the six performance measures" (Dess, 1987: 272). Nevertheless, even for the strongest results, the interaction effect was not statistically significant (i.e., $F(1, 3{,}013) = 4.36$, $p > .05$, Dess, 1987, Table 4). Taken together, these analyses and material provide additional support for the hypothesized causal chain as described by a mediation moderated model in which objectives mediate the relationship between means and performance.

Figure 2 includes a graphic display of the competitive method consensus by dynamism and the consensus on objectives by dynamism interaction effects. We created these graphs using the standardized equation and standardized predicted scores for the Y-axis (cf. Cortina et al., 2001). As shown in this figure, consensus on objectives is positively and strongly related to performance when dynamism is low, but the relationship is actually strong and negative when dynamism is high. Given this strong moderating effect (i.e., β = -.37), the fact that the direct relationship between consensus on objectives and performance is not statistically significant is

not surprising because direct effects can be interpreted as average effects across levels of the moderator (i.e., dynamism) (Aguinis, 2004). As illustrated in Figure 2, averaging the high and low dynamism conditions results in a near-zero relationship (i.e., flat slope) for the direct relationship between consensus on objectives and performance.

Combining results shown in Figure 1 and Figure 2 with results based on the additional model like the one in Figure 1 but excluding consensus on objectives indicates that although both competitive method consensus and consensus on objectives interact with environmental dynamism in explaining organizational performance, the interaction effect involving competitive method consensus is more complex and, in support of Hypothesis 1, follows a pattern of mediated moderation. Specifically, when consensus on objectives is included in the model, the competitive method consensus by dynamism interaction effect is no longer statistically significant. This is precisely the pattern of mediated moderation as defined by Muller et al. (2005). This means that the moderating effect of dynamism on the competitive method consensus-performance relationship should be considered together with a mediating effect of consensus on objectives on the competitive method consensus-performance relationship as well as the moderating effect of dynamism on the comensus on objectives-performance relationship.

Finally, as a check on the robustness of the findings, we conducted additional analyses for some variations of the model: latent dynamism based separately on each of the three observed dynamism items (instead of the combined 3-item measure), performance only as commercial performance or financial performance, and competitive method consensus and consensus on objectives indexes based on Euclidean distances. Each of the substantive results reported above remained unchanged, which provided additional triangulation-based evidence in support of our substantive conclusions.

In sum, results provide support for the moderating effect of dynamism on the competitive method consensus-performance relationship (Hypothesis 3) and also indicate that this relationship is quite complex because there is a mediated moderation relationship. Specifically, this moderating effect should be considered together with a mediating effect of consensus on objectives on the competitive method consensus-performance relationship (Hypothesis 1) as well as the moderating effect of dynamism on the consensus on objectives-performance relationship (Hypothesis 2).

DISCUSSION

Although strategic consensus is a central construct in the strategic and operations management literatures, its relationship with organizational performance is unclear. There is a lack of consensus regarding how researchers define and measure strategic consensus and empirical results regarding the relationship between strategic consensus and organizational performance are inconsistent. Our study's main contribution is that it helps make sense of past inconsistent findings by adopting a dual conceptual approach to the study of strategic consensus: (a) competitive method consensus (i.e., how a firm chooses to compete), and (b) consensus on objectives (i.e., the results it wishes to achieve). In support of more recent conceptualizations derived from the industrial organization perspective from economics, our results suggest that strategic consensus is indeed positively related to organizational performance. However, the form of this relationship is such that competitive method consensus is related to performance through the mediating effect of consensus on objectives. Moreover, environmental dynamism serves as a moderating effect of the consensus-performance relationship such that the consensus-performance relationship is positive for less dynamic environments, but that relationship turns negative for more dynamic environments.

In short, our study provides support for a mediated moderation model in which the relationship between competitive method consensus and performance is explained by the degree of consensus on objectives and is conditional upon the degree of environmental dynamism. Next, we describe implications of these results for both theory and practice.

Implications for Theory

One contribution to theory is that, by considering the moderating role of the environment, the present study identified a condition under which strategic consensus is related to performance. The analysis of the moderating role of environmental dynamism also includes considering the effects of external consensus. In the sense proposed by Miller (1992), our research identified a situation where incompatibilities between environmental and internal consensus may arise. Attempts to meet the requirements of a dynamic environment can prevent internal consensus. Conversely, efforts aimed at achieving internal consensus (between business and functional strategies and among diverse functional strategies) may reduce organizational flexibility and increase the costs of and the resistance to change (Miller, 1992). This lack of fit with a dynamic environment will undermine competitive advantage and therefore will result in decreased performance.

A second contribution is that our study provides a likely explanation for inconsistent findings regarding the consensus-performance relationship as reported in previous research (see Table 1). A perusal of Figure 2 illustrates this implication for theory graphically: The relationship between consensus and performance can range from positive to null to negative depending on the level of environmental dynamism (i.e., low, medium, and high, respectively). As an example, consider the case of a particular study that includes firms whose environments vary in terms of dynamism (i.e., low, medium, and high). So, if dynamism is not measured as

part of the study, the high and low levels cancel out, resulting in an average consensus-performance relationship that is null. Thus, it is possible that the study by West and Schwenk (1996), which found a null consensus-performance relationship, included firms drawn from both dynamic and non-dynamic environments. Also, it is possible that the study by Bourgeois (1985), which found a negative consensus-performance relationship, included firms whose environments were mostly dynamic. Also, it is possible that the studies by Bourgeois (1980), Dess (1987), Pagell and Krause (2002), and Joshi et al. (2003), which found a positive consensus-performance relationship, used samples whose environments were less dynamic. Of course, we are not able to draw strong conclusions regarding causality because neither we, nor these studies, implemented an experimental design (Stone-Romero & Rosopa, 2008). Similarly, consensus may have long term effects on performance and those are not captured by our data. Nevertheless, our results allow us to re-interpret and provide a likely theory- and data-based explanation for past inconsistent findings.

A third contribution is related to the study by Homburg et al. (1999), which included competitive method consensus, but consensus on objectives was not part of the research design. Based on their results, they concluded that consensus (i.e., competitive method consensus) interacted with dynamism in affecting performance. Our pattern of results is similar to Homburg et al. when the consensus construct is not unpacked and consensus is operationalized as competitive method consensus. In other words, when the model includes competitive method consensus only, our results replicate Homburg et al.'s consensus by dynamism interaction effect. However, results are different when we unpack consensus into competitive method consensus and consensus on objectives. Our results indicate that when consensus is unpacked, the interaction effect found by Homburg et al. is no longer statistically significant. Specifically, the

model in Figure 1 shows that dynamism moderates the relationship between consensus on objectives and performance, but not the relationship between competitive method consensus and performance. In short, a second contribution of our study is that the consensus – dynamism – performance relationship is substantially more nuanced as compared to the results of prior research. Separately, our analysis also demonstrates that it is crucial to study both elements of consensus concurrently, in order to avoid misleading findings.

A fourth contribution, related to our dual approach to studying consensus, is the conceptual and operational distinction between competitive method consensus and consensus on objectives. To the best of our knowledge, the present study is the first to examine the mediating role of consensus on objectives on the competitive method consensus-performance relationship. Moreover, as described earlier, this mediating effect should be interpreted together with a moderating effect of environmental dynamism. Thus, competitive method consensus is positively related to performance through consensus on objectives and when the environment is less dynamic. In other words, from a theory point of view, the positive effects of competitive method consensus between functional areas can be seen as a sequential process in which (1) consensus is first achieved regarding the strategies a firm chooses to compete (i.e., competitive method consensus), and (2) consensus is then achieved regarding the goals a firm decides to undertake (i.e., consensus on objectives). As Kellermanns et al. (2005: 734) noted, "the length of the causal chain from managerial consensus to organizational performance may simply be too long to provide a realistic assessment of consensus's impact" and this may explain the inconclusive findings in the research on consensus-performance relationship. In the present study, we followed Kellermanns et al.'s (2005) suggestion and investigated a causal chain including distal (competitive method consensus) and proximal (consensus on objectives) antecedents of

performance. To date, we know of no studies that have explored the validity of such a causal chain. Particularly given that prior work has proposed different causal structures, we believe that our manuscript makes a substantial contribution to the understanding of the intervening and moderating effects in the consensus-performance relationship.

Implications for Practice

From a practice point of view, our results lead to several implications regarding what managers should do differently. First, our study suggests that it is not enough to ensure that functional managers know about the overall business strategy to achieve desired levels of organizational performance. It is also important for organizations to put mechanisms in place so that consensus on competitive strategies (i.e., competitive method consensus) translates into consensus on specific goals (i.e., consensus on objectives). For example, the active participation and involvement of functional area managers in the strategic planning process would be beneficial (Aguinis, 2009). In addition, good internal communication processes can also help cross-area consensus on objectives.

Another implication for practice is that organizations must be aware that competitive method consensus does not necessarily lead to positive organizational results. In fact, in dynamic environments, higher levels of consensus lead to lower levels of organizational performance. Thus, in such dynamic environments, it is more appropriate to allow functional managers greater autonomy in their strategic decisions to face the diverse situations and circumstances that arise. Pressing for consensus across functional strategies in dynamic environments can be costly and actually lead to poor overall organizational performance.

Finally, Floyd and Wooldridge (1992) discussed implications of consensus gaps for managerial work. The first gap concerns scope, and occurs when “top managers share common

perceptions of strategy, but middle managers and others have misperceptions or lack commitment" (1992: 37). A second type of gap addresses the level of detail. This occurs when organizational members agree on a goal in the abstract, but "each is pursuing them differently" (1992: 37). Consensus on objectives addresses the second gap though its emphasis is on a set of specific topics. The first gap is addressed as it is administered to middle managers. In other words, having consensus leads to behavior that is much more focused and consistent across organizational members. Related research explains this process and the practical implications of our study in more detail. Dooley, Fryxell, and Judge (2000) studied consensus in the context of specific, prominent, firm decisions. When decisions had higher levels of consensus, executive team members reported higher levels of commitment to that decision, and also acted to implement related action plans more quickly. We expect that these types of attitudes and behaviors are what drive the performance benefits of consensus in dynamic environments.

Potential Limitations and Future Research Directions

We acknowledge potential limitations of our study, which in turn can help guide future research. First, our study focused exclusively on purchasing and manufacturing, which are admittedly important functional areas in the value chain but nevertheless two functional areas only. Thus, future research could attempt to replicate and extend our findings to other functional areas.

Second, we used a type of difference score in computing both competitive method consensus and consensus on objectives for the following reasons. First, the constraints associated with the use of difference scores are not inconsistent with the reasoning underlying the hypotheses of our study. For example, it is reasonable to assume that the relevant issue is the difference of opinions between the purchasing and the manufacturing managers irrespective of

which of them scores higher on the items. Second, we used complex profile similarity indexes, which, according to Tisak and Smith (1994), ameliorate some of the criticisms raised against difference scores. Furthermore, in these cases, polynomial regression equations can contain many terms, thus requiring very large samples and making interpretation rather difficult (Edwards, 2001). For example, the measurement of consensus on objectives is based on 18 items so that, if the squared difference index is used for each item, the resulting polynomial regression equation would include a total of 90 predictors. Finally, in this study we tested the relationship between certain congruence measures (competitive method consensus and consensus on objectives) and an outcome variable (performance), but also the role of a moderator (environmental conditions) and the connection between congruence measures. The combination of polynomial regression equations with other methodologies used to test moderation or mediation would increase the number of variables in the regression equations even more, making interpretation quite difficult (Aguinis, 2004).

Third, our research has focused on a single country. In the same way that it is not possible to have full certainty on whether results based on United States samples can be generalized to other countries, it is not possible for us to specify the extent to which our findings can be generalized beyond Spain. Nonetheless, we chose three prevalent and relevant industries for most developed economies, so we expect that this choice of industries would lead to similar substantive conclusions in other also developed economies.

Concluding Remarks

Our results point to the need to conceptualize and measure consensus using a dual approach: (a) competitive method consensus (i.e., how a firm chooses to compete) and (b) consensus on objectives (i.e., the results it wishes to achieve). Adopting this less coarse approach

to operationalizing strategic consensus provides support for a causal chain proposed by an industrial organization theoretical perspective in which competitive method consensus has a positive effect on performance through the mediating effect of consensus on objectives. In other words, a positive effect on organizational performance occurs when functional areas first agree on a strategy and then subsequently agree on goals. Moreover, this mediating effect is moderated by environmental characteristics such that the relationship between consensus and performance is positive in stable environments, but negative if the environment is highly dynamic. Overall, support for our hypotheses help explain past inconsistencies regarding the consensus-performance relationship and point to the need for a more complex conceptualization of the relationship among competitive method consensus, consensus on objectives, organizational performance, and the organization's surrounding environment.

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TABLE 1

Summary of Key Empirical Studies on Strategic Consensus and Firm Performance

Study	Sample	Consensus	Performance	Moderators	Mediators	Results
Bourgeois (1980)	20 firms	Goals: importance of 10 possible objectives (e.g., long term profits, growth rates). Means: 23 competitive methods (e.g., product breadth, cost reduction)	Accounting-based measures	None	None	Means more important than goals as a predictor of performance
Bourgeois (1985)	20 firms	Goals: 12 possible objectives (e.g., profit margin, market share)	Accounting-based measures	None	None	Disagreement on goals associated with higher performance
Dess (1987)	19 firms	Objectives: 12 possible objectives (e.g., net profit, market share) Competitive methods: 21 competitive methods (e.g., new product development, reputation)	Survey-based measures	Interaction between the two types of consensus	None	Consensus on either objectives or competitive methods associated with higher performance. In supplementary analysis, the interaction between the two consensus elements was not statistically significant.
West & Schwenk (1996)	65 firms	Goals: 13 objectives Means: 23 competitive methods	Survey-based measures	Dynamism, measured by an industry dummy code	None	Main effects of consensus were statistically nonsignificant. Dynamism interaction was also statistically nonsignificant.

Homburg et al. (1999)	101 firms	Strategy: 3 measures for low cost, and a 4 items for differentiation	Survey-based measures	Dynamism, measured by survey-based measure	None	Consensus linked to performance for differentiation strategy, but not for low cost. Dynamism interacted with consensus to positively affect performance for differentiation strategy; not tested for low cost strategy.
Pagell & Krause (2002)	252 firms	Operations strategy: 12 items to measure cost, quality, flexibility, and delivery	Survey-based measures	Environmental uncertainty Plant size	None	Consensus positively associated with performance. Interaction between consensus and uncertainty was not statistically significant at the traditional .05 level (i.e., $p = .054$).
Joshi et al. (2003)	99 firms	Alignment of manufacturing priorities: 17 items	Survey-based measures	Respondent demography	None	Alignment positively associated with performance. Organizational experience of respondents significantly moderated the alignment – performance relationship.

TABLE 2

Generic Organizational Strategies Used to Assess Competitive Method Consensus between Purchasing and Manufacturing [a]

Types of competitive advantage	**Importance that managers think the company gives to each of the following issues**: [b]
Differentiation	▪ Fostering research and development of new products
	▪ Incorporating the most advanced technologies and features into the company's products
	▪ Developing a good image of products and improving the company's reputation
Cost Leadership	▪ Reducing operating costs (e.g., manufacturing, supply, marketing and distribution)
	▪ Optimizing the utilization of capacity and available resources
	▪ Offering lower prices than competitors

[a] All items were administered in Spanish.

[b] Items were rated on 7-point Likert scales of importance ranging from 1: *none* to 7: *very high*

TABLE 3
Strategic Functional Priorities Used to Assess Consensus on Objectives between Purchasing and Manufacturing

	Purchasing Items[a,b]	Manufacturing Items[a,b]
Cost	1. Labor productivity in the purchasing department	1. Labor productivity in the manufacturing department
	2. Productivity of purchasing resources	2. Productivity of manufacturing resources
	3. High utilization of purchasing resources	3. High utilization of manufacturing resources
	4. Low cost of purchases	4. Low manufacturing costs
	5. Low inventory levels	5. Low inventory levels
Quality	6. Features and functionality of purchased products	6. Features and functionality of products
	7. Durability of purchased products	7. Durability of products
	8. Reliability of purchased products	8. Reliability of products
	9. Fit to purchasing specifications of purchasing products	9. Fit to design specifications of products
	10. Effectiveness of suppliers in addressing our complaints	10. Effectiveness in addressing customers' complaints
Dependability	11. Low ordering times in our company	11. Low production times
	12. Low delivery time by suppliers	12. Low waiting times of customers
	13. Fulfillment of agreed schedules by suppliers	13. Fulfillment of delivery schedules
	14. Fulfillment of agreed delivery terms by suppliers (quantity, quality, format)	14. Fulfillment of delivery terms (quantity, quality, format)
Flexibility	15. Supplier flexibility to adapt capacity to the needs of our company	15. Flexibility to adapt capacity to the needs at each moment
	16. Wide range of product versions, options and features offered by suppliers	16. Wide range of product versions, options and features
	17. Supplier capability to introduce (customized) changes in products	17. Capability to introduce (customized) changes in products
	18. Supplier rate of introduction of new products (updated and leading products)	18. Rate of introduction of new products (updated and leading products)

[a] All items were administered in Spanish.
[b] Items were rated on 5-point Likert scales of importance ranging from 1: *none* to 5: *very high.*

TABLE 4
Means, Standard Deviations, and Pearson Product-moment Correlation Coefficients[a]

Variable	Mean	SD	1	2	3	4	5	6	7
1. Competitive method consensus	18.11	4.21							
2. Consensus on objectives	25.30	5.71	.23*						
3. Dynamism (summated scale)	12.18	4.46	-.07	-.23*					
4. Commercial Performance[c]	.00	1.00	.04	.09	-.06				
5. Financial Performance[c]	.00	1.00	-.10	.02	.03	.65**			
6. Company size	436.57	916.50	.09	.17	.02	-.14	-.27**		
7. Electronic equipment sector[b]	.34	.48	-.05	-.16	.02	.13	.08	.01	
8. Transportation equipment sector[b]	.27	.45	.01	.03	-.03	-.14	-.18	.14	-.45**

[a] $n = 102$
[b] Dummy-coded as 1 for companies in the sector, 0 otherwise
[c] In standard-score metric
* $p < .05$, ** $p < .01$

TABLE 5
Coefficients and Standard Errors for Paths in Model in Figure 1

	Standardized Regression Coefficient	Unstandardized Regression Coefficient	Standard Error
Competitive Method Consensus → Performance	.07	.06	.10
Consensus on Objectives → Performance	.20	.17	.09
Competitive Method Consensus → Consensus on Objectives	.21	.21	.10
Dynamism → Performance	.01	.01	.09
Competitive Method Consensus x Dynamism → Performance	.01	-.04	.10
Consensus on Objectives x Dynamism → Performance	-.37	-.34	.10
Dynamism → Competitive Method Consensus	-.08	-.08	.10
Dynamism → Consensus on Objectives	-.22	-.22	.10
Size → Performance	-.23	.00	.00
Electric Sector → Performance	.04	.08	.20
Transp Equip Sector → Performance	-.12	-.23	.22
Performance → Commercial Perf.	.78	.72	.17
Performance → Financial Perf.	.90	1.00[a]	--
Comm. Performance → Item1	.70	1.00 [a]	--
Comm. Performance → Item2	.88	1.09	.14
Comm. Performance → Item3	.86	.94	.12
Comm. Performance → Item4	.74	1.12	.16
Comm. Performance → Item5	.66	.82	.13
Finan. Performance → Item6	.96	1.00 [a]	--
Finan. Performance → Item7	.88	.93	.07
Finan. Performance → Item8	.74	.79	.08

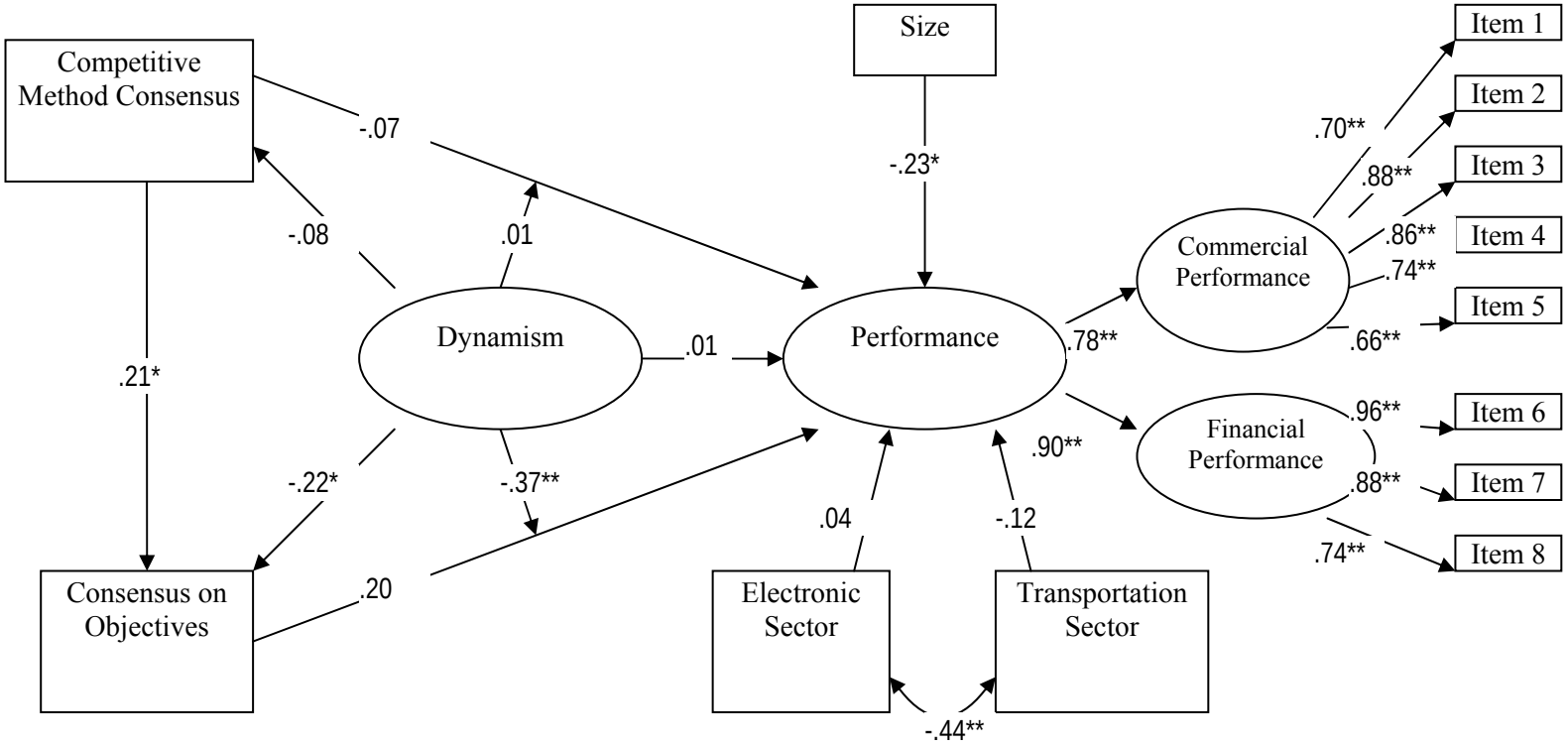
[a] Fixed as 1.00 to determine measurement properties

TABLE 6
Coefficients and Standard Errors for Paths in Model in Figure 1 Excluding Consensus on Objectives

	Standardized Coefficient	Unstandardized Coefficient	Standard Error
Competitive Method Consensus → Performance	.05	.32	.06
Dynamism → Performance	-.06	-.37	.07
Competitive Method Consensus x Dynamism → Performance	-.22	-.15	.09
Dynamism → Competitive Method Consensus	-.08	-.08	.10
Size → Performance	-.12	.00	.00
Electric Sector → Performance	.12	.16	.16
Transp Equip Sector → Performance	-.09	-.13	.16
Performance → Commercial Perf.	1.05[b]	1.30	.51
Performance → Financial Perf.	.66	1.00[a]	--
Comm. Performance → Item1	.70	1.00 [a]	--
Comm. Performance → Item2	.88	1.09	.14
Comm. Performance → Item3	.86	.95	.12
Comm. Performance → Item4	.74	1.11	.16
Comm. Performance → Item5	.65	.81	.13
Finan. Performance → Item6	.96	1.00 [a]	--
Finan. Performance → Item7	.88	.92	.07
Finan. Performance → Item8	.74	.79	.08

[a] Fixed as 1.00 to determine measurement properties.
[b] Note that standardized coefficients "are not numerically bounded by ± 1, as are correlation coefficients, except in the simple regression case (when both coefficients are equal), and in the unique situation where all the variables in an independent variable set are pair-wise orthogonal. Consequently, standardized coefficients greater than one must have the same direct interpretation as all other rates of change" (Deegan, 1978: 882).

FIGURE 1
Model Testing Moderating Effect of Dynamism on Consensus on Objectives-Performance Relationship



* $p < .05$, ** $p < .01$. Path coefficients are expressed in standardized metric.

FIGURE 2
Graphic Representation of Moderating Effect of Environmental Dynamism on the Competitive Method Consensus-Performance (top panel) and Consensus on Objectives-Performance (bottom panel) Relationships