Organizational design and pricing capabilities for superior firm performance

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Abstract

Purpose – The purpose of this paper is to test the relationship between organizational antecedents, pricing capabilities, and firm performance.

Design/methodology/approach – Quantitative survey of 748 managers from mostly large companies globally.

Findings – It was found that the following five key organizational resources (the 5 Cs) – center-led price management, organizational confidence, championing behaviors, organizational change capacity, and pricing capabilities – positively influence firm performance. Furthermore, it was found that center-led price management, organizational change capacity, and championing behaviors act as important antecedents to pricing capabilities and, except for the former, to organizational confidence. The authors also examine interaction and mediation effects.

Originality/value – The results thus suggest that generic organizational factors – namely center-led price management – as well as highly idiosyncratic firm, specific capabilities – namely organizational confidence, championing behaviors by top management, organizational change capacity, and pricing capabilities – are key requirements to increase firm performance via pricing.

Keywords Performance, Organizational design, Pricing, Organizational behaviour, Pricing strategy

Paper type Research paper

Introduction

Despite recent critiques (Kraaijenbrink et al., 2010; Hinterhuber, 2013), the core propositions of the resource-based view (Barney, 1991; Barney et al., 2011; Grant, 1991) are widely accepted: differences in firm profitability are the result of differences in firm capabilities. Empirical tests of the RBV (resource-based view), however, have yielded overall mixed results (Armstrong and Shimizu, 2007; Newbert, 2007, 2008) and have led to frequent calls for further empirical studies (Mol and Wijnberg, 2011).

As an important subset of overall firm capabilities, pricing capabilities are important drivers of firm performance (Dutta et al., 2003). Research on the role of

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pricing capabilities is today largely confined to qualitative studies. Furthermore, little is known about the organizational antecedents of pricing capabilities.

From a managerial perspective, this study is important. Although managers do understand the criticality of pricing, in day-to-day practice they frequently revert to ineffective rules of thumb in price setting (e.g. cost-based pricing) and largely ignore the role of pricing in the overall design of their organizations (Hinterhuber, 2004; Liozu et al., 2012). A significant problem of practice is thus the question of how to increase firm performance via pricing. This study shed light on this question.

In this study we test the relationship between organizational antecedents, pricing capabilities, and firm performance through a survey of 748 managers worldwide. We find that four key resources and capabilities – championing behaviors, pricing capabilities, organizational confidence, and organizational change capacity – directly influence firm performance.

We also find that three organizational factors – center-led pricing management, championing behaviors, and organizational change capacity – are significant antecedents of pricing capabilities; these organizational factors are – with the exception of center-led pricing management – also significant antecedents of organizational confidence. We finally study interaction effects between these antecedents. In sum, this paper is the first quantitative study to link both organizational confidence and pricing capabilities to firm performance. We also contribute to the literature of organization theory by suggesting key organizational antecedents of pricing capabilities as well as of organizational confidence.

The remainder of the article is organized as follows. In the next section, we provide our conceptual framework and theoretical support for the testable hypotheses that support the nomological network. The methodology section describes our database, sample, measures, and analysis. Next, we present a discussion of the results, the limitations of the research design, the theoretical contributions, and the implications for future research and managerial practice.

**Research model and hypotheses**

Our work is informed by organizational theory and the RBV. Among the vast array of derivative theories and multiple schools of thought that surround organizational theory and the theory of the firm, we focus, relative to the first, on organizational decision-making theory (March, 1994; March et al., 1958) and, with regard to the latter, on the behavioral theory of the firm (Cyert and March, 1992) and the RBV of the firm (Wernerfelt, 1984). Organizational theory focuses on the internal structure of the firm and the relationships between its units and departments (Grant, 1996), and decision-making theory addresses the flow of information within organizations that supports and influences decision-making processes (March, 1994, 1999; Simon, 1961). Previous work by leading behavioral and social researchers addresses many important aspects of organizational theory. In the following, we focus on the most relevant aspects, including organizational structure (Aiken et al., 1980; Hall, 1977; Hall et al., 1967; Miller et al., 1988), organizational efficacy (Bandura, 2000; Bohn, 2001), organizational champions (Howell and Shea, 2006; Schon, 1963), and organizational change capacity (Judge and Douglas, 2009).

**Effects of organizational structure: center-led pricing**

Central pricing teams focus on the diffusion of pricing expertise and skills across the organization. If present, these central pricing teams – typically under the
responsibility of a chief pricing officer or pricing director – lead a company’s overall pricing strategy, resulting in a “center-led” pricing strategy (Ecker, 2010, p. 13). Because these central positions are nonroutine and highly specialized, their expert incumbents are likely to gain power and influence (Pfeffer, 1978). The presence of this team of experts also increases organizational confidence in executing marketing activities (John and Martin, 1984). This organizational configuration thus results in the diffusion of pricing capabilities throughout the organization as well as in higher level of confidence. Formally:

\[ H1a. \] Center-led pricing management has a positive effect on pricing capabilities.

\[ H1b. \] Center-led pricing management has a positive effect on organizational confidence.

Organizational confidence

Social cognitive theory (Bandura, 1997) suggests that two main perceptions motivate an organization member to “engage in teamwork activities and behaviors” – the “individual’s perception of his or her ability to perform generic teamwork behavior (self-efficacy) and perceptions regarding the team’s possession of the resources required for completing the task (collective efficacy)” (Tasa et al., 2007, p. 19). Social cognitive theory broadens the concept of human agency to collective agency (Bandura, 2000): people share beliefs in their “collective power” to produce desired results. Socially shared cognitions are placed into an organizational context where people work together to accomplish desired outcomes and ends (Bohn, 2001). Among the social cognitions of firm members are beliefs about or perceptions of their organization’s capabilities. Bandura (1997, p. 476) posits that “an organization’s beliefs about its efficacy to produce results is undoubtedly an important feature of its operative culture.”

Self-efficacy, central to the motivational concept of human action in organizations, is the generative capacity of one’s resources and abilities to cope with a situation (Bandura, 1997). Collective efficacy refers to the perception of groups, teams, and other social collections of the capability of a group (Bohn, 2001). A meta-analysis conducted by Gully et al. (2002) shows that the relationship between collective efficacy and team performance is positive and significant, thus supporting social cognitive theory’s claim that efficacy is “a primary determinant of the extent to which individuals or teams are likely to put forth the efforts required to perform successfully” (Bandura, 1986, p. 392). Confidence consists of “positive expectations” for favorable outcomes and tremendous potential results (Hoover and Valenti, 2005, p. 244). Confidence influences a member’s willingness to invest money, time, reputation, and emotional energy to shape the ability to perform (Kanter, 2006, p. 7).

In this paper, we use the words organizational efficacy and organizational confidence interchangeably and adopt Bohn’s definition and properties of organizational efficacy as an organizational factor affecting the adoption of pricing approach: organizational efficacy is a generative capacity within an organization to cope effectively with the demands, challenges, stressors, and opportunities it encounters within the business environment. It exists as an aggregated judgment of an organization’s individual members about their sense of collective capacities, sense of mission or purpose, and sense of resilience. In its most basic form, organizational efficacy is a sense of “can do” (Bohn, 2001, p. 39c; Bohn, 2002).
These shared beliefs in employees’ “collective power” promote people working together, and lead to the desired superior outcome (Bohn, 2001). Indeed, De Jong et al. (2006) show a causal link between employee confidence and performance. Therefore, we hypothesize:

**H2.** Organizational confidence has a positive effect on firm performance.

**Organizational champions**

Nearly half a century ago, a seminal article on radical military innovation (Schon, 1963, p. 85) defines the champion’s role to be to “promote ideas actively and vigorously through informal networks and to risk his or her position and prestige to ensure the innovation success.” Schon (1963, p. 84) declares that a new idea “either finds a champion or dies.” Later, Chakrabarti (1974, p. 58) elaborates by linking the role of champion to the various stages of the collective decision-making process: the champion plays a critical role at all stages, overcoming technical and organizational obstacles and guiding effort to achievement by the “sheer force of his will and energy.”

Other scholars and practitioners focus on the role of champions strictly from a leadership perspective. Organizational champions are defined as charismatic leaders (Nadler and Tushman, 1990), transformational leaders (Bass, 1985, p. 22; Wang and Huang, 2009), and champions of change (Nadler and Nadler, 1997, p. 98). Champions may exhibit a “constellation of behaviors” (Howell et al., 2005, p. 643) that can be nurtured and learned – including “communicating a clear vision of what innovation could be or do, displaying enthusiasm and demonstrating commitment to it, and involving others in supporting it” (Howell and Higgins, 1990, p. 323). Champions may increase “effort-accomplishment expectancies” by reinforcing collective efficacy and increase both self-efficacy and collective efficacy by expressing positive evaluations (Tasa et al., 2007), showing confidence in others’ abilities to perform effectively and to meet challenges (Nadler and Tushman, 1990), and rallying troops (Hacker and Roberts, 2003).

Champions mobilize organizations by energizing teams, providing resources, and continuously emphasizing pricing capabilities, as well as by learning from failures to remove organizational and behavioral barriers (Chakrabarti, 1974). The focus by champions on energizing teams creates organizational excitement, which generates the “emotional contagion” (Hatfield et al., 1994, p. 7) necessary for change. Charismatic champions raise “effort-accomplishment expectancies” by reinforcing self- and collective efficacy (Tasa et al., 2007) and by showing confidence in people to meet challenges (Nadler and Tushman, 1990). Championing of pricing by the CEO increases pricing capabilities as well as firm performance (Liozu and Hinterhuber, 2013a). Thus, we posit the following:

**H3a.** Championing behaviors have a positive effect on pricing capabilities.

**H3b.** Championing behaviors have a positive effect on firm performance.

**H3c.** Championing behaviors have a positive effect on organizational confidence.

**Organizational change capacity**

Organizational change capacity is a relatively new construct emanating from the RBV that describes organizational, as opposed to individual, ability to change.
Organizational change capacity is “a dynamic organizational capability that allows the enterprise to adapt old capabilities to new threats and opportunities as well as create new capabilities” (Judge and Elenkov, 2005, p. 893). Learning is a central element of this capacity (Moilanen, 2005). Organizational change capacity is an antecedent of organizational ambidexterity, which allows organizations to simultaneously explore and exploit market opportunities (Judge and Blocker, 2008). Judge and Elenkov (2005) operationalize the construct for empirical research and suggest eight dimensions encompassing leadership, culture, and systems thinking. In a sample of Bulgarian companies, Judge and Elenkov (2005) find that organizational change capacity is positively related to environmental performance, largely defined as the degree of preservation of environmental resources. Since in our research we are interested mostly in firm financial performance, we choose to narrow this construct to a reduced set of dimensions (see “Methods”).

We conjecture that the capacity of firms to change will strongly and positively influence the development of pricing capabilities and will amplify organizational confidence, or a “can do” attitude (Bohn, 2001) toward change. Finally, we posit that the overall capacity of a firm to learn and adapt to change will positively influence firm performance vis-à-vis competitors. Accordingly:

H4a. Organizational change capacity has a positive effect on pricing capabilities.
H4b. Organizational change capacity has a positive effect on firm performance.
H4c. Organizational change capacity has a positive effect on organizational confidence.

Capabilities
Capabilities are the glue that combines, develops, and transforms the resources to create value offerings for customers (Day, 1994; Grant, 1991; Teece et al., 1997). Dutta et al. (2003) specifically highlight the role of pricing capabilities, defined as a set of complex routines, skills, systems, know-how, coordination mechanisms, and complementary resources, in increasing company performance: pricing capabilities refer to, on the one side, the price-setting capability within a firm (identifying competitor prices, setting pricing strategy, translating from pricing strategy to price) and, on the other, to the price-setting capability vis-à-vis customers (convincing customers on price-change logic, negotiating price changes with major customers).

Today, our understanding on the role of pricing capabilities is largely confined to qualitative research (Berggren and Eek, 2007; Dutta et al., 2002; Dutta et al., 2003; Hallberg, 2008), i.e. interviews with CEOs, pricing and marketing managers. This stream of research finds that pricing capabilities are positively related to firm performance. We thus posit that this relationship also holds in our quantitative survey:

H5. Pricing capabilities have a positive effect on firm performance.

Link between capabilities and confidence
Organizational and individual confidence rest on activities that organizations and individuals do well: in a study of sales personnel, Román and Iacobucci (2010) find that an increase in selling skills leads to an increase in confidence. Qualitative research in pricing suggests that an increase in individual pricing capabilities leads to an increase in individual confidence, enabling sales personnel to be a “superhero for one second,”
that is, to withstand customer pressure to discount prices during sales negotiations (Hinterhuber and Liozu, 2012, p. 72). Accordingly,

\textit{H6.} Pricing capabilities have a positive effect on organizational confidence.

\textit{Championing behaviors as an amplifying variable}\nChampioning behaviors can have a powerful impact on organizations as top executives make strategic choices (Hambrick and Mason, 1984), purposefully become involved in projects and tasks (Cyert and March, 1992), and influence group cohesiveness through transformational leadership (Wang and Huang, 2009). When executive champions design organizational architecture, they influence the management and speed of system-wide organizational change (Nadler and Tushman, 1990). In pricing, CEO championing behaviors positively affect pricing capabilities and firm performance (Liozu and Hinterhuber, 2013a). We thus hypothesize that the presence of strong championing behaviors in firms, coupled with the presence of purposely designed center-led pricing teams and organizational change capacity, acts as an amplifier on firm performance:

\textit{H7.} Championing behaviors amplify the positive effect of organizational change capacity on firm performance.

\textit{H8.} Championing behaviors amplify the positive effect of center-led pricing management on firm performance.

\textit{The moderating effect of competitive intensity and product advantage}\nThe adoption and implementation of pricing practices and the organizational design for pricing are moderated by two exogenous factors: First, competitive intensity increases customer bargaining power and decreases firm performance. As competition increases, so may stress, uncertainty, and the “unanalyzability” of market information (Daft and Weick, 1984), leading to pricing decisions that are erratic and more intuition-based (Brownlie and Spender, 1995). Product differentiation, on the other hand, isolates a firm, to a degree, from competitive pressure. Differentiation influences customer preferences and customer choice (Brown and Carpenter, 2000).

Consequently, Ingenbleek \textit{et al.} (2003) suggest that competitive intensity negatively moderates the relationship between pricing practices and firm performance and that, conversely, relative product advantage positively moderates this relationship. In line with these propositions we suggest that:

\textit{H9a.} Competitive intensity negatively moderates the relationship between organizational confidence and firm performance such that, for high competitive intensity, the relationship is weaker than for low competitive intensity.

\textit{H9b.} Competitive intensity negatively moderates the relationship between pricing capabilities and firm performance such that, for high competitive intensity, the relationship is weaker than for low competitive intensity.

\textit{H10a.} Product advantage positively moderates the relationship between organizational confidence and firm performance such that, for high product advantage, the relationship is stronger than for low product advantage.
H10b. Product advantage positively moderates the relationship between pricing capabilities and performance such that, for high product advantage, the relationship is stronger than for low product advantage.

In sum, our hypothesized research model (see Figure 1) suggests the following key relationships: the RBV leads us to suggest that pricing capabilities and organizational confidence both positively influence firm performance. Organization theory leads us to suggest that organizational change capacity, center-led pricing management, and championing behaviors are antecedents of pricing capabilities as well as of organizational confidence. We model interaction effects between some of these antecedents and consider the moderating effects of competitive intensity and relative product advantage.

Methods
We use the membership list of the Professional Pricing Society (PPS) as the sample frame for this study. PPS is the world’s largest professional organization dedicated to pricing. Members are marketing, pricing, and general managers involved in pricing at mostly large, global companies from countries across the world. The president of the PPS endorses our study with his personal support and encourages members to respond to our survey. The unit of analysis for the survey is the individual respondent. PPS distributes our survey electronically in April 2011 to its approximately 18,300 members. We assure respondents of anonymity and give them the option to enter a raffle to win a prize as inducement for participation. Responses are returned over an eight-week period. About 300 “bounce” and are assumed not to have reached the intended recipients. Of the remaining 18,000 surveys, 1,148 are returned partially or fully completed. We determine 748 to be usable for further analysis, for a response rate...
of 4.2 percent. Although this response rate is low, it is consistent with other large-scale survey response rates, which tend to range from 5 to 10 percent (Roth and Van Der Velda, 1991; Shah and Ward, 2003; Stock et al., 2000). Table I summarizes the sample profile: Respondents are, by and large, pricing managers from publicly traded, US-based manufacturing firms with more than 10,000 employees.

We assess nonresponse bias by verifying that early and late respondents do not differ in their responses (Armstrong and Overton, 1977). The early respondents are identified by selecting those that responded in the first two weeks. All possible t-test comparisons between the means of the two groups are not different from each other at the 0.05 level of significance, except on two of the 44 (4.5 percent) study variables.

**Measures**

We gather multi-item measures for our major constructs from well-validated measures found in prior literature. Since there are no existing scales to measure pricing capabilities and center-led management, we develop indigenous items following rigorous established item-development procedures and guidelines (Churchill, 1979; Nunnally and Bernstein, 1994). We take all other scales from the literature with minor modifications, with the exception of organizational change capacity, which we modify substantially. Judge and Elenkov (2005) suggest eight dimensions: trustworthy leadership, trusting followers, capable champions, involved mid-management, innovative culture, accountable culture, systems communication, and systems thinking. We regard the dimensions trustworthy leadership and innovative culture to be most critical for this study and operationalize organizational change capacity based on only these two dimensions using an eight-item scale (see below).

The construct definitions, survey items, response format, and scale sources are presented in detail in the Appendix (see Table AI). In summary, they are as follows:

<table>
<thead>
<tr>
<th>Table I. Profile of sample firms and respondents</th>
<th>Design and Pricing Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Activity</strong></td>
<td>Count</td>
</tr>
<tr>
<td>Manufacturing Firm</td>
<td>415</td>
</tr>
<tr>
<td>Service Organization</td>
<td>206</td>
</tr>
<tr>
<td>Distribution/Retail Company</td>
<td>107</td>
</tr>
<tr>
<td>Missing Data</td>
<td>20</td>
</tr>
<tr>
<td><strong>Nature of Firm</strong></td>
<td>Count</td>
</tr>
<tr>
<td>Publicly Traded</td>
<td>437</td>
</tr>
<tr>
<td>Privately Owned</td>
<td>257</td>
</tr>
<tr>
<td>Both</td>
<td>25</td>
</tr>
<tr>
<td>Do Not Know</td>
<td>9</td>
</tr>
<tr>
<td>Missing</td>
<td>20</td>
</tr>
<tr>
<td><strong>Firm Size - Employees Numbers</strong></td>
<td>Count</td>
</tr>
<tr>
<td>Less Than 250</td>
<td>78</td>
</tr>
<tr>
<td>251 to 500</td>
<td>43</td>
</tr>
<tr>
<td>501 to 1,000</td>
<td>45</td>
</tr>
<tr>
<td>1,001 to 10,000</td>
<td>233</td>
</tr>
<tr>
<td>More than 10,000</td>
<td>329</td>
</tr>
<tr>
<td>Missing</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total Respondents</strong></td>
<td>748</td>
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<td></td>
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<td></td>
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</tbody>
</table>
Center-led management: new seven-item scale, as in Liozu et al. (2011).


Organizational confidence: 12-item scale adapted from Bohn (2001).

Championing behaviors: nine-item scale adapted from Howell et al. (2005).

Organizational change capacity: two dimensions from the eight-dimension scale by Judge and Elenkov (2005) with in total eight items: three for “trust worthy leadership,” – degree to which business unit leaders protect the core values while encouraging change, consistently articulate an inspiring vision of the future, and show courage in their support for change initiatives; and five for “innovative culture,” – measuring the extent to which current organizational culture values innovation, values change, attracts and retains creative people, provides resources to experiment with new ideas, and allows people to take risks and occasionally fail.

Product advantage: three-item scale from Ingenbleek et al. (2003).

Competitive intensity: three-item scale from Ingenbleek et al. (2003).

Perceived relative performance: eight-item scale from Ingenbleek et al. (2003) and Morgan et al. (2009).

The use of subjective performance measures requires clarification. First, although North American respondents dominate our sample, about 32 percent of respondents are located elsewhere, mostly in Europe, Latin America, and Asia. A multidimensional measure based on perceived firm performance facilitates comparisons across different regions adhering to different accounting standards. Second, our sample includes privately owned companies (34 percent of sample) and small companies (22 percent have less than 1,000 employees). For these companies, researchers express strong reservations about the use of objective performance data, since these data are biased as a result of managerial manipulation for corporate and personal tax reasons (Sapienza et al., 1988). Third, recent studies show that perceptual performance measures tend to be highly correlated (80 percent) with objective performance indicators (Kumar et al., 2011). Subjective performance data are used widely in strategy research (Anderson and Paine, 1975). Taken in the aggregate, subjective or perceptual measures of firm performance reliably indicate a company’s health (Quinn and Baily, 1994).

We conduct face-to-face interviews with six pricing practitioners using concurrent verbal protocol content analysis (Bolton, 1993). Next, we pretest scale items with a panel of five academics and eight pricing practitioners. We then send a pilot test of this survey to 150 professionals representing pricing, marketing, sales, and general management functions and obtain 70 complete and usable responses. We modify the survey iteratively to incorporate all relevant test results.

We include control variables to account for sample heterogeneity, to rule out alternative explanations, to help eliminate contamination by our methods, and to mitigate omitted-variable problems. We control for a number of likely determinants of performance by including demographic characteristics of the firm, such as firm activity (manufacturing, service, retail), firm nature (B2B, B2C, both), firm size (Amburgey and Rao, 1996), and geographic zone.
We first conduct an exploratory factor analysis (EFA) on the sample data to determine whether each of the items, particularly those for the new scales, reliably measures the intended construct. The results confirm unidimensionality, with each item loading on its respective factor (Anderson and Gerbing, 1988). Next, we use confirmatory factor analysis (CFA) to simultaneously test the unidimensionality of a set of correlated constructs and to establish convergent and discriminant validity. The measurement model results indicate that all item loadings exceed the 0.30 threshold value, establishing unidimensionality (O'Leary-Kelly and Vokurka, 1998). The standardized regression weights are greater than 0.58, and all are statistically significant ($p < 0.001$), indicating convergent validity. In addition, significant cross-loadings are absent. We establish convergent validity of the measures by examining whether each construct has an average variance extracted (AVE) of at least 0.50 (Fornell and Larcker, 1981). This is true for all but two of the constructs (see Table II).

AVE exceeds the average shared variance (ASV) and maximum shared variance (MSV) in all cases but two, providing evidence of discriminant validity. We find that the square root of the AVE for each construct is greater than the correlation of the construct with any other given construct in the analysis, confirming satisfactory discriminant validity of the constructs. Furthermore, without exception, Cronbach alphas and composite reliability (CR) for each construct exceed the commonly used norm for acceptable psychometrics ($>0.70$).

The hypothesized CFA model of six correlated latent factors fits the data well using a number of conventional fit indices ($\chi^2/df = 1.842$, RMSEA = 0.034, NFI = 0.984, NNFI = 0.973, IFI = 0.969, and CFI = 0.969) (see Table III).

We assess configural and metric invariance to identify whether the factor structure is equivalent across different groups (Rungtusanatham et al., 2008). The results of multiple-group CFAs across both types of competitive intensity (high and low) and product advantage (high and low) provide evidence of configural equivalence. Analysis of metric invariance confirms that the groups are also metric-invariant based on non-significant path differences between them (Vandenberg and Lance, 2000).

To assess the extent to which common method bias is a concern, we conduct CFA in which the baseline model includes a common method bias factor (Podsakoff et al., 2003), where each of the items are linked to a common method factor (CMF). The results indicate that the common method bias, if present, is negligible. Next, a marker variable, determined ex post to have no signification correlation with other items in the constructs, is added to the measurement model (Lindell and Whitney, 2001). The marker variable extracts a negligible 1.25 percent of the variance.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Center-Led Pricing Management</th>
<th>Pricing Capabilities</th>
<th>Relative Performance</th>
<th>Organizational Confidence</th>
<th>Championing Behaviors</th>
<th>Organizational Change Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center-Led Pricing Mgmt</td>
<td>5.20</td>
<td>1.48</td>
<td>0.45 (0.44)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pricing Capabilities</td>
<td>4.31</td>
<td>1.50</td>
<td>0.445 (0.49)</td>
<td></td>
<td></td>
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<tr>
<td>Relative Performance</td>
<td>4.82</td>
<td>1.31</td>
<td>0.328 (0.55)</td>
<td></td>
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<tr>
<td>Organizational Confidence</td>
<td>5.07</td>
<td>1.41</td>
<td>0.317 (0.467)</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Championing Behaviors</td>
<td>4.94</td>
<td>1.59</td>
<td>0.449 (0.551)</td>
<td></td>
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</tr>
<tr>
<td>Organizational Capacity</td>
<td>4.93</td>
<td>1.46</td>
<td>0.363 (0.477)</td>
<td></td>
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</tbody>
</table>

**Notes:** Bolded values on the diagonal are the AVEs with square root of AVE in parentheses. All correlations are significant at $p < 0.001$.
### Table III. Measurement model results

<table>
<thead>
<tr>
<th>Constructs and Corresponding Items</th>
<th>Cronbach Alpha</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standardized Regression Weights</th>
<th>Standard Error</th>
<th>Critical Ratio</th>
<th>Composites Reliability</th>
<th>Average Variance Extracted</th>
<th>Maximum Shared Variance</th>
<th>Average Shared Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pricing Capabilities (PC)</td>
<td>0.906</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC1</td>
<td>4.32</td>
<td>1.594</td>
<td>0.766</td>
<td>0.053</td>
<td>23.998</td>
<td>0.9</td>
<td>0.40</td>
<td>0.42</td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td>PC2</td>
<td>4.32</td>
<td>1.425</td>
<td>0.653</td>
<td>0.048</td>
<td>19.298</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC3</td>
<td>4.73</td>
<td>1.318</td>
<td>0.808</td>
<td>0.043</td>
<td>25.956</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC4</td>
<td>4.44</td>
<td>1.482</td>
<td>0.625</td>
<td>0.051</td>
<td>18.218</td>
<td></td>
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Structural model
We estimate a structural model to further test our direct-effect hypotheses (H1a, H1b, H1c-H10), shown in Figure 1. The structural model results are shown in Table II, and the final SEM in Figure 2. The model-fit measures indicate acceptable agreement with the covariance in the data: \( \chi^2/\text{d.f.} = 1.00 \), root mean square error of approximation (RMSEA) = 0.002, normed fit index (NFI) = 0.997, non-normed fit index (NNFI) = 1.000, incremental fit index (IFI) = 1.000, and comparative fit index (CFI) = 1.000.

Direct effects on dependent variables
First, the hypothesized impact of center-led pricing management on pricing capabilities (\( b = 0.359, p < 0.01 \)) is significant. However, center-led pricing management does not positively influence an organization's confidence (\( b = 0.013, p = 0.531 \)). These results provide support for H1a but not for H1b.

Second, we find championing behaviors to have a positive and significant effect on relative firm performance (\( b = 0.09, p < 0.05 \)), pricing capabilities (\( b = 0.351, p < 0.01 \)), and organizational confidence (\( b = 0.189, p < 0.01 \)). Our findings support H3a, H3b, and H3c.

Third, we find organizational change capacity to be positively and significantly related to pricing capabilities (\( b = 0.135, p < 0.01 \)), organizational confidence (\( b = 0.575, p < 0.01 \)), and relative firm performance (\( b = 0.116, p < 0.05 \)), thereby validating H4a, H4b, and H4c.

Fourth, we find pricing capabilities to have a positive and significant influence on organizational confidence (\( b = 0.241, p < 0.01 \)) and a much stronger positive influence on relative firm performance (\( b = 0.344, p < 0.01 \)), providing support for H5 and H6.

Finally, as with pricing capabilities, we find organizational confidence to have a positive and significant influence on relative firm performance (\( b = 0.279, p < 0.01 \)), providing support for H2. With one exception, all of our ten direct-effect hypothesized relationships are supported (see Table IV).

<table>
<thead>
<tr>
<th>Championing Behaviors</th>
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<tr>
<td>Center-led Pricing Management</td>
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</tr>
<tr>
<td>Pricing Capabilities</td>
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</tr>
<tr>
<td>R² = 0.543</td>
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<tr>
<td>Relative Firm Performance</td>
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<tr>
<td>R² = 0.568</td>
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<tr>
<td>Organizational Confidence</td>
<td>0.241***</td>
</tr>
<tr>
<td>0.575***</td>
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<tr>
<td>0.116**</td>
<td></td>
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<tr>
<td>-0.032**</td>
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<td>Firm Size</td>
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Notes: *p < 0.1; **p < 0.05; ***p < 0.01
Interaction effects
Champions throughout the organization, especially in the pricing function, can effectively support important organizational changes. Consequently, we hypothesize that the combination of an organization’s capacity to manage change and the championing of pricing affects relative performance differently than each variable individually. However, our data do not support this relationship, and we reject H7.

A center-led management team of pricing experts ensures consistency and diffusion of key pricing activities across the entire company while also supporting decentralized managers who are involved in pricing based on their specific requirements. When top executives champion pricing, they send critically important signals to the organization on the importance of pricing, resolve conflicts, and ensure that managers see pricing as a critical activity, regardless of their hierarchical position or functional department. We hypothesize that championing behaviors and a center-led pricing organization work together; however, we observe that the simultaneous influence of these on relative firm performance is not multiplicative. That is, the effect of the pricing champion on relative firm performance is not larger when he or she interacts with the organization’s center-led management team of pricing experts. Therefore, we reject H8.

<table>
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<tr>
<th>Hyp</th>
<th>Hypothesized Paths</th>
<th>Regression Estimates</th>
<th>Standardized Estimate</th>
<th>Critical Ratio</th>
<th>Hypothesis Supported</th>
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<td>0.013 (ns)</td>
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<td>-0.009 (ns)</td>
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<td>-0.118 (ns)</td>
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</table>

| R Square Relative Firm Performance | 0.567 |
| R Square Pricing Capabilities     | 0.543 |
| R Square Organizational Confidence | 0.628 |

Notes: *p < 0.1; **p < 0.05; ***p < 0.01
Analysis of moderation

We use multiple-group SEM to test H9a, H9b, H10a, and H10b: the moderating role of competitive intensity and product advantage on the relationships between organization confidence and relative performance and between pricing capabilities and relative performance. Table II shows significant moderator effects for both competitive intensity and product advantage on the relationship between organizational confidence and relative firm performance. Under both conditions of high competitive intensity ($b = 0.376, p < 0.01$) and high product advantage ($b = 0.236, p < 0.01$), organizational confidence is positively and significantly related to relative firm performance. These results are not found under low conditions of competitive intensity ($b = 0.154, p = 0.073$) and product advantage ($b = 0.128, p = 0.121$). These results provide support for H9a and H10a.

Further, we observe that competitive intensity and product advantage do not moderate the relationship between pricing capabilities and relative firm performance. This relationship remains positive and significant under conditions of high and low competitive intensity, but also under circumstances of high and low product advantage. Consequently, H9b and H10b are not supported. Last, most of our control variables are not significant, except for firm size ($b = -0.036, p = 0.043$), which has a positive effect on organizational confidence.

Discussion

In this paper we examine how firms increase performance via pricing. Our survey of 748 pricing and marketing managers from countries around the world offers three main contributions.

First, this study suggests a parsimonious model for driving firm performance via pricing: the 5 C model. Championing behaviors by top management, center-led pricing management, pricing capabilities, organizational confidence, and, finally, organizational change capacity are all positively linked to firm performance. Our data suggest that all of these factors, with the exception of center-led pricing organization, are directly related to firm performance. Furthermore, we find that center-led pricing management, organizational change capacity, and championing behaviors act as important antecedents of pricing capabilities. We also find that change capacity and championing behaviors are antecedents of organizational confidence.

In line with current research (Homburg et al., 2012), we find that centralization is only conditionally beneficial. In our model, center-led pricing management increases pricing capabilities, but not organizational confidence. Pricing capabilities and organizational confidence in turn directly increase firm performance. In our model, the benefits of a center-led pricing organization are contingent on the current level of pricing capabilities and organizational confidence. Given highly developed pricing capabilities and a low level of organizational confidence, center-led pricing does not appear to increase firm performance. Conversely, with weakly developed pricing capabilities and a high level of organizational confidence, center-led pricing management seems to strongly increase firm performance, via its effect on pricing capabilities and without negatively affecting organizational confidence. Further empirical studies directly exploring these relationships seem warranted.
Second, our study highlights the role of organizational confidence as an antecedent of firm performance. To the best of our knowledge, the relationships between organizational confidence, pricing capabilities, and firm performance have not yet been explored in a quantitative survey. A different dataset and sample (CEOs) addresses related, but distinct, research questions in our overall stream of research dedicated to pricing (Liozu and Hinterhuber, 2013a). The results of this study suggest that championing behavior, organizational change capacity, and pricing capabilities positively influence organizational confidence, which in turn leads to superior firm performance. In the overall stream of research exploring the link between capabilities, resources, and performance (Armstrong and Shimizu, 2007; Newbert, 2007, 2008), these findings thus document a positive relationship between the intangible asset of organizational confidence and firm performance.

Our research shows that an increase in organizational confidence has a very substantial impact on firm performance. Organizational confidence encompasses the following items: the belief in one’s own abilities to take on any challenge, a sense of purpose, a vision for the future, the confidence in the future and belief in future accomplishments, the conviction that one’s own products/services deliver value, the courage to withstand customer price objections, the courage to implement price changes in the market, and the certainty to work well together as a team.

While the role of confidence has been explored in qualitative research before (Hinterhuber and Liozu, 2012), this is the first quantitative study documenting a positive relationship between organizational confidence and firm performance. As such, this study is also an important milestone in the overall research stream on the RBV. Also here, further research is warranted: particularly promising seem further quantitative studies exploring contingent factors of confidence or curvilinear relationships between confidence and firm performance.

Third, our study is the first quantitative research documenting a positive relationship between organizational change capacity – measured on the two dimensions of trustworthy leadership and innovative culture – and pricing capabilities, organizational confidence, and firm performance. It is firmly established by now that a new pricing approach is not “just a change of marketing signals” but “a new way of life” (Forbis and Mehta, 1981, p. 42). Our study documents that the higher the organizational change capacity – specifically, trustworthy leadership and innovative culture – the higher pricing capabilities, organizational confidence, and, ultimately, firm performance. Increasing pricing capabilities and organizational confidence is thus fundamentally a change-management process that requires capabilities typical of such processes: trustworthy, visionary leaders who encourage change while promoting core values, and an organizational culture that allows innovation and change while permitting people to take risks, to occasionally fail, and to experiment with new ideas.

Developing pricing capabilities rests on developing organizational change capacity. We are not aware of any quantitative study that highlights the foundational nature of organizational change capacity toward building pricing capabilities. Also on this point, further studies are warranted, specifically studies employing the original, eight-dimensional model of organizational change capacity developed by Judge and Elenkov (2005).
Finally, although we do not find the hypothesized interaction effects, we find moderating effects between competitive intensity/relative product advantage and organizational confidence/firm performance: our data suggest that competitive intensity negatively moderates the relationship between organizational confidence and relative firm performance such that, for low competitive intensity, the relationship is stronger than for weak competitive intensity. We also find that product advantage positively moderates the relationship between organizational confidence and relative firm performance such that, for high product advantage, the relationship is again stronger than for low product advantage. Analysis of these interaction effects thus points toward the role of product differentiation and market segments with lower competitive intensity as instrumental for strengthening the positive impact of organizational confidence on firm performance.

Limitations
This study advances the literature on a number of key research questions, specifically on the role of organizational confidence and change-management capacity in pricing. We propose a parsimonious model – the 5 C model – suggesting key levers that firms should activate to increase performance via pricing. Nevertheless, this study has important limitations.

First is the use of subjective or perceptual measures of firm performance. Subjective performance measures are widely used in the strategy literature (Gruber et al., 2010; Spanos and Lioukas, 2001) as well as in the marketing literature (Kohli and Jaworski, 1990; Narver and Slater, 1990). Nevertheless, subjective performance measurement is based on perceptions and is thus potentially biased. Future studies would benefit from measuring subjective and objective performance indicators simultaneously. The second limitation is common method bias. We attempt to minimize common method bias through statistical analysis but cannot rule it out entirely. Future studies would benefit from collecting multiple responses per firm. The third limitation is causality: the directionality in our hypothesized research model is based on previous empirical research as well as on established theoretical frameworks. Nevertheless, we cannot entirely rule out reverse causality – that high performance leads respondents to rate pricing capabilities within their organizations highly – as opposed to the causal path in our model. Since we are not able to control for prior year firm performance, we cannot completely rule out the possibility of reverse causality. Future research can address this issue, via appropriate controls or the use of longitudinal data. The fourth and final limitation concerns the sample and response rate: we poll members of the Professional Pricing Society, an organization that includes an estimated 30 percent of the Global Fortune 500 companies and a large number of medium-sized companies. There are strong reasons to assume that the membership base is representative of the overall population of firms globally, but we cannot completely rule out a sample selection bias. Also the response rate of 4.2 percent is comparatively low. These issues can be addressed in future studies.

Implications for practice
This study has simple, yet very important, implications for practicing managers. First, we suggest that pricing managers, marketing executives, and members of the top management team can drive firm performance via pricing through the following five
factors (the 5 Cs): center-led price management, organizational confidence, championing behaviors, change capacity, and pricing capabilities. All of these factors directly or indirectly contribute to increased firm performance. Our 5 C model also may help to explain why pricing initiatives frequently fail: by concentrating on a narrow set of factors, such as, for example, increasing pricing capabilities within their organizations, managers overlook that significant increases in firm performance are possible only when all five factors are addressed conjointly – when, in addition to increasing pricing capabilities, executives also establish a center-led pricing organization, when the organization has top managers actively championing the pricing function, when the organization has developed capabilities to manage organizational change, and, last, when managers actively develop organizational confidence. Increasing performance via pricing is a complex, multifaceted endeavor requiring that managers activate the five organizational and strategic levers we identify conjointly.

Of interest to practicing managers are our findings on organizational confidence and organizational change capacity. These two factors have so far been largely neglected in pricing research. This study shows, for the first time using a quantitative survey with global respondents, that organizational confidence is directly related to firm performance. We also, very likely for the first time, highlight the role of organizational change capacity for pricing purposes: organizational change capacity positively and directly influences pricing capabilities, organizational confidence, and firm performance. Our study also confirms key findings from earlier studies on the importance of CEO championing behavior (Liozu and Hinterhuber, 2013a). Championing behaviors by senior management positively influence pricing capabilities, organizational confidence, and firm performance.

The key managerial implication of this study is that executives need to manage pricing holistically in order to increase firm performance: pricing capabilities, center-led price management, organizational confidence, championing behaviors, and organizational change capacity need to move in symphony to increase firm profits.

The analysis of moderating effects shows, unsurprisingly, that the effect of organizational confidence on firm performance is stronger when products are strongly differentiated and when competitive intensity is low. We thus remind managers that basic housekeeping activities have an indirect effect on performance: creating meaningful, relevant differentiation and carving out market niches or customer relationships with lower competitive intensity are activities that strengthen the positive relationship between organizational confidence and firm performance.

**Research directions**
The findings of this study offer a number of avenues for future research. First, we need to know more about the role of center-led pricing management in increasing firm performance. Our findings suggest that center-led pricing management is particularly effective in increasing firm performance when pricing capabilities are low and when organizational confidence is high. The data in our study only point toward this possibility, so clearly more research is needed to substantiate this finding.

Second, we intuit that organizational confidence has an upper boundary with regard to firm performance. In other words, we need to understand when organizational confidence becomes arrogance, thus potentially decreasing firm performance. Thus,
further research should explore the existence of curvilinear relationships between organizational confidence and performance, possibly augmented by a differentiation between hierarchical levels in organizations or departments. Examining where and when organizational confidence starts to hurt performance is a potentially very fruitful research endeavor.

Finally, the moderation effects in our data – for low competitive intensity or high product advantage, the relationship between organizational confidence and firm performance is strengthened – raise the interesting question of whether organizational confidence can act as de facto substitute for product differentiation or privileged customer relationships. This question may well be worth a study.

References


### Appendix

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<th>Construct/dimensions</th>
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| **Organizational structure** | The existence of a centralized team of experts focusing on the diffusion of knowledge and expertise throughout the firms and on the support of business unit leaders in making the appropriate pricing decisions. Center-led also indicates that decision-making authority remains decentralized with business unit managers. | Indicate the degree to which this central team support your organization with the following activities . . . 
1. Conducts pricing training with divisional decision makers and top executives (D) 
2. Manages specific pricing projects or programs to support divisional marketing programs (D) 
3. Assists in the design and/or implementation of pricing tools (D) 
4. Conducts pricing research activities to support pricing decision making process (D) 
5. Assists decision makers with price-setting process as part of the formal product development process (D) 
6. Provides top management with pricing reports and trends (D) 
7. Provides knowledge with overall pricing process (for example, pricing increases, pricing reviews) | Construct and item definition follow qualitative research (Liozu et al., 2011). Result of the pilot survey with 70 responses yielded an AC of 0.745 with these seven items. |
| **Pricing capabilities** | Pricing capabilities are part of marketing capabilities which concern the firm’s adequate management of individual “marketing mix” processes such as product development and management, pricing, selling, etc. as well as marketing strategy development and execution. These capabilities may be rare, valuable, non-substitutable, and immobile source of advantage that can lead to superior firm performance. | Rate your organization relative to your major competitors in terms of its capabilities in the following areas: 
1. Using pricing skills and systems to respond quickly to market changes 
2. Knowledge of competitors’ pricing tactics 
3. Doing an effective job of pricing products/services 
4. Monitoring competitors prices and price changes 
5. Sticking to price list and minimizing discounts 
6. Quantifying customers’ willingness to pay 
7. Measuring and quantifying differential economic value versus competition 
8. Measuring and estimating price elasticity for products/services 
9. Designing proprietary tools to support pricing decisions (D) 
10. Conducting value-in-use analysis or Total Cost of Ownership (D) 
11. Developing and conducting specific pricing training programs (D) 
12. Developing proprietary internal pricing management process (D) | Construct definition includes Morgan et al. (2009) and the researcher qualitative research (Liozu et al., 2011). Result of the pilot survey with 70 responses yields an AC of 0.885 with these 12 items. |
| **Organizational confidence** | Organizational confidence is a generative capacity of an organization to cope effectively with the demands, challenges, stresses and opportunities it encounters within the business environment. It exists as an aggregated judgment of an organization’s individual members about their (1) sense of collective capacities, (2) sense of mission or purpose, and (3) a sense of resilience. In its most basic form, organizational efficacy is a sense of “can do” (Bohn, 2001, 2002). | To what extent do you agree or disagree with the following statements about your organization: 
1. We can take on any challenge (D) 
2. Because our departments work together well, we can beat our competition (D) 
3. We are more innovative than most organizations I have worked in (D) 
4. Everyone works together effectively (D) 
5. People here have a sense of purpose to accomplish something (D) 
6. We have a strong vision of the future (D) 
7. We are very certain about what we will accomplish together as a company (D) 
8. We are confident about our future (D) 
9. We believe in the value of our products/services (D) 
10. We have the necessary courage to stand firm to customers’ pricing objections (D) 
11. We have the necessary courage to implement difficult price changes in the market (D) 
12. We have a strong sense of resilience with pricing (D) | Adapted from Bohn (2001) Overall Bohn questionnaire AC is 0.91 with 20 items. Sense of Collective Capability (AC: 0.95) (Items 1-7, 9 and 10) 
Sense of Mission and Future (AC: 0.84) (Items 11, 12, 14, 15 and 16) 
Sense of Resilience (AC: 0.86) (Items 13, 17-21). |

Table AI. Construct, measurement items and representative literature (continued)
### Championing behaviors

Transformational leaders motivate followers to achieve performance beyond expectations by transforming followers’ attitudes, beliefs and values. They take on the role of organizational champions by demonstrating specific behaviors to lead and support organizational implementations.

To what extent do you agree or disagree with the following statements about your top management involvement with pricing?

1. Strongly Disagree to 7 = Strongly Agree
2. Enthusiastically promotes the pricing function
3. Expresses confidence in what pricing can do
4. Shows tenacity in overcoming obstacles when changes in pricing are needed
5. Knocks down barriers and obstacles to pricing implementations
6. Gets pricing problems into the hands of those who can solve them
7. Gets the right people involved in pricing discussions
8. Gets key decision makers involved in the pricing process
9. Acts as a champion of pricing

Adapted from Howell et al. (2005)) based on Avodof et al. (1999) MLQ scales

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<td>Gets the right people involved: three items (AC: 0.83)</td>
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### Organizational change capacity

The organization’s capacity to manage the change process from a dynamic capabilities prospective.

To what extent do you agree or disagree with the following statements about your organization?

1. Strongly Disagree to 7 = Strongly Agree
2. Protect the core values while encouraging change
3. Consistently articulate an inspiring vision of the future
4. Show courage in their support for change initiative

In this organization, our organizational culture...
1. Values innovation
2. Values change
3. Attracts and retains creative people
4. Provides resources to experiment with new ideas
5. Allows people to take risks and occasionally fail

Adapted from Judge and Elenkov (2005) eight dimension scale: Trustworthy Leaders: four items (AC: 0.92) and Innovation culture: four items (AC: 0.89)

### Product advantage

Relative superiority of product over competition.

To what extent do the following statements apply to your products/services?

1. Does Not Apply to 7 = Strongly Applies
2. Our products/services offer higher quality than competing ones
3. Our products/services solve problems customers have with competing products/services
4. Our products/services are very innovative and can substitute for an inferior competing alternative

Adapted from Ingenbleek et al. (2003) Product Advantage: three items (AC: 0.74)

### Competitive intensity

Competitive behavior or rivalry between competitors.

To what extent do the following characteristics apply to your primary market?

1. Does Not Apply to 7 = Strongly Applies
2. Intense price competition
3. Strong competitors’ sales, promotion and distribution systems
4. Strong and high quality competing products and services

Adapted from Ingenbleek et al. (2003) Competitive Intensity: three items (AC: 0.73)

### Perceived relative performance

Respondents' perceived evaluation of their organization’s performance relative to their competition.

Please evaluate the performance of your major line of business over the past year relative to your major competitors.

1. Much Worse/Lower Than Competitors to 7 = Much Better/Higher Than Competitors
2. Acquisition of new customers
3. Growth in total sales revenues
4. Absolute price levels
5. Pricing power in the market
6. Business Unit profitability
7. Return on sales (ROS)
8. Return on investment (ROI)

Adapted from Ingenbleek et al. (2003) and Morgan et al. (2009).

Note: (D) = Item dropped due to poor reliability

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