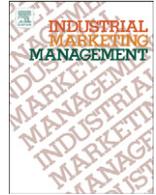




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CEO championing of pricing, pricing capabilities and firm performance in industrial firms

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ABSTRACT

CEOs uniquely shape activities within the firm. Among potential activities, pricing is unique: pricing has a direct and substantial effect on firm performance. In what may be the first quantitative study in industrial marketing polling exclusively CEOs globally we examine to which degree CEO championing of pricing influences pricing capabilities and firm performance. Our sample consists of 358 CEOs of industrial firms. Our results suggest that the level of championing of pricing by the CEO positively influences decision-making rationality, pricing capabilities, and collective mindfulness thereby leading to a significantly higher firm performance. This study also documents a relationship between decision making rationality and pricing capabilities (but not firm performance) thus suggesting that intuition in pricing decisions could drive firm performance.

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1. Introduction

Pricing is still an under-researched topic in industrial marketing: in a retrospective analysis of the content published in the *Journal of Business-to-Business Marketing* Dant and Lapuka (2008) find that the topic of pricing accounts for less than 5% of all articles published between 1993 and 2006. Similarly, after a comprehensive review of the industrial marketing literature, Reid and Plank (2000:88) conclude: “pricing continues to be an area in need of research”.

In the current study we focus on the activities of one particular individual – the Chief Executive Officer (CEO). The literature highlights the role of organizational champions in bringing about organizational change (Howell & Higgins, 1990). In the current study we examine how championing activities of pricing by the CEO influence pricing capabilities and firm profitability in industrial companies. CEOs are, of course, very particular individuals: within any organization, the “levers of power are uniquely concentrated in the hands of the CEO” (Nadler & Heilpern, 1998:5). As architects of corporate strategy CEOs commit organizations to specific courses of action (Harrison & Pelletier, 1997).

Whereas earlier research suggests that the influence of the CEO on firm outcomes is rather symbolic in nature and thus limited (Pfeffer, 1981), the current literature documents a substantial CEO effect on

corporate performance, estimating that between 6% and 29% of the variance in corporate profitability is due to the CEO (Mackey, 2008). The marketing literature indicates that CEO attention positively impacts innovation outcomes (Yadav, Prabhu, & Chandy, 2007). CEOs thus clearly matter. Do CEO activities in pricing matter as well and, if so, through which mechanisms?

In our study we examine how CEO championing of pricing in industrial firms influences pricing capabilities, collective mindfulness and decision making rationality and how these factors influence firm profitability. CEOs themselves “will never set a single price. They can, however, give their managers the ability to win price wars, maintain price leadership and hold a competitive edge in pricing” (Dutta, Bergen, Levy, Ritson, & Zbaracki, 2002:66). CEO activities are magnified throughout the organization thus resulting in a substantial, leveraged, impact of even small activities throughout the organization (Rosen, 1990). Reports by pricing practitioners suggest that the pricing function is increasingly driven by chief executives or other members of the executive management team (Jacobson, 2007). Empirically, the lack of CEO support is an important obstacle in the implementation of value-based pricing strategies (Hinterhuber, 2008).

In our survey, we poll 358 CEOs from companies around the world by making use of the database maintained by the Young Presidents' Organization. To the best of our knowledge this is the first study in industrial marketing making use of this database. To the best of our knowledge this is also one of the very few global studies in industrial marketing polling only CEOs: Auh and Menguc (2007, 2009), for example, poll 260 Australian CEOs and senior executive, Auh and Menguc (2005) poll 242 national (likely US) CEOs, Aragon-Correa, Garcia-Morales, and Cordon-Pozo (2007) use 408 Spanish CEOs, and

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Sluys, Matthyssens, Martens, and Streukens (2011) use 235 Belgian CEOs. Other studies have a large share (60%) of CEOs among respondents, but also use operating managers (Land, Engelen, & Brettel, 2012). Finally, qualitative research with the CEO as main respondent is quite frequent (Keating & McLoughlin, 2010; Zerbin, Golfetto, & Gibbert, 2007).

In other words, quantitative, global surveys with the CEO as respondent are not very frequent in industrial marketing, but potentially very illuminating given the uniqueness of the position of a CEO within any organization.

Understanding the link between CEO commitment to and involvement in pricing and the design and performance of an organization allows us to further shed light on a specific type of strategic action – championing of the pricing function – through which CEOs can influence firm performance. Our inquiry contributes to the fields of pricing and industrial marketing by linking CEO championing behaviors to three organizational factors – pricing capabilities, collective mindfulness and decision making rationality – and subsequently to relative firm performance. Most importantly, our data highlight the role of organizational champions and imply that purposeful championing of pricing by CEOs influences organizational design for pricing and firm performance. Our results also underline the role of decision making rationality in building pricing capabilities. Contrary to expectations, we do not find an effect of decision making rationality on firm performance. For future research this potentially suggests that, conversely, intuition in pricing decision could positively affect firm performance.

2. Theoretical background and hypotheses

The development of our theoretical model draws from related streams of literature: industrial pricing, the resource-based view of the firm and from organization theory, particularly the literature on bounded rationality, organizational champions and collective mindfulness. Fig. 1 below describes our hypothesized research model.

2.1. Pricing literature from an organizational perspective

Several studies examine pricing practices from the perspective of organizational decision processes but, among them, only a handful link the bodies of knowledge on pricing and organizational behaviors. Cyert and March (1992), who study pricing behaviors in a retail environment, suggest that, over time, simplifying rules of thumb emerge

within the firm. They argue that prices are negotiated between various departments of the firm as a way to reach consensus and achieve negotiated objectives. Finally, they propose that cost-based pricing practices are included among these rules of thumb or routines. Lancioni, Schau, and Smith (2005) research the intraorganizational influence on business-to-business pricing strategies and more specifically the importance of interdepartmental rivalry and conflicting interests on the pricing process. The findings show that resistance to progressive pricing strategies emanates from many groups in firms each of them “having parochial interests and agendas” Lancioni et al. (2005:130). The most dominant resistance and roadblocks are created by the finance department which is ranked as the most difficult to work with in developing a comprehensive pricing policy. Ingenbleek (2007) conducts a literature review of 53 pricing studies drawn from cost-theory, decision making theory and marketing strategy: Ingenbleek proposes a conceptual framework and several directions for future research in the field of value-informed pricing. His review of the literature suggests that information sources represent a key resource to be acquired, developed and deployed within the firm. However, the availability of information does not guarantee success in value-informed pricing – the degree to which information is processed, interpreted, communicated and used can influence the implementation of it. Thus the pricing process within the firm can influence the management of information related to customer value perceptions. Ingenbleek (2007) makes the following critical conclusions with regards to pricing literature: 1) it is highly descriptive and lacks statistical significance; 2) research insights on pricing practices are often not cumulative; and 3) theory about how price decisions are made in firms is limited. We build on the scholarly work of Cyert and March, Lancioni, and Ingenbleek by bridging the fields of pricing and organizational behavior.

2.2. Organizational champions

Leaders can influence both functional management commitment and the adoption of innovative technology and practices in firms (March & Simon, 1958:219). Top management support strongly impacts functional management commitment. This type of top management support is needed for complex initiatives such as total cost of ownership calculations in sourcing (Wouters, Anderson, & Wynstra, 2005) or value-based pricing (Hinterhuber, 2008), which require strong inter-functional cooperation. Hinterhuber (2008), for example, finds that the lack of support from senior management is an important

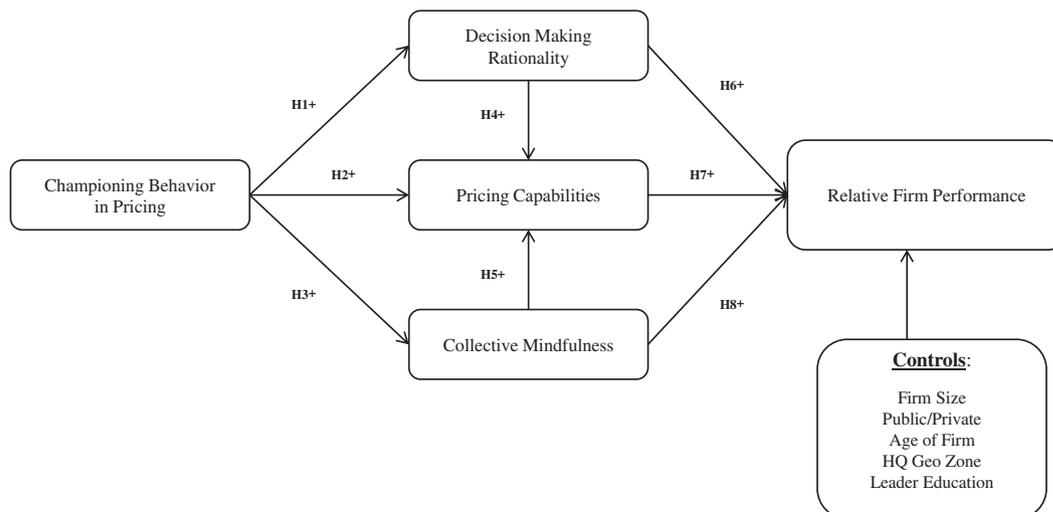


Fig. 1. Hypothesized research model.

obstacle in the implementation of value-based pricing strategies. Senior management support for customer-value management processes is a requirement when firms try to implement a “philosophy” of doing business based on demonstrated value to customers (Anderson, Kumar, & Narus, 2007:13). Senior management must “take a broader view of persuasively conveying this value merchant mind-set and culture to everyone working in the business and to the customers” (Anderson et al., 2007:123). Hinterhuber (2008:49) finds that “senior management (support) can be obtained through various means, including lobbying, networking, and bargaining. If such support is gained, middle-ranking executives can then implement value-based pricing strategies”.

Top management plays a key role in defining and promoting corporate-wide priorities and new strategic programs but also in identifying, allocating and deploying strategic resources to support these programs (Chandler, 1973). Executive experience, overall personality, and risk aversion behaviors help determine the course and rate of structural adaptation and innovation (Chandler, 1973; Jaworski & Kohli, 1993). The influence, skills and drive of upper management are a resource leading to better strategy and greater economic rents by firms (Barney & Clark, 2007). Leadership styles (authoritative versus participative) and backgrounds (legal, finance or marketing) also impact the organization (Chandler, 1973; Simon, 1961).

Organizational champions are charismatic, (Nadler & Tushman, 1990) transformational leaders (Bass, 1985; Wang & Huang, 2009) and advocate change (Nadler & Nadler, 1997:98). Champions may exhibit a “constellation of behaviors” (Howell, Shea, & Higgins, 2005:643) 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 & Higgins, 1990:323). They may increase effort-accomplishment expectancies by reinforcing collective efficacy and increase self-efficacy and collective efficacy by expressing positive evaluations (Tasa, Taggar, & Seijts, 2007) and showing confidence in people to perform effectively and to meet challenges (Nadler & Tushman, 1990). Recent research finds that CEO attention acts as significant catalyst for organizational outcomes (Yadav et al., 2007). Qualitative research highlights the critical role of the CEO to act as champion to promote the pricing function, to nurture capabilities in pricing and to ensure decision making rationality (Liozu & Hinterhuber, 2012). We thus hypothesize.

H1. CEO championing activities have a positive impact on the decision-making rationality of the firm.

H2. CEO championing activities have a positive impact on pricing capabilities.

H3. CEO championing activities have a positive impact on the collective mindfulness of the firm.

2.3. Decision making rationality

Simon (1961:93) posits that actual behavior of managers in firms when making decisions or making choices falls short of objective rationality in three ways: 1) the incompleteness of knowledge; 2) the difficulties in anticipation of the consequences that will follow choice; and 3) the choice among all possible alternative behaviors. Managers also suffer from possible “bottleneck of attention” that impacts their ability to deal with more than a few things at a time (Simon, 1961:90). Bounded rationality refers to the notion that rational actors are significantly constrained by limitations of information and calculations (Cyert & March, 1992:214). Behavioral theorists conjecture that managers in organizations simplify the decision-making process by using various behaviors (Cyert & March, 1992:264): satisfying (March, 1978); following rules of thumb (Schwenk, 1988); and defining standard operating procedures and organizational routines

(Feldman, 2000; Pentland & Reuter, 1994). Others will define frames of reference (March & Simon, 1958:159) which will be determined “by the limitations of the rational man’s knowledge”. Experienced managers will draw from their memory, training and experience (Simon, 1961:134). They construct and use “cognitive heuristics” (Brownlie & Spender, 1995:42) or mental models (Porac, Thomas, & Baden-Fuller, 1989) to simplify complex strategic issues and engage in intuitive and judgmental responses to decision-demanding situations (Barnard & Andrews, 1968; Oxenfeldt, 1973). The resolution of uncertainty is “to create a rationality, a recipe or an interpretative scheme” (Brownlie & Spender, 1995:43) leading to a choice or a decision. We thus conjecture:

H4. Decision making rationality is positively related to pricing capabilities.

H6. Decision making rationality is positively related to firm performance.

2.4. Organizational mindfulness

Mindfulness is a state of alertness and active information processing (Langer, 1989) that includes: creating new categories rather than relying on categories present in our memory; welcoming new information by being open and attending to changed signals; and welcoming more than one view and being aware of multiple interpretations. Fiol and O’Connor (2003:60) observe that “the greater the level of mindfulness of decision makers, the more likely it is they will use decision making mechanisms to expand their search for information.” Weick, Sutcliffe, and Obstfeld (1999) extend the concept of individual mindfulness (Langer, 1989, 1997) to the collective, describing it as the widespread adoption and diffusion of mindfulness by the organization’s members. Mindfulness helps organizations to notice more issues, process them with care, and detect and respond to early signs of trouble (Weick & Sutcliffe, 2007). Weick and Sutcliffe (2007) and Weick et al. (1999) describe five cognitive processes that constitute organizational mindfulness: 1) preoccupation with failure; 2) reluctance to simplify interpretations; 3) sensitivity to operations; 4) commitment to resilience; and 5) deference to expertise. We contend that these characteristics of high reliability organizations can also be applied to the adoption and implementation of pricing strategies in firms.

Firms engaged in the development of modern pricing practices invest in developing pricing capabilities of their front line personnel through pricing training for sales employees in order to equip them with the tools and capabilities to achieve the firm’s pricing goals. Sensitivity to operations also entails adjusting pricing programs by taking into account the knowledge of people who actually do the work (Weick & Sutcliffe, 2007). Commitment to resilience is strongly influenced by executive champions’ internal development of shared beliefs, courage and resilience when implementing pricing strategies. Finally, firms defer pricing decision expertise and influence to center-led pricing teams. Decision makers in business units rely on the expertise of these specialized centers of excellence to optimize pricing decisions and firm’s performance. Recent qualitative research explores the idea of mindfulness in pricing and suggests that it increases both firm pricing capabilities as well as firm performance (Liozu, Hinterhuber, Perelli, & Boland, 2012). We thus hypothesize:

H5. Collective mindfulness is positively related to pricing capabilities.

H8. Collective mindfulness is positively related to firm performance.

2.5. Capabilities and resource based view of the firm

The resource-based view of the firm (Wernerfelt, 1984) sees the firm as a unique bundle of resources and capabilities where the

primary task of management is to maximize value (Grant, 1996). These resources include all assets (physical and nonphysical), capabilities, organizational processes, firm attributes, information, knowledge *etc.* controlled by the firm that enable a firm to conceive and implement strategies that improve its efficiency and effectiveness (Barney, 1991). A specific combination of these tangible and intangibles resources and capabilities is valuable, rare and difficult to imitate or acquire by competitors (Barney & Clark, 2007; Dierickx & Cool, 1989; Hall, 1993) and cannot be captured on a piece of paper (Nadler & Tushman, 1990:18). A positive relationship between firm capabilities and profitability exists also in business markets (Kaleka, 2002; Merrilees, Rundle-Thiele, & Lye, 2011; Nath, Nachiappan, & Ramanathan, 2010).

Dutta, Zbaracki, and Bergen (2003) specifically highlight the role of pricing capabilities as antecedents of firm performance. In contrast to the marketing capability literature, these authors define pricing capabilities as set of complex routines, skills, systems, know-how, coordination mechanisms and complementary resources. Pricing capability refers to, on the one hand, the price setting capability within the firm (identification of competitor prices, setting pricing strategy, and translation from pricing strategy to price) and, conversely, to the price setting capability vis-à-vis customers (convincing customers on the price change logic, negotiating price changes with major customers). In this and subsequent research settings, pricing capabilities are positively related to company performance (Berggren & Eek, 2007; Hallberg, 2008). In these studies, pricing capabilities are complex, difficult to imitate processes which span organizational boundaries. All of these studies use qualitative research. In other words, the link between pricing capabilities as complex routines and skills and organizational performance has not yet been explored in a quantitative survey. We posit:

H7. Pricing capabilities are positively related to firm performance.

3. Methods

3.1. Data collection and sampling

Following the total design method (Dillman, Smyth, & Christian, 2009), we send a cross-sectional self-administered electronic survey in April, 2011 to 7897 active members of the Young President Organization International. This organization is a for-profit organization with 18,000 members composed exclusively of CEOs, business owners or presidents in 110 countries. Member companies comprise B2B as well as B2C companies. Members must meet eligibility criteria, such as, age (under 45 years old), title (President, Chief Executive Officer, Chairman of the Board, Managing Director), enterprise value (minimum \$10 million USD), number of employees (minimum 50) and annual sale revenues (minimum \$8 million for sales, service and manufacturing corporations, \$160 million for financial institutions and \$6 million for agency-type businesses). To the best of our knowledge, no other empirical study in industrial marketing uses this database.

Consequently, we e-mail the survey to 7897 targeted respondents and receive 376 e-mails back for reasons of email discrepancies. Of the remaining 7521 surveys 902 surveys are returned partially or completed for a response rate of 12%. Our response rate is consistent with the surveys of other top executives (Hambrick, Geletkanycz, & Fredrickson, 1993; Simsek, Heavey, & Veiga, 2010). Since we are not able to select B2B companies *ex ante*, we eliminate all B2C companies from the 557 completed surveys. Our final sample thus consists of 358 B2B companies.

Our sample size contains respondents from all continents, with respondents from North America accounting for the largest share (62%); in terms of firm size, CEOs of companies with less than 500 employees account for the largest share of respondents (72%), CEOs of companies with more than 10,000 employees account for a small share (3%). A typical respondent in this sample is thus a CEO of a

North American, privately held company with less than 250 employees. Table 1 below provides more descriptive information about our sample.

3.2. Measure development and assessment

We adapt most scales from the current literature and develop a new scale to measure pricing capabilities. We refine the scale through pretests and pilot testing using established item development procedures and guidelines (Churchill, 1979). We determine content and face validity through a comprehensive review of the literature, pre-and pilot tests, and assessment by a panel of practitioners and academics to ensure that measurement items covered the domain of the constructs (Churchill, 1979; Nunnally, 1978). To assess the quality of the survey items, we conduct in-depth, face-to-face interviews with pricing practitioners using Bolton's talk aloud methodology (Bolton, 1993). We pre-test all scale items with a small panel of academics and pricing and business practitioners.

We pilot-test the survey instrument with 150 professionals representing pricing, business and general manager functions from companies in both manufacturing and service industries and receive 70 complete responses. We iteratively modify the survey instrument to incorporate all relevant test results. None of the pretest or pilot test participants are included in the final sample. The survey instrument is presented in the Appendix A.

3.2.1. Behavior of champion on pricing

We adapt a six-item scale from Howell et al. (2005) to assess pricing champion behaviors (CBE). We measure each item by a seven-point Likert scale anchored at the extremes by 'strongly disagree' to 'strongly agree.'

3.2.2. Pricing capabilities

Since there is little empirical precedent to measure pricing capabilities (PC), we develop a multiple-item scale in accord with an operational definition (Kerlinger & Lee, 1999), by relying on our fieldwork, and on extant literature. Our scale covers the three critical dimensions of pricing (Hinterhuber, 2004): the customer perspective (measuring and quantifying maximum willingness to pay, price elasticity, and value-in-use), the competitor perspective (knowledge about price levels of competing products, ability to respond to market changes), and the company perspective (availability of pricing tools, existence of price-management processes, availability of trainings to develop employee skills in pricing). We use twelve items ranging

Table 1
Sample characteristics.

| Firm size – employees numbers | Count | % | Geography of firm HQ | Count | % |
|-------------------------------|-------|-----|-------------------------------|-------|-----|
| Less than 250 | 183 | 51% | North America | 222 | 62% |
| 251 to 500 | 75 | 21% | Latin America | 24 | 7% |
| 501 to 1000 | 48 | 13% | Europe | 52 | 15% |
| 1001 to 10,000 | 42 | 12% | Asia Pacific | 36 | 10% |
| More than 10,000 | 10 | 3% | Middle East/Africa | 24 | 7% |
| Age of firm | Count | % | Leader educational background | Count | % |
| Less than 5 years old | 18 | 5% | Business management | 173 | 48% |
| 5 to less than 10 years old | 25 | 7% | Marketing and sales | 47 | 13% |
| 10 to less than 25 years old | 81 | 23% | Finance and accounting | 61 | 17% |
| 25 to less than 50 years old | 101 | 28% | Technical and engineering | 77 | 22% |
| 50 years old or more | 133 | 37% | | | |
| Nature of firm | Count | % | | | |
| Publicly traded | 37 | 10% | | | |
| Privately owned | 318 | 89% | | | |
| Both | 3 | 1% | | | |

from 1 – ‘much worse than competitors’ to 7 – ‘much better than competitors’ to operationalize this scale.

3.2.3. Collective mindfulness

The twelve item scale used to measure collective mindfulness (CM) is based on adapting existing measures (Knight, 2004) and conceptual definitions in the literature (Dane, 2011; Weick & Sutcliffe, 2007): collective mindfulness refers to the ability of individuals within organization to notice a large variety of issues (wide attention breadth), to process these issues with care (high present moment orientation) and to detect and respond to early warning signals. Consequently, we assess sensitivity to operations (4 items), reluctance to simplify (4 items), and commitment to resilience (4 items) using seven-point, Likert-type scales.

3.2.4. Decision making rationality

We adapt a 4 item scale developed by Miller (1987) and relate the construct – measuring concepts of analysis, future orientation and planning, explicitness of the strategy, and systematic scanning of the environment – to pricing decisions. The seven-point scale is anchored with ‘does frequently’ at the extreme positive end and ‘does rarely’ at the opposite end of the scale.

3.2.5. Firm performance

Similar to Morgan, Vorhies and Morgan (2005), we operationalize firm performance as a second-order construct consisting of three first-order reflective constructs – sales, pricing and profit performance. The measures for sales and profit are adapted from Morgan, Vorhies, and Mason (2009) and include six items, while the other two measures are from the work of Ingenbleek (2007). The use of subjective performance measures is required for a number of reasons. First, because our sample contained many privately owned firms for which objective accounting data on their performance are not accessible, we follow the convention (Simsek, 2007; Simsek, Veiga, Lubatkin, & Dino, 2005) of asking CEOs to compare their firms' relative performance to that of their competitors on eight different dimensions for the past year (e.g. growth in sales, return on investment, return on sales and so forth) using a scale ranging from 1 (‘much worse’) to 7 (‘much better’) than competitors (Song, Droge, Hanvanich, & Calantone, 2005). Researchers express strong reservations about the use of objective performance data specifically in research settings involving small and medium-sized companies, since these data are biased as a result of managerial manipulation for corporate and personal tax reasons (Sapienza, Smith, & Gannon, 1988). Second, since firms in our sample are of various types and from various geographical zones, a multidimensional measure based on perceptual firm performance facilitates comparisons across firms and contexts, such as across industries, time horizons, and economic conditions. Finally, earlier studies show that perceptual performance measures tend to be highly correlated with objective indicators (Dess & Robinson, 1984): more recently Kumar, Jones, Venkatesan, and Leone (2011) find a high correlation (0,8) between subjective and objective data on firm performance. Subjective performance data are used widely in strategy research (Anderson & Paine, 1975). Taken in the aggregate, subjective or perceptual measures of firm performance can provide a broad indication of a company's health (Quinn, Baily, Herbert, Meltzer, & Willett, 1994).

3.2.6. Firm-level control variables

We control for a number of likely determinants of performance by including demographic characteristics of the firm, such as firm type, age, and firm size (Amburgey & Rao, 1996).

3.3. Non-response bias

A commonly used method for estimating the bias in strategy research (for examples see Armstrong & Overton, 1977) is to compare early – those who responded within the first week (74%) and late (26%) responses among the study variables; a late respondent is considered a proxy for a non-respondent. One way ANOVA tests, performed at the item level indicate no significant differences in data derived from early vs. late responders, except on 1 of the 26 (1.73%) study variables. Consequently, it appears that bias present from the time of response is due to chance.

3.4. Common method bias

Surveys from a single set of respondents can introduce common method bias (CMB) in the data. Consequently, we take several steps to mitigate, detect, and control for a common method bias. We carefully construct all survey items, and wherever possible, used pre-tested, valid, multidimensional constructs (Huber & Power, 1985). We vary the scale anchors and format in the questionnaire, perform a series of scale-validation processes before distributions, and randomize questions.

Several *post hoc* tests determine the extent to which common method bias is present in our data. First, using Harman's single-factor test, all 26 items are entered into an unrotated principal components factor analysis to determine the number of factors necessary to account for the variance in the variables. Accordingly, if a single factor emerges or a single general factor explains most of the variance between the independent and dependent variables, common method variance may be present (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Our results indicate the presence of six potential factors (all with eigenvalues greater than one), each factor explained roughly equal variance, and explained over 53% of the total variance. These results provide initial evidence response bias does not appear to be a problem in the data (Podsakoff & Organ, 1986).

Second, an unrelated construct, a marker variable, determined *ex post* to have no significant correlation with other items in the constructs is added to the measurement model (Lindell & Whitney, 2001). Since we do not measure an unrelated construct *a priori*, we use a modified test in which a weakly related construct – CEO perceptions of pricing – a four-item scale is used (Pavlou & Gefen, 2005). High correlations among any of the items of the study's constructs and pricing perception indicate common method bias. Since the highest correlation of pricing perceptions and the constructs is $r = 0.15$, there appears to be minimal evidence of common method bias.

Third, we examine multicollinearity and CMB with linear regression analysis on the study constructs and find low variance inflation factors. Further, multicollinearity can be ruled out because no two predictor variables correlated more strongly than 0.70 (Hair, Black, Babin, & Anderson, 2010). Finally, we examine the correlation matrix, as shown in Table 3, and find no highly correlated factors (highest correlation is $r = 0.566$), whereas evidence of common method bias will result in high correlations ($r > 0.90$). Based on these tests,

Table 2
EFA summary results.

| Construct | No. of items | Loadings | Cronbach alpha |
|-----------------------------|--------------|--|----------------|
| Decision-making rationality | 4 | 0.666;0.503;0.726;0.682 | 0.752 |
| Pricing capabilities | 8 | 0.577;0.631;0.590;0.605 0.677;0.718;0.659;0.614 | 0.845 |
| Championing behaviors | 4 | 0.797;0.774;0.625;0.750 | 0.818 |
| Collective mindfulness | 7 | 0.694;0.555;0.634;0.688 0.790;0.782;0.771 | 0.871 |
| Relative firm performance | 3 | 0.874;0.948;0.929 | 0.935 |

Table 3
Correlation matrix and assessment of discriminant validity.

| Constructs | Pricing capabilities | Decision-making rationality | Relative performance | Championing behaviors | Collective mindfulness |
|-----------------------------|----------------------|-----------------------------|----------------------|-----------------------|------------------------|
| Pricing capabilities | 0.402 | | | | |
| Decision-making rationality | 0.525*** | 0.430 | | | |
| Relative performance | 0.475*** | 0.216*** | 0.831 | | |
| Championing behaviors | 0.566*** | 0.411*** | 0.271*** | 0.544 | |
| Collective mindfulness | 0.288*** | 0.212*** | 0.192*** | 0.345*** | 0.500 |

Bolder values on the diagonal are the AVE's.

*** $p < 0.01$.

multicollinearity is not present and common method bias does not appear to pose a problem with our analysis.

3.5. Measurement models

We conduct an exploratory factor analysis (EFA) on the sample dataset to determine whether each of the items, particularly those for the new scales, reliably measured its intended construct. Factor analysis results confirm the existence of five factors, with each item loading on its respective factor in support of unidimensionality (Anderson & Gerbing, 1988). The items generally load well on the factors, but on 4 out of the 26 items factor loadings are below 0.6 (Table 2).

We assess the psychometric properties of the six factors derived from the EFA using a confirmatory factor analysis (CFA) to validate the factor structure. Without exception, the composite reliability (CR) for each construct exceeds the commonly used norm for acceptable psychometrics (> 0.70). As shown in Table 5, AVE exceeds the average squared variance (ASV) and maximum squared variance (MSV) in all cases providing further evidence of discriminant validity.

The overall fit for the model meets the conventional standards and is considered acceptable as represented by $\chi^2/d.f. = 1.718$, root mean square error of approximation [RMSEA] = 0.045, normed fit index [NFI] = 0.932, nonnormed fit index [NNFI] = 0.895, incremental fit index [IFI] = 0.953, and comparative fit index [CFI] = 0.953 (Table 4).

3.6. Invariance test

To establish the model is not significantly affected by the region in which the organization operates, we conduct configural and metric invariance tests (Steenkamp & Baumgartner, 1998) to the measurement model. Due to the unequal sampling from different regions, we are constrained to split the data into two groups: North America ($n = 222$) and Other ($n = 136$), rather than five groups (for each of the five regions); sample sizes in the non-North American regions are too small to support measurement model estimation using a five-group model. Using the two-group model, we observe adequate fit for the unconstrained measurement models ($cmin/df = 1.589$;

Table 4
Fit statistics.

| Model fit measures | Threshold | CFA model | Structural model | References |
|--------------------|-----------|-------------|------------------|-----------------------------|
| Chi-square/Df | | 488.393/261 | 28295/17 | |
| P-value | <0.05 | 0.000 | 0.000 | |
| CMIN/DF | <2 | 1.718 | 1.664 | Tabachnik and Fidell (2007) |
| PCFI | >0.5 | 0.829 | 0.304 | Hu and Bentler (1999) |
| CFI | >0.95 | 0.953 | 0.970 | Hu and Bentler (1999) |
| RMSEA | <0.06 | 0.045 | 0.043 | Hu and Bentler (1999) |
| Pclose | >0.5 | 0.89 | 0.63 | Jöreskog and Sörbon (1993) |

CFI = 0.925; RMSEA = 0.041). After constraining the models to be equal, we find the chi-square difference test to be non-significant ($pval > 0.05$). Thus our measurement model meets criteria for metric and configural invariance across regions.

4. Results

We test our hypotheses using structural equation modeling (SEM). SEM is particularly appropriate because it allows estimation of multiple associations, simultaneously incorporates observed and latent constructs in these associations, and accounts for the biasing effects of random measurement error in the latent constructs (Medsker, Williams, & Holahan, 1994).

The results are in Table 6. All hypothesized relationships are significant, except for H6 (Firms' decision making rationality will be related positively to relative firm performance). The fit indices (Table 4) for the final structural model shown in Fig. 2 indicate that this model reaches an acceptable level for goodness of fit ($\chi^2_{(2)} = 28.295$; $p = 0.000$, $\chi^2/df = 1.664$, CFI = 0.970, IFI = 0.972; NNFI = 0.932 and RMSEA = 0.043).

First, championing behaviors have a positive and significant impact on pricing capabilities (0.335, $p < 0.01$), on collective mindfulness (0.317, $p < 0.01$), and on decision making rationality (0.249, $p < 0.01$). These findings support H1, H2 and H3. Second, collective mindfulness is both positively and significantly related to the firms' pricing capabilities (0.108, $p < 0.05$) and firm performance (0.086, $p < 0.1$), thereby validating H5 and H8. Third, decision making rationality is significantly and positively related to pricing capabilities (0.288, $p < 0.01$) providing support for H4. Decision making rationality (-0.035) has no effect on firm performance, thus H6 is not supported. Finally, pricing capabilities have a positive and significant impact on firm performance (0.486, $p < 0.01$), thereby supporting H7.

We control for company type (public/private, age and size of the firm, geographical zones and leader's main education background). We control for firm size as in previous studies (Morgan et al., 2009) and firm age. No significant effects on performance emerge (Table 7).

5. Discussion

Strategy is "the pattern of activities determinant of the gain in a context of market exchange" (Snehota, 1990:164). In this study we examine the impact of one particular type of strategic activity – CEO championing activities of pricing – on firm performance. We focus

Table 5
Construct reliability and validity results.

| Constructs | Critical ratio | AVE | MSV | ASV |
|-----------------------------|----------------|-------|-------|-------|
| Pricing capabilities | 0.843 | 0.402 | 0.320 | 0.226 |
| Decision-making rationality | 0.754 | 0.430 | 0.276 | 0.134 |
| Relative performance | 0.936 | 0.831 | 0.226 | 0.096 |
| Championing behaviors | 0.825 | 0.544 | 0.320 | 0.170 |
| Collective mindfulness | 0.874 | 0.500 | 0.119 | 0.071 |

Table 6
Construct reliability and validity results.

| Hyp | Hypothesized paths | Regression estimates | Standardized estimate | Critical ratio | Hypothesis supported |
|------------------------------------|--|----------------------|-----------------------|----------------|----------------------|
| H1 | Championing behaviors to decision-making rationality | 0.368 | 0.249*** | 4.865 | Yes |
| H2 | Championing behaviors to pricing capabilities | 0.300 | 0.335*** | 6.882 | Yes |
| H3 | Championing behaviors to collective mindfulness | 0.216 | 0.317*** | 6.319 | Yes |
| H4 | Decision-making rationality to pricing capabilities | 0.175 | 0.288*** | 6.213 | Yes |
| H5 | Collective mindfulness to pricing capabilities | 0.142 | 0.108** | 2.290 | Yes |
| H6 | Decision-making rationality to relative firm performance | -0.025 | -0.042 (ns) | -0.844 | No |
| H7 | Pricing capabilities to relative firm performance | 0.481 | 0.486*** | 9.569 | Yes |
| H8 | Collective mindfulness to relative firm performance | 0.113 | 0.086* | 1.836 | Yes |
| R square relative firm performance | | | | | 0.250 |
| R square pricing capabilities | | | | | 0.283 |
| R square collective mindfulness | | | | | 0.101 |

* p<0.1.
** p<0.05.
*** p<0.01.

on pricing activities since pricing is a frequently overlooked area in industrial marketing (Lancioni, 2005).

Lancioni et al. (2005) identify senior management as the organizational layer presenting the largest number of obstacles to price setting and price planning in industrial firms. This study, conversely, takes a complementary perspective in examining to which extent (active) CEO championing behaviors influence pricing capabilities and firm profitability in industrial companies. Our findings offer four substantive contributions.

First, our results support the proposition that a purposeful championing of pricing activities by top executives strongly influences the organizational design to support the pricing process: CEO championing positively and significantly influences pricing capabilities, decision-making rationality, and collective mindfulness. By providing evidence of these relationships, we uniquely begin the exploration of organizational drivers of the pricing function. Our conclusions suggest that, once top executives realize the importance of pricing and purposefully decide to champion it, the impact on the

Table 7
Controls.

| Controls | Dependent variables | Standardized estimates | P value |
|-------------------|---------------------------|------------------------|---------|
| Public/private | Relative firm performance | 0.044 | 0.366 |
| Size – employees | Relative firm performance | 0.049 | 0.333 |
| Age of firm | Relative firm performance | -0.016 | 0.739 |
| HQ geo zone | Relative firm performance | 0.024 | 0.622 |
| Leader background | Relative firm performance | 0.017 | 0.718 |

organization and its performance is significant. In line with previous studies (Mackey, 2008) we find that CEOs clearly matter and provide support for studies in business markets on the role of senior management in designing and implementing pricing strategies (Lancioni et al., 2005).

Second, our results support resource-based theory that pricing capabilities positively and significantly influence firm performance vis-à-vis competition. Previous studies on marketing capabilities suggest a positive link between pricing capabilities – a subset of marketing capabilities – and firm performance (Morgan et al., 2009; Vorhies & Morgan, 2005). However, these studies measure pricing capabilities as part of a much wider subset of marketing capabilities using a narrow, 3-item scale: We develop a new 12-item scale for pricing capabilities to reflect the complex processes and organizational routines which pricing capabilities encompass (Dutta et al., 2003). Our findings show that pricing capabilities are significantly influenced by championing behaviors, decision-making rationality, mindfulness and overall pricing orientation. In turn, these capabilities in pricing positively influence firm performance vis-à-vis competition in industrial companies.

Third, our findings suggest that the CEO is essential for the successful implementation of pricing in industrial firms. Pricing should become a top priority for CEOs. By investing to build pricing capabilities that generate a sustainable and inimitable competitive advantage, champions of pricing forge shared vision, a collective can-do mentality and a sense of resilience in the firm that lead to superior levels of organizational efficacy (Bohn, 2001) and superior outcome. Dutta et al. (2002:66) state that “most CEOs will never set a single price. They can, however, give their managers the ability to win price wars, maintain price leadership and hold a competitive edge in pricing.”

Finally, this study finds a positive relationship between decision making rationality and pricing capabilities, but – contrary to expectations – does not find a relationship between decision making rationality and firm performance. Decision making rationality thus contributes to the development of pricing capabilities within firms, but not to firm performance.

The absence of a relationship between decision making rationality and firm performance points, at least in principle, towards the role of intuition. The role of intuition in decision-making theory is gaining

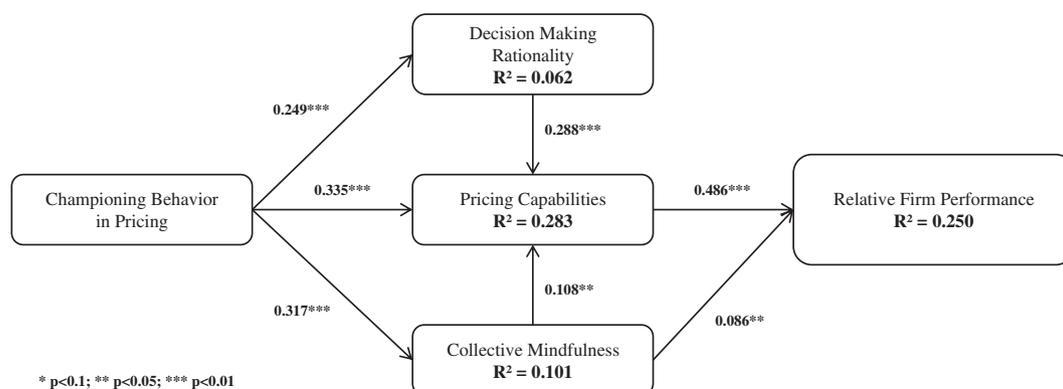


Fig. 2. Structural model.

Appendix A. Constructs, definitions, coded items and source

| Construct/ Dimensions | Definition | Items | Source |
|-----------------------------|---|---|---|
| Decision making rationality | Rationality relates to the concepts of analysis, future orientation and planning, explicitness of the strategy, and systematic scanning of the environment. These concepts all relate to the "synoptic and planning modes" and represent systematic, analytical decision making. This contrasts with the purely spontaneous, intuitive modes found with severely bounded rationality. | Indicate the extent to which your organization does the following activities to support pricing decisions. (1 = does rarely to 7 = does frequently) DMR1: applies pricing research techniques such as conjoint analysis and pricing/value simulations to make major product/service pricing decisions DMR2: conducts brainstorming with senior management groups for novel solutions to pricing problems DMR3: conducts formalized, systematic pricing review process as part of the product/service development process (like Stage Gate) DMR4: uses staff specialists to investigate and provide recommendation on major pricing decisions | Adapted from Miller (1987). Level of analysis: 4 items (AC: 0.74) |
| 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 inimitable 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 = much worse than competitors to 7 = much better than competitors) PC1: using pricing skills and systems to respond quickly to market changes PC2: knowledge of competitors' pricing tactics PC3: doing an effective job of pricing products/services ^a PC4: monitoring competitors prices and price changes ^a PC5: sticking to price list and minimizing discounts PC6: quantifying customers' willingness to pay PC7: measuring and quantifying differential economic value versus competition PC8: measuring and estimating price elasticity for products/services PC9: designing proprietary tools to support pricing decisions ^a PC10: conducting value-in-use analysis or Total Cost of Ownership ^a PC11: designing and conducting specific pricing training programs PC12: developing proprietary internal price management process | Construct definition included Morgan et al. (2009) and qualitative research (Liozu, Boland, Hinterhuber, & Perelli, 2011). Result of the pilot survey with 70 responses yielded an AC of 0.885 with these 12 items. |
| 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 involvement with pricing (1 = strongly disagree to 7 = strongly agree). CBE1: I enthusiastically promote the pricing function CBE2: I express confidence in what pricing can do CBE3: I show tenacity in overcoming obstacles when changes in pricing are needed ^a CBE4: I get pricing problems into the hands of those who can solve them ^a CBE5: I get key decision makers involved in the pricing process CBE6: I act as a champion of pricing | Adapted from Howell et al. (2005): |
| Collective mindfulness | Weick et al. (1999) extended the concept of individual mindfulness (Langer, 1989) to the collective entities, describing it as the widespread adoption and diffusion of mindfulness by the organization's members. Mindfulness helps organizations to notice more issues, process them with care, and detect and respond to early signs of trouble (Weick & Sutcliffe, 2007). They describe | To what extent do you agree or disagree with the following statements about your organization. (1 = strongly disagree to 7 = strongly agree) ^a CM1: seeks input from diverse sources to solve problems ^a CM2: approaches unexpected events with novel solutions ^a CM3: expects that employees are familiar | Adapted from Knight (2004) based on the work of Weick and Sutcliffe (2007) Reluctance to simplify interpretations: 4 items (AC: 0.80) Sensitivity to operations: 4 |

Appendix A (continued)

| Construct/ Dimensions | Definition | Items | Source |
|--------------------------------|--|--|--|
| | five cognitive processes that constitute organizational mindfulness: 1) preoccupation with failure; 2) reluctance to simplify interpretations; 3) sensitivity to operations; 4) commitment to resilience; and 5) deference to expertise. | with tasks beyond their immediate jobs ^a CM4: supports divergent viewpoints CM5: fosters a climate that encourages open, ongoing communication CM6: pays attention to real-time information CM7: believes that regular updating, and re-freshing of our employees skills are essential CM8: strives to make ongoing assessments and continual updates in our operations CM9: does not give up on solving problems CM10: encourages employees to "bounce back" from mistakes CM11: takes steps to correct errors before they worsen ^a CM12: treats failures as indicators of reliability of operations | items (AC: 0.84) Commitment to resilience: 4 items (0.87) |
| 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) ^a RP1: acquisition of new customers ^a RP2: increase of sales to current customers ^a RP3: growth in total sales revenues ^a RP4: absolute price levels ^a RP5: pricing power in the market RP6: business unit profitability RP7: return on sales (ROS) RP8: return on investment (ROI) | Two items adapted from Ingenbleek (2007). Six items adapted from Morgan et al. (2009a); market effectiveness: 3 items (AC: 0.90) and profitability: 3 items (AC: 0.95) Our pilot survey with 70 respondents yielded an AC of 0.929. |

^a Item eliminated due to insufficient reliability and validity; AC = alpha coefficient.

interest as of recent (Sadler-Smith & Shefy, 2004). Intuitive decision making is increasingly viewed as a viable and acceptable approach in today's business context (Burke & Miller, 1999). Intuition may be an appropriate decision-making process in certain situations and business scenarios, especially in situations of uncertainty, turbulence (Khatri & Ng, 2000), or novelty. Scholars relate the intuitive skills of managers to the intuitive skills of chess masters or physicians (Simon, 1987). Experienced managers have in memory a large amount of experience, schemas and patterns gained through experience and organized "in terms of recognizable chunks and associated information" (Simon, 1987:61). Managers need to be able to combine both approaches to reach a greater level of decision effectiveness (Dane & Pratt, 2007; Simon, 1987). Intuition can then become a complement to an appropriate pricing decision after a thorough analytical and scientific process. An interesting avenue for future research is thus the exploration of contingencies which favor decision making rationality versus intuition in industrial pricing. An exploration of the consequences of intuitive decision making in industrial pricing is warranted.

6. Limitations

The use of a large sample of CEOs from countries across the globe as sole respondents is a novelty in industrial marketing. This study has, however, four important limitations which offer fruitful avenues for future research. First: causality. Our quantitative survey confirms two key relationships: the relationship between CEO championing and pricing capabilities and the relationship between pricing capabilities and firm performance. We base these hypothesized relationships on substantial empirical research which suggests that championing influences capabilities (Nadler & Tushman, 1990; Tasa et al., 2007) and that capabilities influence performance (Barney, 1991; Dutta et al., 2003). Qualitative research in industrial pricing provides further support for these two relationships (Liozu & Hinterhuber, 2012). Nevertheless, this survey is cross sectional and we cannot rule out reverse causality. Our agreement with the Young Presidents' Organization, the members of which we survey,

prevents us from re-polling respondents to collect data on, for example, prior performance which could be used to mitigate reverse causality concerns. The guarantee on confidentiality which we have given to potential respondents to solicit participation prevents us from attempting to link individual CEO responses to information on financial performance obtained, for example, from annual reports or from information brokers. A very important avenue for future research is thus the exploration of the relationship between CEO championing activities, firm capabilities and firm performance through longitudinal research. Second: the response rate. The response rate of our survey of 358 CEOs is 12% and low compared to typical response rates in industrial marketing, but fairly consistent with the response rate of CEO surveys (Hambrick et al., 1993; Simsek et al., 2010). This comparatively low response rate may limit the ability to generalize results. Third: common method bias. We collect data from one individual per organization – the CEO. Data from multiple respondents should be used in future studies to reduce common method bias (Burton-Jones, 2009). Finally: factor loadings: the items generally load well on the factors, but on 4 out of the 26 items we measure factor loadings are below 0.6.

Directions for future research include: longitudinal studies on the effect of championing behaviors by chief executives on pricing capabilities and firm performance; studies exploring the effect of intuition in (pricing) decisions on firm performance; finally, studies exploring the antecedents of pricing capabilities in industrial firms.

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