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Does Management's Attention to Different Facets of Entrepreneurial Orientation Create Value for the Firm?

A Longitudinal Study of Large Retailers

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Studies of entrepreneurial orientation tend to merge its three components—proactiveness, risk-taking, and innovativeness—into a monolithic construct and analyze its relationship with firm outcomes at one point in time. This has resulted in knowledge voids related to the relative importance of the different components, their specific effect on value created by the firm, and their evolution over time. The present study links each component of entrepreneurial orientation to economic value creation using a longitudinal dataset. Results provide support for hypothesized relationships. Implications and avenues for future research are discussed.

Keywords: entrepreneurial orientation, proactiveness, risk-taking, innovativeness, economic value creation

Entrepreneurial orientation has gained substantial visibility in the entrepreneurship and management literatures, and become increasingly relevant to scholars in other areas of business studies (Wales, Gupta, & Mousa, 2013). Based on Miller's (1983) conceptualization, entrepreneurial orientation is often conceived as involving a willingness to innovate, take risks, and be more proactive (Covin, Green, & Slevin, 2006). Lumpkin and Dess (2005, p. 148) note that many large corporations such as Sony, 3M, Intel, and Virgin "attribute much of their success to an entrepreneurial orientation." Despite the growing popularity of the entrepreneurial orientation construct in management research and practice, "there continue to be numerous debates" about it, resulting in several "open questions and research gaps" (Miller, 2011, p. 6). A prominent knowledge gap in the literature pertains to the dimensions that comprise the construct of entrepreneurial orientation (Lumpkin & Dess, 2005). Specifically, myriad "differences between the components" of entrepreneurial orientation (Miller, 2011, p. 7) have largely been ignored, so that there exists little knowledge of whether each component is equally relevant or even needed for value creation (Vecchio, 2003). Understanding and establishing the value potential of individual components is important

because failure to do so can undermine the validity of our theoretical models, generate "erroneous conclusions" regarding the nature of entrepreneurial orientation, and hamper "efforts to build actionable knowledge" (George, 2011, p. 1299).

In this study, we examine a critical but neglected issue in entrepreneurship research—the value creation potential of the three component factors of entrepreneurial orientation. Specifically, we investigate the effect of top management's emphasis on innovativeness, risk-taking, and proactiveness on value generation by the firm in the capital markets. We conduct our study in the context of large, publicly traded firms in the organized retail industry, sampling some of the largest retailers in the United States. Top management at large retail firms is expected to continuously engage in the discovery, creation, and exploitation of new opportunities to maintain their firm's relevance in the highly competitive industry (Levy & Weitz, 2010). Consequently, the entrepreneurial orientation construct has been employed to assess the strategic posture of retail firms, albeit in other disciplines such as operations management (Jambulingam, Kathuria, & Doucette, 2005) and marketing (Griffith, Noble, & Chen, 2006).

Our study furthers theoretical and methodological research on entrepreneurial orientation in several ways. First, we respond to calls for linking the entrepreneurial orientation construct with promising theoretical paradigms (Miller, 2011), and propose an attentional explanation for why entrepreneurial orientation matters (Ocasio, 1997). Following Cho and Hambrick (2006, p. 454), we conceptualize attention as "the degree to which something ... occupies the consciousness" of top managers, and examine the relationship between managers' emphasis on the core dimensions of entrepreneurial orientation and value creation. Second, we examine the time-varying effect of individual dimensions of entrepreneurial orientation. The inability

to create value over time has led to the decline of many firms with household names such as Kmart, Borders, and Blockbuster. Yet, the role of time remains overlooked in the entrepreneurial orientation literature (Clausen & Madsen, 2011), a gap we redress in this study. Finally, we present a novel un-intrusive empirical approach, which involves historiometric analysis of corporate letters to shareholders, to provide a fairly unique window into management's emphasis on entrepreneurial orientation. To our knowledge, this is the first study to use historiometry to explore a substantive issue in entrepreneurship.

Theoretical Background

Entrepreneurial orientation refers to managers' "angle of inclination" toward pursuing new business opportunities (Basso, Fayolle, & Bouchard, 2009: 317). It encompasses management's "frame of mind" and mental models that lead the organization "toward a proactive and continuous search for opportunistic growth" (Habbershon & Pistrui, 2002, p. 228). Research and popular press suggest that management biases and preferences have a strong impact on the strategic posture of the entire firm (Boal & Hooijberg, 2000). Firms often operate in environments characterized by complex and ambiguous information, so that managers have considerable discretion in the strategic choices they make to direct the firm.

Top managers face competing claims on their attention (Hambrick & Mason, 1984). Within their roles as managers, senior executives often must attend to various tasks such as environmental scanning, opportunity evaluation, performance assessment, labor negotiations, capital allocation, corporate development, and many others (Boal & Hooijberg, 2000). The attentional focus of top management influences what information is attended to in the firm and how this information is interpreted, which drives the culture and activities of the firm (Levy, 2005). Ocasio (1997, p. 189) explained attention as:

The noticing, encoding, interpreting, and focusing of time and effort by organizational decision-makers on both (a) issues: the available repertoire of categories for making sense of the environment: problems, opportunities, and threats; and (b) answers: the available repertoire of action alternatives, proposals, routines, projects, programs, and procedures.

Ocasio (1995) argued that the issues that receive management's attention become more salient in the organization, such that there is a greater state of awareness and anticipation about these events and topics (D'Aveni & Macmillan, 1990). Attention is therefore

a crucial component of managerial cognition, affecting organizational direction (Levy, 2005).

Managers often privilege particular areas over others by paying more attention to certain issues and trends (Hambrick, 2007). Consistent with a long-standing stream of research on upper echelons (Hambrick & Mason, 1984), entrepreneurial orientation provides that top management can exercise discretion in emphasizing strategic elements when dealing with the challenges and issues facing their firm (Covin & Slevin, 1989). For example, Cho and Hambrick (2006) found that management in some airline companies (but not others) demonstrated a strong 'entrepreneurial focus,' and this focus changed over time as the internal and external environment evolved. Thus, from an attention-based perspective, entrepreneurial orientation is a function of managerial emphases, which vary based on management's assessment of the situation. When top management of a firm emphasizes entrepreneurship, the entrepreneurial elements—proactiveness, risk-taking, and innovativeness—become salient in the organization, and drive organization-wide attention to events and issues consistent with this strategic posture. This is consistent with Ocasio's (2010) argument that dominant attentional foci of top managers influence the overall strategy of the firm, which in turn shapes the allocation of resources and effort within the firm.

Hypotheses

A majority of entrepreneurial orientation studies adopt Miller's (1983) conceptualization of entrepreneurship as engaging in product market innovation, undertaking somewhat risky ventures, and proactively outcompeting rivals. Based on this conceptualization, scholars have repeatedly pinpointed and studied three core aspects of entrepreneurial orientation: risk-taking, proactiveness, and innovativeness. The extent to which these facets are emphasized by top management determines the strategic posture of the firm (Covin & Slevin, 1993).

For large firms competing in highly competitive industries, understanding which of the individual components of entrepreneurial orientation may be most useful in value creation is an important issue. It is conceivable that all three aspects may be beneficial, but it is equally plausible that only one or two of the components may be valuable at a particular point in time (Hughes & Morgan, 2007). It is also possible that some aspects of entrepreneurial orientation might be favorable for value creation, leading to a situation

where some dimensions may 'carry' others that have no separate influence (Lumpkin & Dess, 2001). This seems a likely possibility because, although the entrepreneurial orientation construct has been associated with superior outcomes in several studies (Rauch, Wiklund, Lumpkin, & Frese, 2009), many others have reported finding little or no association, and even negative effects (e.g., Hart, 1992; Matsuno, Mentzer, & Ozsomer, 2002; Smart & Conant, 1994). Despite the intuitively appealing notion that all aspects of entrepreneurial orientation are equally useful for the firm, prior research has revealed that the various facets of entrepreneurial orientation show differing relationships with firm performance. Table 1 summarizes articles that examine the effect of different dimensions of entrepreneurial orientation on performance outcomes.

Careful consideration of the studies that examine the performance outcomes associated with the individual dimensions of entrepreneurial orientation reveals little attention to the value creation as the dependent variable. Moreover, surprisingly little research has looked at the effect of different facets of entrepreneurial orientation on firm performance over time. Thus, in the next few pages we elaborate the evolutionary nature of the link between each dimension of entrepreneurial orientation and value creation.

Proactiveness Focus and Value Creation. The advice to 'adopt a proactive stance' is one of the most enduring in business theory and practice. Managers are often encouraged to be forward-looking and act in anticipation of future changes. Venkatraman (1989, p. 949) defined proactiveness as the pursuit of new directions "which may or may not be related to the present line of operations, introduction of new products and brands ahead of competition, [and] strategically eliminating operations which are in the mature or declining stages of the life cycle." Penrose (1959) suggested that an emphasis on proactiveness is essential for strategic leadership because proactive managers will have the vision and initiative to pursue growth in new domains.

Proactiveness enables managers to be receptive to market signals, stay attuned to changes and trends in the marketplace, and seize emerging opportunities in advance of rivals (Slater & Narver, 1995). Being attentive to future market changes allows management to be in a better position to shape future demand. A proactive focus indicates that management is prepared to meet the demands of the future, not simply occupied with the concerns and problems of the past and the present (Crant, 2000). Researchers generally agree that by

anticipating future challenges from environmental shocks and competitive pressures, management makes the firm less vulnerable to the ebbs and flows of the market. This reduces volatility in future revenues and cash flows, which will enhance shareholder value (Joshi & Hanssens, 2010). A strong emphasis on proactiveness allows companies to form a unique bond with their customers, attracting customers who are usually more loyal, willing to pay a higher price, and have greater switching costs, which provides the firm with greater elasticity in their marketing efforts. Such firms have a more stable and attractive customer base, and a higher rate of customer retention (Lieberman & Montgomery, 1988).

Proactiveness may be beneficial for a firm only as long as it is distinctive such that other firms do not have it. If competitors also emphasize proactiveness, firms cannot be at the forefront beating rivals over time. As is well known, rare is the firm that is safe from imitation by competitors. The apparent success of firms in which management is proactive encourages managers in others firms to also become more proactive. To sustain competitive advantage over time, managers need to continually emphasize higher proactiveness, failing which the firm may end up as the "one with the arrows in its back." (Robinson & Min, 2002). Consequently, there likely will be a reduced marginal effect of proactiveness on value creation in the long run. Therefore, balancing the positional advantages that accrue to proactiveness and the costs associated with maintaining that comparative advantage over time, we propose the following:

Hypothesis 1: *The relationship between top management's emphasis on proactiveness and value creation (a) will be positive, (b) and this effect decreases over time.*

Risk-Taking Focus and Shareholder Value. Risk-taking can be defined as emphasizing decisions or courses of actions involving uncertainty regarding success or failure outcomes (Lumpkin & Dess, 1996). Risk-taking has long been considered a defining feature of entrepreneurship (Zhao, Seibert, & Lumpkin, 2010) and common wisdom considers willingness to take risks to be a key driver of entrepreneurial behavior (Zahra, 1996). In top management contexts, Morgan and Strong (2003) note that risk-taking is important in "resource allocation situations and can act as a key parameter in determining the decision processes involved in competitive strategy."

Table 1. Articles Examining Relationship between Different Dimensions of Entrepreneurial Orientation and Firm Performance

S. No.	Author	Journal	Year	Sample	EO Dimensions	Nature of Relationship
Main Effects						
1	Shahzad, Wales, Sharfman, & Stein	JMO	2015	1015 public US corporations	Proactiveness Innovativeness Risk-taking	(+ve) (+ve) (-ve)
2	Kreiser, Marino, Kuratko, & Weaver	SBE	2013	1668 SMEs in nine countries across 13 different industries	Proactiveness Innovativeness Risk-taking	(+ve) U shaped (+ve) U shaped (-ve) U shaped
3	Koe	JEMI	2013	153 Government-linked companies in Malaysia	Proactiveness Innovativeness Risk-taking Autonomy Competitive Aggressiveness	(+ve) (+ve) (+ve) (+ve) (+ve)
4	Kraus, Rigtering, Hughes, & Hosman	RMS	2012	164 Dutch SMEs	Proactiveness Innovativeness Risk-taking	(+ve) n.s. n.s.
5	Short, Broberg, Cogliser, & Brigham	ORM	2009	450 S&P 500 firms	Proactiveness Innovativeness Risk-taking Autonomy Competitive Aggressiveness	(+ve) (+ve) (-ve) n.s. (-ve)
6	Swierczek & Ha	EI	2003	172 Thai and 306 Vietnamese SME	Proactiveness Innovativeness	(+ve) (+ve)
Moderating Effects						
7	Richard, Barnett, Dwyer, & Chadwick	AMJ	2004	700 U.S. banks	Innovativeness Risk-taking	(+ve) (-ve)
8	Li, Zhao, Tan, & Liu	JSBM	2008	213 Chinese firms	Proactiveness Innovativeness Risk-taking	(+ve) (+ve) (-ve)
Partial Dimensions						
9	Naldi, Nordqvist, Sjöberg, & Wiklund	FBR	2007	265 family and 431 non-family U.S. firms	Risk-taking	(-ve)
10	Lumpkin & Dess	JBV	2001	94 U.S. firms	Proactiveness Competitive Aggressiveness	(+ve) n.s.

Note: SBE: Small Business Economics, JEMI: Journal of Entrepreneurship Management and Innovation, ORM: Organizational Research Methods, EI: Entrepreneurship and Innovation, AMJ: Academy of Management Journal, JSBM: Journal of Small Business Management, FBR: Family Business Review, JBV: Journal of Business Venturing, RMS: Review of Managerial Science, JMO: Journal of Management and Organization

A large body of research in business, finance, economics, and management science has addressed the relationship between risk and performance returns, positing a positive relationship between the two (that is, higher risk accrues higher reward). According to much of the literature dealing with risk (Jensen & Meckling, 1976), managers tend to be risk-averse, so unless an endeavor promises a very high return, risk-averse managers will not pursue it (Singh, 1986). Figenbaum and Thomas (1988) observed that a positive risk-return relationship exists in cross-sectional studies across different environments. However, Bowman (1980, 1982) found that the risk-return relationship was negative, describing his finding as a paradox for management since it ran counter to conventional wisdom (Singh, 1986). Bettis and Mahajan (1985) suggested that when management takes risks based on careful consideration of the benefits and disadvantages associated with the various alternatives, high returns will accrue. Investors are aware of management's general aversion to risk and tend to see a proclivity to take risk as an indicator of management's willingness to invest in projects that may be deemed risky but have a high chance of success. In such situations, investors would react positively to management's emphasis on risk-taking, such that risk-taking will be evaluated positively by shareholders.

The positive relationship between risk-taking and value creation is likely to be dynamic and change with time. Figenbaum and Thomas (1986) contend that researchers should explicitly introduce a temporal component when examining the performance outcomes of risk. These scholars argued that longitudinal investigations may provide a deeper understanding of the role of risk in value creation for the firm. We believe that risk-taking will create value for the firm in the short-term, but these benefits will diminish in the long-term. This is because investors will begin to take for granted the above-normal returns that accrue to high risk-taking, and will demand an ever-increasing level of risk-taking from managers. Yet, it is difficult for management to be able to derive consistently high positive performance from progressively riskier projects. Thus, we suggest that the effect of risk-taking on value creation will diminish with time. We propose that:

Hypothesis 2: *The relationship between top management's emphasis on risk-taking and value creation (a) will be positive, (b) and this effect decreases over time.*

Innovativeness Focus and Value Creation. Ever since Schumpeter (1942) argued that innovation facilitates creative destruction in society, innovativeness has been regarded as an essential aspect of entrepreneurship (Lumpkin & Dess, 1996). Stevenson and Gumpert (1985) argued that innovativeness is the "heart of entrepreneurship," a sentiment echoed more than a decade later by Covin and Miles (1999). Conceptually, innovativeness refers to focusing on decisions and activities that embrace creativity, experimentation, and novelty (Wiklund & Shepherd, 2003). Managers are said to be innovative when they encourage departure from tried-and-tested ways of doing things and venture outside the proverbial box (Kimberly & Evanisko, 1981). In today's business, innovativeness has "become the industrial religion" as managers and external stakeholders see it "as the key to increasing profits and market share" (Baer & Frese, 2003, p. 45).

Despite the intuitive appeal of the 'innovativeness is good' logic, few studies have actually examined the direct relationship between top management innovativeness and value creation (Subramanian & Nilakanta, 1996). We expect that an emphasis on innovativeness will be rewarded by investors as a key differentiating factor between a firm and its competitors (Hult, Hurley, & Knight, 2004). Indeed, Rose and Thomsen (2004) found a positive association between innovativeness and stock market performance. Brüderl and Preisendörfer (1992) identified a focus on innovativeness as the single most important predictor of firm growth. We argue that focusing on innovativeness enables management to differentiate their offerings from other companies in the market, allowing the firm to charge higher prices, or at the very least better resist downward pressure on price. An innovative top management also increases the firm's relative bargaining power with its suppliers, customers, and channel members, who seek to maintain favorable relationships with a firm that may be seen as an innovative leader in its product category (Porter, 1980). Emphasizing innovativeness also provides a firm greater elasticity in demand as there is less competitive pressure in selling new products and services, providing a price advantage in the market. Together, the combined effects of innovativeness should positively impact value creation.

Over time, the value creation impact of innovativeness is likely to become weaker. This is because managers will narrowly define innovativeness within the range of the products and services they currently provide. This 'fallacy of the served markets' will lead management to focus its

attention on what they already do, rather than explore new territory unrestricted by the current scope of their activities. In such situations, firms are confronted with thresholds beyond which further focus on innovativeness does not provide corresponding returns in profit and sales. This could lead to a reduced marginal effect of innovativeness on value creation in the long run. Thus, we hypothesize:

Hypothesis 3: *The relationship between top management's emphasis on innovativeness and value creation (a) will be positive, (b) and this effect decreases over time.*

Method

Data Source

We obtained information about top management's entrepreneurial orientation from letters to shareholders published in annual reports. We chose letter to shareholders as our data source because:

Letters to shareholders are manifestations of the perceptual focus of attention of [managers]... They are particularly good indicators of the major topics that organizational managers attend to...and reflect the perceptions of organizational stewards because they are the product of the input of and close review by top managers...Letters to shareholders reveal how much attention is paid to various aspects... relative to others (D'Aveni & Macmillan, 1990, p. 640).

A considerable body of research shows that letters to shareholders provide a unique glimpse into management's attentional foci, which are very difficult to assess and access using conventional ask-a-key-informant methods (McClelland, Liang, & Barker, 2010). We used a historiometric technique to derive data from letters to shareholders. Historiometry applies psychometric measurement techniques to historical data (Simonton, 2003) such as using questionnaire instrument to assess leadership proclivity reflected in biographical material (e.g., Bass, Avolio, & Goodheim, 1987).

Data Collection and Sample Selection

Data for this study were collected from two primary sources. Letters to shareholders were collected from corporate annual reports. Data for computing shareholder value were drawn from Standard & Poor's COMPUSTAT database.

We derived our sample from the retailing industry, starting with a list of retailers ranked as the "world's largest retail companies by sales in 2000" (Rugman & Girod, 2003). We chose to focus only on US-headquartered retailers (n = 25) because the United States is considered the world's most sophisticated retail market, has relatively fewer

regulations governing retail firms compared to other parts of the world (e.g., Europe and Asia), and helps avoid potential country-of-origin issues.

We obtained ownership data for the 25 retailers from 2004 to 2008 (the time period of our study), and identified 9 firms for elimination: 3 were not publicly owned (Albertson, Publix, and Toys "R" Us), two merged (May and Macy's), one was acquired by another (Kmart and Sears Roebuck), and two declared bankruptcy (Circuit City and Winn Dixie) during this period. This left us with a sample of 16 independent publicly traded firms headquartered in the United States: Walmart, Home Depot, Kroger, Target, Safeway, JC Penney, Walgreens, CVS, Lowe's, Best Buy, Rite Aid, Gap, Office Depot, Great Atlantic & Pacific Tea, Staples, and TJX. These 16 firms comprise the *Who's Who* of the retailing industry in the United States and account for a major share of the retail sales by volume in the country (Spector, 2005). Notably, 14 of these 16 firms are part of the S&P Retail Industry Index, indicating that these firms are considered to have a large influence on the overall market by analysts.

The retailing industry offers an interesting context for conducting our study. First, retailing is a high-discretion industry where management has substantial latitude in strategic decision-making to meet market needs (Levy & Weitz, 2010). Second, the organized retail sector is characterized by a general lack of rent-producing strategic assets such as proprietary technology and patented research, which accrue unique and inimitable benefits to firms that possess them. This relatively even playing field enables management the freedom to emphasize activities and choices they consider most suitable for their firm. Lastly, the major firms in this business are an interesting mix of 'veteran players' who have been around for decades and 'newbies' who are recent entrants in the industry. This indicates that new companies can enter and grow in the retail business when management is able to take advantage of emergent opportunities (Spector, 2005).

We used the sample firms in a panel that covered the years 2004-2008, a time period considered by many analysts, including Goldman Sachs, to be one of strong global economic growth. Panel data have the primary advantage of controlling for systematic heterogeneity across sample firms. It also alleviates issues related to reverse causality, which are challenging to address through traditional single-period studies. With the exception of

some two-period studies (e.g., Madsen, 2007), we are not aware of any studies using panel data to examine the effects of entrepreneurial orientation.

Procedure

We followed the procedure suggested by Deluga (1997, 2001) to obtain quantitative information about our constructs from historical texts (in this case, letters to shareholders). Printed copies of anonymous letters to shareholders were randomly distributed to raters with academic training in business (70 raters of which 36 were men; mean age 24 years). Three raters independently evaluated each letter, and each rater was limited to a maximum of three letters. Raters were encouraged to re-read the letter as often as needed and to use overall impressions from each letter in making their evaluation on each measurement item. For each letter, we computed an overall proactiveness (3 items ($\alpha = .80$): proactively introduce new products and services, have a strong tendency to be ahead of others, and take initiative), risk-taking (3 items ($\alpha = .86$): willing to take risks, tendency to make bold and aggressive decisions, and open to pursuing risky projects), and innovativeness (4 items ($\alpha = .85$): look for new ways to do things, improve and innovate its way of doing business, willing to engage in new innovations, and strong proclivity for innovation) score as the average score provided by all raters who evaluated the letter.

The instructions provided with the letters made no mention of entrepreneurial orientation, and raters were not informed that the letters were from retailers. An 'awareness' question asked raters to 'guess' the name of the firm from the letter. None of the raters correctly guessed the firm associated with the letters they read (responses included retailers such as Macy's and Wegmans, which were not part of our sample as well as non-retailers such as GE and HP), indicating that responses were not based on pre-conceived notions about the firm (Deluga, 2001).

Our measurement technique involved collecting data from individual raters about proactiveness, risk-taking, and innovativeness foci of management, and then aggregating it to form an indicator for the strategic posture of the firm. To justify aggregation, we calculated within-letter agreement using rwg ('reliability within groups on j number of items'; James, Demaree, & Wolf, 1993), and found it to be acceptable ($>.7$ for the three constructs). We also calculated intraclass coefficients (ICC) and found them to be above the acceptable standard of 0.3 for the three constructs (Homburg & Furst, 2005), indicating significant between-letter variance.

Measuring Value Creation

A future-oriented, capital market-based measure of economic value creation is Tobin's q (Anderson, Fornell, & Mazvancheryl, 2004). It is based on the supposition that financial markets efficiently evaluate firms' expected performance in determining the firm's value. Mathematically, a firm's q value is the ratio of market value of equity to the book value of equity (Cooper, Gulen, & Schill, 2008). A firm that creates a market value greater than the book value of its equity is performing well and increasing shareholder value (Fama & French, 1992). A firm that is not creating incremental value has a Tobin's q value equal to 1. Because the q value is informed by the stock price of the firm, it incorporates anticipated future value creation of the firm. Furthermore, Tobin's q offers the advantage of capturing both short-term and long-term value creation in a single variable (Uotila, Maula, Keil, & Zahra, 2009). In summary, as Anderson et al. (2004, p. 175) observed, "Tobin's q appears to be the best measurement option [of value created by a firm], given its strengths of being forward-looking, comparable across firms, and based on economic theory."

We measured Tobin's q using data obtained from Standard & Poor's COMPUSTAT database.

Control Variables

We included several control variables in our study: firm size measured as number of employees, CEO change (dichotomous), board size, and top management team size. In addition, we also controlled for value created in the prior year, as past performance may influence subsequent performance.

Analyses and Results

Our dataset uses time-series-cross-section (TSCS) data of 16 companies over a 5-year period. TSCS involves repeated cross-section data, where the relationship between variables is examined over time so as to properly specify longitudinal effects (Tosi, Misangyi, Fanelli, Waldman, & Yammarino, 2004). We estimate the impact of proactiveness, risk-taking, and innovativeness emphases on subsequent performance, using the following model, which incorporates time-varying effects of the independent variable on the dependent variable:

$$VC_{i,t} = \alpha_0 + \alpha_1 \log(\text{Size}_{i,t}) + \alpha_2 \text{CEO change} + \alpha_3 \text{TMT Size}_{i,t} + \alpha_4 \text{Board Size}_{i,t} + \alpha_5 VC_{i,t-1} + \alpha_6 \text{PVI}_{i,t-1} + \alpha_7 \log(t) + \alpha_8 \text{PVI}_{i,t-1} \times \log(t) + e_{i,t}$$

Where

t = 1-4 when year goes from 2005 to 2009;
 PVI,t = Predictor Variable, proxy for risk-taking, proactiveness, and innovativeness, respectively;
 Size_{i,t} = Size of firm i at time t; CEO Change = Change in CEO (Y/N);
 TMT Size_{i,t} = Size of management team of firm i at time t; Board Size_{i,t}: Size of board of firm i at time t.
 VCI,t = Value Creation at time t for firm i.

We model value creation (measured by Tobin's q) as a function of lagged predictor variable, namely proactiveness, risk-taking, and innovativeness respectively. Lagging helps alleviate concerns over reverse causality, an issue that is further addressed by the use of panel

data. The coefficient of PVI,t-1 (α_6) measures the effect of the specific predictor variable on value creation at year 2005 (t=1) to 2008 (t=4). We predict that the effect of the predictor variable changes over time as proposed in our hypotheses. We use natural log of t as the moderator variable interacting with the predictor variable to capture the time-varying effect of the specific predictor variable, where α_7 measures the effect.

We examine our data using EViews software, which provides an easy-to-use object-oriented interface to examine longitudinal data. Table 2 presents correlations and key descriptive statistics for the variables in our study.

Table 2. Descriptive Statistics

Variable	Mean	Std. dev.	Min	Max	1	2	3	4	5	6	7
1. Value Creation	2.74	2.22	-13.47	6.69	1						
2. Proactiveness	3.72	0.57	2.33	5	0.04	1					
3. Innovativeness	3.76	0.49	2.38	4.83	0.06	0.55	1				
4. Risk-Taking	3.15	0.60	1	4.67	0.11	0.33	0.33	1			
5. Firm Size	290	444	2100	38	0.09	0.08	0.19	-0.10	1		
6. TMT Size	5.90	1.59	5.00	11.00	0.03	0.02	-0.22	-0.09	-0.09	1	
7. Board Size	11.23	0.43	8.00	17.00	0.22	0.18	0.18	-0.04	0.43	0.26	1

Notes: All correlations above |0.21| are significant at the 0.05 level.

Following prior research (e.g., Gupta, Huang, & Yayla, 2011), we conducted a maximum likelihood CFA on the variance-covariance matrix and found that proactiveness, risk-taking, and innovativeness were distinct constructs, providing support for a multi-dimensional conceptualization of entrepreneurial orientation. We used ordinary least squares (OLS) with panel-corrected standard errors (PCSE) which is appropriate when the number of time points (t) is less than the number of cross-sectional units (i) (Beck & Katz, 1995)

Hypothesis 1 predicted that the relationship between top management's emphasis on proactiveness and value creation (a) will be positive, (b) and this effect decreases over time. We found that, initially, a one standard deviation increase in proactiveness (approximately 0.57 units)

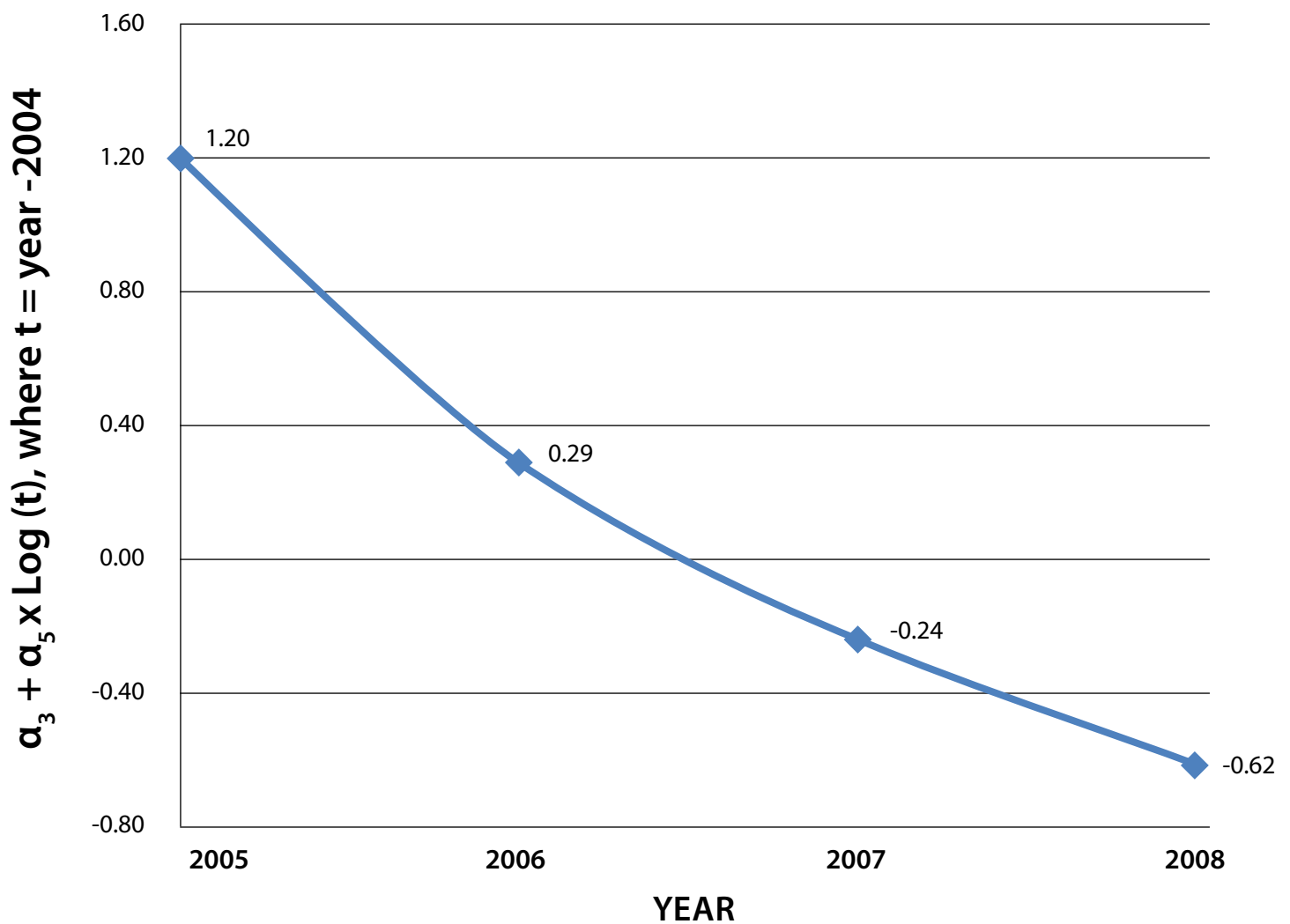
improves shareholders' value by 0.67 units in year 1. The marginal effect of proactiveness on shareholder value in the regression, $\alpha_6 + \alpha_8 \cdot \log(t)$, diminishes over time as there is a negative coefficient to the interaction term between proactiveness and logarithmic value of t. Thus, hypotheses 1a and 1b were supported in our data. Figure 1 presents the evolutionary nature of the effect of proactiveness.

Hypothesis 2 predicted that the relationship between top management's emphasis on risk taking and value creation (a) will be positive, (b) but this effect decreases over time. We found that risk-taking emphasis had no association with value creation in the short run as well as over time. Thus, hypotheses 2a and 2b were not supported in our data.

Table 3. Effect on Value Creation; Dependent Variable = Value Creation (VC)

Independent Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	11.9** (5.384)	9.7 (5.82)	9.728 (5.78)	-3.577 (5.132)	6.35 (6.1)	-6.508 (6.4)
Log(size)	-1.09 (1.143)	-1.092 (1.218)	-1.212 (1.232)	0.713 (0.884)	0.232 (1.026)	0.863 (0.971)
SVt-1				0.049 (0.178)	0.057 (0.04)	0.014 (0.04)
CEO	0.582 (0.37)	0.649 (0.401)	0.657 (0.395)	0.545** (0.263)	0.662** (0.292)	0.586** (0.28)
TMT Size	-0.026 (0.112)	-0.039 (0.116)	-0.021 (0.117)	-0.007 (0.081)	-0.027 (0.084)	0.031 (0.091)
Board Size	-0.108 (0.092)	-0.127 (0.098)	-0.121 (0.099)	-0.041 (0.07)	-0.099 (0.07)	-0.055 (0.074)
Proactiveness _{t-1}	-0.632** (0.215)			1.197** (0.55)		
Risk-Taking _{t-1}		0.116 (0.252)			-0.709 (0.67)	
Innovativeness _{t-1}			0.208 (0.283)			1.776** (0.81)
Log(t)				3.73** (1.589)	-2.413 (1.489)	3.362 (2.411)
Proactiveness _{t-1} * Log(t)				-1.31*** (0.44)		
Risk-Taking _{t-1} * Log(t)					0.381 (0.463)	
Innovativeness _{t-1} * Log(t)						-1.298* (0.66)
R-square	0.669	0.632	0.634	0.755	0.712	0.724

* p < 0.10, **p < 0.05, and***p < 0.01; Notes: Standard errors are in parentheses.

Figure 1. Diminishing effect of proactiveness on value creation

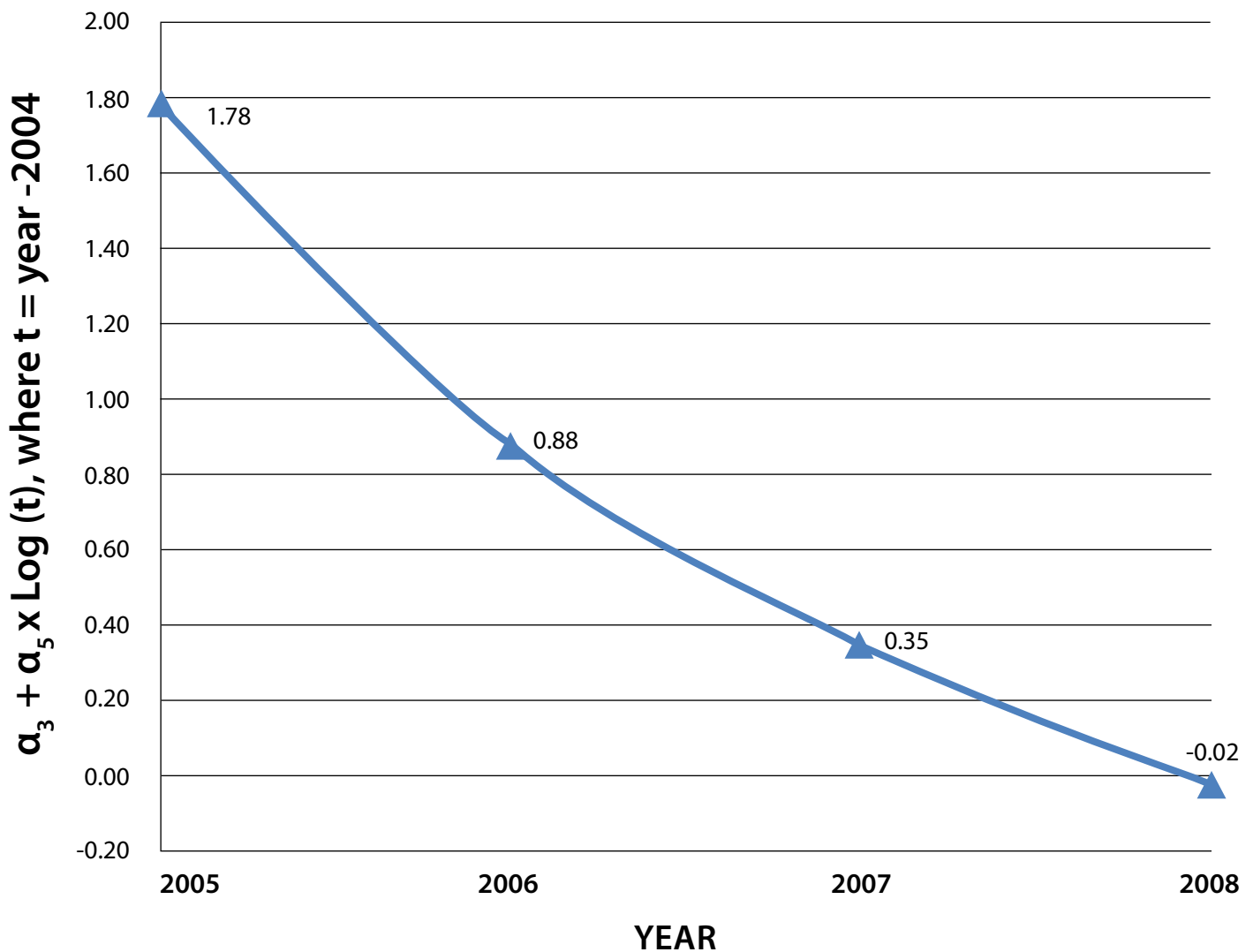
Hypothesis 3 predicted that the relationship between top management's emphasis on innovativeness and value creation (a) will be positive, (b) and this effect decreases over time. We found that, initially, a one standard deviation increase in innovativeness (approximately 0.49 units) improves value creation by 0.87 units. The marginal effect of innovativeness on shareholder value in the regression, $\alpha_6 + \alpha_8 \times \log(t)$, diminishes over time as there is a negative coefficient to the interaction term between innovativeness and logarithmic value of t. Thus, hypotheses 3a and 3b were supported in our data. Figure 2 presents the evolutionary nature of the effect of innovativeness.

To establish the robustness of our results, we conducted some additional analyses. We re-estimated our regression models for ten iterations, in each case with a randomly drawn subsample of 90% of the data we have.

We found that results remain stable, indicating that our findings are not vulnerable to random variations in sample size. These analyses enhance confidence in the findings of our study.

Discussion

Our results, based on studying senior management in large publicly-traded retailers, suggest two important ideas. On the conceptual side, we show that the manner in which top management exercises discretion in allocating scarce attentional resources to the various components of entrepreneurial orientation has significant implications for the value creation potential of the firm. This is an important finding because, the nexus between managerial attention and specific aspects of entrepreneurial orientation, though theoretical and practically substantive, remains under-explored in prior

Figure 2. Diminishing effect of innovativeness on a value creation

research. On the methodological side, we demonstrate the potential usefulness of historiometry in researching questions related to entrepreneurial orientation of top management. A historiometric approach enabled us to convert qualitative information over an extended period of time into quantitative indicators that were embedded in a nomological network and analyzed using statistical tools.

A notable knowledge void in the entrepreneurial orientation literature concerns how it relates to financial value creation and whether its individual dimensions are equally valuable (Miller, 2011). Results of the present study provide evidence that proactiveness and innovativeness emphases on the part of top management are significantly associated with value creation in the capital markets. Our findings with regard to lack of evidence for

the value creation potential of risk-taking seem to support Morgan and Strong's (2003) conclusion that it is unclear what place risk-taking occupies in the complement of top management as its commercial rewards are unclear. We join prior research in arguing that it may be premature to talk about the 'potential competitive advantage' of risk-taking at the corporate level. Investors may be inert to a risk-taking emphasis on the part of top executives as our results suggest, or worse, react negatively to it if they perceive it to be an impediment to performance as some past research suggests (Hughes & Morgan, 2007; Short, Broberg, Cogliser, & Brigham, 2010).

The entrepreneurial orientation concept also stipulates that sustained success can only be attained by emphasizing an entrepreneurial posture over time

(Rauch, Wiklund, Lumpkin, & Frese, 2009). Yet, the question of whether the impact of individual elements of entrepreneurial orientation is monotonic across time has not yet been examined (Madsen, 2007). In the present study, we found that the positive influence of proactiveness and innovativeness on value creation diminished over time. These results shed new light on the effect of entrepreneurial orientation over time. Perhaps, with time, managers of rival firms also begin to emphasize proactiveness and innovativeness, slowly eroding their value generation potential. The influence of proactiveness became negative after some years, which suggests an emphasis on proactiveness is not rewarded by the capital markets in the long-term, unless management follows it with stronger attention to proactively leading the market. For innovativeness, our results suggest that management can create value for the firm by emphasizing innovativeness as investors continue to react positively to it (Sood & Tellis, 2009). To our knowledge, this is one of the first studies to examine the evolutionary influence of the three central facets of entrepreneurial orientation. The temporal aspect of our research is important as superior outcomes over time are a key concern for managers. This is because sustained value creation reflects consistently high estimates of future cash flows for the firm (Milgrom & Roberts, 1992), indicating that the firm is being managed in the best interest of stockholders.

On the methodological side, our research illustrated the use of historiometry to extract quantitative information about entrepreneurial orientation of top management from qualitative data sources (Cho & Hambrick, 2006). Past studies have largely relied on asking a key executive within the firm for information regarding entrepreneurial orientation, leading to problems associated with self-serving biases and memory distortion. Moreover, a key informant approach is not appropriate for longitudinal research because it “requires very intrusive access to . . . executives. . . who are notoriously unwilling to submit themselves to scholarly poking and probing” over time (Hambrick, 2007, p. 337). More than a decade ago, Lyon, Lumpkin, & Dess (2000) encouraged development of new methodological techniques to measure entrepreneurial orientation. Recently, Miller (2011, p. 7) echoed the call for exploring new ways to measure entrepreneurial orientation, and spotlighted textual analysis as one methodology to test hypotheses using qualitative data sources. By using historiometry to derive data from

archival publically available qualitative sources like letters to shareholders, we were able to (a) collect data consistently over time and across companies, as well as (b) conduct quantitative analyses based on first-order qualitative data. We hope our novel methodology will show future researchers an approach that can be applied to collect data related to top management constructs like entrepreneurial orientation that would be difficult to obtain otherwise.

To summarize, our results provide support for the idea that not all components of entrepreneurial orientation may be equally important or relevant (e.g., George, 2011). Based on our results, we contend that innovativeness may be the most important dimension of entrepreneurial orientation, followed by proactiveness. As for risk-taking, further research is needed to establish its relevance for entrepreneurial orientation in the context of large firms. Departing from prior research, we also examined the evolutionary nature of the relationship each component of entrepreneurial orientation had with value creation, and found that, as expected, the effect of proactiveness and innovativeness diminished with time. Further, it seems that, in the long run, the effect of innovativeness is stronger than the effect of proactiveness. These findings have important implications for researchers who conceptualize entrepreneurial orientation as a gestalt construct (e.g., Covin, Green, & Slevin, 2006) as well as those who view it as having independent dimensions (e.g., Lumpkin & Dess, 1996). To the first group of scholars, it suggests that it may be useful to operationalize entrepreneurial orientation as an unequally weighted composite measure with different weight attached to each dimension. To those in the second group, our research suggests that even when one dimension is absent, the other two dimensions can cause the firm to be entrepreneurial. In addition, for managers, our results suggest the need to strategically focus their attention on specific aspects of entrepreneurial orientation to generate superior value in the capital markets.

Like other research studies, our study also has certain limitations. First, it is possible that there is a gap between what is emphasized in the letter and what the firm actually does (Judd & Tims, 1991), though these concerns may be considerably alleviated in light of the fact that misleading statements in the letter can lead to negative consequences for managers, including loss of credibility, censure by powerful stakeholders, and legal sanctions (McClelland,

Liang, & Barker, 2010). Another issue is the small sample size ($n=16$), which may influence the credibility of results presented here. However, our data collection involved obtaining data on independent and dependent variables for 5 years (2004-2008), and it can be argued that collecting data for a longer period of time would eliminate the need of large sample size and increase temporal generalizability of our research (Bettis & Mahajan, 1985). Lastly, we followed Miller's (2011, p. 9) advice to study entrepreneurial orientation within a "carefully defined industry context" and focused on large retail firms headquartered in the United States, but whether our findings generalize to other industries (e.g., banking) or countries (e.g., Germany) remains to be examined in future studies.

Notwithstanding the limitations of our research, our study has several methodological strengths. First, in addition to providing benefits such as alleviating reverse causality and controlling for value generated in the prior year, our panel dataset also allowed us to explicitly include and test the role of time in the nomological net. Second, the use of public correspondence to obtain data helped overcome some of the limitations associated with prior entrepreneurial orientation research that has relied on single key informants. Third, we employed non-expert raters who do not possess intense knowledge of retail companies and do not read shareholder letters as part of their job, which reduces concerns about the role of preconceived notions and biases based on real-world

knowledge about the company (Deluga, 2001). Fourth, we used an objective measure of economic value creation, departing from prior research in entrepreneurial orientation that has generally relied on other performance indicators, often measured perceptually. Fifth, we used qualitative data to obtain quantitative information that was used to test hypothesized relationships in a rigorous variance-theoretic manner, which is the dominant mode of empirical research in management and entrepreneurship (Chiles, Bluedorn, & Gupta, 2007). Finally, we focused our research within a single industry context within one country, which has the merit of holding extraneous factors constant.

Conclusion

Our findings indicate that the core aspects of entrepreneurial orientation do not generate uniform and consistent gains in shareholder value creation. The influence of entrepreneurial orientation is therefore more complex than is often portrayed, and its three core facets are not of equal value at all times. Top management that emphasizes proactivity and innovativeness aspects of entrepreneurial orientation can accrue shareholder value for their firm for some time. The key emphasis area for management may indeed be innovativeness as it is positively associated with shareholder value over a longer time period. Thus, managers of large firms should strategically and selectively emphasize entrepreneurial orientation to create value in the financial markets.

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