Entrepreneurial orientation, legitimation, and new venture performance

(Running head: Entrepreneurial orientation and legitimation)

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ABSTRACT

Research summary: We integrate research on entrepreneurial orientation and new venture legitimacy. To create value from an entrepreneurial orientation, firms need to possess necessary resources and capabilities, which new ventures often lack due to their liability of newness. We posit that legitimation helps overcome these constraints by enabling new ventures to acquire necessary resources and develop essential capabilities, and argue that entrepreneurial orientation and legitimation jointly enhance new venture performance. We analyzed data on 149 new ventures and found support for this argument. This study opens new research avenues by extending and incorporating explanations and predictions of entrepreneurial orientation and legitimation, two areas that have been largely considered as independent of each other.

Managerial summary: In the absence of a clear connection between legitimacy and economic returns, entrepreneurs and managers may not give strategic priority to legitimation. We find that new ventures with an entrepreneurial orientation as demonstrated by innovative, proactive, and risk-taking decisions and behaviors can achieve superior performance if they also actively undertake legitimation efforts to meet stakeholders' cognitive, regulative, and normative expectations. This study suggests that neglecting legitimation as an important competitive tool may be a greater mistake than has been previously realized, especially for new ventures with an entrepreneurial orientation.

Keywords: entrepreneurial orientation, legitimation, liability of newness, resource acquisition, capability development

INTRODUCTION

How ventures can succeed in their early years remains an important inquiry in entrepreneurship and management research. New ventures play a vital role in driving economic growth by actively introducing novel products, services, and price/value combinations (Aldrich and Ruef, 2006; Davidsson, 2004). Such new entries, often enabled by an entrepreneurial orientation (Lumpkin and Dess, 1996), may generate superior economic returns by exploiting entrepreneurial opportunities in the marketplace (Kirzner, 1973; 1997).

Extant research indicates that an entrepreneurial orientation helps create value when firms possess resources and capabilities that enable them to foster opportunity-seeking and advantage-seeking behaviors (Stam and Elfring, 2008; Wiklund and Shepherd, 2005). This value creation mechanism, however, may not be applicable to the majority of new ventures. Generally speaking, new ventures have not invented or learned functional roles, implemented effective processes, or built stable relationships with stakeholders (Stinchcombe, 1965). These liabilities suggest that new ventures may lack essential capabilities to accomplish important tasks, such as introducing new products and entering new markets. Because the risk of failure in new ventures is much higher than that in established corporations, new ventures often confront 'liability of newness' concerns from potential resource providers (Stinchcombe, 1965: 148). As a result, it can be also difficult for new ventures to access needed resources to exploit entrepreneurial opportunities (Fisher, Kotha, and Lahiri, 2016).

Legitimation, which refers to 'the intentional engagement of social actors in specific practices that may lead to achieving [legitimacy]' (Drori and Honig, 2013: 349), is a potential antidote to the liability of newness (Stinchcombe, 1965). Legitimacy is 'a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions' (Suchman, 1995: 574). Three types of legitimacy are particularly important for new ventures, including cognitive, regulative, and normative legitimacy (Aldrich and Fiol, 1994). Researchers have widely documented that legitimacy enhances organizational survival (Delmar and Shane, 2004; Singh, Tucker, and House, 1986). However, because 'legitimacy, arguably, has no specific, tangible value and cannot be accounted for directly as a firm asset' (Nagy *et al.*, 2012: 943), relatively less is known about whether and how legitimation affects other performance aspects beyond organizational survival.

Given the urgency with which researchers and practitioners need to better understand how new ventures can acquire resources and develop capabilities to exploit entry opportunities, it is imperative to incorporate explanations and predictions of both entrepreneurial orientation and legitimation. An entrepreneurial orientation alone may be insufficient to create value (Rauch *et al.*, 2009), especially for small and new ventures that lack necessary resources and capabilities (Stam and Elfring, 2008; Wiklund and Shepherd, 2005). Legitimation, by providing an important way for new ventures to overcome their liability of newness (Singh *et al.*, 1986; Zimmerman and Zeitz, 2002), can enable resource acquisition and capability development needed to exploit entry opportunities. These two lenses have been largely treated in isolation, which not only impedes our knowledge about how new ventures can overcome resource and capability constraints, but may also miss opportunities to open important research avenues beyond each lens's individual explanations and predictions (Okhuysen and Bonardi, 2011).

By combining major tenets developed in the entrepreneurial orientation and legitimacy literatures, we posit that legitimation helps new ventures overcome resource and capability constraints, and that entrepreneurial orientation and legitimation jointly enhance new venture performance. We analyzed data from 149 new ventures and found that new ventures undertaking greater legitimation efforts, that is, seeking to meet stakeholders' cognitive, regulative, and normative expectations, exhibited a more positive effect of entrepreneurial orientation on firm performance.

This study contributes to entrepreneurship and management research in two major ways. First, we demonstrate that entrepreneurial orientation and legitimation can be interactively beneficial to new ventures. An entrepreneurial orientation is important for new ventures to exploit entry opportunities (Anderson and Eshima, 2013; Stam and Elfring, 2008), but its effect on firm performance depends on necessary resources and capabilities (Covin and Slevin, 1988; 1989; Wiklund and Shepherd, 2003; 2005). Legitimation can enable new ventures to access needed resources and develop essential capabilities to exploit entrepreneurial opportunities. The joint effects of entrepreneurial orientation and legitimation found in this study provide important insights into the management and development of new ventures.

Second, we reveal a new mechanism through which legitimation enables surviving organizations to create value. Researchers have traditionally focused on how legitimation affects organizational survival (Bruderl and Schussler, 1990; Delmar and Shane, 2004), and presumed that legitimacy has no tangible value for alive organizations (Nagy *et al.*, 2012). In contrast to this common assumption, our evidence suggests that legitimation magnifies returns from an entrepreneurial orientation, even though it may not create economic value directly. This finding enhances recent theory development on the broader utilities of legitimation for new ventures (e.g., Fisher *et al.*, 2016).

THEORY AND HYPOTHESES

Theoretical background

The entrepreneurial orientation literature originates from Miller's seminal statement: 'An entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is *first* to come up with "proactive" innovations, beating competitors to the punch' (Miller, 1983: 771). Researchers have since defined an entrepreneurial orientation as 'the processes, practices, and decision-making activities that lead to new entry' (Lumpkin and Dess, 1996: 136), including innovative, proactive, and risk-taking decisions and behaviors (Covin and Lumpkin, 2011). As a business-level concept, an entrepreneurial orientation is an antecedent to new entry but may be insufficient to generate economic returns (Rauch *et al.*, 2009). To create value from an entrepreneurial orientation, firms need to possess needed resources and essential capabilities (Stam and Elfring, 2008; Wiklund and Shepherd, 2005).

Although an entrepreneurial orientation can be adopted by various organizations (Lumpkin and Dess, 1996), new ventures with an entrepreneurial orientation face a specific dilemma. An entrepreneurial orientation reflects strategic dispositions and willingness of top management (Covin and Slevin, 1988; 1989), which have greater direct influence on new ventures than on established corporations. New ventures are also small and flexible, thus being able to quickly respond to entrepreneurial opportunities appearing in the marketplace (Rauch *et al.*, 2009; Stam and Elfring, 2008). At the same time, because new ventures suffer from the liability of newness (Stinchcombe, 1965), they often confront tremendous challenges when acquiring necessary resources and developing essential capabilities to exploit entrepreneurial opportunities (Fisher *et al.*, 2016).

To overcome their liability of newness, new ventures need to legitimize first (Delmar and

Shane, 2004). It is particularly important for new ventures to undertake legitimation efforts to meet stakeholders' cognitive, regulative, and normative expectations. Cognitive legitimation is generally achieved by hiring capable and committed managers and employees, thus signifying to potential resource providers that the venture will succeed in its business domain (Cohen and Dean, 2005; Rao, Chandy, and Prabhu, 2008). Regulative legitimation occurs through obtaining governmental approvals and industrial and professional certifications to indicate that the venture will comply with established regulations and standards (Rao, 1994). Normative legitimation is mainly obtained by pursuing socially responsible and environmentally friendly activities so as to enhance stakeholders' perceptions that the venture will address social interests, welfare, and values (Wang and Bansal, 2012).

Recognizing that no single panacea can tackle resource and capability constraints that impede new ventures from exploiting entrepreneurial opportunities, we incorporate theories on entrepreneurial orientation and new venture legitimacy. We then posit that cognitive, regulative, and normative legitimation enhance the effect of entrepreneurial orientation on new venture performance, as Figure 1 illustrates.

Insert Figure 1 about here

Entrepreneurial orientation and cognitive legitimation

An entrepreneurial orientation consumes resources, especially when it entails product innovation (Covin and Slevin, 1991). Therefore, to realize economic returns from entrepreneurial orientations, firms need to have sufficient access to necessary resources such as financial capital (Wiklund and Shepherd, 2005). Raising money is challenging for new ventures. The lack of operating records and collateral assets often causes potential investors and creditors to decline new ventures' financing requests or to demand significant risk premiums. In order to overcome investors' doubt, new ventures can recruit experienced and committed managers and employees (Rao *et al.*, 2008), or communicate the credibility, achievements, and commitments of their founders (Pollack, Rutherford, and Nagy, 2012; Zott and Huy, 2007). By undertaking such efforts, a new venture can improve potential investors' perception of its performance prospects, leading to favorable financing deals. In essence, hiring experienced managers, employees, and directors communicates to potential resource providers that the venture has the necessary talent to achieve its new entry objectives (Rao *et al.*, 2008).

Cognitive legitimation also facilitates capability development for new ventures. An entrepreneurial orientation emphasizes opportunity seeking, given 'the scanning aspect of proactiveness' (Lumpkin and Dess, 1996: 148). Identifying and exploiting opportunities often require particular knowledge and skills (Lumpkin and Lichtenstein, 2005), which new ventures may have not developed yet. Cognitive legitimation is not simply about looking competent. Hiring employees with experience in the industry and assigning them to leadership positions actually increases new ventures' ability to exploit entrepreneurial opportunities. Stinchcombe (1965: 148) has long noted that 'New organizations have to get by with generalized skills produced outside the organization.' Consistent with this tenet, Rao and colleagues argue that hiring experienced executives can enhance new ventures' product development capabilities, thereby resulting in improved performance with their new offerings (Rao *et al.*, 2008). Experienced executives also enhance new ventures' ability to serve early customers, thus reducing their concerns about the functionality, quality, and reliability of new products and services (Wang, Song, and Zhao, 2014). Thus, *Hypothesis 1 (H1): The relationship between entrepreneurial orientation and new venture performance is more positive when cognitive legitimation is stronger.*

Entrepreneurial orientation and regulative legitimation

Regulative legitimation, such as gaining approval and endorsements from governments and industrial associations, can be critical for new ventures to access needed resources to exploit entrepreneurial opportunities. Business registration signals continuity and trustworthiness to investors, thus increasing entrepreneurs' access to financial capital (Kistruck *et al.*, 2015). Industrial and professional certifications increase the confidence of constituents and therefore help new ventures acquire resources from various providers, such as venture capitalists, angel investors, commercial banks, business partners, and community groups (Sine, David, and Mitsuhashi, 2007). Similarly, endorsements by prominent institutions enable new ventures to raise capital more quickly and in larger amounts (Stuart, Hoang, and Hybels, 1999). Achieving regulative legitimacy is also a prerequisite for access to public funds and government resources, such as small business loans, tax credits, and expenditure subsidies (Moutray, 2009).

Regulative legitimation may also help new ventures exploit entry opportunities. One of the major barriers to new entry is the ambiguity caused by the lack of standards and knowledge to evaluate the utility, quality, and safety of new products and services (Rao, 1994). Regulative legitimation helps overcome this barrier, because certification can serve 'as a form of tangible "evidence" that the activities that an entrepreneur is proposing are consistent with prevalent rules' (Sine *et al.*, 2007: 580). Given that new ventures heavily rely on relations among strangers, complying with universalistic laws and regulations enables them to overcome issues associated with the lack of trust from stakeholders (Stinchcombe, 1965). Therefore, regulative legitimation enhances new ventures' ability to build credible and stable relationships with potential customers, which are essential in new market entry.

Note, however, that an entrepreneurial orientation reflects a firm's strategic intent to differentiate itself from others by being innovative and proactive, whereas regulative legitimation reflects the firm's efforts to be similar to others by complying with the same regulations and standards. In some situations, distinctiveness and legitimacy can conflict (Navis and Glynn, 2011; van Werven, Bouwmeester, and Cornelissen, 2015). A new venture with excessive emphasis on regulative legitimation needs to minimize distinctive attributes and behaviors that are necessary for opportunity exploitation but not consistent with the letter and spirit of existing laws, regulations, and standards (Webb *et al.*, 2009).

Because resource acquisition and capability development are fundamentally critical for new ventures to exploit entrepreneurial opportunities, on balance we suggest that regulative legitimation plays a positive role in shaping the effect of entrepreneurial orientation on new venture performance. Therefore,

Hypothesis 2 (H2): The relationship between entrepreneurial orientation and new venture performance is more positive when regulative legitimation is stronger.

Entrepreneurial orientation and normative legitimation

Normative legitimation can enable new ventures to acquire needed resources to exploit entry opportunities. Sharfman and Fernando (2008) argue that firms minimizing environmental impacts can reduce capital costs and increase debt capacity. Some new ventures use normative legitimation as an instrument for raising capital. For example, Jia and Zhang (2014) find that corporate giving prior to an initial public offering positively influences market valuation, especially for ventures with negative media coverage. Overall, these studies demonstrate that normative legitimation enables resource acquisition, which is critical for ventures with an entrepreneurial orientation (Wiklund and Shepherd, 2005).

Normative legitimation may also help new ventures develop essential capabilities of opportunity exploitation. Researchers note that normative efforts can result in a platform from which new opportunities spring (Fombrun, Gardberg, and Barnett, 2000). Take, for example, the trend for consumers to increasingly prefer products and services that feature social and environmental benefits (McWilliams and Siegel, 2001). New ventures can exploit emerging opportunities from this trend by developing products and services that incorporate social and environmental considerations into design and manufacturing. Through normative legitimation, a new venture can also enhance its relationships with key stakeholders by addressing their interests, norms, and values (Wang and Bansal, 2012). Improved stakeholder relationships, in turn, facilitate the development and improvement of new product offerings (Wang *et al.*, 2014). As illustrated by Stinchcombe (1965: 149), normative efforts can enhance the 'sense of responsibility for getting the job done,' thus enabling new ventures to overcome organizational constraints in opportunity exploitation. In sum,

Hypothesis 3 (H3): The relationship between entrepreneurial orientation and new venture performance is more positive when normative legitimation is stronger.

DATA AND RESULTS

Data sources

We collected data from new ventures in the manufacturing industries, where new product offerings often require deeper changes in business strategy and a longer testing time than is the case for service providers (Ettlie and Rosenthal, 2011). Therefore, an entrepreneurial orientation for manufacturers is particularly demanding of resources and capabilities. Furthermore, a new manufacturer often lacks sophisticated engineering and manufacturing processes, and consequent concerns from major stakeholders may undermine its legitimacy (Choi and Shepherd, 2005). Customers may worry about product functionality, quality, and reliability (Shepherd and Zacharakis, 2003); environmentalists may be concerned about energy use and waste generation (Worthington and Patton, 2005); and residents in the local community may question whether the company will be a good corporate citizen (Peredo and Chrisman, 2006). To mitigate such concerns, a new manufacturer has ample motivation to undertake various legitimation efforts.

We drew our sample from Dun & Bradstreet's 2008 *Guide to Canadian Manufacturers Directory*, and considered firms eight years old or younger as new ventures. Researchers defined new ventures by using age cutoffs from six to 10 years (Leung, Foo, and Chaturvedi, 2013; Li, 2013), with the majority using eight years (Atuahene-Gima and Li, 2004; Batjargal *et al.*, 2013; Su, Xie, and Li, 2011). We excluded firms with fewer than 10 employees (Chaston and Sadler-Smith, 2012; Kraus *et al.*, 2012). By constraining our sample to new ventures that grew to 10 employees or more within eight years, we identified ventures with high growth potential, which are of primary interest in entrepreneurship research (Anderson and Eshima, 2013; Wales *et al.*, 2013). We focused on single-business ventures, because an entrepreneurial orientation captures strategic intent at the business level (Lumpkin and Dess, 1996; Rauch *et al.*, 2009). With these criteria, we identified 846 new ventures with contact information for the chief executive officers (CEOs) or presidents.

Data on entrepreneurial orientation and new venture performance were collected through a survey of these CEOs and presidents. We addressed the questionnaire directly to the executives by name, and made several efforts to assure their responses. We did not provide a monetary incentive; the CEOs and presidents were under no influence to respond and could discard the questionnaire if they did not wish to participate. The questionnaire included an area for remarks.

A number of completed questionnaires contained written comments and were signed and dated by the CEOs and presidents, suggesting their direct participation.

Through five rounds of contact from June to October 2008 (invitation letter, first-round questionnaire, fax reminder, second-round questionnaire, and phone call reminder) (Dillman, 2007), we received 204 returned questionnaires (162 by mail and 42 by email). Eight returned questionnaires had significant missing values and were dropped, resulting in a sample of 196 firms (response rate = 23%). We tested for the differences in (a) response rates across industries and regions; (b) age, sales, and number of employees between responding and nonresponding firms; and (c) all surveyed variables between the first 50 and the last 50 returned questionnaires, and between the questionnaires returned by mail and by email. We did not find any evidence of response bias in these tests.

Legitimation requires a communication channel through which the organization can inform and educate its stakeholders so as to enhance their understanding of its efforts and status (Bitektine, 2011; Zimmerman and Zeitz, 2002). Most companies in our sample had started using official websites to communicate with their major stakeholders. Information on a company's website is generally consistent with that provided through other communication channels (e.g., stakeholder meetings and annual reports) (Esrock and Leichty, 2000; Wang and Bansal, 2012). For example, by adopting a legitimacy perspective, Branco and Rodrigues (2006) found similar results when looking at how firms disclosed information about social responsibility in annual reports and on the Internet.

We treated company websites as a data source for legitimation measures. Once we had received the completed questionnaires, we searched the Internet and found that, among the 196 responding firms, 149 used official websites to describe their profiles (18% of the original sample of 846 new ventures). We saved the introductory webpages of 'About Us,' 'History,' and 'Mission and Vision Statements,' where these ventures describe their core business activities, important milestones, and key stakeholder relationships (Reber and Kim, 2006). The lead author reviewed major definitions and measures of cognitive, regulative, and normative legitimation (Aldrich and Fiol, 1994; Delmar and Shane, 2004; Rao *et al.*, 2008; Tornikoski and Newbert, 2007; Zimmerman and Zeitz, 2002; Zott and Huy, 2007), which were summarized and used to train a research assistant (a Ph.D. candidate in economics) to code data for this topic. Then, the lead author and the research assistant independently constructed legitimation measures by using content analysis (Krippendorff, 2013).

Variable measures

New venture performance

New ventures generally do not publicize their financial outcomes, and their various performance criteria cannot be fully reflected in financial reports. As a result, surveying their decision makers is a practical and appropriate way to collect performance information (Anderson and Eshima, 2013; Kraus *et al.*, 2012). We adopted a nine-item, seven-point scale that represents various aspects of firm performance (Stam and Elfring, 2008) (*NVP1 – NVP9* in the Appendix). The nine items loaded on one factor and exhibited good reliability (Cronbach's alpha = 0.93). We used the factor score of the nine items to measure new venture performance.

To validate this subjective performance scale, we retrieved sales information from the ORBIS database developed by Bureau van Dijk, and found that 60 of the 149 ventures were included in the database and contained sales information for 2008 and 2009. We calculated their sales growth as follows: $SG = \frac{S09-S08}{S08}$, where *S08* and *S09* were their sales in 2008 and 2009 respectively. The correlation between *SG* and the subjective assessment of sales growth (*NVP3*) was 0.35 ($p < 0.01$), and the correlation between *SG* and the factor score of the nine performance items (*NVP1 – NVP9*) was 0.28 ($p < 0.05$). These correlations were consistent with those reported in previous studies. De Clercq and colleagues (2010) found a 0.25 correlation between this performance scale and income growth. Ling *et al*. (2007) reported a 0.38 correlation between subjective and objective performance measures. Similarly, Stam and Elfring (2008) found a 0.32 correlation between this performance measure and sales growth.

Entrepreneurial orientation

We measured the *innovativeness* dimension of entrepreneurial orientation using the three items developed by Miller and Friesen (1982) (*INNOV1–INNOV3* in the Appendix), the *proactiveness* dimension using the three items validated by Lumpkin and Dess (2001) (*PRO1–PRO3* in the Appendix), and the *risk-taking* dimension using the three items developed by Miller and Friesen (1982) (*RT1–RT3* in the Appendix). The nine items loaded on one factor, as reported by other researchers (Stam and Elfring, 2008). These items also exhibited acceptable reliability (Cronbach's alpha = 0.87). Because our objective is to examine the interaction effects of the three types of legitimation and entrepreneurial orientation on new venture performance, it is appropriate to employ a reflective measure of entrepreneurial orientation (George and Marino, 2011; Wales, 2016). We used the factor score rather than the composite index of the nine items to measure entrepreneurial orientation, given that a composite index is essentially a formative measure (Diamantopoulos and Winklhofer, 2001).

The same CEO or president answered all the questions in the survey, suggesting that common-method variance may exist between our measures of entrepreneurial orientation and new venture performance. We conducted an exploratory factor analysis of all the items used to measure entrepreneurial orientation and new venture performance. By analyzing the eigenvalues and the scree plot, we found that two factors were generated and explained 34 percent and 25 percent of these items' variance, respectively. Because no single dominant factor was found, common-method variance was not an issue in the data (Podsakoff and Organ, 1986).

Cognitive legitimation

Generally speaking, founders, managers, and core employees with credible capabilities and commitments are expected to lead their firms successfully. Capabilities can be reflected by expertise in the business domain, which is widely used as a measure of cognitive legitimation (Nagy *et al*., 2012; Zott and Huy, 2007). Commitments can be measured by investments in plant, equipment, and property; without such investments, a manufacturer is unlikely to be perceived as cognitively legitimate (Choi and Shepherd, 2005).

The lead author and the research assistant independently searched the webpages of these ventures and constructed two binary variables, *business expertise* and *manufacturing capacity*. We assigned a value of one to *business expertise* if a venture reported the business-specific expertise of its founders, managers, and/or core employees, and a value of zero otherwise. To assure that the reported expertise was verifiable (thus trustworthy), we counted only expertise that was described in numerical terms (e.g., the founding team had 40 years of combined experiences in the industry) and excluded general statements (e.g., the employees were highly experienced). We assigned a value of one to *manufacturing capacity* if a venture reported its manufacturing capacity, and zero otherwise. To assure that the reported manufacturing capacity was verifiable (thus trustworthy), we counted only capacity that was described in numerical terms (e.g., the firm had built a 70,000-square-foot plant) and excluded general statements (e.g., the firm had sufficient manufacturing facilities). We then summed the two binary variables to measure cognitive legitimation. The lead author and the research assistant coded and calculated this index independently and reached agreement for 91 percent of the observations, indicating good interrater reliability.

Regulative legitimation

Regulative legitimation can be captured by the degree to which the organization complies with rules and regulations issued by governments and other powerful organizations (Aldrich and Fiol, 1994; Zimmerman and Zeitz, 2002). Accordingly, we measured regulative legitimation by the number of professional and industrial certifications that a venture obtained (Rao, 1994; Sine *et al.*, 2007). As Table 1 shows, these ventures had obtained 37 distinct professional and industrial certifications, which in total appeared 73 times. The lead author and the research assistant coded and calculated this measure independently and reached agreement for 88 percent of the observations, indicating good interrater reliability.

Insert Table 1 about here

Normative legitimation

An organization is perceived to have normative legitimacy if it addresses the interests, welfare, and values of stakeholders (Aldrich and Fiol, 1994; Zimmerman and Zeitz, 2002), especially of those who may suffer from the organization's irresponsible decisions and behaviors (Mitchell, Agle, and Wood, 1997). A company has a variety of stakeholders, whose values and interests may differ (Bridoux and Stoelhorst, 2014). For example, returns to creditors and shareholders may conflict (Wang and Thornhill, 2010). As a result, addressing the interests, welfare, and values of one stakeholder group may not contribute to, and in some situations may impair, normative legitimacy obtained from other stakeholder groups. Therefore, the more stakeholder groups to which the firm made commitments, the more normative legitimation efforts it had undertaken.

We focused on four stakeholder groups, including customers, employees, community, and environmentalists. Customers play a key role in granting legitimacy for new ventures (Shepherd and Zacharakis, 2003). Gaining legitimacy from employees is also important, which is why new ventures often allocate stock options to employees (Hand, 2008). A new venture typically needs to acquire resources from its local individuals and organizations (e.g., access to natural resources and infrastructure), suggesting that the local community is an important stakeholder group (Peredo and Chrisman, 2006). Finally, because small and new manufacturers often generate disproportionate levels of waste (Worthington and Patton, 2005), environmentalists may also be a key stakeholder group. By environmentalists, we refer to individuals and organizations mainly concerned with a firm's environmental impacts (Roxas and Coetzer, 2012).

From the above-mentioned webpages of the sampled ventures, the lead author and the research assistant independently searched for mentions of commitments to addressing the interests, welfare, and values of the four stakeholder groups (reported in Table 2). Again, we included specific commitments (e.g., donating 10% of profits to the local community) and excluded general statements (e.g., protecting the earth). We then used the number of stakeholder groups a venture addressed to measure its normative legitimation efforts. The lead author and the research assistant coded and calculated this index independently and reached agreement for 83 percent of the observations, indicating good interrater reliability.

Insert Table 2 about here

To test the joint effects of entrepreneurial orientation and cognitive legitimation (H1), entrepreneurial orientation and regulative legitimation (H2), and entrepreneurial orientation and normative legitimation (H3), we constructed their interaction terms by multiplying the corresponding measures. As explained above, entrepreneurial orientation was measured by using the factor score of the nine survey items and thus was already standardized. To reduce potential multicollinearity, we centered the measures of cognitive, regulative, and normative legitimation before multiplying them by the factor score of entrepreneurial orientation.

Control variables

The entrepreneurial orientation-firm performance relationship depends on environmental *munificence*, *dynamism*, and *complexity* (Lumpkin and Dess, 1996). Environmental munificence refers to the extent to which the environment can support sustained growth (Dess and Beard, 1984). Following Branzei and Thornhill (2006), we measured environmental munificence by the average sales growth rate from 2004 to 2008 in each industry, as defined by a three-digit North American Industry Classification System code. Environmental dynamism reflects the rate of unpredictable changes in the environment (Lumpkin and Dess, 2001). Accordingly, we measured environmental dynamism by the standard deviation of total sales from 2004 to 2008 in each industry, divided by the average sales in the industry during these years (Dess and Beard, 1984). Environmental complexity describes the degree of sophisticated knowledge and skills needed to operate in the environment (Sharfman and Dean Jr., 1991). We measured environmental complexity by using average R&D intensity from 2004 to 2008 in each industry, computed as the ratio of total intramural R&D expenditures to total sales in the industry (Branzei and Thornhill, 2006). These industrial level data were collected from the CANSIM database built and administered by Statistics Canada.

Although all the sampled firms were new ventures, differences in firm size and age may influence their financial performance. We thus controlled for firm size, using the number of employees (log transformed), and for firm age, using the number of years since the firm was established (log transformed).

The effect of entrepreneurial orientation on firm performance was more positive for high-tech than for low-tech ventures (Rauch *et al.*, 2009), suggesting the necessity to control for this difference. Our sampled manufacturers can be categorized by two-digit Standard Industrial Classification (SIC) codes from 20 to 39. Following Mousa and Wales (2012), we treated companies operating in the following industries as high-tech ventures: biotechnology and drugs (SIC = 28), computer and related (SIC = 35), electronics and communications (SIC = 36), and medical equipment (SIC = 38). We assigned a value of one to a binary variable *Hi-tech* to indicate a high-tech venture, and zero to indicate a low-tech venture.

Different markets often have diverse social and institutional requirements (Campbell, 2007), suggesting that firms targeting different markets may need to undertake differing levels and types of legitimation efforts. We used two binary variables to control for the target countries to which these companies sell, including only the Canadian market (the reference group), the North American market (Canada and the USA), and the international market (Canada, the USA, and at least one other country).

Founders and professional managers may differ in their strategic objectives for and emotional attachment to the ventures they operate (Wasserman, 2003). To control for this difference, we added a binary variable *Founder CEO* and assigned it a value of one if the CEO or president was also a founder of the venture and zero otherwise. We collected founder information from Dun & Bradstreet's reports, company websites, or telephone interviews with employees who answered the general phone numbers of these ventures.

Analyses and results

Descriptive statistics and bivariate correlations of all the variables are reported in Table 3. On average, the 149 ventures had 46.44 employees and were 5.40 years old. The correlations among cognitive, regulative, and normative legitimation ranged from 0.08 to 0.13. These low correlations suggest that new ventures may place different emphases on different legitimation efforts, and indicate good discriminant validity of our legitimation measures.

Insert Table 3 about here

Regression results are reported in Table 4. Model 1 is the base model, which included entrepreneurial orientation, the three types of legitimation, and the control variables. Although we did not hypothesize the main effects of entrepreneurial orientation and legitimation efforts, entrepreneurial orientation exhibited a positive and significant regression coefficient with new venture performance ($B = 0.21$, $p = 0.01$). Cognitive legitimation produced a positive and marginally significant regression coefficient with new venture performance ($B = 0.26$, $p = 0.07$), while the regression coefficient of regulative legitimation was negative and significant ($B = -0.20$, $p = 0.02$). The regression coefficient of normative legitimation was positive but not statistically significant ($B = 0.06$, $p = 0.62$).

Insert Table 4 about here

In Model 2, we added the interaction term between entrepreneurial orientation and cognitive legitimation. This interaction term exhibited a positive and significant regression coefficient ($B = 0.40$, $p = 0.01$), supporting H1. In Model 3, we added the interaction term between entrepreneurial orientation and regulative legitimation. This interaction term produced a positive regression coefficient (B = 0.09, p = 0.29), which was consistent with the direction of H2 but not statistically significant. We added the interaction term between entrepreneurial orientation and normative legitimation in Model 4, which produced a positive and significant regression coefficient with new venture performance (B = 0.28, p = 0.02). Therefore, H3 was supported. In Model 5, we included all the interaction terms and found results qualitatively identical to those reported in Models 2–4.

We plotted these results with further analyses of the spots where legitimation efforts convey specific meanings (Spiller *et al.*, 2013). As Figure 2 shows, when cognitive legitimation reached 0.17, the effect of entrepreneurial orientation became statistically significant. To realize returns from its entrepreneurial orientation, a new manufacturer needed to undertake at least one effort at cognitive legitimation (e.g., hiring experienced managers and employees or building manufacturing facilities). Figure 3 reveals an interesting pattern; when regulative legitimation was higher than 0.13 and lower than 2.78, the effect of entrepreneurial orientation on new venture performance was statistically significant. To maximize returns from its entrepreneurial orientation, a new manufacturer needed to obtain one to two certifications. When normative legitimation was higher than 0.27, the effect of entrepreneurial orientation became statistically significant (Figure 4). To achieve economic returns from its entrepreneurial orientation, a new venture needed to address the interests, welfare, and values of at least one stakeholder group (i.e., customers, employees, community, or environmentalists).

Insert Figures 2-4 about here

DISCUSSION

For the 149 new ventures studied here, the effect of entrepreneurial orientation on firm performance was more positive for new ventures that undertook cognitive, regulative, and normative efforts than for those that did not undertake these legitimation efforts. The primary contribution of this study lies in our integration of theories on entrepreneurial orientation and legitimacy, as evidenced by the joint effects of entrepreneurial orientation and legitimation on new venture performance.

Researchers have argued that an entrepreneurial orientation is particularly important for new ventures to exploit entry opportunities (Anderson and Eshima, 2013; Stam and Elfring, 2008). However, without a proven performance record, new ventures are typically perceived as risky by potential investors (Bruderl and Schussler, 1990; Delmar and Shane, 2004), resulting in restricted access to necessary resources. By reducing information asymmetry between new ventures and potential resource providers (Fisher *et al.*, 2016; Zimmerman and Zeitz, 2002), legitimation may enable new ventures to acquire needed resources to exploit entry opportunities. Legitimation may also enable opportunity exploitation for new ventures by developing essential capabilities, and thus counteract their liability of newness due to the lack of functional roles, effective processes, and stable relationships with stakeholders (Stinchcombe, 1965).

This study also furthers our knowledge of new venture legitimacy by demonstrating an implicit value-creation mechanism for active firms. Prior research suggests that legitimacy and legitimation primarily determine the survival of new ventures (Bruderl and Schussler, 1990; Delmar and Shane, 2004), but may not influence other performance aspects of the surviving population. This view holds that there is a threshold effect: beyond a certain level legitimacy does not have tangible value (Nagy *et al.*, 2012). We challenge this common belief and find that legitimation does help new ventures enhance returns from their entrepreneurial orientations. Therefore, we reveal an implicit value-creation mechanism that has not previously been reported in the legitimacy literature. The functions of resource acquisition and capability development derived from legitimation not only enhance firm survival as previous studies have concluded, but also enable surviving ventures to generate returns.

Although we did not formally hypothesize the main effects of legitimation, our results suggest that new venture performance could be positively affected by cognitive legitimation and negatively affected by regulative legitimation (see Table 4). Thus, the main effects of different legitimation efforts on firm performance may offset each other. This finding helps explain why previous studies often contend that legitimation may not lead to net economic returns (Nagy *et al.*, 2012).

The effect of entrepreneurial orientation on new venture performance was significant only at moderate levels of regulative legitimation (see Figure 3). Regulative legitimation seems to be a double-edged sword for new ventures with an entrepreneurial orientation: it helps new ventures acquire needed resources and develop essential capabilities to exploit entry opportunities, but reduces the distinctiveness of their offerings in the competitive marketplace (Guo, Tang, and Su, 2014).

These theoretical insights have important managerial implications. Because previous studies have not reported a clear connection between legitimacy and economic returns (Nagy *et al.*, 2012), entrepreneurs and managers may not give strategic priority to legitimation compared with, say, product and market development. This study suggests that legitimation is an important competitive tool. By actively undertaking legitimation efforts, entrepreneurs and managers can enhance returns from their ventures' entrepreneurial orientations. Furthermore, legitimation can enable new ventures to access resources when they are needed (Zimmerman and Zeitz, 2002), resulting in enhanced flexibility of resource acquisition. Certainly, it may be costly to recruit experienced talent (Rao *et al.*, 2008), comply with regulations and standards (Rao, 1994; Sine *et al.*, 2007), and address the interests, welfare, and values of multiple stakeholder groups (Wang and Bansal, 2012). While legitimation may have previously been seen as expenses with no direct benefits (Nagy *et al.*, 2012), the present research suggests that positive outcomes beyond a venture's survival are associated with its legitimation efforts.

Future research

This study opens several promising avenues for future research. First, we encourage researchers to further develop and test our theoretical model (see Figure 1). We have not directly tested the resource acquisition and capability development mechanisms, which should be further examined. In developing our hypotheses we suggest that legitimation helps new ventures raise money from equity and debt investors. However, different legitimation efforts may differ in their effects on acquiring various types of resources, an interesting and important direction for future research. Also, while major efforts have been made to study the moderating role of resource acquisition in the entrepreneurial orientation-firm performance relationship (Wiklund and Shepherd, 2003; 2005), relatively less research attention has been paid to the contingent function of capability development.

Second, it may be promising to examine how different legitimation efforts directly affect new venture performance. We focus on the joint effects of entrepreneurial orientation and legitimation on new venture performance, but do not intend to preclude the importance of the main effects of legitimation efforts. Context might also influence the relationships among entrepreneurial orientation, legitimation efforts, and new venture performance. For example, in industries with strict regulatory standards, firms have comparatively little opportunity to differentiate themselves from competitors. Studies that disentangle these complexities could make important contributions.

Third, further research is needed into how new ventures obtain and communicate legitimacy. We made a well-grounded assumption, based on previous theoretical explanations and empirical evidence (Pollack *et al.*, 2012; Zimmerman and Zeitz, 2002), that legitimation efforts enhance legitimacy status. However, this assumption requires further examination. Evaluation institutions and salient stakeholders may perceive an entity as being legitimate with no effort on its own part. It would be fruitful to examine the situations under which legitimation efforts do and do not work.

In measuring regulatory legitimacy, we follow Zimmerman and Zeitz's (2002: 418) argument that credentialing certifications reflect 'a generalized sense that the new venture is operating according to the letter and spirit of laws and regulations.' We recognize, however, that particular certifications may contain information beyond regulative legitimation (e.g., a firm's quality certificates indicate that it can develop high quality products and thus has cognitive legitimacy). Our results did not change significantly when we included all the legitimation efforts in our regression analyses (Model 5). However, it is interesting and promising to look into legitimation efforts that may lead to multiple legitimacy outcomes.

We recommend researchers compare different channels that new ventures may employ to communicate their legitimation efforts and status. Although information from company websites is consistent with that reported in other data sources (Branco and Rodrigues, 2006; Wang and Bansal, 2012), companies often maintain their websites parsimoniously, providing little detailed information. Other data sources (e.g., sustainability reports) may contain more data on specific legitimation efforts (e.g., normative legitimation).

Fourth, it is promising and interesting to examine the direct relationship between entrepreneurial orientation and legitimation. Menguc and colleagues (2010) find that an entrepreneurial orientation leads to proactive environmental practices, which can be considered normative legitimation efforts. Legitimacy and legitimation may also affect entrepreneurial orientation. Prospect theory suggests that individuals and organizations become more risk-averse as they accumulate wealth (Kahneman and Tversky, 1979). If we consider legitimacy as a form of wealth and an entrepreneurial orientation as a risk-taking strategy, then as new ventures gain more legitimacy, they may become less entrepreneurial. Slack search theory suggests an opposite relationship. As individuals and organizations accumulate slack resources, they pursue new opportunities through explorative search (Bourgeois III, 1981). If we treat legitimacy as a means of access to slack resources and an entrepreneurial orientation as explorative search, ventures that have acquired legitimacy may be more entrepreneurial than those without legitimacy. Researchers integrating these theoretical underpinnings may make important contributions to entrepreneurship and management research.

Finally, we encourage researchers to use panel data to examine several speculations that we cannot investigate from our cross-sectional data. An entrepreneurial orientation reflects top management's inclination to make innovative, proactive, and high-risk, high-return decisions (Covin and Slevin, 1988; 1989). Such a strategic inclination often results from the founding team's mindsets and beliefs and thus tends to be firm specific. As a consequence, the variance among new ventures' entrepreneurial orientations is likely to be cross-sectional. However, we acknowledge that new ventures can undertake different legitimation efforts, depending on their status and strategies (Bitektine, 2011; Drori and Honig, 2013; Fisher *et al.*, 2016). We focused on firms that grew to 10 or more employees within eight years. Smaller and younger ventures may have different levels of entrepreneurial orientation and legitimation efforts than those included in the sample. Adjustments and changes in legitimation efforts could be better captured with longitudinal data and analyses.

Concluding remarks

We find that legitimation enhances the effect of entrepreneurial orientation on new venture performance. This finding indicates that legitimation plays an important role in enabling resource acquisition and capability development for new ventures. While simply surviving from year to year can gradually improve organizational capabilities and increase the confidence of resource providers, legitimation provides a more direct pathway for new ventures to access needed resources and develop essential capabilities to exploit entry opportunities.

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Table 1. Industrial and professional certifications

Certification	Frequency	Certification	Frequency
ABSA	1	HACCP	3
ANSI	1	HEALTH CANADA	2
API	1	IMS	1
AS9101	1	ISO	22
ASME	1	JWES	1
ASTM	1	KCMA	1
BOEING 380	1	LEAN MANUFACTURING	1
CE	1	NADCAP	1
CME	1	NEMA	1
CSA	7	OCFB	1
CWB	3	OHSA	1
DIN	1	QP3	1
EGGBS	1	QS	1
ESP	1	ROHS	1
ETV	1	RWMA	1
FDA	5	TSSA	1
FSC	1	UL	1
GMP	1	WQS	1
GREENGUARD	1	Total	73

Table 2. Examples of normative legitimation

Customers	Employees	Community	Environmentalists
• We use only natural materials for our products; • We provide customers with a lifetime warranty; • We operate on a 24/7 schedule for quick delivery; • We adopt mass-customization to ensure customer satisfaction; • We provide customer services in various languages; • We source materials only from certified suppliers; • Our quality exceeds average customer tolerance by # times.	• Our venture is owned by its employees; • We exceed the legal requirements to minimize occupational risks; • Our policy nurtures and rewards talents and efforts; • We provide continuous training and cross-training for all employees; • Our top priority is to ensure employees' safety; • Our workforce policy fosters teamwork and harmonious labor relationships; • We adopt a policy to promote from within.	• Our venture is locally owned and operated; • We contribute at least 10% of profits back to the local community; • We support the development of a local business school; • We hold open communications with the local community regarding site operations; • We are well connected to the local farming community; • We hire locally; • We founded not-for-profit organizations to promote local development.	• Our products have a high percentage of recycled content; • Our technology enables a recycling rate in excess of 90%; • We adopt a move to totally renewable energy; • Our technology enables zero emissions; • We exceed the legal requirements to reduce energy use; • We ensure that all employees adhere to our environmental practices; • We use only biodegradable packaging materials.

Table 3. Descriptive statistics and bivariate correlations

	Min	Max	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Entrepreneurial orientation	–2.33	2.00	0.00	1.00													
2. New venture performance	–3.00	1.94	0.00	1.00	0.20												
3. Cognitive legitimation	0.00	2.00	0.38	0.59	–0.10	0.12											
4. Regulative legitimation	0.00	6.00	0.49	0.95	–0.08	–0.20	0.13										
5. Normative legitimation	0.00	3.00	0.51	0.75	0.13	0.06	0.08	0.11									
6. Environmental munificence	–0.15	0.18	0.00	0.05	0.11	–0.05	–0.05	0.09	0.12								
7. Environmental dynamism	0.02	0.25	0.06	0.05	0.00	0.05	0.15	–0.12	0.03	–0.48							
8. Environmental complexity	0.00	0.13	0.02	0.04	0.05	–0.17	–0.11	0.03	–0.03	–0.25	–0.05						
9. Hi-tech	0.00	1.00	0.36	0.48	0.07	–0.10	–0.08	–0.01	–0.04	0.15	–0.17	0.56					
10. International market	0.00	1.00	0.26	0.44	0.04	–0.09	–0.01	–0.08	–0.13	0.04	0.10	0.08	0.14				
11. North American market	0.00	1.00	0.36	0.48	–0.02	–0.05	–0.01	0.02	0.06	0.00	–0.11	–0.02	0.00	–0.44			
12. Firm age	0.69	2.20	1.80	0.36	0.07	0.05	–0.20	–0.11	–0.05	0.01	–0.06	0.05	0.17	0.01	0.05		
13. Firm size	2.40	6.18	3.38	0.87	–0.11	–0.01	0.08	0.01	0.01	–0.03	–0.03	–0.02	–0.06	0.08	0.08	–0.07	
14. Founder CEO	0.00	1.00	0.58	0.50	0.10	0.09	–0.01	–0.11	0.05	0.00	–0.01	0.06	0.09	–0.07	0.14	0.20	–0.16

Note: Correlations with absolute value larger than 0.17 and 0.21 were significant at $p < 0.05$ and $p < 0.01$, respectively.

Table 4. Regression results: new venture performance

	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	–0.11 (0.57, 0.85)	–0.13 (0.56, 0.81)	–0.22 (0.57, 0.70)	–0.19 (0.57, 0.74)	–0.32 (0.56, 0.57)
Environmental munificence	–2.80 (2.12, 0.19)	–2.90 (2.08, 0.17)	–2.53 (2.13, 0.24)	–2.81 (2.08, 0.18)	–2.65 (2.07, 0.20)
Environmental dynamism	–1.21 (2.03, 0.55)	–1.11 (1.99, 0.58)	–1.13 (2.03, 0.58)	–1.47 (2.00, 0.46)	–1.25 (1.98, 0.53)
Environmental complexity	–5.92 (2.94, 0.05)	–6.41 (2.89, 0.03)	–5.57 (2.96, 0.06)	–6.22 (2.89, 0.03)	–6.26 (2.88, 0.03)
Hi-tech	0.08 (0.22, 0.72)	0.12 (0.21, 0.59)	0.08 (0.22, 0.72)	0.16 (0.22, 0.47)	0.18 (0.21, 0.41)
International market	–0.32 (0.21, 0.13)	–0.25 (0.21, 0.24)	–0.29 (0.21, 0.17)	–0.34 (0.21, 0.10)	–0.26 (0.21, 0.21)
North American market	–0.26 (0.19, 0.17)	–0.28 (0.18, 0.13)	–0.24 (0.19, 0.20)	–0.26 (0.18, 0.15)	–0.26 (0.18, 0.15)
Firm age	0.13 (0.23, 0.58)	0.18 (0.23, 0.43)	0.11 (0.23, 0.63)	0.12 (0.23, 0.61)	0.15 (0.23, 0.51)
Firm size	0.04 (0.09, 0.68)	0.04 (0.09, 0.66)	0.05 (0.09, 0.62)	0.07 (0.09, 0.45)	0.07 (0.09, 0.43)
Founder CEO	0.12 (0.17, 0.47)	0.16 (0.17, 0.35)	0.12 (0.17, 0.47)	0.12 (0.17, 0.46)	0.15 (0.16, 0.35)
Entrepreneurial orientation (EO)	0.21 (0.08, 0.01)	0.25 (0.08, 0.00)	0.21 (0.08, 0.01)	0.23 (0.08, 0.01)	0.25 (0.08, 0.00)
Cognitive legitimation (CL)	0.26 (0.14, 0.07)	0.33 (0.14, 0.02)	0.26 (0.14, 0.07)	0.28 (0.14, 0.05)	0.34 (0.14, 0.02)
Regulative legitimation (RL)	–0.20 (0.09, 0.02)	–0.19 (0.09, 0.03)	–0.20 (0.09, 0.02)	–0.21 (0.09, 0.01)	–0.21 (0.08, 0.02)
Normative legitimation (NL)	0.06 (0.11, 0.62)	0.06 (0.11, 0.57)	0.05 (0.11, 0.67)	0.01 (0.11, 0.91)	0.02 (0.11, 0.86)
EO × CL		0.40 (0.16, 0.01)			0.34 (0.16, 0.04)
EO × RL			0.09 (0.09, 0.29)		0.08 (0.09, 0.33)
EO × NL				0.28 (0.11, 0.02)	0.22 (0.12, 0.06)
R squared	0.16	0.20	0.17	0.20	0.23

Note: Unstandardized regression coefficients; numbers in brackets are standard errors and p values, two-tailed tests.

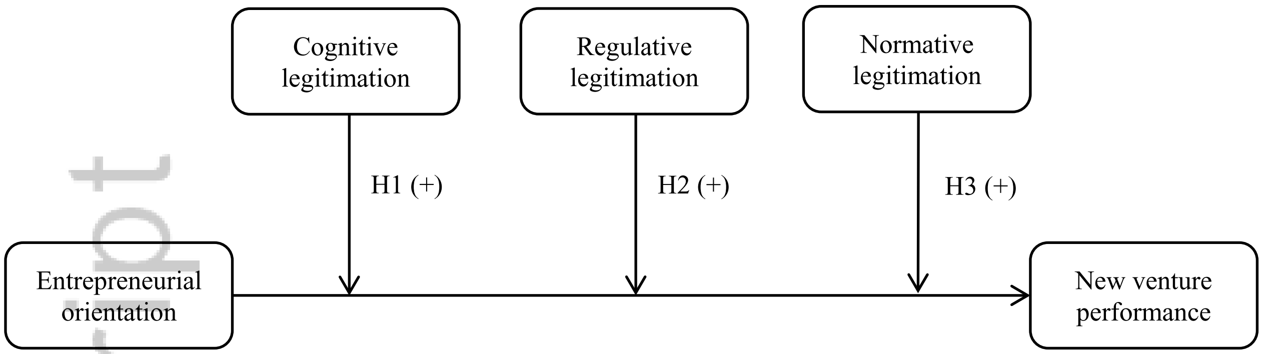
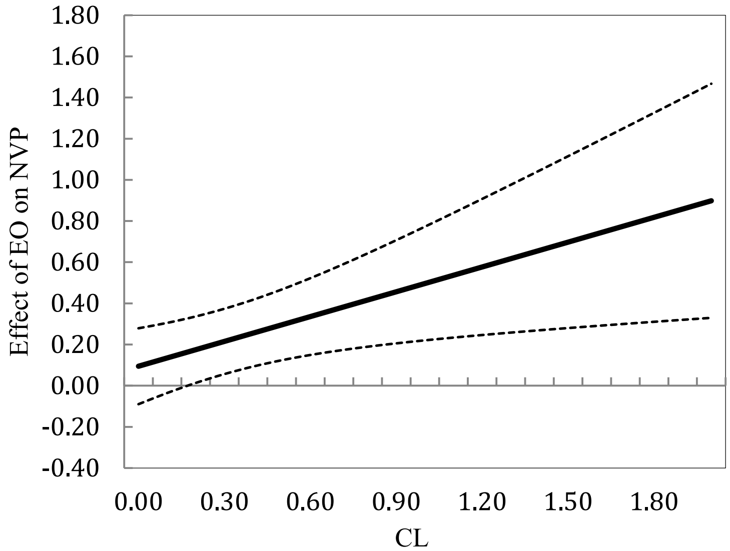
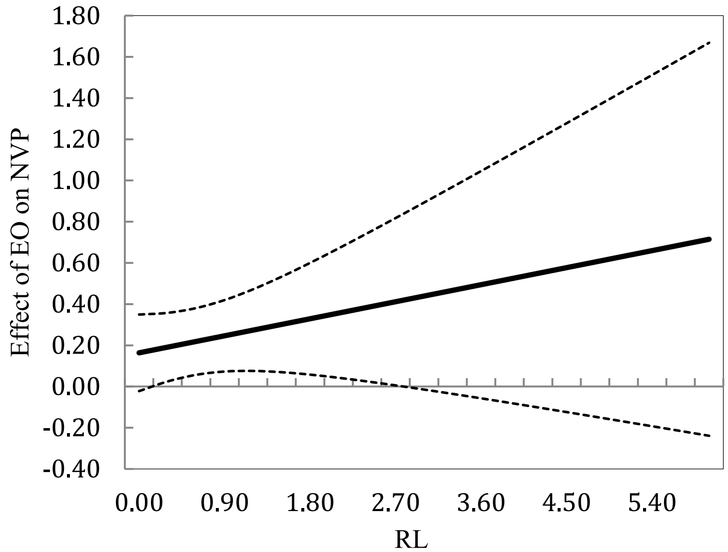


Figure 1. Theoretical framework



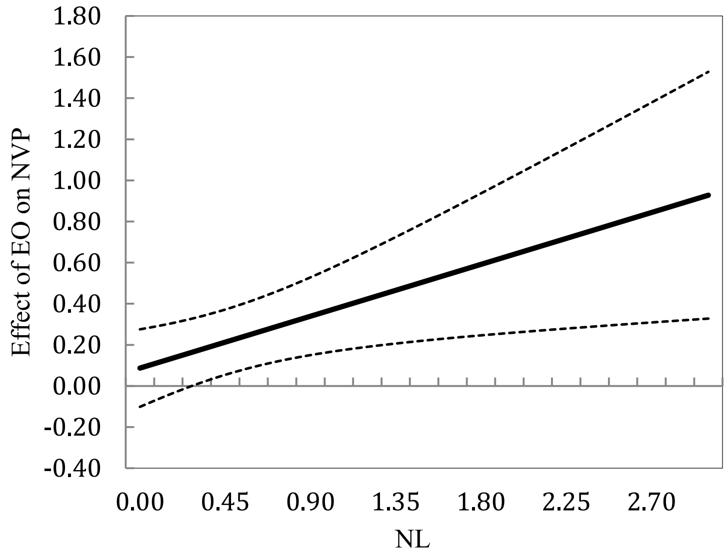
Notes:
(a) EO = entrepreneurial orientation, NVP = new venture performance, CL = cognitive legitimation.
(b) The dark line describes the point estimate of the effect of EO on NVP, and the dashed lines are the corresponding lower and upper levels of 95% confidence intervals.
(c) Spotlight: CL = 0.17, B (standard error, p value) = 0.16 (0.08, 0.05).

Figure 2. Estimated effects of EO on NVP at different levels of CL



Notes:
(a) EO = entrepreneurial orientation, NVP = new venture performance, RL = regulative legitimation.
(b) The dark line describes the point estimate of the effect of EO on NVP, and the dashed lines are the corresponding lower and upper levels of 95% confidence intervals.
(c) Spotlights: RL = 0.13, B (standard error, p value) = 0.18 (0.09, 0.05);
RL = 2.78, B (standard error, p value) = 0.42 (0.21, 0.05).

Figure 3. Estimated effects of EO on NVP at different levels of RL



Notes:
(a) EO = entrepreneurial orientation, NVP = new venture performance, NL = normative legitimation.
(b) The dark line describes the point estimate of the effect of EO on NVP, and the dashed lines are the corresponding lower and upper levels of 95% confidence intervals.
(c) Spotlight: NL = 0.27, B (standard error, p value) = 0.16 (0.08, 0.05).

Figure 4. Estimated effects of EO on NVP at different levels of NL

APPENDIX

Survey questionnaire

New venture performance (NVP)

Please evaluate your firm's performance in the last year by choosing a number between 1 and 7, where 1 means that your firm was much worse and 7 means that your firm was much better than major competitors.

NVP1. Sales level	1	2	3	4	5	6	7
NVP2. Market share	1	2	3	4	5	6	7
NVP3. Sales growth	1	2	3	4	5	6	7
NVP4. Cash flow	1	2	3	4	5	6	7
NVP5. Ability to fund business growth from profits	1	2	3	4	5	6	7
NVP6. Return on assets	1	2	3	4	5	6	7
NVP7. Return on equity	1	2	3	4	5	6	7
NVP8. Return on sales	1	2	3	4	5	6	7
NVP9. Overall firm performance/success	1	2	3	4	5	6	7

Entrepreneurial orientation (EO)

INNOV1. Your firm generally markets tried-and-true products/services.	1	2	3	4	5	6	7	Your firm strongly emphasizes R&D, technological leadership, and innovations.
INNOV2. How many new lines of products/services has your firm marketed in the past three years?								
No new lines of products/services.	1	2	3	4	5	6	7	Many new lines of products/services.
INNOV3. Changes in your product/service lines have been mostly minor.	1	2	3	4	5	6	7	Changes in your product/service lines have usually been quite dramatic.
PRO1. Your firm typically responds to actions competitors initiate.	1	2	3	4	5	6	7	Your firm typically initiates actions to which competitors then respond.
PRO2. Your firm is seldom the first to introduce new products/services, administrative techniques, operating technologies, etc.	1	2	3	4	5	6	7	Your firm is often the first to introduce new products/services, administrative techniques, operating technologies, etc.
PRO3. Your firm tends to 'follow the leader' in introducing new products or ideas.	1	2	3	4	5	6	7	Your firm tends to be the leader in introducing novel ideas or products.
RT1. Your firm generally pursues low-risk projects (with normal and certain rates of return).	1	2	3	4	5	6	7	Your firm generally pursues high-risk projects (with chances of very high returns).
RT2. Owing to the nature of the environment, your firm generally engages tentative and incremental behaviors to achieve its objectives.	1	2	3	4	5	6	7	Owing to the nature of the environment, your firm generally takes wide-ranging steps to achieve its objectives.
RT3. When confronted with uncertainty, your firm typically adopts a cautious, 'wait-and-see' posture to minimize the probability of incurring costly losses.	1	2	3	4	5	6	7	When confronted with uncertainty, your firm typically adopts a bold, aggressive posture to maximize the probability of exploiting potential opportunities.