THE INFLUENCE OF TOP MANAGEMENT CHARACTERISTICS
ON SENIOR MANAGERS’ INNOVATION ADOPTION TENDENCY

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ABSTRACT

This study examines the influence of top management characteristics, i.e., strategic planning capacity and entrepreneurship orientation, on senior managers’ innovation adoption decision tendency. Subjects are experienced business professionals from the U.S. and China. The results suggest that the alignment of these characteristics influences innovation adoption decision in both cultural settings.

Keywords: Strategic Planning Capacity, Entrepreneurial Orientation, Innovation, Business Decision-Making, Risk Propensity

INTRODUCTION

Innovation adoption is important to firms’ evolutionary dynamics and their long-term viability. Insight into factors that influence the innovation adoption process helps firms to adapt to changing environment more effectively (Frambach & Schillewaert, 2002). Innovation adoption decision, as many other business decisions in today’s dynamic environment, tends to be risky and multifaceted, involving various aspects of risks concurrently (Hung & Tangpong, 2010). Research has shown that decision makers’ individual characteristics affect their innovation adoption decisions. For example, risk propensity, defined as an individual’s current tendency to take or avoid risk (Sitkin & Weingart, 1995), has been found to play an influencing role in various business decisions, behaviors, and outcomes in business and management literature (Lumpkin & Dess, 1996). It has also been shown to influence managers’ product innovation adoption decision (Hung, Tangpong, Li, & Li, 2012).

At the same time, given the importance of innovation adoption to firms, a manager’s decision to adopt innovations is potentially also shaped by organizational characteristics, rather than by individual characteristics alone. Organization is the reflection of its top management as the top management shapes various parts of organizations as well as behaviors of other managers in organization (e.g., Jaworski & Kohli, 1993). Strategic planning and entrepreneurial orientation are often perceived as two major approaches toward creating and managing values in organizations (Hitt, Ireland, Camp, & Sexton, 2001). Therefore, the characteristics of top management should be among the factors that shape other senior managers’ tendency to adopt
innovation, which is important to the firms’ adaptability to external changes, ensuring their long-term viability.

In this paper, we ask the question: “How top management’s strategic planning capacity and entrepreneurial orientation impact senior managers’ tendency to adopt innovations?” In order to answer this question, we specifically examine (1) the main effects of top management’s strategic planning capacity and entrepreneurial orientation on senior managers’ innovation adoption decision, and (2) the effect of the alignment between these two top management characteristics on such decision.

THEORETICAL ARGUMENTS AND HYPOTHESES

The first top management characteristic we examined in this study is their strategic planning capacity. Strategic planning focuses on managerial control and systematic approach to managing firms (Venkatraman & Ramanujam, 1987). Top management’s strategic planning capacity can help firms to anticipate surprises and crisis and adapt to unanticipated changes. While successful strategic planning should enhance innovation in an organization, certain aspects of strategic planning, can also have unintended consequences in stifling creativity and innovation within the firm. Such emphasis on systematic managerial controls by top management in strategic planning can shape senior managers’ cognitions and decision-making toward managerial compliance to the top management’s expectations and can subconsciously promote risk aversion and suppress the adventurous tendency among senior managers. Thus, when top management exhibits high strategic planning capacity, it can increase risk aversion and conservatism toward business decisions among senior managers and reduce their tendency to adopt a new risky approach or innovation that requires them to justify to the top management for compliance and control purposes. Following this line of argument, we propose Hypothesis 1, suggesting that strategic planning capacity of top management negatively affects senior managers’ decision on product innovation adoption.

Hypothesis 1: Top Management’s Strategic Planning Capacity (TMSPC) is negatively associated with senior managers’ tendency to make risky decisions in adopting innovations.

Top management entrepreneurial orientation refers to the extent that the top management team is entrepreneurial (Covin & Slevin, 1989). In practice, this translates to top management’s emphasis on engaging in competition aggressively, committing resources to projects that have potential to leapfrog competitions but with possible risky outcomes, and anticipating opportunities in terms of changes in products and demands (e.g., Covin & Slevin, 1989). Entrepreneurial orientation has been found to be positively related to firms’ product innovation (e.g., Atuahene-Gima & Ko, 2001). Top management with high entrepreneurial orientation tends to encourage greater level of autonomy in organization that allows innovative ideas to be carried out without being stifled by stringent organizational constraints (e.g., Lumpkin & Dess, 1996). Essentially, top management with high entrepreneurial orientation sets example, and the others follow. As such, we propose Hypothesis 2 as follows.

Hypothesis 2: Top Management’s Entrepreneurial Orientation (TMEO) is positively
associated with senior managers’ tendency to make risky decisions in adopting innovations.

Finally, we look at the influence of the interaction between the abovementioned factors. Hypothesis 1 suggests that high level of top management’s strategic planning capacity enhances the organization’s ability to execute top management’s plan but results in stifling senior managers’ innovation adoption behavior due to their emphasis on the managerial controls in the process. Hypothesis 2 suggests that top management’s entrepreneurial orientation increases the tendency of senior managers to adopt innovations. However, their effects on senior managers’ innovation adoption behavior may also be influenced by the alignment between them. For example, when top management possesses high level of entrepreneurial orientation, high level of strategic planning capacity can enhance the organization’s ability to trickle down such entrepreneurial orientation among senior managers and throughout the managerial ranks, enabling the organization to implement entrepreneurial initiatives. Following this reasoning, we propose Hypothesis 3, suggesting that strategic planning capacity and the entrepreneurial orientation of top management, interactively, affects senior managers’ decision on product innovation adoption.

Hypothesis 3: The interaction of Top Management’s Strategic Planning Capacity (TMSPC) and Entrepreneurial Orientation (TMEO) is positively associated with senior managers’ tendency to make risky decisions in adopting innovations.

METHODOLOGY

Vignette Study and Participants

To test the proposed hypotheses, we used a vignette study as our research method. Vignette is a short scenario or case designed to reveal respondents’ certain predispositions or decision tendencies. The use of vignette study is supported by the extant literature. It is commonly used to examine respondent attitudes, ethics, and decision making (e.g., Reynolds, Schultz, & Hekman, 2006), and has been found to be both more reliable and more valid for studying respondent attitudes than typical opinion surveys (Alexander & Becker, 1978). Its validity in policy and decision making research has also been empirically supported (e.g., Key, 1997).

The participants in our vignette study were a group of 259 experienced business professionals: from the United States and China. The participants were asked to make a decision in a product innovation adoption vignette, developed by Hung and Tangpong (2010). This vignette was empirically grounded in an actual business incident of the development of the Boeing 7E7 Dreamliner. In the vignette, each participant assumed the role of a senior manager of an aircraft component supplier and was asked to rate their likelihood to accept a proposal from an aircraft manufacturer regarding the use of a lightweight and durable composite material in the production of the body of the new generation, fuel-efficient aircraft. The risk associated with this decision was multifaceted. While this proposal was quite favorable in terms of energy and sustainability, it might induce a question regarding safety. The decision to accept the proposal would also necessitate a new and unfamiliar operational procedure including design, production, inspecting, and testing. The market of this new aircraft was uncertain, and its success or failure would ultimately impact the company financially.
The survey questionnaire used in this study included an 11-item scale from Venkatraman & Ramanujam (1987) to measure top management strategic planning capacity and a 9-item scale from Covin & Slevin (1989) and Naman & Slevin (1993) to measure top management entrepreneurial orientation. Since research has indicated that the innovation adoption tends to be influenced by risk propensity of decision makers, we controlled for participants’ risk propensity, measured by Hung et al.’s (2012) five-item GRP scale.

The vignette and survey instrument were written in English for the U.S. sub-sample first. This English version of vignette and the instrument were then translated into Chinese by one of the authors for the China sub-sample. To verify the accuracy of the Chinese translation, the Chinese version of the instrument was translated back into English by a research assistant who was unaware of the purpose of the study and the original English version of instrument. These two English versions were compared to verify that the original meanings were intact in both versions.

**Measurements and Statistical Models**

An exploratory factor analysis, using principal component analysis, were performed and verified the reliability and the unidimensionality of the items of Top Management Strategic Planning Capacity (TMSPC), Top Management Entrepreneurial Orientation (TMEO) and the General Risk Propensity (GRP) scales. As such, we used the sum scores for these three scales in our analyses. The sum scores of TMSPC and TMEO were used as the independent variables to predict the likelihood that participants would accept the new product development proposal. The participants’ likelihood to accept the innovation adoption proposal was measured through a 1-7 scale (1 = Very unlikely and 7 = Very likely). We also controlled for country, participants’ gender, age, sum GRP score, and management experience.

We began the data analysis by performing correlation analyses. Result of the correlation analyses of the independent and control variables indicated that there were some significant correlations among the variables. Nevertheless, Variance Inflation Factors did not indicate multicollinearity problems among them; therefore, the underlying assumptions of multiple regression analysis were not violated.

In the multiple regressions analysis, the dependent variable was the likelihood of making the innovation adoption decision, and two regression models in addition to the control model were tested. The result of the Control Model indicated that Country and Agent GRP were significantly and positively related to the likelihood of making the innovation adoption decision, as we expected. The Top Management Characteristics Model indicated that Top Management Strategic Planning Capacity and Entrepreneurial Orientation were not significantly related to the likelihood of innovation adoption decision; however, Country and Agent GRP remained significant. In the Full Model, while Country and Agent GRP remained significant, the results indicated that Top Management Strategic Planning Capacity, Entrepreneurial Orientation, and their interaction term were significantly related to the likelihood of making the innovation adoption decision. The overall model was significant at $p < 0.001$. In addition, Top Management Strategic Planning Capacity and Entrepreneurial Orientation were negatively related to the decision. It appeared that the introduction of the interaction term helped to
improve the explanatory power of the top management characteristics (Incremental F value = 6.88, p < 0.01). Together, these results supported hypotheses 1 and 3, but not hypothesis 2.

**DISCUSSION AND CONCLUSION**

Our results showed that, the top management strategic planning capacity and entrepreneurial orientation, in and of themselves, were significant in reducing senior managers’ innovation adoption tendency. However, taken together these two top management characteristics interactively influenced senior managers’ innovation adoption tendency in a positive way and significantly increased their likelihood to make a risky decision and embrace innovations.

This study contributes toward our understanding of the influence of top management characteristics on innovation management. First, when top management’s strategic planning capacity and entrepreneurship orientation are not aligned, these characteristics reduce senior managers’ likelihood to adopt innovation. On the other hand, when these top management characteristics are aligned, they work in tandem to empower the senior managers to embrace risk and adopt innovation. Second, the overall results are highly significant for a cross-cultural sample of senior managers from the U.S. and China, suggesting that our finding can perhaps be generalized to cross-cultural settings.

This study provides two practical implications that can be useful to business professionals and practitioners. First, our findings reveal that senior managers’ general risk propensity plays a part in influencing innovation adoption decisions, this finding is consistent with extant literature that decision-makers’ general risk propensity influences outcomes of innovation adoption and risky decisions (e.g., Hung et al., 2012). As such, if a firm wants to be innovative, it should recruit and promote managers who exhibit high levels of general risk propensity. Second, our finding indicates that senior managers are less likely to adopt innovation when there is misalignment between top management’s strategic planning capacity and entrepreneurship orientation. Thus, if a firm wants to be innovative, it should also evaluate the alignment between these characteristics of its top management.

Despite its contributions towards theoretical research and practical applications, this study still has room for improvement. First, while our results are highly significant for a cross-cultural sample consisting of senior managers from the U.S. and China, we can compare the results in the two subsamples in the future. Future study can extend our finding with further cross-cultural validation by including senior managers from other cultures besides the U.S. and China. Second, while our results on the influence of top management strategic planning and entrepreneurship orientation provide insight into innovation management and innovation adoption decision-making process, future study can explore and examine the effects of other top management characteristics and their alignment on innovation adoption decisions in organizations.

**REFERENCES**


