Financial orientation, product innovation and firm performance — an empirical study in the Japanese SMEs

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FINANCIAL ORIENTATION, PRODUCT INNOVATION AND FIRM PERFORMANCE: AN EMPIRICAL STUDY IN THE JAPANESE SMEs

Abstract

Research into product innovation and financial orientation in the SMEs is burgeoning, yet our understanding of the finance- product innovation- and performance remains unclear. Given the lack of empirical research on the role of financial orientation on innovation performance in the SMEs, especially in an Asian context, the current study addresses the relationships between financial orientation, product innovation and business performance in the Japanese SMEs, because it has a long established record on product innovation. Data were generated from 189 Japanese businesses and the results were analyzed using multiple regression. Results confirm the study hypotheses. Implications for management are discussed, along with suggestions for further research.

Keywords: *financial orientation, product innovation, Japan, SMEs, business performance*

Introduction

Since competitors, like chasing ghosts, always watch to respond to products in the various stages, world-class manufacturers have been advised to develop competencies to innovate, design, and introduce new products to the market ahead of competitors (Meybodi, 2003; Tajeddini, Trueman, and Larsen, 2006). That is why there has been considerable discussion regarding the value of studying product innovation in both the academic scholars as well as practitioners in recent times. In this regard, there is ample evidence to suggest that innovation provides a competitive advantage in domestic and global markets (Henri, 2006; Tidd, Bessant,

and Pavitt, 1999) and plays role for the long-term survival of organizations (Ancona and Caldwell, 1987; Cook, 1998). While process innovation provides the means for safeguarding, saving costs and improving quality, product innovation provides the most obvious means for generating revenues (Johne, 1999). Tidd and Bessant (2010) argue that most organizations either simply does not formally manage the innovation process, or manage it in an ad hoc way. The primary reason is that innovation is a risky and costly complex process and success in innovation requires organic structure, different tangible (e.g., equipment, capital) and intangible orientation (e.g., knowledge, technology, management support, finance) and capabilities. In addition, Iyer and coworkers (2006) argue that "the stress on innovation and new product development is moderated by sobering statistics regarding new product failures that raise concerns about the true value of firms' new product efforts" (p.373).

The benefits of product and process innovation as well as financial orientation are apparent. What is not as clear is how managers should decide on which innovations to implement (Victorino, Verma, Plaschka and Dev, 2005) from the point of cost effect. The rationale is some innovations may merely raise the cost of doing business without a significant economic benefit or providing a competitive edge; hence it is no wonder why many financiers see innovation as a high-risk venture (Hall, 1989). This is because, from the traditional finance paradigm, managers primarily strive for wealth maximization and this preference determines the strategic decision making within organizations (Poutziouris, 2003). Abundant evidence indicates that the failure rate of new products in various stages is rather high and considerable. For example, Cooper (1982) reports a failure rate of (41%) for fully developed new industrial products introduced into the market; i.e., for those that successfully passed the development process. Similarly Stevens and Burley (2003) note the failure rate of new products is somewhere between (40%) and (75%).

Iyer et al. (2006) report that American Demographics estimated that 85% of 17,000 new products introduced in the U.S. in 1993 was failed. They also refer to the report published in Information Orientation, Inc. in 1995 showing that (70–80%) of new product introductions fail, with each failure resulting in a net loss of up to $25 million. Recently, Susterova, Lavin, and Riives (2012) noted that complicated design of product for manufacturing, the expenses of the product development process which exceed the limits and budget forecast create the potential high risk. As partners in a firm that specializes in product launches, Schneider and Hall (2011) in a report published in Harvard Business School, state that they have regularly been informed from entrepreneurs and brand managers seeking help with their "revolutionary" products. They further reported that about 75% of consumer packaged goods and retail products fail to earn even $7.5 million during their first year. Similarly, Birley and Niktari (1995) find that the majority of failures are due to under capitalization, short-term liquidity problems, insufficient working capital, insufficient start-up capital and poor financial management. In a similar vein, Tidd, Bessant and Pavitt (1997) state that accessing finance for SMEs can be barriers to survival, growth and innovation. This may explain why some SMEs use short-term bank overdrafts to fund their innovation strategies.

Although the value of SME's contribution to economies is well acknowledged (cf. Ghobadian and Gallear, 1996; Gilbert, 2007), much of the research into product innovation has focused on the activities of large corporations (Gudmundson, Tower, and Hartman, 2003), yet SMEs contribute more significantly too many country's economic landscape than do large companies (Gilbert, 2007). Statistics on business enterprise published by SMEA (2014) are compelling, detailing that in Japan 99.7% of all enterprises are SMEs, 74% of employment and more than 50% of value added in 2012, also need to play a more prominent role in innovation

(OECD, 2015). Although the government of Japan provides about 10% of financing for SMEs, and its share rises to 20% including guarantees, which are much higher than in other OECD countries, they have long suffered from low productivity, weak profitability and high leverage (OECD, 2015). Despite the fact that SMEs receive substantial government financial support, there is little evidence that it improves SME performance (Ono and Uesugi. 2014).

Given the high costs associated with new product development, firms are required to optimize their orientation constantly in general and financial support in particular to exploit the innovator's efforts in developing the products and markets to be able to stay in the competition and be innovative. These firms usually take the strategy of being “first to the market” approach (Smith 2006, Tajeddini and Mueller, 2012). However, the growing literature on innovation is largely silent on the issue of financial orientation, and the large and established literature on financial orientation is a less well articulated aspect of new product development and has certainly received less attention in the marketing and strategy literature (cf. Tajeddini, 2015). Since financial return is the dialogue required to access funds from the financial purse strings that are crucial for the implementation of marketing programs (McAlister, Srinivasan and Kim, 2007), marketing executives are urged to “speak in the language of finance” with their finance colleagues and senior management (Srivastava and Reibstein, 2005).

Valuing new product development is rapidly proving to be a primary source of long term competitive advantage and performance (cf. Pfeffer, 1998). Yet, the emphasis from the investment and financial resources is still on short-term profit driven performance. Moreover, despite the various plausible arguments for the potential conflict between financial orientation and product innovation, and their subsequent effect on financial business performance, few empirical studies, if any, have examined the relationship between these two strategic

orientations. Given the importance of SMEs to Japan's economy (and for that matter most other country's economies), combined with the lack of understanding regarding factors that contribute to product innovation, we examine the effect of financial orientation on product innovation and in turn, the impact of product innovation on business performance as perceived by owners and managers of SMEs in Japan. Moreover, little is known about how key financial drivers of product innovation operate under varying conditions in the firm's external environment. Using a sample of small and medium industrial-based firms, the results extend our understanding of the critical issues that impact upon production innovation and provide firm owners and managers with valuable knowledge that will assist their firms in becoming more effective in meeting the ever increasing demands of dynamic business environments. To address this issue, we investigate the role of environmental characteristics in moderating the relationship among. Based on different conceptual frameworks from the research literature, we formulate specific hypotheses concerning the relationships among these constructs. The methodology used to test these hypotheses is further described and then the preliminary results are presented. The study concludes with a discussion on our findings and research limitations, and implications of these results for future research.

Theoretical framework

Figure1 provides the conceptual model which will be tested in this study. In this conceptualization, product innovation is the central mechanism by which firms improve business performance. The logic of the proposed model is that innovation requires a manager's positive proclivity to invest in appropriate orientation and capabilities (e.g., technology) as well as innovations in order to benefit of long term products, processes, and business strategy. Innovation studies show that the constant financial support affects innovation (Khan, 1990;

Souitaris, 2002). Therefore, this research examines the effect of financial orientation as a salient driver toward product innovation. The conceptual framework illustrates the empirical links between financial innovation orientation, and product innovation and ultimately their effects on business performance. However, the failure to analyze moderators like environmental dynamism could explain the non-conclusive relationships between financial innovation orientation, product innovation and business performance. Each phase of the relationships in Figure 1 will be discussed and investigated. The findings can contribute to the knowledge of strategic and marketing managers to better understand how to manage and optimize their financial orientation with a view to increasing the level of innovation and business performance among small and medium firms.

Background and literature

Financial orientation

A financial orientation simply implies a value priority for *achieving profit*, *increasing sales*, and/or *minimizing costs* since these are three basic variables of interest (Beatty, 1988). For example, it can be argued that the primary focus of so many firms is the operation of the firm so as to minimize costs. Thus, we witness that the introduction of so many new products and much heightened interest in innovation management, the recession has forced firms to focus on simple cost management. In normative management, the basic values and attitudes of financial orientation are monetary performance and pay off thinking. In this regard, the corporate goals are liquidity; profit; return on investment, financial independence. In strategic management, however, the basic storages in financial orientation are investment and disinvestment strategies portfolio management (Fritz, 1996). A basic thrust of financial orientated strategy is to focus on

financial ratios and other measures (Masterson and Pickton, 2004) to reduce the cost and to provide an adequate return on the stockholders' equity (Beatty, 1988). Thus, firms are "seeking ways to minimize overhead costs, to eliminate intermediate production steps, to reduce transaction and other 'friction' costs, and to optimize business processes across functional and organizational boundaries" (Treacy and Wiersma, 1993, p. 85).

Fritz (1996) notes financial orientation seems closely related to production and cost orientation, thus resulting in one common leadership dimension. However, it may affect different organizations face special problems in the formulation of their performance. For example, Rust, Moorman, and Dickson (2002) find that an attentional emphasis on external constituents, such as customers (which they refer to as "*revenue emphasis*"), leads to superior performance. However, attentional emphasis on efficiency considerations of internal operations (which they refer to as "*cost emphasis*") is associated with less favorable performance. Also, Peters and Waterman (1982) suggest that poorer performing companies seem to live by the numbers (sales, profits, or costs). But increasingly firms are recognizing the benefits of moving away from short-term, narrow objectives towards a more strategic, integrated and holistic management approach (Welford and Gouldson, 1993).

Innovation and product innovation

Innovation is defined as "the development and use of new ideas or behaviors in organizations" Damanpour and Wischnevsky (2006:271). A new idea can be a new product, service or method of production (technical innovation), operation, or a new market, organizational structure or administrative system (administrative or organizational innovation) (Damanpour and Wischnevsky (2006). Luggen, Birkenmeier and Broadbeck (2005) argue that innovations are the

results of innovation competence (prerequisite) and their realization in an innovation process (value generator). In this regard, innovation competence is aimed to reduce existing barriers and to increase the innovation potential of the enterprise (Luggen et al., 2005).But for innovation to occur, the ideas and insights as well as the collaboration of experts and managers from different functional areas is needed to trigger innovation and new product development (Miller, 1988). The main reason is that there the search for innovations does not start with the generation of good ideas but with a systematic identification of the innovation potential (Luggen et al., 2005).

The adoption of innovation is intended to contribute to the organization's effectiveness and competitiveness so that it can change and adapt to new conditions in its external environment (Damanpour and Wischnevsky, 2006, p.272). In the long run, those that learn to continuously adapt to change have a competitive advantage. Change occurs when organizations evolve from old behaviors and methods of operations to new ones (Damanpour and Wischnevsky, 2006). At the organizational level, this shift from the current state to future state can be a consequence of adopting an innovation (Damanpour and Wischnevsky, 2006). Innovations can be classified in a number of ways; however, one of the most common is from the perspective of product and process innovations (Bruton and White, 2011). Product innovation refers to the whole process of generating ideas or the creation of something entirely new that is reflected in changes in the end product or service offered by the organization (Prajogo and Ahmed, 2006) bringing to the market to solve the customer's problem that benefits both the customer and the sponsoring company. It involves multiple activities such as product conceptualization, design and development, production and marketing. We might distinguish a product innovation from a process innovation, whereas the former considers as the result of an activity (i.e., the organization's new product offerings; for example, introduction of new

machinery operating in new ways), the latter concerns as a change in the activity itself (i.e., changes to organizational operations and production; for example, new ways of organizing the process) (Knight, 1967; Prajogo and Ahmed, 2006; Rowley, Baregheh, and Sambrook, 2011; Zhuang, Williamson and Carter, 1999).

Financial orientation and product innovation

In almost all industries, any innovation attempt faces a combination of temporal, technical and market uncertainty and in fact when an organization attempt to be innovative and produce new products, it will not necessary end up to a desirable and successful result. It is obviously necessary and healthy to emphasize different financial aspects (i.e., a value priority for achieving profit, increasing sales, and/or minimizing costs), since these are the basic variables of a firm's mission. However, in some companies, one or more of these financial aspects seem to dominate and override all other important values (i.e., profit over people) (Beatty, 1988). More specifically this orientation strategy may have an impact on innovation strategies in particular due to deficiencies arising from their limited orientation and range of technological competencies (for example see Tidd, Bessant, and Pavitt, 1997). For instance, although Sorescu and Spanjol (2008) argue that many executives hold an unwavering belief in innovation as a strategic imperative, counting on innovation to spur growth and yield positive financial returns, profitable innovation remains an elusive goal. Interestingly, they further exemplify chief executive officers (CEOs), such as Sun Microsystems' Jonathan Schwartz (2006) who recognizes innovation as "*the key to survival*," but they are still wondering how to get innovation to pay off. Similarly Hall (1989) suggested that the reluctance in funding innovation was due to the high risk and inability of financiers to determine the technological validity or project viability of innovation. For example,

a Boston Consulting Group (2005) study concurs; whereas 74% of 940 executives surveyed expected to spend more on innovation in 2005 than in previous years, more than half the respondents were dissatisfied with the returns on their investments.

In contrast, Freel (2000) found that, although finance might be an issue in regard to innovation success, it was unlikely to be pivotal. For example, executives who have chosen to focus on quantity find themselves lamenting their decision: "There's actually an innovation glut, the real shortage is profits" (Schrage, 2000, p. 225). Larsen and Lewis (2006) categorized financial factors as barriers to innovation. Miller and Friesen (1982) argue that most major innovations are too costly to be undertaken by organizations that are short of financial capital. They found that financial orientation, along with structural, technocratic orientation, were a determinant of innovation. The main reason is that prompting any new product introduction often requires organizational orientation such as abundant material, capital equipment, human orientation, much expenditure for R&D, test-marketing and changes in production facilities (Miller and Friesen, 1982). Rosenberg (1990) argues that strong R&D spending capabilities play a direct role in creating the internal knowledge needed for product innovation. Therefore, we might envisage product innovation is driven by financial orientation. Thus,

H1: *Financial orientation have a positive, direct impact on product innovation.*

Product innovation and business performance

The impact of innovation on business performance has been amply debated in the literature. As oppose to numerous of researchers (e.g., Ahmed, 1998; Damanpour and Schneiderw, 2006; Tajeddini and Trueman, 2008) who suggest innovation strategy to improve business performance, some scholars posit that the benefits of an imitation strategy can prevent high risk and uncertainty; improve and develop the existing products through the available information

and manage cutting costs and boosting growth simultaneously (Berndt, Bui, Reiley and Urban, 1995; Golder and Tellis, 1993; Schnaars, 1994; Zhang and Markman, 1998). In this regard, Golder and Tellis (1993) defined "failure" as the end of sales in the category under the brand name with which it entered and found that the average market share of pioneers was (10%) whereas the failure rate was (47%). In comparison between pioneers and late market entrants, Golder and Tellis (1993) found that late market entrants enjoy low failure rates (8%) and large average market shares (28%). Prior studies also show that late entrants may overtake pioneers in various markets. Among many examples in which pioneers could eclipse by late movers, scholars have pointed out high-tech industries such as watch, personal computer, cameras, electric dynamo, wine cooler, and video cassette recorder (VCR), equipment and game markets as well a slow-tech categories such as food processors, ballpoint pens, and light beer (Jovanovic, 2008; Schnaars, 1994; Shankar, Carpenter, and Krishnamurthi, 1998; Zhou, 2006). For instance, while the Swiss manufacturers were first to develop an electronic watch in the post-World War II period and convinced of the superiority of their high quality mechanical watches, they lost a large share of their market to Japanese and other Asian competitors in the 1970s (Assink, 2006; Tajeddini and Mueller, 2012; Sloane, 2006). According to this view, firms are required to optimize their orientation constantly in general and financial support in particular to exploit the innovator's efforts in developing the products and markets to be able to stay in the competition and be innovative.

Shankar, Carpenter, and Krishnamurthi (1998) conducted an archival research on 13 brands from two categories of ethical drugs in the U.S. market during the 1970s and 1980s that were characterized by innovative late entries. They found that creative innovative late movers would outsell pioneers not by "*beating them at their own game*" but by "*affecting the diffusion*

and marketing spending effectiveness of pioneers" (p. 67). They further found that innovative late entrants grew faster than pioneers, slowed the growth pioneers, and reduced the effectiveness of pioneers' marketing efforts and, consequently, overtake the pioneer (Shankar et al., 1998).

In contrast, most scholars (e.g., Cardinal, 2001; Cobbenhagen, 2000; Damanpour and Schneiderw, 2006) argue that intensified competitive pressure, increased global competition, technology fusion, technological change in global environments, shortening product life cycles (fast product-cycle times) at an immense rate, product commoditization, continuous customer demand for quality products and price reduction indicate innovations as essential activities for the long-term survival of organizations. Thus, there is no wonder why academic scholars and practitioners commonly agree that innovation create more opportunities for differentiation and results to gain a competitive advantage in order to survive and grow (Deshpandé and Farley, 1999; Damanpour and Schneiderw, 2006; Gatignon and Xuereb, 1997; Han, Kim and Srivastava, 1998;Kleinschmidt and Cooper, 1991; Tajeddini and Trueman, 2008).

Prior studies have identified a range of benefits for those organizations that have exploited innovation strategies with distinctive knowledge and capabilities to differentiated products enhanced business performance (Capon, Farley, Lehmann, and Hulbert, 1992; Deshpandé, Farley, and Webster, 1993; Damanpour and Evan, 1984; Han *et al.*, 1998), providing more value to customers (Gatignon and Xuereb, 1997; Kleinschmidt and Cooper, 1991) and enjoying greater performance through different indicators such as higher net income growth, profitability, return on asset, market share (e.g., Han *et al.*, 1998; Narver and Slater, 1990).

In a comprehensive study, Doyle, Saunders and Wong (1992) examined competition in global markets using a case study of American and Japanese competition in the British market

and found that Japanese firms were significantly stronger than the Americans and the local British companies. Further, their research shows Japanese companies had competitive superiority in terms of product innovation. Doyle et al. (1992) argue that the American and British companies have so frequently lost ground to their Japanese competitors due to the superiority of Japanese product innovation. Similarly, in another comparison with the US, the Japanese were found to be superior in some industries, where adaption to particular types of technologically-oriented innovation for new products is required (Mansfield, 1989). Edgett, Shipley and Forbes (1992) found that the Japanese firms perceived themselves superior to the British firms in terms of radical product innovations.

Moreover, while a large number of innovation strategy scholars have developed theoretical models and embedded concepts to understand processes of product innovation, the possibility of applying them in the context of SMEs is in question (see for example Dolfsma, 2004; Tajeddini, 2011; Sundbo, 1997). Although Calantone, Harmancioglu and Droge (2010) argue that innovation developed with an internal focus may not explain performance outcomes, and Calantone, Chan and Cui (2006) found no relationship between innovativeness and profitability, Tajeddini, Trueman and Larsen (2006) found positive and significant effect of innovativeness upon market share, new product sales to total sales and ROI. More recently, in a comprehensive study in hotel industry, Tajeddini (2010) found that innovativeness had a significant and positive impact upon profit goal achievement, sales goal achievement, and ROI achievement. Previous studies (Langerak and Hultink, 2006;Nakata, Im, Park, and Ha, 2006) indicate that there is a positive effect of innovation (new product development and new service deployment) on performance. This implies the following hypothesis:

H2: *Product innovation has a positive, direct impact on organizational performance.*

Environmental dynamism: *moderating effect*

Contingency theories of management (Burns and Stalker, 1961; Fiedler, 1964; Miller, 1988; Scott, 1981) suggest that previous management theories had failed because they assumed that there might be a universal way of organizing and leading all organizations regardless taking into account of contingent factors. In contrast, from a strategic behavioral perspective, contingency theories assert that the optimal organization or leadership style is contingent upon an alignment with the internal and external environmental factors (Gounaris, Avlonitis and Papastathopoulou, 2004).

Although conventional wisdom suggests that financial orientation may enhance innovation, it is important to note that these effects, when they occur, do so against a backdrop of controlling external environmental variables. Among these variables, the speed of environmental change, inconsistent pattern and unpredictability of the environment known as *environmental dynamism* (Dess and Beard, 1984) is considered to be an important component of in the analysis of strategic management and organizational theory. This can be influenced by competitive forces such as how the rate of technological change is diffused in each industry (Mia and Clarke, 1999; Simerly and Li, 2002). For example, shifts in firm's technological capabilities, changes in customer preferences, and/or new competitors may lead to high dynamism in the environment (Boyd, Dess and Raheed, 1993). Highly dynamic environments are more likely to induce firms to be first to introduce their new products or services than less dynamic environments, while establishing a solid market position that cannot be taken by later entrants. In conjunction with previous studies (Aldrich, 2000; Dess and Beard, 1984; Miller, 2007), Barona and Tang (2011) state that "highly dynamic environments are unpredictable and filled with rapid and dramatic change; as such, they

often involve high levels of uncertainty and risk" (p.53). Such conditions have been found to raise inflexibility and decision strangulation (Davis and Lawrence, 1978).Burns and Stalker (1961) suggest that organizations with organic structures, or loosely coupled networks of workers, are better adapted to dynamic environments. In a dynamic environment, managers of private enterprises, as oppose to state owned enterprises, tend to avoid making proactive and risk-taking decisions (Tan, 2002). On the basis of this reasoning, we argue that the link between financial orientation and product innovation will be stronger in environments that generate high levels of dynamism than ones that generate lower levels of dynamism or activation. This suggests that financial orientation enhances product innovation primarily when it is accompanied by high levels of dynamism. Thus, we propose the following hypothesis.

H3: *Environmental dynamism moderates the relationship between financial orientation and product innovation, such that this relationship is stronger in highly dynamic than in more stable environments.*

On the one hand, global proliferation of technology, the reorganization of international economic boundaries and the ongoing emergence of new players in world markets (Achrol, 1991), and on the other hand, the heterogeneity in consumer choice behavior created environments characterized by high levels of market and technological dynamism for many firms (Atuahene-Gima and Ko, 2001). Such environments call for speed (Fine, 2000), flexibility (Nonaka, Krogh, and Aben, 2001), and innovation (Tajeddini and Trueman, 2008) to adjusting and adapting to changes in technology, markets and competition. From a strategic behavioral perspective, the successful management of an organization depends on, or is contingent to, the environment in which it performs; every decision, which managers undertake in order to achieve the organizational goals, is influenced by the specific environment(Fiedler, 1964).Existing evidence suggests that financial orientation enhance product innovation (e.g., Artz, Norman, Hatfield, and

Cardinal, 2010) and that product innovation, in turn, plays a crucial role in developing competitive advantage and contributes to a firm's organizational performance (Akamavi, 2005; Lages, Abrantes and Lages, 2008).In dynamic environments, as opposed to stable environments, successful firms must support for innovation by producing an effective regular stream of innovations to survive long and achieve rapid growth (Ahmed, 1998;Davila et al. (2006); Drucker, 1985; Robbins and Coulter, 1999; Kanter, 1983; Porter, 1980). In other words, in a competitively dynamic environment, firms are required to support for innovation from idea generation to market launch. Therefore, we suggest that the link between product innovation and performance may be moderated by dynamic environment. Thus,

H4: *Environmental dynamism moderates the relationship between product innovation and organizational performance, such that this relationship is stronger in highly dynamic than in more stable environments.*

Furthermore, in this research we propose a moderated-mediation model of the role of financial orientation and organizational performance. Figure 1 proposes that among significant influential factors, financial support facilitates firm product innovation, in turn, improves firm-level performance. In addition, the model also suggests that both of these links are moderated by environmental dynamism, being stronger in highly dynamic than stable environments. Because previous research suggests that financial product innovation plays a crucial role in developing competitive advantage and contributes to a firm's organizational performance (e.g. profitability and expansion) (e.g., Akamavi, 2005), the model focuses only on the financial orientation influence of product innovation. However, this no way implies that that the other factors are less important; rather, it merely reflects the fact that existing evidence concerning the effects of financial orientation do not provide a strong and consistent empirical foundation on which to base theoretical predictions.

Research method

Research context and data collection

As Japan continues its shift over to maintain their competitive advantage, Japanese firms have been exposed to the notions of the different forces in a very highly complex and dynamic economy and rapid market change, so they must not only exploit their existing orientation and capabilities but also develop and improve new ones to survive against their counterparts. A questionnaire was first developed in English and then was translated into the Japanese language. Back translation was done to ensure accuracy of the original scales (conceptual equivalence) in the Japanese context by following the guidelines suggested in the literature (Sekaran, 1983; Steenkamp and Baumgartner, 1998). We discussed any conflicts with the translators until we reached an agreement. Regardless the amount of attention paid in the process to preserve the original meaning of the constructs; it is still possible that reliability and validity of the scales may be compromised in the process. Therefore, to minimize such limitations and to certify the content and face validity of the measures, two pretests were carried out. First, we contacted the subjects personally and pre-tested the questionnaires with four Japanese academics who taught different management courses both in English and Japanese to ensure the meaningfulness of the Japanese version of the questionnaires. After some slight modifications, we carried out a second pre-test with eight business managers to make sure that the respondents did not have any difficulties with the questions. We asked these respondents not only to answer all the questionnaire items but also to provide feedback about their design and wording. We attempted to keep the true meaning of each question to Japanese participants. On the basis of their responses, we revised a few questionnaire items to enhance their clarity.

Sampling

The population examined in this study consisted of the senior managers of small and medium-sized Japanese companies. These managers were targeted to develop a comprehensive understanding of a broad range of culture and strategy elements (Han, Kim, and Sirvastava, 1998; Hult, Hurley, and Knight, 2004; Moorman and Miner, 1997; Tajeddini and Trueman, 2008).It has been suggested that survey research at the strategic business level is the most appropriate method to study organizational performance (Deshpandé and Webster, 1989; Hult and Ketchen, 2001) because the executives play an active role in product and process innovation and also they are the most knowledgeable about the past and present organizational practices relating to quality and innovation aspects in the organization (de Brentani and Ragot, 1996; Kohli and Jaworski, 1990). We identified managers of Japanese manufacturing and non-manufacturing firms including various industry sectors from different corporate databases such as Japan Productivity Center for Socio-Economic Development (JPC-SED), Tokyo Stock Exchange industry codes (for example electric appliances industry), and NIKKEI Almanac in Japan. The JPC-SED plays a major role in promoting productivity in Japan's industrial society and consists of over 10,000 companies and organizations in Japan (Cao, Zhao and Nagahira, 2011). The other database used is NIKKEI Almanac of small- and medium-sized companies. A random sample of 1000 Japanese owned small and medium firms was drawn from these databases covering almost all categories located in different cities. We also reviewed different company documents and publicly available materials as supplementary sources.

To maximize responses, different strategies were used; such as making more contacts, altering the length and the form of the survey, using preaddressed postage-paid envelopes as well as the promise of feedback and confidentiality. Each of the informants received a personalized letter explaining the purpose of the study and a questionnaire by email. Two weeks later, non-

respondents received a reminder email and a second questionnaire. Two hundred-six respondents returned the survey. Eight of these questionnaires were either incomplete or were answered by an uninformed source and were discarded. Nine questionnaires were returned with letters explaining their refusal to participate. They were reluctant to disclose information due to confidentiality reasons, business policy and lack of interest, time and work pressures. In this process, by discounting the number of return to sender (RTS) mails, 189 questionnaires were received and usable, showing final response rate accounted for 18.9%.

Non-response bias was tested using the method of interest hypothesis advocated by Armstrong and Overton (1977). This approach underpins the assumption that non-respondents are similar to respondents. We used correlations of responses between early respondents and late respondents based on industry sectors and organizational size (Prajogo and Ahmed, 2006). The results of the λ_2 tests in terms of subject characteristics and the independent samples t tests in terms of major constructs showed no significant differences between these two groups with all *p* values being above 0.05, leading us to conclude that the probability of a non-response bias was minimal.

Measures

All measures were drawn from previous research and aligned with the conceptual aspects of each construct. All study measures use five-point Likert scales with anchors strongly disagree (=1) and strongly agree (=5), unless otherwise noted. To measure financial orientation, multiple scales were used. Fritz (1999) argues that financial orientation seems closely related to production and cost orientation, thus resulting in one common leadership dimension (production and cost orientation). Thus, we adopted the scale of Fritz (1999) using the five-item scale due to its emphasis on production and cost orientation. The five item were positively correlated. We also

adopted one item from Chiesa, Coughlan, and Voss, (1996) and Miller et al. (1984) indicating the consistence of the innovation budget and one item from Mohr (1969) and Twiss (1993) showing the existence of innovation budget. However theses two items were eliminated based on the lowest item to-total correlation and also due to non-significant factor loadings. We measured financial orientation (α= .90) with five items. To assess respondents' perceptions about product innovation, five items for product innovation were adapted from multiple-item scales developed by Prajogo and Ahmed (2006). The item-to-total correlation was examined and one low-scoring items was removed (α= .97). Strategic literature shows that different scholars look at different perspectives of environmental turbulence (e.g., Baron and Tang, 2011; Calantone, Garcia and Droge, 2003; Davis, Morris and Allen, 1991; Miller and Friesen,1983). For this study, we employed four items to operationalize the market dynamism construct, adopted from Appiah-Adu and Singh (1998) which originally developed by the scales of Jaworski and Kohli (1993) and Pelham and Wilson (1996). These items evaluate the degree to which changes occurred in the: types and preferences of a firm's customers; rate at which products became obsolete; nature of competitors' strategies and actions; and, technology within one's industry (α = .75). Lastly, prior research shows that measuring firm performance is complex due to the multi-dimensional nature of organizational performance (see Harris and Ogbonna, 2001). However, scholars such as Matsuno, Mentzer and Özsomer (2002); Robinson and Pearce (1988); and Sin,Tse, Heung, and Yim (2005) note that objective performance measures, certifiable by a third-party, are virtually impossible to obtain at the business unit level, and that subjective measures can be correlated to objective performance measures. From a financial perspective, following purification business performance is assessed based on self-reported perceptual measures derived from Hooley *et al.*(2000), and Kaynaka and Kara (2004) including four items: market share,

profitability, and growth in sales as well as general performance. All performance items assess the average level of firm performances within the preceding three years, using five-point scales anchored at much worse than competition (=1) and much better than competition (=5).

Control variable

To isolate the effect of other firm's orientation and competences on business performance, we incorporate several control variables at the firm level into the regression model. Firm size was used as a control variable because larger firms tend to access to internal assets and external orientation and be able to introduce their new products and processes to the market easier and quicker. Similarly, established firms benefit from internal assets and external orientation and are more involved with the new product and process development. The type of the industry may also determine the firms inclination towards invest on the new product and process innovations. Firms also vary in terms of the type of operations and the CEO background. In addition, CEO background, the type of the firm's operation and type of firm likely influence the firms' strategic choices, thereby business performance (Menguc and Auh, 2008). We control firm size (log transformation of the number of full-time employees); age of the firms (that can be considered a proxy for valuing the firm's experiences in strategic decision-making) with a continuous variable indicating the number of years since the founding of the firm; type of firm (0: freestanding firm; 1: dependent firm, such as multinational subsidiary, joint venture, dealer, etc.); type of industry (1: high-technology; 0: other industries); type of operations (1: business to- business; 2: business-to-consumers; 3: both) and CEO background (0: marketing/sales; 1: other).

Reliability and Validity

Following the data collection, scale purification using a series of reliability and validity assessments was undertaken prior to hypothesis testing. Although the scales were grounded in the previous literature (O'Leary-Kelly and Vokurka, 1998), and following basic descriptive analyses including the examination of coding errors, normality, skewness, kurtosis, means and standard deviations (Panayides and So, 2005), confirmatory factor analysis (CFA) by means of AMOS was employed to evaluate the psychometric properties (Lukas, Tan and Hult, 2001)and ensure reliability (Kim and Mueller, 1978). *Unidimensionality* is a necessary prerequisite for reliability and validity analyses (Nunnally, 1988). A construct is unidimensional if its constituent items represent one underlying trait (Tajeddini, 2010). In confirmatory factor analysis, specifying a measurement model that defines the relationship between each construct and its constituent items is a test of unidimensionality (Ravichandran, 2005). A good fit of the measurement model to the data indicates that, as hypothesized, all items load significantly on one underlying latent variable. In conducting our tests of unidimensionality, the first-order constructs, namely product orientation, market dynamism, business performance and financial orientation were analyzed with exploratory factor analysis (EFA). The EFA results (maximum likelihood with varimax rotation) suggest a clean four-factor solution corresponding to individual constructs (with item loading >0.45 and small cross loading). EFA was followed by confirmatory factor analyses (CFA). Firm performance was excluded from CFA because a formative scale was used to measure it. Then, CFA using covariance matrices and the maximum likelihood estimation procedure in AMOS were modeled for the scales. This procedure was carried out for two reasons: (1) to test for construct convergence within maximally similar sets of variables and (2) to avoid violating recommended minimal sample size to parameter estimate ratios (cf. Baker and Sinkula, 1999; Bentler and Cho, 1988).

The model fits were evaluated using different indices indicating the most stable in confirmatory factor analysis (CFA) and structural equation modeling to estimate the measurement properties of multi-item constructs in AMOS (Gerbing and Anderson, 1992; Hu and Bentler, 1999). In addition, the items were examined based on the error variance, modification index (<3.84), and residual covariation (<|2.58|) (Anderson and Gerbing, 1988; Jöreskog and Sörbom, 1996). The CFA model resulted in an acceptable fit to the data, with comparative fit index [CFI]=0.97, goodness-of-fit index [GFI]= 0.89, the root mean square error of approximation [RMSEA]= 0.05; incremental fit index [Delta2] =0.97, the Tucker–Lewis index [TLI]= 0.96, the root mean square residual [RMR]=0.05 and Chi-square [$\chi 2$]=242.93; degree of freedom [df]=160; χ^2/df=1.52 (Hair, Anderson, Tatham, and Black, 1998) (Table 1) . Moreover, within the CFA setting, composite reliability was calculated employing theprocedures delineated by Fornell and Larcker (1981). The composite reliabilities[1] (CR) of each construct exceeded the usual 0.70 benchmark (ranging from 0.79 to 0.86). Additionally, the parameter estimates and their associated t-values (ranged from 3.88 to 31.49, p<0.05) and were examined along with the average variance extracted[2] (AVE) (Anderson and Gerbing, 1988) for each construct. The results showed that all constructs exceeded 0.50 (ranged from 61% to 62%) Thus, these measures demonstrate adequate convergent validity and reliability (Fornell and Larcker, 1981) (see Table1).

Insert Table1

[1] $CR\eta = \frac{(\Sigma\lambda\gamma i)^2}{(\Sigma\lambda\gamma i)^2+(\Sigma\varepsilon i)^2}$ where CR = composite reliability for scale η; λ_{yi} = standardized loading for scale item γ_i, and ε_i = measurement error for scale item γ_i (Fornell & Larcker, 1981).

[2] $AVE = V_\eta = \frac{\Sigma\lambda\gamma i^2}{\Sigma\lambda\gamma i^2+\Sigma\varepsilon i}$ where V_η = average variance extracted for η; λ_{yi} = standardized loading for scale item γ_i, and ε_i = measurement error for scale item γ_i (Anderson & Gerbing 1988).

The CR of financial orientation construct was 0.82, exceeding 0.70, which is the acceptable level suggested by Bagozzi and Yi (1988). The value for average variance extracted of financial orientation construct was 0.61, which also exceeds the threshold level (0.50) suggested by Bagozzi, Yi, and Phillips (1991). All item loadings ranging from 0.78 to 0.87 are significant at the 5% significance level, indicating convergent validity (Bagozzi *et al*., 1991). Likewise, the CRs of product innovation and market dynamism are 0.79 and 0.86 respectively. The value for average variances of product innovation and market dynamism are 0.61 and 0.62 respectively. Discriminant validity which refers to distinctiveness of the factors measured by different sets of indicators was assessed in two ways. First, Table 2 presents the basic descriptive statistics and reports the results of pairwise latent-trait correlations for discriminant validity assessment. The correlation results for all study variables, was two tailed significant indicating that all the independent variables and subjective dependent variables for the study were submitted via Pearson correlation coefficient bivariate analysis. This correlation analysis is employed due to the fact that the scores generated from the measures were approximately normally distributed-based. With no exception the correlations among variables were significantly different from 1, establishing discriminant validity (Brown, 2006). Intercorrelations among independent variables were below 0.70, indicating that multicolinearity was not a problem (Hurley, 1995; Tabachnick and Fidell, 1989). Second, Bagozzi's (1980) criterion was used through *chi-square difference tests*. A significant difference in chi-square values for the fixed and free models indicates the distinctiveness of the two constructs (Bagozzi and Phillips, 1982). We constructed models for all possible pairs of latent constructs. The models were run on each selected pair, first allowing for correlation between the two various constructs, and then fixing the correlation between the

various constructs at p<001. We ran chi-square difference tests (24/4=6)[3] for all main constructs (i.e., finance orientation, product orientation, business performance and market dynamism) in pairs to determine if the restricted model (correlation fixed as 1) (i.e., constraining the phi coefficient, φ) performed significantly worse than the freely estimated model (correlation estimated freely). All the chi-square differences are highly significant (e.g., test for product orientation, and market dynamism ($\Delta\chi^2_{(1)}$ = 83.7, p<001); and for product innovation and financial orientation ($\Delta\chi^2_{(1)}$= 64.039, p<001) and exceeded the critical value ($\Delta\chi 2$>3.84), providing evidence of discriminant validity (Anderson and Gerbing, 1988).

Insert Table2

Tests of hypotheses

We used hierarchical regression to test hypotheses. Regression was chosen rather than a structural equations approach because of sample size limitations. Except for the controls, each construct was composed as a summated index of the items that constitute the construct. To reduce measurement error bias, loadings (i.e., lambda values from the CFA) were given to each item instead of equal weights (i.e., unity) (Aiken and West, 1991; Tsai, Chou and Kuo, 2008). After using the mean-centering technique, the variance inflation factor estimated (1.01–1.31) for all variables in the full models suggesting that multicollinearity did not pose a serious problem (Barringer and Bluedorn, 1999). To assess the explanatory power of each set of variables, we include only the control variables in the first step, and then add financial drivers as well as interaction effects variables into the model. To examine the interaction effects, separate series of some regression models were established to evaluate the change in the amount of variance

[3]Possible Pairs of Constructs: C(m,2) = m**!** /[(m - 2)**!** * 2**!**], where m= the number of constructs (Ahire, Golhar& Waller, 1996)

explained (ΔR^2), and conducted overall and incremental F tests of statistical significance. Table 3 shows the results of the regression analyses. Model 1 serves as the base model for Model 2 (control variables into the regression equation), which in turn is the base for Model 3. Similarly, Model 4 is the base for Model 5, which in turn is the base model for Models 6, 7, 8 and 9.

Hypothesis1 postulates the positive, direct impact of financial orientation on product innovation. Results relevant to this hypothesis is presented in Model 2 of Table 3 and indicate that, as predicted, financial orientation are significantly related to product innovation (B=.370, p < .001), supporting Hypothesis 1. Hypothesis2 predicts that product innovation has a positive, direct impact on organizational performance. Results (Model 8 of Table 3) provide support for H2 indicating that product innovation is significantly related to the organizational performance (B=.170, p < .01). H3 and H4 hypothesized that the impact of a financial orientation and product innovation was contingent upon the level of environmental dynamism. In examining the moderating relationships posited in H3–H4, the sample was split at the median value of environmental dynamism (median = 4.00, S.D. = 0.53) into two groups representing low (n = 97, mean = 3.39, S.D. = 0.86) and high (n = 92, mean = 5.25, S.D. = 0.63) environmental dynamism. A second, two-group model was estimated in AMOS and resulted in a good fit to the data (χ_2 = 331.76, df=21, △2=.94, RNI=.94, CFI=.94, RMSR=.08, RMSEA=.10, NCP= 18.57, ECVI=.43). Hypothesis 3 proposes a moderating effect of market dynamism on the relationship between financial orientation and product innovation. As shown in Model 3 of Table 3, results offer support for Hypothesis 3 (B of the interaction between financial orientation and product innovation=.137, p < .001). It implies that the relationship between financial orientation and product innovation is stronger in highly dynamic than in more stable environments. As Table 3 shows, the increase in R^2 from model 2 to model 3 is .03, and it is statistically significant (ΔR^2 =

.03, *F* change = .67, p< .05, two-tailed test), which indicates that in model 3, the addition of the two-way interaction among market dynamism and financial orientation significantly increased 3% of the explanation of variance in product innovation (the explanatory power of the model). In addition, Table 4 shows that in the case of highly high market dynamism, the relationship between financial orientation and product innovation is stronger (*Standardized estimate (high)*= 0.13; *t*= 2.24) than in the case of low level of market dynamism (*Standardized estimate (low)*= 0.12; *t*= 2.11). Also, the Chi-square difference ($\triangle\chi^2$ = 4.32, p< 0.05) indicates the presence of a significant moderator effect; thus, H3 is supported. Therefore, in the case of high market dynamism, financial orientation is an important driver of product innovation. Next, Hypothesis 4 predicts a moderating role of market dynamism with respect to the relationship between product innovation and organizational performance. Results offer support for H4 (Model 9 of Table 3): market dynamism positively moderates the relationship between product innovation and organizational performance (B of the interaction between product innovation and market dynamism =.129, p<.01). As Table 3 shows, the increase in R^2 from model 8 to model 9 is .02, and it is statistically significant (ΔR^2 = .02, *F* change = .18, p< .05, two-tailed test), which indicates that in model 9, the addition of the two-way interaction among market dynamism and product innovation significantly increased 3% of the explanation of variance in organizational performance (the explanatory power of the model). Table 4 also shows that in the case of highly high market dynamism, the relationship between product innovation and organizational performance is stronger (*Standardized estimate (high)*= 0.14; *t*= 2.98) than in the case of low level of market dynamism (*Standardized estimate (low)*= 0.11; *t*= 2.19). Also, the Chi-square difference ($\triangle\chi^2$=4.08, p< 0.05) indicates the presence of a significant moderator effect; thus, H4

is supported. Therefore, in the case of high market dynamism, product innovation is an important driver of organizational performance.

Insert Table4

Mediating role of product innovation

To test the proposal that environment-moderated product innovation mediates the relationship between financial orientation and organizational performance, we adopted the procedures developed by Baron and Kenny (1986). According to the logic of this procedure, mediation is suggested if the following conditions are met: (a) the independent variable is a significant predictor of both the dependent variable and the mediator, (b) the mediator is a significant predictor of the dependent variable, and (c) the effects of the independent variable on the dependent variable are reduced when the mediating variable is added to the regression equation. Full mediation is indicated if the effect of the independent variable is no longer significant when the mediating variable is added, whereas partial mediation is suggested if the effect of the independent variable is reduced but remains significant. We first examined the relationship between the independent variable and dependent variable as well as the relationship between the independent variable and the mediator. As shown in Model 6 of Table 3, market dynamism-moderated financial orientation was significantly related to the organizational performance (B= .15, $p<0.05$). As shown in Model 3 of Table 3, a significant relationship exists between dynamism moderated financial orientation and product innovation (B=.14, $p < 0.001$). Second, market dynamism -moderated product innovation is significantly associated with the organizational performance (B=.13, $p<.01$) as indicated in Model 9 of Table 3. Third and finally,

as Models 7 and 9 in Table 3 demonstrates, the coefficient for the dynamism-moderated effects of financial orientation on organizational performance is insignificant when the market dynamism-moderated effects of product innovation were included in the regression equation. The coefficient decreased from .15 ($p<.05$ in Model 7) to .13 (n.s. in Model 9). Thus, market dynamism-moderated product innovation fully mediates the financial orientation between market dynamism-moderated product innovation and organizational performance in the present data. In order for either partial or complete mediation to be established, the reduction in variance explained by the independent variable determined by the ratio of the indirect effect over its standard error (Sobel, 1982). The result is compared to a z distribution to examine the statistical significance of the direct or indirect effect (Baron and Tang, 2011). The Sobel statistic test indicated that the indirect effect of dynamism-moderated financial orientation on business performance (Sobel statistic=2.21, $p = .016$) was in the anticipated direction and statistically significant, providing further evidence for full mediation.

Conclusions

There is an abundance of research addressing the innovation management within large firms. Most business innovation models are grounded and developed for large-based firms due to the benefit of strong R&D budgets. However, there is a dearth of literature on how small and medium firms should manage their innovation financial plan as an effective means to operationally and strategically prepare for new market demands. The purpose of this paper is to extend innovation management theory by exploring how financial triggers might influence innovation management in small and mediums firms. Past research shows that those organizations that are consistently successful at managing innovation outperform their peers in terms of growth and financial performance (Tidd, 2006a). The assumption that innovation is the

consequence of simple coupling of skill, knowledge, culture, technological possibility and market opportunity is too limited (Tidd, 2006b), and has limited in a narrow industry innovation trajectory in small and medium firms. This study addresses the impact of financial orientation on performance as key antecedent to product innovation in an empirically model. We make a distinction between production innovation and process innovation. Product innovation is concerned with the development of new products and services for the market (customers) while process innovation relates to ways of undertaking production or service operations (Rowley, Baregheh and Sambrook, 2011, p.77). We thereby fill a significant gap in the understanding of product innovation and the nature of relationships between financial impact on innovation performance according the perception of the executives of the small and medium firms. Due to the speed of technological innovation and diffusion on the one hand, but on the other hand ongoing strategies to squeeze cost savings, the importance of perception of managers provide an initial roadmap for organizational strategy attributes apparent in conjunction with innovation in the SMEs operating environment. Several contributions to various research streams are noteworthy.

First, the vast majority of research on organizational innovation adopts a resource-based perspective that predicts positive returns to organizational resources and capabilities (Atuahene-Gima, Li, and De Luca, 2006). This study has been restricted, however, to the narrow context of financial orientation and product innovation. Although product innovation enhances firm performance only when it is successfully commercialized (Atuahene-Gima et al., 2006), prior research tends to pay little attention to accompanying financial antecedent orientations (Tajeddini, 2015). Our findings highlight the importance of a more compositional approach to the study of the effect of innovation performance driving by financial antecedent orientations on

business performance. This approach may be more useful and realistic than previous approaches which failed to consider key financial drivers (e.g., Tajeddini et al, 2006). Extant prior research suggests that firms require a new set of imperatives, such as an alignment of market and entrepreneurship orientations, investment in existing product innovation knowledge, skills, and processes, if they are to be successful in product innovation in these turbulent times (Atuahene-Gima, 2005; Atuahene-Gima and Ko, 2001; Slater and Narver 1995). For example, while previous study focusing on Greek SMEs to explore strategic drivers of radical product innovation adoptions provides support of a positive effect of entrepreneurial orientation on product innovativeness (Salavou and Lioukas, 2003), Avlonitis and Salavou (2007) explore the identification of SMEs' entrepreneurial orientation profiles to suggest variations in product innovativeness dimensions of different performance potential.

Next, although it seems to be conventional wisdom, empirical findings confirm financial orientation are important determinants of SMEs innovation. This implies that to the extent that innovation is enhanced through the presence of financial orientation, SMEs should be able to increase innovation activities. Financial orientation are also likely to be important in allowing SMEs to develop innovative practices. More specifically, Hypothesis 1, on a positive relation between financial budget and the likelihood of innovation, is supported. Given the fact that the product innovation- ranging from incremental to radical- involves the whole process of bringing a new product (including service) to the market (Dougherty, 1999), it seems more likely that financial budget facilitate different phases of product conceptualization, design, development, operationalization, distribution, and selling.

In addition, given the importance of the innovation process to individual firms (Chaudhuri, Aboulnasr, and Ligas, 2010) as well as to the increase economic dynamism (Amorós, Fernández,

and Tapia, 2012), our empirical findings suggest that top managers must identify different financial support during the implementation process. In line with the argument of Burgelman and Sayles (1986), we notice that those firms which successfully innovate often go through different phases during the course of the innovation process; therefore, the consistent of innovation budget seems necessary and if firms omit the financial support will run the risk of a failed innovation attempt. This implies that financial assets must be managed as any other intangible assets, with portfolio orientation that account for sustained innovation performance.

Prior research has suggested that large, bureaucratic firms, operating in mature markets with high organizational slack, are more likely to adopt innovation since they can take advantage of process innovation (Cooper, 1998; Damanpour and Evan, 1984; Porter, 1980). The argument is that in larger firms, processes that contribute a small proportion of a firm's output may justify the adoption of innovations on the basis of economies of scale or through the production critical masses at which innovation becomes efficient (Cooper, 1998, p.499). However, in line with the findings of Scuilli (1998) in the banking industry (i.e., small firms), we found that there was a direct positive effect of financial support on innovation process suggesting that SMEs are more likely apt to adopt process innovation too. The finding is reminiscent of an argument made by Cooper (1998), who claimed that computer technology advances and declining the cost of systems and software as well as the improvement of the workforce favor small [and medium firms] to be able to adapt the technologically élite and befits of process innovations.

Furthermore, empirical findings confirm process innovation as an important determinant of business performance. This implies that innovative activities are generally important to the success of the business. Accordingly, managers are advised to improve the innovation process of their business in their efforts to attain superior business performance in terms of market share,

profitability, and growth in sales as well as general performance. As a further contribution, the results imply that if firms go through over the course of an innovation effort at various stages of innovation process (i.e., identifying problems, evaluating alternatives, arriving at a decision, and putting innovation into use) (Cooper, 1998; Rogers, 1983), may leverage the advantages associated with an attitude toward change to strengthen their innovative capabilities (Tajeddini, in press). Moreover, the results show that product innovation in the presence of market dynamism has no significant impact on performance. This seems to challenge the wisdom that product innovation is inherently good. In fact it can be argued that making products quicker and earlier than the rivals is not sufficient any more. The reason is if the firms concentrate on the new products, they will face a high risk activity because the probability is that competitors copy the product within 9 to 15 months (Ghemawat, 1986). They might have learnt that they have to create their products before the recognition of an explicit need by customers (Hamel and Prahalad, 1991).

Product innovation- as a key strategy of many export oriented companies- enables innovative processes and growth of production to take place without much redeployment and without the displacement of entire branches or product groups (Brugger and Stuckey, 1986). Given the importance and possible contribution of product innovation orientation in explaining positional advantage, it is recommended that further research should investigate the nature of the relationship between these two important issues.

As with any single study of an issue as broad and important as product innovation within large scale organizations, the results of this study must be interpreted in light of the obvious limitations the study possesses. First, the study is limited to Japanese SMEs. Generalizing the results to other SMEs and countries may not be appropriate. Further research is needed on the SMEs and

large firms in other countries to assess whether the structure uncovered is universal. Second, the modest sample size places limitations on the credibility of the authors' findings. Third, all data were collected in a cross sectional manner, and therefore, all we can conclude is that the role variables and their posited consequences are related at one point in time. Bollen (1989) stated that an acknowledged weakness of cross-sectional design is that causality is much harder to infer because of temporal priority, one pre-requisite for inferring causality is not present. Using a longitudinal study may help to identify the direction of causality between variables. Fourth, the use of control variables and environmental variables may not exclude other factors influencing the results (Tajeddini, 2013). Finally, the study is based on self-report data incurring the possibility of common method bias. However, our tests of common method variance do not find it to be a significant problem in this study. We also use multiple assessments including Cronbach alphas, composite reliability, to support the accuracy of the data and the results. Future studies might use objective measures for firm performance to strengthen the research design. Since the coefficient of determination is relatively low, further research may incorporate more key factors in the proposed model. Major priorities are proposed for future research. It would be useful to replicate this study and repeat this model testing approach using a completely new sample. Interesting comparisons could then be undertaken by using an identical model for a developing country and then comparing the estimated structural parameters.

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