By: *Misyer Mohamed TAJUDIN; Omar MUSA; & Normaziah Che MUSA*

Effects of Organizational Culture, Market Orientation, and Innovativeness toward New Product Performance amongst Malaysian SMEs

Abstract

This research analyzed the effects of Malaysian SME's organizational culture, market orientation, and innovativeness toward the introduction of new products and their performance. A series of hypotheses concerning the relationships between these variables are developed and tested on a sample of 65 SMEs. The results show that organizational culture influences new product performance (NPP) through innovativeness as the mediating factor, but an entrepreneurial culture directly influences NPP. Innovativeness is also shown to have a significant direct effect on NPP, more so amongst firms displaying the tendency to explore new innovation competencies than those who exploit existing ones. The expanded market orientation construct failed to significantly establish a link between market orientation and NPP, except that firm-supplier relationship has a positive impact on NPP. This demonstrates the importance of "supplier-orientation" construct to be included in future market orientation studies besides customers and competitors. The impact of organizational culture on innovativeness is also mediated by market orientation. The type of innovation does not appear to moderate the effect of market orientation and organizational innovativeness towards NPP. However, SMEs with established firm-supplier relationship were found to register higher levels of NPP when incremental innovations are developed, indicating its significant moderating role.

Keywords:

- New product performance
- Innovation
- Organizational culture
- Market orientation
- Innovativeness

Introduction

Many firms innovate, but there is an increasing rate of failure amongst commercialized innovation (Griffin, 1997; Steven & Burley, 2003; Clancy & Stone, 2005; and Roosen & Nakagawa, 2008). Given the difficulties facing majority of Malaysian businesses in terms of innovating successfully, portrayed by the country's inability to create global products/brands amid the state of emphasis in innovation and development of innovation capabilities by the respective authorities, this study raises one central research question: *What are the organizational factors that Malaysian firms need to create successful new products/services?* Factors that correlate with new product /service performance (NPP) include nature of the marketplace, resource bases of the firm, nature of the project, proficiency of process activities, commercial entity, information acquired,

Misyer Mohamed TAJUDIN (misyer64@unitar.my), Omar MUSA (omarm@unitar.my) and Normaziah Che MUSA (normaziah@unitar.my) are lecturers at the Unitar International University, Malaysia.

strategic factors, organizational factors, product advantage, meeting customer needs, marketing support and corporate environment (Cooper, 1979; Montoya-Weiss & Calantone, 1994; Henard & Szymanski, 2001; Gounaris, Papastathopoulou, & Avlonitis, 2003. This research endeavors to make an important contribution to the existing literature on the focused areas of innovation, strategic management, and organizational behavior by framing its investigation against internal organizational factors to capture the interplay between organizational culture, market orientation and innovativeness that may set the right organizational environment for Malaysian SMEs to innovate successfully, simultaneously contributing positively to the country's 2020 goal.

This focus on Malaysian SMEs aligns with the continued huge interest of the research community towards microenterprises, whose symbiotic role in promoting growth among larger firms in the economy has not gone unnoticed (Foster, Haltiwanger, & Krizan, 1998; Cefis & Marsili, 2003; de Jong, Vermeulen, & O'Shaughnessy, 2004). In Malaysia, some 500,000 SMEs contribute 37 per cent to the GDP, 59 per cent to employment, and make up 81.4% of 17,830 Malaysian export companies. In supporting the development and growth of the SME sector, the government had allocated a total of RM26.6 billion for development programmes, benefiting more than 2.4 million people (www.miti.gov.my; June 7, 2011). In 2011 alone, the government through the various ministries and agencies implemented 219 SME development programmes run by 115 SMEs identified and certified as innovative by SME Corp, the central point of reference for information and advisory services for all SMEs in Malaysia (The Sun Daily, May 10, 2012). While SMEs are reluctant to spend in pursuit of innovation ((Brouwer & Kleinknecht, 1996; De Jong, 2002), innovation does create a lot of room at the bottom of the size distribution as new small firms continue to enter the market with new ideas and many exit after a few years (Audretsch, 1995; Caves, 1998) indicating SMEs as "fruit flies of innovation" – their evolution can be observed over short time periods (de Jong & Marsili, 2005).

These justify the choice of SMEs for the study, which aims to remedy the neglect of developing countries' cases, and expands the empirical research, notably to Malaysian SMEs.

Theory Development

The Resource-based View of the firm (RBV) suggests that a firm can sustain its competitive advantage if it is able to generate sustainable economic rent through its ability to identify, develop, deploy, and preserve particular resources and distinguish these from its rivals (Peteraf, 1993; Amit & Schoemaker, 1993; Carmeli & Tishler, 2004; Collis & Montgomery, 1998; Dierickx & Cool, 1989). As compared to tangible resources, intangible resources such as know-how, skills, knowledge, perceptions, product reputation, culture and network (Connor, 2002; Hall, 1992) that are heterogeneous and immobile in nature (Barney, 1991; Peteraf, 1993) have received a lot of attention as to its impact on firm performance.

Henderson & Cockburn (1994) found significant differences in firms" performance when they possess different level of intangible resources. In his study of 72 Spanish manufacturing firms, López (2003) found empirically that intangible resources (e.g. company reputation, human capital and organizational culture) are positively related to the firm's performance. Carmeli & Tishler (2004) found that intangible resources variables (managerial capabilities, human capital, perceived organizational reputation, internal auditing, labor relations, and organizational culture) were positively and significantly related to organizational performance variables (financial performance, municipal development, internal migration, and employment rate) in

their study of 99 Israeli government authorities. Furthermore, the findings of their study have identified that organizational culture and perceived organizational reputation were the two most significant variables relating to organizational performance.

While the effects of churning innovative products on firm performance are more likely indirect (Geroski, 1995), firms with a continuous stream of innovative products seem to be less susceptible to cyclical, sectoral, and environmental pressures than non-innovative firms. Further findings provide empirical evidences that new product performance (NPP) is one of the key factors resulting in higher organizational performance (Gatignon & Xuereb, 1997; Langerak, Hultink, & Henry, 2004). NPP, or what is defined as the outcome of innovation, specifically concerning the results of introducing a new product into the market still appears to affect firm performance in a wide spectrum from sales, market share and profitability to productivity and efficiency (OECD Oslo Manual, 2005). If NPP affects firm performance positively, and that intangible firm resources are positively and significantly related to organizational performance variables, it may be not be as remote as suggesting that the same intangible firm resources variables could be positively and significantly related to NPP. Hence, successful product/service innovation may demand that a firm must possess an organizational culture, which promotes behavioral processes that enable it to create and deliver superior customer value (Day, 1994).

The relationship between culture and organizational behavior is undeniable. Organizational culture is a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (Schein, 1984). Organizational culture empowers and challenges companies in today's business world. A culture that supports strategic and operational goals can fuel performance and spark innovation and differentiation. If the culture opposes the company's strategy, however, the results can be disastrous. Based on these assumptions, organizational culture is seen as an antecedent or a precursor to other organizational behaviors, such as being market-oriented and innovative, which influence new product performance.

Market orientation is seen as an "organizational behavior that develops capabilities to acquiring market intelligence, disseminating them within the company, and responding by developing products that fulfill market needs, all of which can result in a firm's competitive advantage". This behavioral perspective of market orientation (Kohli & Jaworski, 1990), as opposed to it being cultural in nature (Narver & Slater, 1990), allows for the study of its antecedents (organizational culture) as well as its role in harnessing firm innovativeness and performance.

Extant literature attributes to market information and its management a crucial role in explaining firms' innovation performance, and cumulated empirical evidence supports a positive relationship between market knowledge and innovation (Im, Hussain & Sengupta, 2008; Aldas-Manzano, Kuster & Vila, 2005; Mavondo, Chimhanzi & Stewart, 2005; Sondergaard, 2005; Han, Kim & Srivastava, 1998; Atuahene-Gima, 1995). Firms behave in a market-oriented manner by obtaining deeper knowledge of the current and future market elements, simultaneously feeling dissatisfied with the inadequacies of current competencies, which results in investments to enhancing or renewing competencies (Huff, Huff, & Thomas 1992) and insightful strategic change (Noble, Sinha, & Kumar, 2002). Kogut and Zander (1992), Hurley and Hult (1998), and Day (1994) posit that market

orientation is a precursor to innovativeness, or innovation competency building.

Besides being market-oriented, organizational innovativeness is also seen as another behavioral element that is linked positively to new product performance. It reflects the ability of a firm to adopt or implement new ideas, processes, or products successfully (Hurley & Hult, 1998) thereby leading towards competitive advantage (Cohen & Levinthal, 1990). Organizational culture is known to directly influence organizational innovativeness, while this behavioral element is also known to mediate the influence of organizational culture on NPP. Organizational culture and innovativeness is also mediated by market orientation. In this study, organizational innovativeness is defined as "an organization's overall innovation competencies of introducing new products to the market, or opening up new markets, through combining strategic orientation with innovative behavior and process" (Wang & Ahmed, 2004). Differences in organizational culture and the extent of market orientation would lead to the organization's emphasis on either competence exploitation or competence exploration practices.

Both market orientation and organizational innovativeness reflect the extent of learning and adaptability required by the firm to develop and market the new product, and for customers to adopt it (Lawton & Parasuraman, 1980). Therefore, the different types of product innovation reflect the need for differing degree of market orientation and innovation competency not only to cope with relative levels of uncertainties, new information, technical changes, and new organizational arrangements associated with incremental or radical innovations but also in establishing and educating the market. Such study of different innovation types creates a uniqueness that throws new light on extant literature as each innovation type requires different processes, resources, competencies and vocabularies. These differences must also be treated, managed, and measured according to their unique variables, with appropriate rigor allocated to each type.

Organizational Culture and New Product Performance

Peters and Waterman (1982) conclude that an appropriate organizational culture provided positive performance, with the implication being that organizations need to actively manage organizational culture in order to maximize performance. Pfeffer and Viega (1999) discussed cultures that revolve around a variety of high-involvement human resource practices that they felt provided a competitive advantage to a firm. According to Sadri and Lees (2001), a positive organizational culture could provide immense benefits to the organization, and thereby a leading competitive edge over other firms in the industry. Organizational culture is also linked with the implementation of total quality management (Detert, Schroeder, & Mauriel, 2000) and innovation and change (Loewe & Dominiquini, 2006; Schraeder, Tears, & Jordan, 2005). O'Cass and Ngo (2006) find that organizational culture is important in affecting organizational performance of a cross-sectional group of Australian companies.

Belassi (2004) studied 218 U.S. organizations to investigate the direct effects of organizational culture as suggested by Hofstede (2001) on new product performance (NPP) and found that

organizational culture is a significant determinant of three performance measure: the commercial outcome of the project; the technical outcome; and level of customer satisfaction. Kotter and Heskett (1992) and Van der Post et al. (1998) found that organizational culture has a significant impact on a firm's long-term economic performance. They also believe that organizational culture was becoming more important in determining the success or failure of firms in the next decade, which was mirrored through a study of 202 managers in Malaysian public listed companies by Rashid, Sambasivan and Johari (2003) that find significant correlation between corporate culture and organizational commitment. As such, the first research proposition is:

H_1: Organizational culture influences NPP.

Market Orientation and New Product Performance

Previous research conducted has conceptually and empirically supported the notion that market orientation independently or collectively has positive correlations with the business performance of organizations (Narver and Slater, 1990; Jaworski and Kohli, 1993; Lee and Peterson, 2000). Gatignon and Xuereb (1997) suggested that a market-oriented organization leads to superior performance, at least in part, because of the new products that are developed and are brought to market. Han, Kim & Srivastava (1998), Baker and Sinkula (1999a), Pelham and Wilson (1996), Slater and Narver (1994) and Baker and Sinkula (1999b) have reinforced this wisdom by revealing that a market-oriented approach enhances new product success.

The rationale for market orientation being positively related to new product performance is rooted in the belief that a market-oriented culture embodies organizational values and beliefs that guide activities, like providing a unifying focus for the efforts and projects of individuals and departments in organizations (Ruekert, 1992) and creating value for buyers (Slater & Narver, 1994), which possibly lead to superior organizational performance. A study on the adoption of market orientation in the service sector by Panigyrakis and Theodoridis (2007) through the examination of 252 supermarket chains with nation-wide stores in Greece also demonstrates a positive effect of market orientation on retail performance and support the notion that market orientation is an important determinant of firm performance. Abdul Aziz and Mohd Yassin (2010) examine the marketing practices and the marketing orientation-business performance relationship among SMEs in 102 agri-food companies in Malaysia, revealing that customer-competitor orientation and information dissemination were positively related to business performance.

Despite these encouraging results about the significant role of market orientation, a study on Malaysian manufacturing industry by Mohd Mokhtar, Yusoff and Arshad (2009) conclude that not all market orientation variables have a direct effect on organizational performance as there could be differences in term of economic structure, regulation aspect, competitive environment and the people elements, which are unique to a particular country (Yoon & Lee, 2005).

In another study of 227 manufacturing firms in China, Zhang and Duan (2010) find that both proactive market orientation and responsive market orientation have a positive total effect in improving new product performance, although technological and market conditions influence the strength of the relationship. Therefore, this study's second proposition is:

H_2: Market orientation influences NPP.

Breaking away from the established dimensions in the market orientation theory (competitor orientation, customer

orientation, and interfunctional coordination), this study suggests the inclusion of supplier orientation because a large body of literature in the relationship marketing domain in general and on interorganizational innovation in particular underscores the way in which the customer and supplier firms should interact in order to achieve high innovation performance (Jap, 1999; Stump, Athaide, and Joshi, 2002). For example, the role of relationship connectors (i.e., information exchange, operational linkages, legal bonds, cooperation, and relationship-specific adaptations by suppliers and customers) in achieving high customer satisfaction and supplier performance has been investigated (Cannon and Perreault, 1999). Communication frequency and intensity builds stronger supplier-customer relationships and has a positive impact on channel performance in terms of effectiveness and efficiency (Mohr and Nevin, 1990; Mohr and Sohi, 1995). Furthermore, commitment and trust (Doney and Cannon, 1997; Morgan and Hunt, 1994), and connectedness (Gemünden, Ritter, and Heydebreck 1996; Johnson and Sohi, 2001) are also frequently cited antecedents of supplier-customer relationship outcomes. Birou and Fawcett (1994) quite specifically reveal that technology and expertise were important rationales for supplier involvement. Wagner and Hoegl (2006) interviewed R&D directors and project managers who state that the supplier's competence in mastering a new or complex technology and the supplier's innovation potential (i.e., the ability to steer the customer firm to highly innovative solutions in their NPD effort) are considered important 'hard' criteria. In addition, criteria of 'soft' nature include trust and reliability, openness and mutual support between the customer and the supplier firm, and goal congruence (Wagner and Hoegl, 2006). All these support for supplier orientation's inclusion as another market orientation dimension that would shed more light into understanding its independent role in influencing innovativeness and NPP.

Innovativeness and New Product Performance

Calantone, Droge, & Vickery (2002) imply that innovativeness requires the acquisition, dissemination and use of new knowledge to successfully implement creative ideas within an organization. In enhancing firm performance, March (1991) and Nerkar (2003) argue for a balance between innovation competency exploitation and exploration. This accounts to the introduction of the capability–rigidity paradox in incremental and radical innovations (Dougherty, 1992; Leonard-Barton, 1992). Too much exploration could be costly because the firm may move from one new idea to the next without exploiting prior learning and experience (Levinthal & March, 1993; March, 1991). Novel products may be underdeveloped, and their fit with customer needs may be unknown. A dose of exploitation tempers these potential excesses of exploration by helping the firm evaluate and assimilate new ideas more effectively (Danneels, 2002). Similarly, too much competence exploitation involves costs because the firm lacks the novel skills and knowledge to generate new insights in product innovation, and overcoming these costs requires a dose of exploration (March, 1991).

In a study of 68 managers in manufacturing firms in Northern Peninsular Malaysia by Ramayah, Sulaiman, Jantan, and Ching (2004), they indicate that internal learning will lead to more proprietary technology development and in turn proprietary technology will lead to higher level of manufacturing performance. Hence, the third proposition of this study is:

H_3: Organizational innovativeness influences NPP.

Organizational Culture and Market Orientation

Consistent with the extant market orientation and organizational culture literatures that suggest values drive behaviors (Schein, 1985; Trice & Beyer, 1993), this research posits that culture and values supporting market orientation enable organizations to implement market-oriented behaviors (Homburg & Pflesser, 2000).

Deshpande and Farley (1999) studied the relationship between organizational culture and market orientation in Indian and Japanese firms. They found that entrepreneurial culture is a more important predictor of good performance for Indian firms, while the competitive culture is more important for the Japanese firms. The results of their study also showed that entrepreneurial and competitive cultures perform better than consensual and bureaucratic cultures. The latter were more inward looking and closed than the former, which is more innovative and risk taker.

Mohd Noor & Muhammad (2005) conclude that cultural elements such as organizational commitment and intrinsic motivation positively influence Malaysian life insurance agents toward customer-orientation behavior in their selling activities. Mohd Mokhtar, Yusoff, & Arshad (2009), in their study of 158 Malaysian manufacturing organizations, indicate that certain organizational culture that inculcates market focus, market action, market planning, market feedback and market coordination is likely to encourage market-oriented behaviors. Thus, the research's fourth proposition is:

H_4: Organizational culture influences Market Orientation.

Organizational Culture and Innovativeness

Schein (1984) and Weick (1985) both find that culture is the linchpin to innovation in organizations. Successful organizations have the capacity or competency to absorb innovation into the organizational culture and management processes of the organization (Syrett & Lammiman, 1997; Tushman & O'Reilly, 1997). An organizational culture that promotes entrepreneurship and learning new skills and competencies may also lead to firm innovativeness (Hurley & Hult, 1998; Liu, Luo, & Shi, 2002), which enables an organization to achieve a higher level of performance and better customer value.

A culture supporting innovation include value creativity, risk taking, freedom, teamwork, be value seeking and solutions oriented, communicative, instill trust and respect, and be quick on the uptake in making decisions (Lock & Kirkpatrick, 1995). Studies on organizational supports for creativity and innovation highlight several factors such as intrinsic motivation to produce highly creative behavior (Amabile, 1988), organizational encouragement (Amabile, 1996; Angle, 1989; Kanter, 1983; Robbinson and Stern, 1997), supervisory encouragement (Amabile et al., 1996; Angle, 1989; Oldham and Cummings, 1996; Tesluk et al., 1997), work group encouragement (Amabile et al., 1996; Angle, 1989; Kanter, 1983; Feist, 1999), freedom and autonomy (Amabile, 1998; Robbinson & Stern, 1997), and resources (Amabile, 1998).

On the other hand, culture that centers on rigidity, control, predictability, and stability hinders innovation (Jassawalla & Sashittal, 2003). The major factor identified in most literature that impedes creativity and innovation is *control* (Amabile, 1998; Angle, 1989; Kanter, 1983; Oldham & Cummings, 1996).

Hence, the fifth proposition is:

H_5: Organizational culture influences organizational innovativeness.

Market Orientation and Innovativeness

Many studies have identified a positive relationship between market orientation and innovation (Im, Hussain & Sengupta, 2008; Aldas-Manzano, Kuster & Vila, 2005;

Mavondo, Chimhanzi & Stewart, 2005; Sondergaard, 2005; Baker and Sinkula, 1999b; Han, Kim & Srivastava, 1998; and Atuahene-Gima, 1995). Some observers, however, have raised questions about the net benefits of market orientation.

Some researchers suggest that being market oriented may detract from innovativeness (Berthon, Hulbert & Pitt, 1999) as it may lead to myopic research and development (Frosch, 1996), and confuse business processes (Macdonald, 1995). Christensen and Bower (1996) even state that firms lose their position of industry leadership because they listen too carefully to their customers. According to this criticism, the strong focus on expressed customer needs inherent in a market-based learning process limits firms' prowess to develop innovative new products and strategies.

On the other hand, firms skewed towards competitor orientation are blamed for launching me-too products in an effort to fight competition. Too many resources will be spent on competitive activities which may prepare them better in gauging trend fluctuations in the market, but may also result in neglecting their customers and restrict investment on breakthrough innovations.

These conflicting arguments render the need for our research to consider the following proposition:

H_6: Market orientation influences organizational innovativeness.

Indirect Relationship between Organizational Culture and New Product Performance

Wei and Morgan (2004) find no support for a direct relationship between the supportiveness of a firm's organizational culture and its new product performance, but found a positive direct relationship of market orientation on firms' new product performance and an indirect positive effect of supportiveness of organizational culture via its impact on market orientation in their study of 110 manufacturing firms in China. Their findings also indicate that the impact of organizational culture on firm performance in a new product context is indirect via the firm's generation, dissemination, and responsiveness to market intelligence. This research therefore suggests that both market orientation and organizational innovativeness may mediate the effect of culture on NPP. Thus,

H_{7A}: Market orientation mediates the effect of organizational culture on the performance of new products.

H_{7B}: Organizational innovativeness mediates the effect of organizational culture on the performance of new products.

Indirect Relationship between Organizational Culture and Organizational Innovativeness

Organizational culture is often cited as being important determinant of organizational innovation capability. The process of stimulating culture that support creativity and innovation is fundamentally based on building the intellectual capital within the company that will yield the competencies and capabilities for creativity and innovation. In this respect a learning organization has a central role in nourishing the organization's capacity from a given situation to the desired market situation (Cegarra-Navarro & Rodrigo-Moya, 2007). This link between a learning culture and market orientation presents an argument that perhaps organizational culture does not directly influence innovativeness, but probably market orientation plays a mediating role in the relationship.

H_{7C}: Market orientation mediates the effect of organizational culture on organizational innovativeness.

Indirect Relationship between Market Orientation and New Product Performance

As commonly reported in the literature market orientation may have a direct impact on performance and indirect effects may exist too. R&D and market orientation and the interaction between them drive innovation and firm innovativeness (willingness and capacity to innovate) which in turn drive customer acceptance (Harmsen et al, 2000).

In a recent study, Zhang and Duan (2010) find that both proactive market orientation and responsive market orientation have a positive total effect in improving new product performance amongst Chinese manufacturers, they also discover that proactive MO impacts new product performance primarily via innovativeness as a mediating variable, concurring with an earlier study by Atuahene-Gima, Slater, & Olson (2005).

These conflicting arguments render the need for our research to consider the mediating roles of organizational innovativeness, in the form of innovation competencies, in the relationship between market orientation and innovation performance. Hence, the following proposition:

H_8: Organizational innovativeness mediates the effect of market orientation on the performance of new products.

Apart from the mediating role of organizational innovativeness in the link between market orientation and new product performance, extant studies also investigate for other variables that may affect the relationship. For instance, Sandvik and Sandvik (2003) provide support for the positive influence of new-to-the-market products (based on the degree of product newness / innovativeness) in the way being market-oriented affects business performance. In this sense, market orientation may play a critical role in promoting product innovation because market orientation represents the firm's disposition to understanding the market needs and demands, the necessity for a cross-functional integration and the relevance of acting in response to market opportunities (Carrillat, and Jaramillo, 2004)

Types of innovation based on product newness have also been studied by Lawton and Parasuraman (1980), Yoon and Lilien (1985), and Atuahene-Gima (1995). The first, product newness to customers, and the second, product newness to the firm, refers to the degree of similarity between the new product and those already marketed by the firm, ranging from incremental, radical or disruptive products.

In this research, it is argued that market orientation will have a greater influence on the performance of radical or disruptive innovations than on incremental innovations. The rationale is that the degree of product newness reflects the extent of learning and change required by the firm to develop and market the new product, and for customers to adopt it (Lawton & Parasuraman, 1980). Therefore, the different types of innovation reflect the experience the firm has in developing and commercializing the new product and of customers in acquiring and using it. It follows that radical and disruptive innovations are more likely to require greater learning and behavioral change on the part of the firm and customers than incremental innovations. Hence,

H_9: Market orientation will have a greater positive influence on the performance of

new products when the innovation is radical or disruptive as compared to being incremental in nature.

Indirect Relationship between Innovativeness and New Product Performance

Langerak and Hultink (2006) indicate the moderating role of product innovation types when they observe some ambivalence as to whether new product development (NPD) is positively or negatively correlated with new product performance (NPP). They expand on the identified advantages/disadvantages of NPD acceleration by positing that there is an inverse U-shape relationship between NPP and NPD. They also find that NPD speed that maximizes NPP is lower for more innovative products.

Several scholars point to the tensions that organizations encounter when pursuing both types of innovation competency simultaneously (Abernathy, 1978; Dougherty, 1992; Nadler & Tushman, 1997). Leonard-Barton (1992) describes a capability–rigidity paradox in product innovation: Exploiting existing product innovation capabilities may have dysfunctional rigidity affects that crowd out exploration of new competencies. At the same time, scholars stress the importance of pursuing both innovation competencies (Tushman and O'Reilly, 1996). Ancona, Goodman, Lawrence and Tushman (2001) suggest that dynamic capabilities are rooted in exploitative and explorative innovations. Colbert (2004) argues that the interaction between exploration and exploitation reflects a complex capability that provides an additional source of corporate advantage beyond those provided by each innovation activity individually.

The differential direct and interaction effects of competence exploitation and exploration on product innovation performance are particularly poignant. Although the differential effects affirm conventional wisdom, the negative effect of their interaction on radical innovation performance is counterintuitive. It implies that competence exploration will be more valuable to the firm when it is matched with a lower level of competence exploitation, and vice versa. Because too much of both competence exploitation and exploration may have undesirable costs for the firm (March, 1991; Nerkar, 2003), this result implies that a firm at the forefront of new knowledge creation through exploration is more likely to succeed in developing radical innovations by recombining this knowledge with some level of exploitation.

Existing competencies provide the necessary absorptive capacity to use new competencies (Danneels, 2002). Conversely, a firm that is extremely competent in exploiting its current competencies will be successful with radical innovation only with a little dose of exploration. This finding reflects the argument that many radical innovations are the locus of a meeting between a problem and its solution, even when neither the problem nor the solution is itself new (Galunic & Rodan, 1998; Kogut & Zander, 1992). This insight is apt in the context of this study in which firms may exploit existing capabilities in new ways to solve emerging customer problems (Luo, 2002). Radical innovations to the Chinese market often result from the recombination of known technology and market elements. The product novelty stems from the act of combination, not necessarily from the novelty of the technology and market solutions combined.

Given the above, the following hypothesis is posited:

H_{10}: Organizational innovativeness will have a greater positive influence on the performance of new products when the innovation is radical or disruptive as compared to being incremental in nature.

The interaction between the organizational variables is depicted by the graphical representation in Figure 1,

representing the conceptual research framework.

Research Methodology

In collecting the sample, care was particularly taken to include a sufficient number of highly innovative SMEs to allow comprehensive coverage and analyses of the relevant organizational factors. Regression analyses were used to test the direct relationship between organizational variables of concern and hierarchical regression analyses were utilized in examining indirect relationships, in which mediating or moderating variables exist (Fornell and Bookstein, 1982).

Research Design

The research design consist of an initial qualitative phase based on in depth interviews with industry players followed-up by a quantitative phase based on survey and secondary data. The qualitative study include 10 interviews with people from R & D, new product development, sales and marketing department of large corporations as well as SMEs, asking them to describe distinctive characteristics of their organization in regard to culture, market orientation, innovative competencies, types of innovation that influence new product performance.

A first draft of the questionnaire was pre-tested with the managers and company representatives studied in the qualitative phase. Feedback acquired led to the enhanced version of measurement scale. This was followed by a pretest with seven academics and five R&D executives and a pilot study of 31 R&D / Business Development personnel to assess the quality of the research design.

Data Collection

The study reported is a cross-sectional survey of Malaysian SMEs comprising both services and manufacturing firms. The questionnaire was distributed during the SME Innovation Showcase 2011 at the Kuala Lumpur Convention Centre in June 2011. A total of 138 participating companies / exhibitors were given the questionnaire. Targeted respondents vary between company CEO, marketing manager, R&D manager, and finance manager.

16 responses were obtained during the two-day exhibition, while the remaining 96 answered questionnaires were either posted to the researchers or collected personally at the companies' premises after follow-up phone calls were conducted 1 week and 2 weeks afterwards. A summary of the research findings was offered as an incentive to respondents. These efforts yielded 112 completed questionnaires; however 47 questionnaires were deemed unusable due to missing data on key constructs. Thus, 65 usable questionnaires were successfully used for analyses for an effective response rate of 47.1%.

Nonresponse bias was assessed by comparing early and late respondents on a number of key characteristics as recommended by Armstrong and Overton (1977). This analysis revealed no significant differences at the 0.05 level between the two groups of firms, indicating that nonresponse bias is not a major problem. Also, as the unit of analysis is the organization, in addition to the study's exploratory nature, the acceptability of small sample size corresponds with Hashim, Mahajar and Ahmad (2003), who reported on innovative practices among 50 small and medium enterprises. A summary of the sample is depicted in Table 1.

Measures

The original measurement scale with 98 items was trimmed to 83 items after factor

loading and reliability test. Table 2 displays the descriptive statistics and reliability indices for all the constructs. Alpha reliabilities of our scales range from 0.77 and 0.97, which meet or exceed Nunnally(1978) standards for research. A few dimensions that were originally captured in the measurement scale such as bureaucratic and competitive culture were found to belong to the same factor grouping, hence the combined items represent a new term called "*mechanistic culture*". In addition, types of innovation also register only two major factors, in which radical and disruptive innovations were regarded as similar. As such, in addition to incremental innovations, the term "*discontinuous innovation*" denotes the integration between innovations that are both radical and disruptive in nature. This is followed by the standardized correlation matrix for the research constructs in Table 3.

The preliminary analysis indicated that the psychometric properties of the measures were acceptable to examine the hypotheses (H1 to H10). Prior to hypothesis testing, to ensure that the data were robust, analyses for both convergent and discriminant validity were undertaken which confirmed that all constructs met the Fornell and Larcker (1981) criteria of 0.50. To test the hypotheses, which focus on explaining multiple dependence relationships, linear regression as well as hierarchical regression analyses, were considered particularly suitable as methods of analysis and model evaluation for this study (Fornell and Bookstein, 1982).

Analysis and Findings

Direct relationships that are highlighted in H_1, H_2, H_3, H_4, H_5, and H_6 were tested using linear regression, in which a summary of the values obtained are shown in Tables 4. Hierarchical or moderated regressions were used in testing for indirect relationships modeled in H_{7A}, H_{7B}, H_{7C}, H_8, H_9 and H_{10}. For these indirect models, involving mediating and moderating variables, different processes were taken. In testing for the mediating role of a variable in the relationship between two variables, the first step involves the introduction of the simple effects between two variables, and in the second, we put the two earlier variables together with the introduction of the mediating variable. In testing for the moderating role of a variable, the first step involves the introduction of the simple effects between two variables and in the second, we put the two earlier variables together with the introduction of the moderating variable, and in the third, we put all earlier variables but also introduced their interaction term.

Direct Effects between Organizational Variables

We find H_1, which hypothesized that organizational culture leads to NPP, to be insignificant. Nevertheless, upon investigation of all three dimensions of culture, we find significant relationship between entrepreneurial culture and NPP (p=0.049; b=0.245; t=2.007). These results indicate that for organizations to be commercially successful in developing new products they need to foster a culture that encourages employees to exert maximal effort, and makes them comfortable in dealing with unfamiliar situations and expressing their opinions.

We do not find any significant relationship between variables in H_2, which hypothesized that market orientation leads to NPP. This does not appear to support recent findings by Ramayah, Samat and Lo (2011) who find that market orientation has a significant effect on organizational performance amongst 175 service organizations in the northern region of Malaysia.

We do, however, find significant relationship between supplier relations and NPP (p=0.020; b=0.228; t=2.389). Supplier relations is also heavily linked with a specific

performance dimension, namely global performance (p=0.022; b=0.283; t=2.346). We relate this phenomenon with Christensen's (1997) value network theory, in which we firmly believe that suppliers form part of the dynamics that create a value network. It suggests that the longer the firms have been in a given network, the more successful they are. And in instances where SMEs achieve the breakthrough to start marketing their products abroad, they normally "bring along" or create good business opportunities to their most trusted and dependable suppliers and business partners to ensure sustainability as well as continued support in managing higher demands of their products.

We find significant relationship between innovativeness and NPP (p=0.022; b=0.284; t=2.347) in H_3. Further investigation of both dimensions of organizational innovativeness subsequently led us to indicate that companies that are prone to explore their innovation competencies are poised to generate better NPP (p=0.000, b=0.337; t=2.843). These correspond with the assumption that product innovations present opportunities for firms in terms of growth and expansion into new areas as well as allow firms to gain competitive advantage.

In examining H_4, we find significant relationship between culture and market orientation (p=0.000, b=0.722; t=8.291). Thus our finding supports the proposition that although market orientation may be just one of many organizational practices that prepare firms with necessary business intelligence, its execution requires certain organizational values and norms. Inculcating these values and norms will likely lead the firm to be market-oriented, while those inhibiting them will likely result in difficulty to become one.

In testing H_5, we find significant relationship between culture and organizational innovativeness (p=0.000, b=0.665; t=7.059). This concurs with a recent research by Kamaruddeen, Yusof and Said (2011) that reveal 4 out of 8 dimensions of organizational culture were statistically significant with organizational innovativeness with moderate strength. Their study on all public listed housing developers conclude that performance orientation, humanitarian and assertiveness culture had highly significant relationships with organizational innovativeness while future orientation had a significant relationship with organizational innovativeness. Our findings also echo those of Kenny and Reedy (2006) which emphasize that organizational culture affects the extent to which creative solutions are encouraged, supported and implemented.

In examining H_6, we find significant relationship between market orientation and innovativeness (p=0.000, b=0.775; t=9.731) . This relationship has been proven in some earlier studies, but not all. These mixed results may be attributed to the interpretation of organizational innovativeness, which differ amongst researchers. Kohli and Jaworski (1990) refer to the action component of market orientation as organization-wide responsiveness to market information, but in their later research work, Jaworski and Kohli (1993) have suggested that, because "a market orientation essentially involves doing something new or different in response to market conditions, it may be viewed as a form of innovative behavior." Hence, being market oriented leads to being innovative as firms are able to create more novel ideas / products / services if they learn more from their environment.

Indirect Effects between Organizational Variables - Mediating Variables

We first tested for the mediating effect of market orientation on the relationship between culture and NPP (H_{7A}), and then the mediating effect of organizational innovativeness on the relationship between culture and NPP (H_{7B}), but both of them exhibit insignificant roles. However, in testing H_{7C}, we find that market orientation plays a

significant mediating role in the relationship between culture and innovativeness (p=0.000; b=0.617; t=5.472), as shown in Table 5. We also tested for the mediating effect of innovativeness in the relationship between market orientation and NPP (H_8), but fail to significantly establish its role.

Indirect Effects between Organizational Variables - Moderating Variables

The moderator in this study of organizational variables is type of innovation, which resembles the degree of product newness. While we fail to find any significant role of innovation types as a moderating variable in the relationship between innovativeness and NPP (in H_{10}), further analyses point out that types of innovation affect the relationship between supplier relations (as a market orientation dimension) and NPP (in H_9). Results displayed in Table 6 from the hierarchical regression in regard the impact of incremental product innovation on the effect of supplier relations towards NPP (p=0.005; b=-2.576; t=-2.887) suggest that companies with good firm-supplier relationships may experience higher NPP given that they produce incremental innovations.

This phenomenon, again, relates with the value network theory (Christensen, 1997), of which the value network paradox highlights that the more successful the firms have been due to their value network, the less eager they are to compete with firms in other networks because their abilities and financial incentives to create new market applications and thus new value networks are constrained by their existing value network. Hence, these firms normally optimize the use of their current value networks to create incremental innovations that continue to serve and please their existing customers.

Whether the same firms would generate better NPP if they were to produce discontinuous innovations is impossible to predict as no significant relationship is established in the application of discontinuous innovations as the moderating variable in the model.

Conclusion and Practical Implications

First of all, the results show that while organizational culture does not significantly affect new product performance (NPP), certain types of organizational culture does. The research findings point out the importance of an entrepreneurial culture that strengthens the organization's capacity for innovation.

Secondly, while being market oriented does not mediate the relationship between organizational culture and NPP, organizational culture does significantly affect its market orientation (MO). We find evidence that entrepreneurial and consensual cultures support the pursuit of market orientation in a higher degree as compared to a mechanistic culture.

MO plays a significant role in guiding managerial decisions to focus on innovativeness, through allocating resources to exploit existing product innovation competencies and to develop new ones. These findings support propositions in the Resource-based View of the Firm (RBV) and marketing theory that because market-oriented firms are sensitive to environmental cues, they are in a better position than their non-market-oriented counterparts to uncover and overcome potential internal competence deficiencies (Barney & Zajac, 1994; Hurley & Hult, 1998; Schroeder, Bates, & Junttila, 2002). Instead of being plagued by the capability–rigidity paradox, it appears that market-oriented firms are able to make judicious judgments in resources allocations for product innovation competencies based on market information.

Although MO, as a whole, does not affect NPP directly, a particular dimension of MO termed as "supplier relationship" indicates a significant link with NPP, especially in terms of projecting the

potential for global expansion as well as helping companies to establish a global presence. This may be associated with the increasing demands to serve a larger market, hence the necessity to secure long-term and intimate relationships with suppliers and business partners to ensure sustainable business. Nevertheless, this applies only when the new product is categorized as incremental innovation and not discontinuous. This holds true given that incremental innovations do not require a significant change in business processes, including the supply chain network as compared to the possibility of restructuring the whole business process and reintroducing new business partners when discontinuous innovations are concerned (Christensen & Bower, 1996).

The differential effects of competence exploitation and exploration on product innovation performance open the door for many questions. Although the direct effect of innovativeness on NPP affirms conventional wisdom, the failure to prove that innovation types moderate its relationship is counterintuitive. The study does imply that competence exploration affect NPP greater than competence exploitation, however it falls short from proving the moderating role of innovation types. Previous studies imply that competence exploration will be more valuable to the firm when it is matched with the creation of a discontinuous innovation, and vice versa. Because too much of both competence exploitation and exploration may have undesirable costs for the firm (March 1991; Nerkar 2003), this result does not imply that a firm at the forefront of new knowledge creation through exploration is more likely to succeed in developing discontinuous innovations, suggesting that organizations must continue to experiment with different combinations of competence exploration and exploitation to achieve the perfect match that gives optimum NPP.

While MO has a significant effect on the type of innovation, only competitor orientation has a significant effect on incremental innovation. This suggests that compared with focusing on other market factors, competitor-centered practices enable firms to marshal resources to meet more immediate threats of competitors through incremental innovations (Noble, Sinha, and Kumar, 2002).

Such orientation is also prone towards competence exploitation. Furthermore, being too dependent on suppliers is not significantly influencing the development of discontinuous innovations, as compared to other market orientation dimensions that do. Companies with higher degrees of proactive customer orientation, awareness of substitute / complimentary products / services, as well as interfunctional coordination (IFC), however, show greater tendency to produce discontinuous innovations. Given that competence exploration involves the acquisition of entirely new knowledge and skills, these results suggest that it is through customer rather than competitor orientation that firms build stronger capacities for breakthrough innovation.

Research Limitations and Direction of Future Research

We set out to investigate ambitious questions, and although we have found intriguing results, our answers are far from definitive and are plagued by many methodological compromises. These relate to the limitations of the culture measurement instrument, the expansive but exploratory nature of the market orientation measurement scale, the chosen measure of NPP and the fact that respondents were limited to managers at innovative Malaysian SMEs. The restricted coverage of factors that influence NPP also confines the generalizability of our research findings.

For the future, we propose that the study of organizational constructs should incorporate involvement of a group of organizational members, instead of the use

of a single representative. Borrowing the concept of integral aggregate variable from epidemiology, Jaskyte and Dressler (2004) argue that there are both integral aggregate properties of culture and integral individual properties of culture. Both dimensions of culture can be examined using cultural consensus analysis, which may provide a different insight into understanding organizational culture at work amongst Malaysian SMEs. In addition, the dimensions of culture that are linked to market-orientation and innovativeness may also vary from industry to industry, in addition to the relative situations at the national and organizational levels. Follow-up studies, possibly in the form of panel surveys, could generate representative time-series data on market orientation and innovation activities and networks amongst Malaysian SMEs. In overcoming the somewhat artificial boundary between SMEs of various sectors, most notably between manufacturing, services, and agriculture, future surveys might even choose a functional cluster approach to define their populations.

References

Abdul Aziz, N. and Mohd. Yasin, N. (2010). How Will Market Orientation and External Environment Influence the Performance among SMEs in the Agro-Food Sector in Malaysia? *International Business Research.* 3(3) July.

Ancona, D. G., Goodman, P. S., Lawrence, B. S., & Tushman, M. L.(2001). Time: A new research lens. *Academy of Management Review*, 26, pp. 645-663.

Armstrong, S.J. & Overton, T.S. (1977). Estimating Nonresponse Bias in mail surveys. *Journal of Marketing Research*, 14 (August), pp. 396-402.

Atuahene-Gima, K. (1995), An Exploratory Analysis of the Impact of Market Orientation on New Product Performance: A Contingency Approach, *Journal of Product Innovation Management*, 12 (September), pp. 275–93.

Atuahene-Gima, K., Slater, S.F. and Olson, E.M. (2005), The contingent value of responsive and proactive market orientations for new product program performance, *Journal of Product Innovation Management*, 22(6), pp. 464-82.

Baker, W.E. and Sinkula, J.M. (1999a). The Synergistic Effect of Market Orientation and Learning Orientation on Organizational Performance. *Journal of the Academy of Marketing Science* 27(4), pp. 411–427.

Baker, W.E. and Sinkula, J.M. (1999b). Learning Orientation, Market Orientation, and Innovation: Integrating and Extending Models of Organizational Performance. *Journal of Market Focused Management* 3(4), pp. 295–308.

Barney, J.B., and Zajac, E.J. (1994). Competitive Organizational Behavior: Toward an Organizationally-Based Theory of Competitive Advantage. *Strategic Management Journal* 15, pp. 5-9.

Belassi, W., Kondra, A. Z., and Tukel, O. I. (2004).*The effects of organizational culture on new product development*. Administrative Sciences Association of Canada Annual Conference (ASAC 2004), Quebec City, Quebec.

Berthon, P., Hulbert, J. and Pitt, L. (1999). To Serve or Create? Strategic Orientations toward Customers and Innovation. *California Management Review*, 42(1), pp. 37–58.

Buzzell, R. D. and Gale, B. T. (1987). The PIMS principles: Linking strategy to performance, Free Press (New York and London).

Cameron, J.P., and Freeman, S.J. (1991). Cultural Congruence, Strength, and Type: Relationships of Effectiveness. In R.W. Woodman and W.A. Passmore, eds., *Research in Organizational Change and Development.* Vol. 5, Greenwich, CT: JAI Press, Inc.

Capon, N., Farley, J., Lehmann, D. and Hulbert J. (1992). Profiles of Product Innovators Among Large U.S. Manufacturers, Management *Science* 38, (2), pp 157-69.

Carrillat, F.A., Jaramillo, F. and Locander, W.B. (2004). Market-driving Organizations: a Framework. *Academy of Marketing Science Review,* 5, pp. 1-14.

Cegarra-Navarro, J.G. and Rodrigo-Moya, B. (2007). Learning Culture as a Mediator of the Influence of an Individual's Knowledge on Market Orientation, *The Service Industries Journal*, 27(5), July, pp. 653-669

Chandy, R. and Tellis, G.J. (1998), "Organizing for Radical Product Innovation," *Journal of Marketing Research*, 35 (November), pp. 474-487

Christensen, C.M. (1997). *The innovator's dilemma: when new technologies cause great firms to fail*. Harvard Business Press, Cambridge MA.

Christensen, C.M and Bower, J. (1996). Customer Power, Strategic Investment, and the Failure of Leading Firms. *Strategic Management Journal*, 17(3), pp. 197–218.

Cohen, W.M., and Levinthal, D.A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35 (March), pp. 128-152.

Colbert, B.A. (2004). The Complex Resource-Based View: Implications for Theory and Practice in Strategic Human Resource Management", *Academy of Management Review* 29 (3), pp. 341-358.

Danneels, E. (2002). The dynamics of Product Innovation and Firm Competencies. *Strategic Management Journal*, 23, pp. 1095-1121.

Deshpande, R. and Farley, J.U (1999). Executive insights: corporate culture and market orientation: comparing Indian and Japanese firms, *Journal of International Marketing*, 7(4), pp. 111-27.

Deshpande, R., Farley, J. U. and Webster Jr, F. E. (1993). Corporate culture, customer orientation, and innovativeness in Japanese firms: a quadrand analysis. *Journal of Marketing*, 57, pp. 23-27.

Detert, J. R., Schroeder, R. G. and Mauriel, J.J. (2000). A Framework for Linking Culture and Improvement Initiatives in Organizations. *The Academy of Management Review*, 25(4), pp. 850-863.

Dougherty, D. (1992). Interpretive barriers to successful product innovations in large firms. *Organization Science*, 3(2) pp. 179–202.

Farley, J. U., Hoenig, S., & Ismail, Z. (2008). Organizational Culture, Innovativeness, Market Orientation and Firm Performance in South Africa: An Interdisciplinary Perspective, *Journal of African Business*, 9(1), pp. 59-76.

Fornell, C. and Bokstein, F. L. (1982). Two Structural Equation Models: LISREL and PLS Applied to Consumer Exit-Voice Theory. *Journal of Marketing Research*, 19, pp. 440-452.

Fornell, C. and Larcker, D.F. (1981). Evaluating Structural Equation Models With Unobservable Variables and Measurement Error. *Journal of Consumer Research* 18 (February), pp. 39-50.

Gatignon, Hubert and Xuereb, Jean-Marc (1997). Strategic Orientation of the Firm and New Product Performance. *Journal of Marketing Research*. 34 (1), pp. 77–90.

Geroski, P., 1995. *Innovation and competitive advantage*. Working Paper No. 159, OECD, Paris.

Han, J. K., Kim, N., and Srivastava, R. (1998). Market orientation and organizational performance: Is innovation a missing link? *Journal of Marketing*, 62(4), pp. 30−45.

Hashim, M.K., Mahajar, A.J. & Ahmad, S. (2003). Innovative practices of Malaysian firms: Some evidence from Enterprise 50 winners. *Malaysian Management Review (MMR)*, 38(2), pp. 19-27.

Homburg, C. & Pflesser, C. (2000). A Multiple-Layer Model of Market-Oriented Organizational Culture: Measurement Issues and Performance Outcomes, *Journal of Marketing Research*, 37(11), pp. 449-462.

Hurley, R.F. and Hult, G.T.M., and Tomas M. (1998). Innovation, Market Orientation, and Organizational Learning: An Integration and Empirical Examination. *Journal of Marketing*, 62(3), pp. 42 – 54.

Im, S., Hussain, M., and Sengupta, S. (2008). Testing interaction effects of the dimensions of market orientation on marketing program creativity. *Journal of Business Research*, 61(8), pp. 859−867.

Jaworski, B.J. and Kohli, A.K. (1993). Market Orientation: Antecedents and Consequences. *Journal of Marketing*, 57 (July), pp. 53–70.

Jap, S. D. (1999): Pie-expansion efforts: Collaboration processes in buyer-supplier relationships, *Journal of Marketing Research*, 26(4), November, pp. 461-475.

Kamaruddeen, A.M., Yusof, N. and Said, I. (2011). Assessing the innovativeness of housing developers in Malaysia. *International Journal of Academic Research,* 3(3), May.

Kenny, Breda and Reedy, Eileen, (2006). The Impact of Organisational Culture Factors on Innovation Levels in SMEs: An Empirical Investigation. *The Irish Journal of Management*, January, pp. 119-42.

Kim, W.C. & Mauborgne, R. (2005). *Blue Ocean Strategy*. Harvard Business School Press, Boston MA.

Kohli, A.K., and Jaworski, B.J., (1990). Market orientation: the construct, research propositions, and managerial implications. *Journal of Marketing* 54(2), pp. 1–18.

Kotabe, M., Duhan, D.F., Smith, D.K., and Wilson, D.R. (1991). The perceived veracity of PIMS strategy principles in Japan: An empirical inquiry. *Journal of Marketing*, 15, pp 26-41.

Langerak F., Hultink J.E, and Henry R.J.S, (2004), The Impact of Market Orientation, Product Advantage, and Launch Proficiency on New Product Performance and Organizational Performance, *journal of product innovation management*, pp. 79–94

Lawton, L., and Parasuraman A. (1980). The impact of the marketing concept on new product planning. *Journal of Marketing*, 44 (Winter), pp. 19-25.

Liu, S., Luo, X., and Shi, Y. (2002). Integrating customer orientation, corporate entrepreneurship, and learning orientation in organizations in transition: an empirical study. *International Journal of Research in Marketing*, 19, pp. 367-382.

March, James G. (1991). Exploration and Exploitation in Organizational Learning, *Organization Science*, 2 (February), pp. 71–87.

Mavondo, F. T., Chimhanzi, J., and Stewart, J. (2005). Learning orientation and market orientation: Relationship with innovation, human resource practices and performance. *European Journal of Marketing*, 39(11), pp. 1235−1263.

Mohd Mokhtar, S.S., Yusoff, R.Z. and Arshad, R. (2009). Market Orientation Critical Success Factors of Malaysian Manufacturers and Its Impact on Financial Performance. *International Journal of Marketing Studies,* 1(1), May, pp. 77-84.

Mohd Noor, N.A. and Muhamad, A. (2005). Individual Factors that Predict Customer Orientation Behavior of Malaysian Life Insurance Agents, *Jurnal Pengurusan,* 24, pp. 125-149.

Narver, J.C. and Slater, S.F. (1990). The Effect of a Market Orientation on Business Profitability. *Journal of Marketing*, 54(3), pp. 20 – 35.

Narver, J.C.,Slater, S.F., and MacLachlan, D.L. (2004). Responsive and Proactive Market Orientation and New Product Success.*The Journal of Product Innovation Management*, 21, pp. 334 – 347.

Nerkar, A. (2003). Old Is Gold? The Value of Temporal Exploration in the Creation of New Knowledge, *Management Science*, 49 (February), pp. 211–29.

Noble, C.H., Sinha, R.K. and Kumar, A. (2002). Market Orientation and Alternative Strategic Orientations: A Longitudinal Assessment of Performance Implications. *Journal of Marketing*, 66

(October), pp. 25–39.

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.

OECD, 2005. *Oslo Manual: Proposed Guidelines for Collecting and Interpreting Technological Innovation Data*. Paris

Quinn, R.E. (1988), *Beyond Rational Management*, Jossey-Bass, San Francisco, CA.

Ramayah, T., Sulaiman, M., Jantan, M., and Ching, N.G. (2004). Organizational Learning, Proprietary Technology, And Manufacturing Performance: A Glimpse From The Malaysian Manufacturing Firms. *International Journal of Innovation and Incubation,* 1(1), June, pp. 63-90

Rashid, Md. Z.A., Sambasivan, M., and Johari, J. (2003). The influence of corporate culture and organisational commitment on performance. *Journal of Management Development*, 22(8), pp. 708 - 728

Sandvik, I.L, and Sandvik, K. (2003). The impact of market orientation on product innovativeness and business performance. *International Journal of Research in Marketing,* 20(4), December, pp. 355–376.

Schein, E. (1984). Coming to a New Awareness of Organisational Culture. *Sloan Management Review*, 25(2), pp. 3-16.

Schein, E. (1985, 1992), *Organisational Culture and Leadership*, Jossey-Bass, San Francisco, CA, .

Schroeder, R., Bates, K. and Junttila, M. (2002). A resource-based view of manufacturing strategy and the relationship to manufacturing performance. *Strategic Management Journal*, 23, pp. 105-117.

Sondergaard, H. A. (2005). Market-oriented new product development: How can a means-end chain approach affect the process? *European Journal of Innovation Management*, 8(1), pp. 79−90.

Stump, R.L., Athaide, G.A./Joshi, and Ashwin W. (2002): Managing seller-buyer new product development relationships for customized products: A contingency model based on transaction cost analysis and empirical test, *Journal of Product Innovation Management*, 19(6), November, pp. 439-454.

Syrett, M., and Lammiman, J. (1997). The art of conjuring ideas. *Director*, 50(9), pp. 48-54.

Trice, H. and Beyer, J. (1993). *The Cultures of Work Organizations*, Prentice Hall, New Jersey.

Tushman, M. L. and O'Reilly, C. A. III (1997). *Winning through Innovation: A Practical Guide to Leading Organizational Change and Renewal*. Boston, MA: Harvard Business School Press.

Tushman, M. L. and Anderson P., Technological discontinuties and organizational environments", *Administrative Science Quarterly,* 31 (1986), pp. 439-65.

Wang, C. L. and Ahmed, P. K. (2004). The development and validation of the organizational innovativeness construct using confirmatory factor analysis. *European Journal of Innovation Management*. 7(4), pp. 303-313.

Wei, Y. and Morgan, N.A. (2004). Supportiveness of Organizational Climate, Market Orientation, and New Product Performance in Chinese Firms, *J PROD INNOV MANAG*, 21, pp. 375–388.

Weick, K. (1985). The Significance of Corporate Culture in P. J. Frost, L. F. Moore, M. R. Louis, C. C. Lundberg and J. Martin. *Organizational Culture*. Beverly Hills, Sage, pp. 381-389.

Yoon, E. and Lilien, G.L. (1985). New Industrial Product Performance: The Impact of Market Characteristics and Strategy. *J. Product Innovation Management*, 3 (September), pp. 134-144.

Zahra, S. & Nielsen, A. P. (2002). Sources of Capabilities, Integration and Technology Commercialization. *Strategic Management Journal*, 23, pp. 377-398.

Zahra, S.A., Ireland, R.D. and Hitt, M.A. (2000), International Expansion by New Venture Firms: Internal Diversity, Mode of Entry, Technological Learning, and Performance. *Academy of Management Journal*, 43(5), pp. 925–50.

Zhang, J. and Duan, Y. (2010). The impact of different types of market orientation on product innovation performance Evidence from Chinese manufacturers. *Management Decision*. 48(6), pp. 849-867

APPENDICES:

TABLE 1: CHARACTERISTICS OF THE SAMPLE

1.	**Types of Industry**	
	a. Manufacturing	**60%**
	b. Services	**32%**
	c. Agriculture	**8%**
2.	**Types of Sector**	
	a. ICT-related	23%
	b. Pharmaceutical	12%
	c. Construction	12%
	d. Automotive	11%
	e. Others	42%
3.	**No. of Workers**	
	a. Less than 50	46%
	b. Between 50 to 100	40%
	c. Between 101 to 300	14%
4.	**Types of Establishment**	
	a. Private Limited	42%
	b. Sole Proprietorship	40%
	c. Partnership	17%
5.	**Status of Ownership**	
	a. 100% Bumiputera	37%
	b. 100% Non-Bumiputera	34%
	c. Non-Bumiputea majority	28%
	d. Foreign-Affiliated	1%
	e.	
6.	**Tenure of Establishment**	
	a. Average age	9 years
	b. Age Range	3 to 2 years
7.	**Company Location**	
	a. Klang Valley	80%
	b. Outside Klang Valley	20%
8.	**Respondents' Age**	
	a. Less than 30	1%
	b. Between 30 to 40	57%
	c. Between 41 to 50	39%
	d. More than 50	3%
9.	**Respondents' Gender**	
	a. Male	68%
	b. Female	32%
10.	**Respondents' Working Tenure at the Company**	
	a. Less than 1 year	5%
	b. Between 1 year to 3 years	31%
	c. Between 3 to 5 years	50%
	d. More than 5 years	14%
11.	**Respondents' Position in the Company**	
	a. CEO	40%
	b. Marketing Manager	40%
	c. R&D Manager	18%
	d. Finance Manager	2%
12.	**Respondents' Knowledge of the Company's Activities**	
	a. Substantial	65%
	b. Very Substantial	35%

FIGURE 1: CONCEPTUAL RESEARCH FRAMEWORK

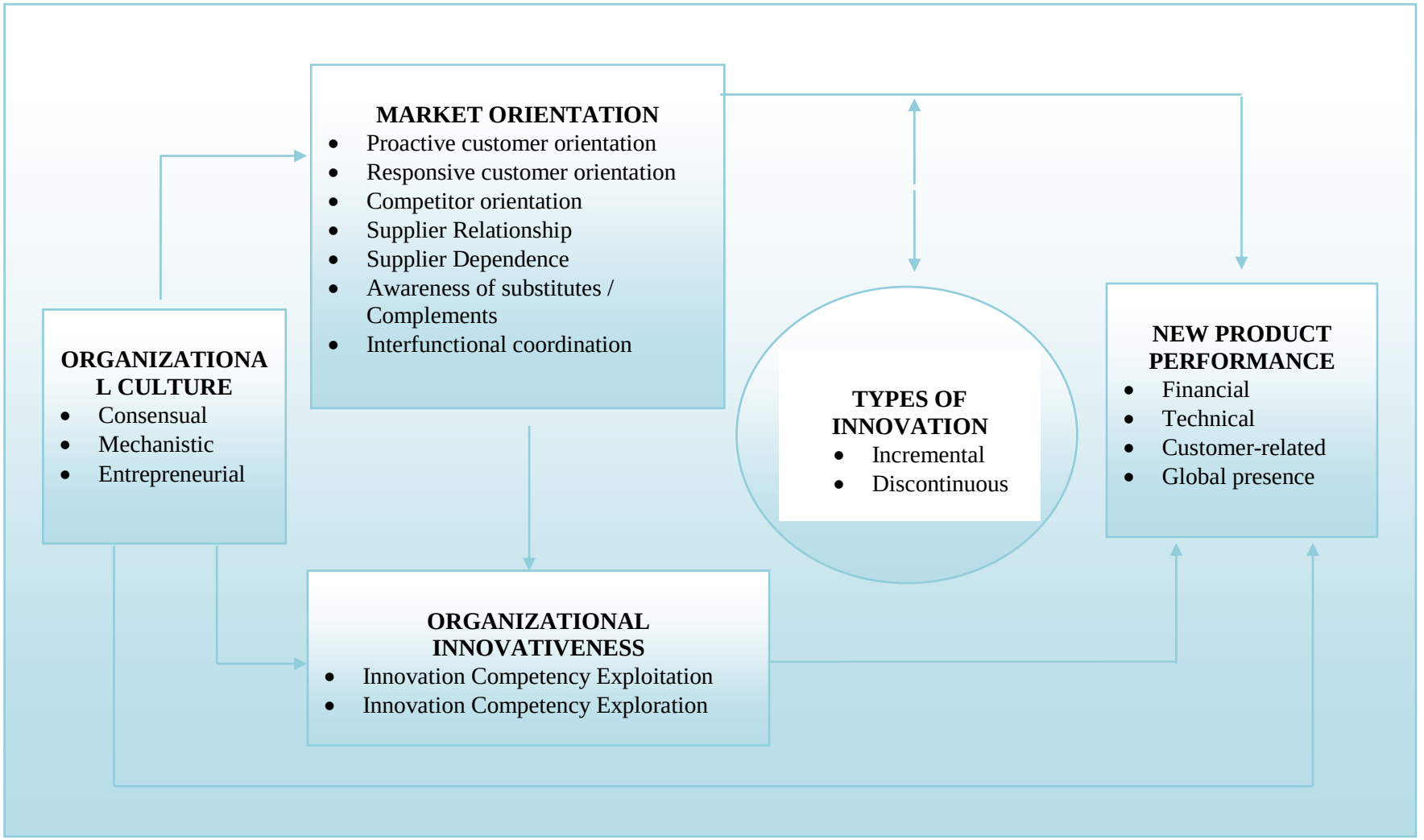

TABLE 2: SOURCE, CONTENT AND RELIABILITY OF MEASUREMENT SCALE

Construct and Sources	Dimension	Number of Items	Items in Scale	Reliability (Cronbach a)
ORGANIZATIONAL CULTURE • **Cameron & Freeman, 1991** • **Quinn, 1998** • **Farley, Hoenig, & Ismail, 2008**	Consensual	4	Personal atmosphere; mentor-style leadership; loyalty and tradition; cohesion and morale	0.876
	Mechanistic	8	Formalization; production-oriented; coordinator-style leadership; goal-oriented leadership; task accomplishment; presence of rules and policies; stability; competitiveness	0.905
	Entrepreneurial	4	Entrepreneurial dynamism; risk-taking in innovating; leadership; emphasis on growth	0.900
MARKET ORIENTATION • **Narver & Slater, 1990** • **Deshpande, Farley, & Webster, 1993** • **Zahra & Nielson, 2002** • **Narver, Slater, & McLachlan, 2004** • **Farley, Hoenig, & Ismail, 2008**	Responsive Customer-orientation	6	Customer service; customer monitoring; knowledge of customers; integrate customer information in company plans and strategies; gathering of customer information through survey, focus groups; brainstorming on customer consumption patterns	0.811
	Proactive Customer-orientation	9	Customer value; anticipation of future customer consumption patterns; anticipation of additional customer needs; anticipate future customer needs by working with lead users; identifying non-customers as potential prospects; look beyond traditional customers; monitors for potential customers outside our traditional industry; inter-firm collaboration in new product development; inter-industry collaboration in new product development	0.908
	Competitor-orientation	3	Collect information about competitors; integrate competitor information in company plans and strategies; knowledge of competitors	0.870
	Firm-Supplier relationship	2	Long-lasting firm-supplier relationship; flexibility of supplier to facilitate firm demands	0.771
	Firm-Supplier dependence	4	Suppliers assist in our areas of weaknesses; suppliers ensure channel efficiency; suppliers ensure timely services; suppliers ensure our operations remain as cost-effective	0.890
	Awareness of alternatives	5	Consider complementary products / services; consider substitute products / services; consider accessory products / services; effective	0.890
	Interfunctional coordination	5	Integration of organization's functional units; existence of cross-functional teams in new product development; sharing of market information; top management support for integration of market information; top management support for sustainable business practices	0.884
INNOVATIVENESS • **Capon, Farley, Lehmann, & Hulbert, 1992** • **Zahra, Ireland, and Hitt, 2000**	Competence Exploitation	5	Organization upgrades employees' current skills and techniques through training and development programs; aims to improve productivity; encourages problem-solving that reflects existing solutions; improves current product development processes; improves efficiency of product development processes	0.871
	Competence Exploration	5	Encourages employees to undergo training and development programs that are entirely new to the firm; aims to improve productivity; encourages problem-solving that reflects existing solutions; improves current product development processes; improves efficiency of product development processes	0.922
TYPE OF INNOVATION • **Tushman & Anderson, 1986** • **Abernathy & Clark, 1985** • **Christensen, 1997** • **Kim & Maubourgne, 2005**	Incremental	4	Product repositioning; requiring similar development and marketing processes; product modification; supplementing existing products	0.891
	Discontinuous	9	Requiring new development and marketing processes; change in business model; large technological advancement; change in customer buying behavior; totally new to the company; fleeing competition by creating new market; attracting new customer; new product features; offering simple, convenient, accessible and affordable products	0.962

NEW PRODUCT PERFORMANCE (NPP) • ***Buzzell & Gale, 1987*** • ***Kotabe, Dunham, Smith, & Wilson, 1991*** • ***Chandy & Tellis, 1998*** • ***Griffin & Page, 1993, 1996*** • ***Cooper & Kleinschmidt, 1995***	*Financial-based*	*2*	*Exceeding profit objectives; exceeding sales objectives*	*0.968*
	Technical-based	*4*	*Product quality; technically superior than competitors', improves operation efficiency; attracts new customers*	*0.886*
	Customer-based	*2*	*Exceed market share objectives; positive impact on company image*	*0.891*
	Global presence	*2*	*Create global potential; enabling global presence*	*0.918*

TABLE 3: STANDARDIZED CORRELATION MATRIX OF CONSTRUCTS

		Market Orientation	Innovativeness	Organizational Culture	Type of Innovation	NPP
Market Orientation	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	65				
Innovativeness	Pearson Correlation	.775**	1			
	Sig. (2-tailed)	.000				
	N	65	65			
Organizational Culture	Pearson Correlation	.722**	.665**	1		
	Sig. (2-tailed)	.000	.000			
	N	65	65	65		
Type of Innovation	Pearson Correlation	.646**	.706**	.646**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	65	65	65	65	
NPP	Pearson Correlation	.206	.284*	.127	.226	1
	Sig. (2-tailed)	.100	.022	.313	.071	
	N	65	65	65	65	65

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

TABLE 4: SUMMARY OF DIRECT EFFECTS

DIRECT EFFECTS BETWEEN ORGANIZATIONAL VARIABLES	Standardized Coefficients (BETA)	t	Sig.
Relationship between entrepreneurial culture and NPP	.245	2.007	.049
Relationship between firm-supplier relationship and NPP	.288	2.389	.020
Relationship between firm-supplier relationship and global performance	.283	2.346	.022
Relationship between innovativeness and NPP	.284	2.347	.022
Relationship between innovation competency exploration and NPP	.337	2.843	.006
Relationship between organizational culture and market orientation	.722	8.291	.000
Relationship between organizational culture and innovativeness	.665	7.059	.000
Relationship between market orientation and innovativeness	.775	9.731	.000

TABLE 5: THE MEDIATING ROLE OF MARKET ORIENTATION ON THE RELATIONSHIP BETWEEN ORGANIZATIONAL CULTURE AND INNOVATIVENESS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.049	.298		3.520	.001
	Culture	.703	.100	.665	7.059	.000

2	(Constant)	-.088	.323		-.273	.785
	Culture	.232	.119	.219	1.944	.056
	MO	.784	.143	.617	5.472	.000
a. Dependent Variable: Innovativeness						

TABLE 6: THE MODERATING ROLE OF TYPES OF INNOVATION ON THE RELATIONSHIP BETWEEN FIRM-SUPPLIER RELATIONSHIP AND NPP

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.768	.379		7.307	.000
	SupplierRel	.059	.113	.066	.521	.604
2	(Constant)	2.835	.520		5.451	.000
	SupplierRel	.058	.115	.064	.504	.616
	IncrInnov	-.020	.106	-.024	-.189	.851
3	(Constant)	-2.400	1.878		-1.278	.206
	SupplierRel	1.629	.555	1.805	2.936	.005
	IncrInnov	1.639	.583	1.956	2.810	.007
	SupplierRel_IncrInno	-.499	.173	-2.576	-2.887	.005
Dependent Variable: NPP						

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.066[a]	.004	-.012	.50051	.004	.271	1	63	.604
2	.070[b]	.005	-.027	.50438	.001	.036	1	62	.851
3	.353[c]	.125	.081	.47695	.120	8.337	1	61	.005

a. Predictors: (Constant), SupplierRel
b. Predictors: (Constant), SupplierRel, IncrInnov
c. Predictors: (Constant), SupplierRel, IncrInnov, SupplierRel_IncrInno