

## A Systematic Analysis of Innovation Studies: A Proposed Framework on Relationship Between Innovation Process and Firm's Performance

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### ABSTRACT

*Innovation has been discussed in a broad field. Scholars have defined and discussed innovation in various forms and perspectives. Whether empirical or conceptual, the discussions have delineated innovation in various perspectives such as organizational innovation, newness, innovation management, innovation as interactive model and types of innovation. In fact, due to the competitive environment, innovation is crucial and has become a niche for firm's performance. This paper aims to provide a systematic analysis and propose framework that emphasizes on investigating the relationship between innovation and firm performance. Based on literature review, this paper proposes six constructs which can be used to examine the innovation implementation at firm level. The constructs are leadership, managerial levers, business processes, innovation process, innovation outcome and firm performance.*

*Keywords: innovation, innovation outcomes, firm performance*

### 1. Introduction

Innovation is crucial in the current business scenario. The state of change in competitive environment at unlimited speed has become more challenging. Therefore, innovation is highly imperative to be the main priority for organizations to achieve competitiveness and high performance growth.

Innovation is used as a source of the strategic logic for high growth and this is proven to the companies with high growth in terms of strategy, customers, asset and capabilities and product or service offerings (Kim and Mauborgne, 1997). Therefore, as a region, state or community, we need to have

the capacity to innovate and grow firm (Judd and McNeil, 2008). The most important issue is how innovation itself affects firm's performance since the contribution from firm will accumulate and contribute to competitiveness and growth. According to García-Morales, Llorens-Montes and Verdú-Jover (2006), organizations must innovate as innovation is essential to obtaining high performance levels.

The effect of innovation on firm's performance has been widely discussed by previous scholars (Cho and Pucik, 2005; Jin K Han, Namwoon Kim, and Rajendra K Srivastava, 1998; Hernández-Espallardo and Delgado-Ballester, 2009; Prajogo, 2006; Salomo, Talke, and Strecker, 2008). For example, an empirical research has proven that

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innovation has positive effect on firm's performances such as innovative performance, production performance, market performance and financial performance (Gunday, Ulusoy, Kilic, and Alpkhan, 2011).

This would also result in a significant linkage between outcome of innovation and firm's performance such as return on investment, market share, competitive position versus direct competitors and value to customers (Neely, Filippini, Forza, Vinelli, and Hii, 2001). Despite the widespread interest on innovation and firm's performance, however, understanding of the relationship between multi-dimensional factors of innovation process and identified innovation outcomes towards firm's performance is limited.

According to Jain (2010), to better understand how organizations evolve in order to meet the challenges of change for fulfilling the expectations of internal and external stakeholders, a more sophisticated understanding of process and innovation orientation outcomes is needed. Even if a firm is highly innovative, it has to exploit its innovation in terms of outcome to gain better business performance (Neely, et al., 2001).

The paper consists of four sections. The first section is introduction to innovation. The second section is a systematic analysis review on innovation, innovation process, innovation factors or antecedents, innovation outcome and firm's performance. The third section presents the framework developed in the present study. This framework demonstrates the relationship between the factors or antecedents of innovation process, innovation outcome and firm's performance.

The final section is conclusion. Conceptually, this paper proposes a framework to be used as a foundation to investigate the implementation of organizational innovation. This will later build innovation dimensions and

constructs that could be used to gather information for further research.

## **2. Literature Review**

### **2.1. Innovation**

Academically, innovation has been discussed in a broad field. Originated from Latin word, the term is defined by Oxford Dictionaries (2011) as the action or process of innovating new method, idea and product. Scholars have defined and discussed innovation in various forms and perspectives. In this paper, the wide perspective of innovation is conducted through systematic analysis according to definition and evolution of innovation, level of analysis, orientation, types, innovation process and key issues, innovation factors, innovation outcome and its relation with firm's performance.

Empirically or conceptually, the discussions have delineated innovation in various perspectives such as organizational innovation, newness, innovation management, innovation as interactive model and types of innovation (Damanpour, 1991; Johannessen, 2009; Johannessen, Olsen, and Lumpkin, 2001; Li, Zhou, and Si, 2010; Mothe and Thi, 2010; Ortt and Duin, 2008). For that matter, numerous definitions of innovation were actually owned and discussed by many business disciplines that align with the dominant paradigm of the discipline (Baregheh, Rowley, and Sambrook, 2009).

### **2.2. Definition and Evolution of Innovation**

Innovation is crucial since the global marketplace is portrayed by intense social, economic and technological changes. Hence, in adapting changes, innovation plays a major role in nurturing the economy, enhancing and sustaining high performance of firms in building competitiveness (Gopalakrishnan and Damanpour, 1997).

Emphasis on innovation has resulted in high interest of innovation studies and researchers within each discipline have conceptualized innovation in different views of its impact, focus and variation in the definition (Gopalakrishnan and Damanpour, 1997). The very early definition on innovation was defined by Schumpeter in 1936 in the context of economic development and new combination of productive resources (Hidalgo and Albors, 2008).

Due to the value judgment attached to innovation, Knight (1967) defined innovation as an adoption of change which is new to an organization and relevant environment. The strength of the definition lies in the word 'adoption' since it is implied beyond the concept of new idea. Based on this definition, innovation of new product occurs when it is conceived, produced and used. Innovation of production process is completed only after its operation and innovation of an organization structure is achieved when the system has been set up and made operational (Knight, 1967).

Nevertheless the concept of new in innovation is argued by (Johannessen, et al., 2001) where they pointed that innovation needs a good 'working definition' due to the lack of meaningful measures. With this concept, the study has addressed newness into three related questions: what is new, how new, and new to whom? As a result, innovation is defined into six different types of activity: new products, new services, new methods of production, opening new markets, new sources of supply and new ways of organizing (Johannessen, et al., 2001).

In view of the global competition, innovation acts as the key driver to address the issue of quality, quantity and speed. Thus, the need to create new value proposition becomes an issue. Firm seeks to optimize the search and designs new value in the form of new products, new processes or novel ways of doing business (Dervitsiotis, 2010). To fulfill this argument, the author has referred innovation as an

organization capability to generate new value proposition for stakeholders (Dervitsiotis, 2010). Leadership, organizational culture, resources, customer participation, employee participation and supplier participation are the variables that link to innovation capability (Dervitsiotis, 2010).

Innovation is a multidimensional concept. According to Neely et al., (2001) innovation is used as a framework for analyzing business performance, firm's innovation and related contextual factors. Thus, innovation is defined as product innovation, process innovation, management system and organizational innovativeness (Neely, et al., 2001). In this context innovation is perceived to affect firm's capacity to innovate and its actual level of innovation. Innovation is not only referred to an outcome or new idea but also a process from which new idea emerges (Gupta, Tesluk, and Taylor, 2007). This definition also has some similarities in terms of innovation as a process and innovation as an outcome (Crossan and Apaydin, 2010).

However, the authors pointed that the definition of innovation consists of three sequential components: innovation leadership, innovation as a process and innovation as an outcome. Due to comprehensive literature review, their definition of innovation covers broad scope: "Innovation is: production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems" (Crossan and Apaydin, 2010).

### **2.3. Innovation - Level of Analysis**

Apart from its definition, innovation is differentiated and discussed in the context of four different types of level. Gopalakrishnan and Damanpour (1997) claims that innovation can be analyzed at industry level, organizational level, subunit level and

innovation level while Gupta et al. (2007) has summarized and added one more level- innovation at the level of geographic regions. This also has led us to understand innovation as new framework of types of innovation (Rowley, Baregheh, and Sambrook, 2011):

- a) Industry level of analysis: This refers to either extra or intra-industry. Extra-industry level emphasizes on factors that distinguish innovation development patterns and innovation magnitude while intra-industry focuses on differences in timing of adoption of an innovation across organizations and the implications of innovation for organizational performance.
- b) Organizational level of analysis: These studies involve either the outcome approach or the process approach. The outcome approach inquires about contextual, structural and behavioral characteristics while process approach describes a broad class of events and sequences central to the innovation process.
- c) Sub-unit level of analysis: The studies analyze departmental phenomena associated with innovation such as communication and decision making factors that affect R and D unit, tenure of RandD groups and diversity of Rand D teams.
- d) Innovation level of analysis: Concentrates on the innovation characteristic such as cost relative advantage, complexity and radicalness.
- e) Innovation at the level of geographic region: Focuses on the emergence of innovation, national innovative capacity and contributing factors to the level of input devoted to innovation and factors drive RandD productivity.

#### **2.4. Orientation of Innovation**

Innovation is also categorized according to four orientations (Johannessen, 2009). They are individual perspective, structural perspective, interactive perspective and

national and regional system of innovation. Individual perspective emphasizes on concepts like age, educational level, personal features, sex, cognitive style and creativity. Structural perspective focuses on organizational characteristics. Interactive perspective focuses on dynamic changes which influence structure over a period of time in the innovation process. The national and regional system of innovation focuses on how it influences innovation activities in companies where organization and distribution of knowledge become the main agenda.

#### **2.5. Type of Innovation**

Different types of innovation have been argued by past research. According to Damanpour (1991) and Gopalakrishnan and Damanpour (1997), three types of innovation which have gained the most attention and most frequently employed are administrative and technical, product and process and radical and incremental. Li et al., (2010) have analyze the internal and external fit of two types of innovation: exploratory innovation and exploitative innovation with the aim to explore firm's innovation activities on performance. In seeking the effects of marketing and organizational innovation strategies on technological performance, Mothe and Thi (2010) have identified two types of innovation: technological and non-technological innovation.

Based on extensive literature review on the types of innovation from year 1960 to 2007, Rowley et al., (2011) has come out with innovation type mapping tool and revealed four types of innovation. The four types comprise of product innovation (product, service and mix between service and product), process innovation (technical, administrative, production, organizational, management and business system), position innovation (commercial or marketing innovation and business system innovation) and paradigm innovation (similar to position innovation).

## **2.6. Innovation Process**

Innovation process is unique, complex and difficult to control (Gerybadze, Hommel, Reiners, and Thomaschewski, 2010). It describes the activities that are performed at each stage of the development of innovation (Ortt and Duin, 2008). The innovation process in organization has been described in various ways and perspectives in the past literatures. Gerybadze et al., (2010) described innovation process as a phase of processes which start from strategy planning, innovation planning, generating idea, screening, project selection, project development, market test, production, market introduction and innovation controlling.

Since these processes are dependent on each other and exposed to the uncertainty factors such as coordination, decisions, resistance, market risk and other factors, Gerybadze et al., (2010) mentioned that it is important to monitor innovation from different perspectives such as strategy related, market related, product/project related, process/performance related and culture related.

In considering innovation as a process, unitary sequence model is used to explain innovation process (Gopalakrishnan and Damanpour, 1997). Their study viewed innovation process which occurs whether as a generator or an adopter of innovation. When it is viewed as generation of innovation, it is defined in terms of problem solving and decision making where innovation process is divided into five stages: idea generation, project definition, problem-solving, design and development, and marketing or commercialization. The success of generation phase depends on an organization's ability to exploit innovation for its own performance improvement.

Consequently, the adoption of innovation is viewed as a process of organizational change that directly affects the technical and social systems of an organization (Gopalakrishnan

and Damanpour, 1997). This stage consists of two phases: initiation and implementation. Initiation stage is characterized by three sub-stages: awareness of innovation, formation of attitude towards it and evaluation from organizational standpoint. Implementation stage includes two sub-stages: trial implementation and sustained implementation (Gopalakrishnan and Damanpour, 1997). The success of adoption stage depends on the integration of the innovation and its contribution to organizational outcome (Gopalakrishnan and Damanpour, 1997).

Extensive literature reviews suggest that innovation process depends on several dimensions: level, driver, direction, source and locus (Crossan and Apaydin, 2010). The dimension pertaining to level explains the split between individual, group and firm's processes. Driver deals with both, internal and external driver. Internal drivers of the innovation process can be available knowledge and resources, while an external driver would be a market opportunity or imposed regulations.

The direction dimension considers how the innovation process starts and develops, whether it is top-down or bottom-up. The source dimension involves the internal source of innovation which is ideation, whereas an external source of innovation is adoption of innovation invented elsewhere. Finally, the locus dimension defines the extent of an innovation process that is whether firm only (closed process) or network (open process) (Crossan and Apaydin, 2010).

Narvekar and Jain (2006) presented an interactive three-stage innovation process: ideation, incubation and demonstration. This framework is suitable in understanding technological innovation process and was proposed to examine the nature and relationship between intellectual capital and innovation and also to indicate how these relationships interact in creating value and wealth. Technological innovation process is

used to describe the learning process whereby company generates a flow of new technological knowledge, competencies and capabilities. In line with explanation about technological innovation process, the main inputs of the innovation process are characterized codified information and tacit, transmission of technology, absorption capacity and effectiveness of the protection mechanism used by company.

## **2.7. Key Issues in Innovation Process**

The various reviews with regards to innovation process have provided researchers to further seek its implication on the management issues. It seems that innovation could be cyclic (Desouza, et al., 2009). According to Desouza et al., (2009), along all stages in the innovation process, organizations face various issues. However any single organization may not participate in all of the stages.

Therefore, competencies and deficiencies need to be identified in improving organization's innovation overall success (Desouza, et al., 2009). Common language for analyzing and discussing innovation and establishing goals at specific stages of innovation process is needed and would urge employee to innovate (Desouza, et al., 2009). This is because innovation process is the backbone of innovative effort and it displays commitment and also direction to the stakeholders (Desouza, et al., 2009).

In implementing successful innovation, organization requires several techniques to support innovation process such as Business Modeling Techniques (Scozzi and Garavelli, 2005). For example, insight on innovation process in SMEs has postulated that innovation development processes are complex, knowledge intensive and often definable (Scozzi and Garavelli, 2005). The issues here are the innovation process occurs as a sequence of tasks which demand coordination, management interdependencies and control,

evolved decision making, strategic process varies, political process difficulties, lacking in interpretative process, demand creative process and communication and information flow needs (Scozzi and Garavelli, 2005). Despite supporting technique, three general characteristics of successful innovation process which are of greater importance are the multifaceted nature of success, the universalization of success factors and the fundamental role played by people in this process (Marques and Monteiro-Barata, 2006).

The effectiveness of management of innovation process requires a balance set of innovation metrics related to all innovation drivers such as leadership, culture and people's participation and also innovation result such as time to market and financial metrics (Dervitsiotis, 2010). Innovation utilizes all inputs: leadership, employee participation process, innovation strategy, innovation resources, customer feedback process, innovation project portfolio, supplier participation process to produce innovation process result (Dervitsiotis, 2010). The results comprise of customer impacts, employee impacts, organization impacts and overall performance impact (Dervitsiotis, 2010).

Innovation process drivers are important in creating an environment to promote innovation and technology breakthroughs. The relationship of knowledge creation and knowledge exchange as drivers of innovation and the ways such knowledge transformation is influenced by technological clusters. A study conducted on telecommunications industry showed the influence of the various sources of knowledge on the inventors' abilities to come up with their recent inventions. Therefore, RandD organizations need to focus their knowledge management more on individual interactions and collective tacit knowledge in order to foster innovation (Ibrahim and Fallah, 2005).

Networking and boundary-spanning activities are also increasingly recognized as

important contributors of the source of innovation process (Love and Roper, 2001). A study in UK and German manufacturing plants discovered that organizational and strategic factors play a much greater and more consistent role than locational influences in shaping the level of outsourcing in the innovation process (Love and Roper, 2001). Strategic approaches to outsourcing may also benefit plants in obtaining economies of scope in the management or governance of outsourcing within the innovation process.

An important interpretation of these results is that firms are managing their portfolios of external relationships alongside the development of in-house innovation competencies and this has contributed to understanding of the more strategic elements of the make-or-buy decision in the product innovation process (Love and Roper, 2001).

Empirically, Marques and Monteiro-Barata (2006) has proposed innovation process model to identify determinants of the main phases of the overall innovation process (innovation inputs and innovation outputs) and analyzed the relationship between the different phases in this process. There are four phases comprising of decision to innovate, innovation inputs, throughput process, innovation outputs and firm performance (Marques and Monteiro-Barata, 2006).

Every innovation process has its strengths and weaknesses. Companies with a structured innovation process focuses more on creating and predicting the future needs of customers as compared to companies without centralized and defined innovation process (Harper and Becker, 2004). Robust organizations are those that have well defined innovation process and clear procedure in evaluating and screening ideas. Through this established process, these organizations would have common framework for management of ideas from their inception to commercialization (Desouza, et al., 2009).

However, brittle organizations, the ones without vigorous innovation process are laden with confusion and indecision (Desouza, et al., 2009). Even though structured innovation process pushes employees to innovate and enables more rapid decision making, investment may not yield short-term return to investors and employee's creativity is stifled (Harper and Becker, 2004).

## **2.8. Innovation Factors**

The following literature review will focus on factors or determinants contributing to innovation process. As proposed by Crossan and Apaydin (2010) the determinants are based on three meta constructs: leadership, managerial levers and business processes. According to Ar and Baki (2011), most research on innovation discussed one construct or factor. In addition, it would be deficient because innovation has a lot of types, dimensions and various applications (Ar and Baki, 2011). In fact, all antecedents of innovation interacting with each other could be ignored when only one research is considered (Ar and Baki, 2011). It is also agreeable by earlier studies such as Smith et al., (2008) and Johannessen (2009). It is important to study contributing factors as factors reported favorable to the implementation of innovation differ between firms and also between industry sectors (Mohamed, 1995). Factors which are observed to be favorable in one firm might not necessarily be implemented in another firm (Mohamed, 1995).

## **2.9. Leadership**

Leadership is seen as an internal competitive force to foster innovation due to its role in affecting core value of organization. This is achieved through the social psychology of its members, the processes of decision flows and the formal and informal role sets of individual and groups (McMillan, 2010). In the nature of innovation, five competitive forces of leadership have been highlighted: skills and competencies, capacity to listen, capacity to

motivate, capacity to learn and the capacity for organizational innovation impacted by the other four drivers (McMillan, 2010).

Style of leadership is also crucial to the success of innovative process. In instrumental leadership style, a leader starts to control the innovation process and then structure the process. Strategic leadership implies that leaders start to commit project members to innovation and then enable project members to be innovative. Interactive leadership leaders start with cooperating with innovative project members and then develop additional leadership in the organization. Meanwhile, charismatic leadership exists when leaders energize project members, communicate with vision and then accelerate the innovation process (Bossink, 2004). However, with the injection of information, knowledge and competence of personnel into the project, it would assist in stimulating the project innovativeness as compared to project without those injection (Bossink, 2004).

The first stage of innovation process involves idea generation. At this initiation stage, employees' behavior towards innovation process depends on leader's influence to lead and stimulate idea generation and application in organization (Jong and Hartog, 2007). Among relevant leadership elements that are connected to innovative behavior are innovative role modeling, intellectual stimulating knowledge diffusion, providing vision, consulting, delegating, support for innovation, organizing feedback, reward and recognition, providing resources, monitoring and task assignment (Jong and Hartog, 2007).

Leadership would contribute to innovation success if we could examine the role and responsibilities in terms of level and phases of the innovation process. In this context, it would be more specific and diagnostic to reflect on innovation effort that fails because of leadership issues (Storti, 2006). According to Storti (2006), these leadership roles are considered strategic and applied to a single

leader or to a leadership team along the five phases of innovation process: preparation, invention, validation, development and refinement and implementation .

In support of this argument, Stamm (2009) pointed the need to create a culture that is conducive to innovation. A leader needs to search for innovation opportunities, be clear about selecting different level of innovation such as incremental and radical and implement it (Stamm, 2009). Strategic leadership contributes to increased innovative efforts and innovation positive result. According to Carneiro (2008) development needs, improvement of performance and quality are always demanding for change. Hence, a strategic leader has to understand how to link leadership approaches to needs of higher performance levels. Carneiro (2008) highlighted three aspects which serve as main pillars of strategic leadership model: knowledge, innovation challenge and needs to change. Besides, he also noted that several considerations are needed to stimulate the innovative effort such as quantifiable goals, innovation culture and program, knowledge and training education and value of teamwork (Carneiro, 2008).

Similarly, strategic leadership is found to have influence and moderating effect of top management team tenure heterogeneity and social culture. Strategic leadership behaviors are found to have a strong positive relationship with executive influence on both product-market and administrative innovations (Elenkov, Judge, and Wright, 2005).

Notably, innovation in an organization would also depend on innovative behavior of employees. Transformational leadership relates to followers' innovation implementation behavior (Michaelis, Stegmaier, and Sonntag, 2010). According to Michaelis, et al. (2010) companies should invest in transformational leadership training and in the selection of supervisors with this leadership style before initiating the implementation of innovations.



Both transformational and transactional leadership behaviors contribute to management innovation (Vaccaro, Jansen, Bosch, and Volberda, 2010). Smaller and less complex organizations benefit more from transactional leadership in realizing management innovation. On the other hand, larger organizations need to draw on transformational leaders to compensate for their complexity and allow management innovation to flourish (Vaccaro, et al., 2010).

## **2.10. Managerial Levers**

According to Crossan and Apaydin (2010) managerial levers are meta-construct consolidating firm level variables that support innovation. Five types of managerial levers used in this study are mission/goals/strategies, structure and systems, resource allocation, organizational learning and knowledge management tool and culture (Crossan and Apaydin, 2010). Innovative organizations have faced dilemmas which are common to dynamic social activities.

According to Chanal (2004), the dilemmas innovative organization might faced are dilemma of structure and action, dilemma with opposition of persistence and change or repetition and novelty which appears as tension between different time horizons. Thus, the proposition of managerial levers is used to overcome this innovation dilemmas (Chanal, 2004).

Strategy has been perceived as a continuous management activities (Drejer, 2006). This is because strategy concerns the survival of entire organization and involves large portion of resources and also strategic thinking of tactical level (Drejer, 2006). When discussing the importance of strategy with innovation, Drejer (2006) has come out to define strategic innovation as the ability to create and revitalize business idea and concept of the company by changing both the market and the competencies and business system of the company. Empirically Blumentritt and

Danis (2006) indicated that approaches to innovation vary across firms with different strategic orientation and firm's strategies plays significant role in deciding which to pursue and which to disregard. As mention by Y. Chen and Yuan (2007), a firm needs to seek optimal balance between internal RandD and technology outsourcing when formulating innovation strategy.

Structure and system factors comprise of the administrative intensity of the organization (Damanpour, 1991). Among them are specialization and centralization, formalization and type of innovation (Damanpour, 1991)f . In a study of the role of organizational structure towards product innovation capabilities, Menguc and Auh ( 2010) found that the effect of radical product innovation capability on new product performance is insignificant under a formal structure, while the effect is positive under the informal structure. However, incremental product innovation has a positive effect on the formal structure and negative effect on informal structures (Menguc and Auh, 2010).

Knowledge management is identified as an important antecedent of innovation (Darroch and McNaughton, 2002). Knowledge management is closely related to organizational learning initiatives (Mundra, Gulati, and Vashisth, 2011). This is because an organizational learning process involves high degree of parallelism and depends on the knowledge base of organization (Weerd-Nederhof, Pacitti, Gomes, and Pearson, 2002). Four processes integrally link organizational learning : information acquisition, information distribution, information interpretation and organizational memory used as tool for improvement (Weerd-Nederhof, et al., 2002).

Plessis (2007), defined the value proposition of knowledge management in innovation process as assisting in creating tools, platform and processes for tacit knowledge creation and sharing, converting tacit knowledge to explicit knowledge,

facilitating collaboration in the innovation process, ensuring the accessibility of both tacit and explicit knowledge in innovation process, flow of knowledge, integration of organization's knowledge base, identifying gaps in knowledge, building competencies, providing organizational context, gathering explicit and tacit knowledge and providing knowledge-driven culture.

A study by Chen, Huang and Hsiao (2010) showed an empirical evidence that knowledge management is positively related to firm innovativeness. However, it is moderated by organizational structure. Employees are inclined toward managing knowledge and translating new knowledge when the structure is less formalized, less centralized and more integrated (C.-J. Chen, et al., 2010). Knowledge management orientation comprises of knowledge acquisition, knowledge dissemination and responsive to knowledge (Darroch and McNaughton, 2002).

In a study to examine the relationship between knowledge management practices and types of innovation, Darroch and McNaughton (2002), postulated that incremental innovation came from firms that sensitive to information about marketplace and responded to knowledge about technology. Meanwhile, radical innovation comes from firms developed innovation that changes consumer behavior (Darroch and McNaughton, 2002).

Organizational culture includes shared vision where clearer vision would act as effective facilitator to innovation (Adams, Bessant, and Phelps, 2006). According to Ahmed (1998), culture has multiple elements which could enhance or exhibit tendency to innovate. He pointed that culture should not be isolated but needs to match with organizational context. Thus, balance and understanding of context is important because culture with strong drive towards innovation could lead to problems when market circumstances and customer requirements demand predictability and conforming to specifications (Ahmed,

1998). In a study of product innovation, it is found that companies should foster cultures with external and flexibility orientation (Julia C. Naranjo Valencia, Valle, and Jimenez, 2010). Thus, hocratic cultures could enhance the development of new products or service while hierarchical cultures inhibit product innovation (Julia C. Naranjo Valencia, et al., 2010).

Innovation culture promoted in organization would depend on the right types of norms which are widely shared and activate creativity (Ahmed, 1998). These norms include challenge and belief in action, freedom and risk taking, dynamism and future orientation, external orientation, trust and openness, debates, cross functional interaction, myths and stories, leadership commitment, rewards, innovation time and training, corporate identification and unity and organizational structure (Ahmed, 1998).

## **2.11. Business Processes**

Business Processes is a meta-construct consolidating process level variables (Crossan and Apaydin, 2010). These core processes include initiation, portfolio management, development and implementation, project management and implementation (Crossan and Apaydin, 2010). Business processes is seen as strategic, operational and tactical where tactical enable adaptability, improvement and chance in the organization (Henriksen and Andersen, 2010). Tactical process is also related to knowledge creation and knowledge transfer in innovation and RandD projects (Henriksen and Andersen, 2010).

Lewis, et al. (2007) described business process based on stakeholder's perceptions. The approach of business process is segmented according to four stages engaging process stakeholders, collect process data, explicate process knowledge and design process innovation (Lewis, et al., 2007). The benefit of this model is the stakeholder becomes more aware that structures influence their behavior

when they engage in describing their processes in the organization. The business process will be understood based on leveraging differences in stakeholder's perceptions (Lewis, et al., 2007).

## **2.12. Innovation Outcome**

As mentioned by Crossan and Apaydin (2010), the dimension for innovation as outcome should answer the questions of 'what' and 'what kind'. Their study has provided several dimensions which portray innovation as an outcome: referent, form, magnitude, type and nature. The referent dimension is defined the newness of innovation as an outcome which is new to the firm, new to the market it serves or new to industry. Magnitude portrays innovation as an incremental innovation and also radical innovation and this dimension is related to referent dimensions (Crossan and Apaydin, 2010).

The form dimension differentiates the innovation outcome into three categories: product or service innovation, process innovation and business model innovation. The type dimension distinguishes technical and administrative innovation which reflects a more general differentiation between social and technology structure (Crossan and Apaydin, 2010). The importance of newness to innovative processes could assist organizations to manage and predict factors that are antecedent to innovation and its outcome. According to Johannessen et al., (2001) innovation as newness represents a unidimensional construct, distinguished only by the degree of radicalness.

The study developed scale on six innovative activities (new product, new services, new methods of production, opening new markets, new sources of supply and new ways of organizing). In this context, the success of an innovation is determined more by the extent of its adoption rather than by who invents it or how technologically advanced it is (Johannessen, et al., 2001)

In obtaining organizational performance, firm needs to utilize the role of innovation outcome between product, process and organizational innovation. This is important so that firm should develop innovation capabilities for pursuing manufacturing flexibility. This argument is found in the study by (Camison and Lopez, 2010) to test the mediating role of three types of innovation (product, process, and organizational) in the relationship between manufacturing flexibility and performance.. Based on samples of 159 Spanish firms, findings showed that the effect on organizational performance of adopting a flexible productive system is mediated by incorporating product, process, and organizational innovation (Camison and Lopez, 2010).

Product innovation performance (PIP) can be viewed as one of firm's specific performance such as changes in new product introduction, technical and technological aspects, market response, product quality, product introduction or development time, profitability and market share (Bakar and Ahmad, 2010).

Empirically, Bakar and Ahmad (2010) has provided some evidence that can be used in the development and testing of hypotheses concerning the relationship between product innovation performance and firm's resources. This study has also supported the view that product innovation performance is the economic financial and non-financial outcomes of firm's product innovation effort. Other similar study with regards to product innovation performance were conducted by Joaquín Alegre et al., (2006). This study has emphasized the importance of product innovation performance efficacy and efficiency in the context of firm competition.

Incremental and radical innovation is identified as one of the dimensions in innovation outcome (Crossan and Apaydin, 2010). Notably a study found that the element of radicalness and speed affect the innovation

outcome (Kessler and Chakrabarti, 1996). According to E. H. Kessler and Chakrabarti (1996), the speed factor has influence on efficiency, quality and project success. In terms of practical managerial implications, the findings have encouraged organization to take specific actions that are likely to improve their innovation speed performance. As a result, there is a need to create an environment of little bureaucracy, rapid and effective communication, fast reaction time, risk-taking, rapid decision-making and motivated labor (Kessler and Chakrabarti, 1996).

Companies that focus on incremental innovation and that achieve high overall innovation performance indeed share a pattern in their internal organization (Pullen, Weerd-Nederhof, Groen, Song, and Fisscher, 2009). Similarly, a study conducted by Mathew J. Manimala, Jose and Thomas (2005) has indicated that incremental innovation has greater impact on the organization. The study has pointed that organizations should have a deliberate innovation strategy and corresponding organizational structures and processes.

Besides the above mentioned dimensions pertaining to innovation outcome, a broader perspective of innovation research is presented in the form of both positive and negative outcomes. Simpson et al., (2006) explored the likely consequences that may result from the deployment of an innovation orientation knowledge structure. The findings of study indentified innovation outcome as faster and higher quality innovation, employee-customer and competition-related advantage and operational excellence while the negative innovation outcome referred to too many unwarranted changes, market risks, employee dissatisfaction and increased cost. The study is important in the sense of providing future research to take a holistic view of consequences of the often cost intensive innovation orientation (Simpson, et al., 2006).

There is also a study conducted to discussed the positive and negative outcomes of innovation (Shaochen and Dier, 2010). As for the positive outcome, innovation oriented firm focuses on customer needs and perspectives competitors, employee advantages and operational excellence. According to the study, customer would benefit greater value from innovation in terms of satisfaction, loyalty and image while the competitors benefit from competitive advantage in terms of being market leaders, greater growth, future oriented, competition related, creation of barriers to entry and ability to adapt market changes (Shaochen and Dier, 2010).

Employee would benefit in terms of personal satisfaction, a proprietary interest in ideas, higher morale, enhanced productivity and lower turnover rates. As for the operational excellence, innovation outcome is seen as the capability of organization to be effective and productive (Shaochen and Dier, 2010). Innovation outcome would also produce negative consequences such as changes which could stray firm's competencies and increase in cost, market risk, employee stress and turnover (Shaochen and Dier, 2010).

### **2.13. Firm's Performance**

Studies have recognized the importance of innovation on firm's performance. These studies were discussed in various perspective of academic research in the form of conceptual and empirical researches (Damanpour and Evan, 1984), (J.K. Han, N. Kim, and R.K. Srivastava, 1998), (Danneels and Kleinschmidt, 2001), (Neely, et al., 2001), (Calantone, Cavusgil, and Zhao, 2002), (Baer and Frese, 2003), (Jin, Hewitt-Dundas, and Thompson, 2004), (Prajogo, 2006), (Salomo, et al., 2008), (Akgun, Keskin, and Byrne, 2009), (Rosenbusch, Brickmann, and Bausch, 2010) and (Gunday, et al., 2011).

Organizations introduce changes in their structure and processes with the objective to strive or improve performance level. An

empirical study of organizational innovation and performance indicates that high performance organizations have a stronger association between the rate of innovations in their social and technical systems (Damanpour and Evan, 1984).

This study has highlighted the contribution of both technical and administrative innovation to the organization's performance. It is found that administrative innovations could change an organization climate, communication, interdepartmental relations, and personnel policies. Administrative innovation might have greater impact in the long run on the overall performance as compared to technical innovations (Damanpour and Evan, 1984). Hence, the ability of organizations to maintain a balance between their social and technical systems would determine their innovativeness as well as their level of performance (Damanpour and Evan, 1984).

In another related study, it is found that the relationship of technical and administrative innovation with organization performance is important in providing synergies between the two types of innovation, enhancing overall corporate performance (Jin K Han, et al., 1998). According to Jin K Han et al., (1998), both types of innovation have played a meditational role between market orientation and performance and it has been found that market orientation provides a significant contribution towards superior performance.

Gunday et al., (2011) empirically studied the relationship between innovation types and firm's performance. In this study, firm performance is referred to innovative performance, production performance, market performance and financial performance, while innovation is classified into four types: product innovation, process innovation, marketing innovation and organizational innovation. Findings have revealed the positive effect of innovations on firm's performance in manufacturing industries. Besides, it also

showed innovative performance as a mediator role between innovation types and performance aspects. In this context, financial performance is the output of innovative production and market performance. An increase in financial performance occurred as the result of increased market and production performances.

The findings supported the innovation strategy as the main driver of firm's performance and should be executed as an integral part of business strategy in boosting operational performance (Gunday, et al., 2011). A significant firm's market performance could be achieved if firm prioritizes innovation and manages innovation from a strategic perspective. This is shown through a study by Salomo et al., (2008) which suggested that innovation field orientation has strong indirect performance effects mediated by the innovativeness of firm's new product portfolio.

Innovation field orientation is analyzed in the form of four elements: focus area specification, foot print of focus area, organizational formality and stimulation of strategies between related projects in focus area (Salomo, et al., 2008). From this four elements, organizational formality and footprint focus area has direct performance effect on firm's performance while other two elements; specification of focus areas and stimulation of synergies are not significant predictors of firm's performance (Salomo, et al., 2008).

Neely et al., (2001) proposed a conceptual framework for analyzing business performance, firm's innovation and related contextual factors. This framework could facilitate innovation within a company. Five constructs are used: business performance, outcomes of innovation, innovation, capacity to innovate and external contextual environment. According to the framework, business performance is mediated by the outcomes of innovation such as lower cost and better service. Company's innovation is influenced by firm's capacity to innovate. The

framework is later applied and has proven the main outcomes of innovation impacted business performance by enhancing competitive position (Neely, et al., 2001).

Similarly, the relationship between innovation and business performance has been empirically explored to compare between manufacturing and service firms (Prajogo, 2006). Business performance is analyzed via three constructs: sales growth, market share and profitability. Manufacturing firms showed a relatively stronger correlation between innovation and business performance as compared to service firms. Latest technology and early market entrances have the strongest effect on business performance. Process innovation showed a significant effect on the business performance parameters in the manufacturing firms (Prajogo, 2006).

Both exploratory and exploitative innovations have a positive effect on firm's performance (Li, et al., 2010). Firms need to introduce exploratory innovation in dynamic environment so that they will find premium market segment to develop and survive, while in less competitive environments, firms could keep their current business system with the low cost risk exploitative innovation which is more beneficial to improve firm's performance (Li, et al., 2010). Hence, the internal fit between exploratory and exploitative innovation either as moderating or matching role has no significant effect on firm's performance. Instead, the fit between innovation activity and

firm's strategy has significant effect on firm's performance (Li, et al., 2010).

### **3. Research Framework**

The literature reviews suggest that the relationship between innovation process and firm's performance is mediated by innovation outcomes. The framework as shown in Figure 1. As mentioned by Crossan and Apaydin (2010) innovation as a process would indicate the 'how' innovation occurs while innovation as an outcome would indicate 'what' form of innovation exists in organization. In this context, the framework proposed is based on several assumptions. The framework states that the capability of firm to innovate depends on the innovation process (independent variable) established in the organization.

Leadership, Managerial Levers and Business Processes are the factors or antecedents that affect innovation process. Subsequent to innovation process, accordingly the process of innovation will continue to present result that would be the innovation outcome (mediating variable).

Finally the innovation outcome will affect the firm's performance (dependent variable). As a result, the proposed framework uses six constructs: leadership, managerial levers, business processes, innovation process, innovation outcome and firm's performance.

Figure 1. Research Theoretical Framework

#### 4. Conclusion

In conclusion, this paper has provided a theoretical framework which could be the reference model to research the relationship between innovation process, innovation outcome and firm's performance. Based on the diverse literature reviews on innovation, understanding innovation in the organization should be differentiated between how innovation is being implemented and what kind of innovation outcome that will finally affect firm's performance. In determining firm's performance, the innovation process must precede innovation outcome. Therefore, to align with the proposed framework, the definition of innovation is 'an interactive process involving multidimensional of organizational factors which are implemented or undertaken through stages of innovation process in producing innovation outcomes such as product, services, processes and business model which are relatively new to organization'.

#### References

- Adams, R., Bessant, J., and Phelps, R. (2006). Innovation Management Measurement: A Review. [Article]. *International Journal of Management Reviews* 8 (1): 21-47.
- Ahmed, P. K. (1998). Culture and Climate for Innovation. *European Journal of Innovation Management* 1(1): 30-43.
- Akgun, A. E., Keskin, H., and Byrne, J. (2009). Organizational Emotional Capability and Process Innovation and Firm Performance: An Empirical Analysis. *Journal of Engineering and Technology Management* 26: 103-130.
- Ar, I. M., and Baki, B. (2011). Antecedents and Performance Impacts of Product Versus Process Innovation. *European Journal of Innovation Management* 14 (2): 172-206.
- Baer, M., and Frese, M. (2003). Innovation Is Not Enough: Climates for Initiative and Psychological Safety, Process Innovations, and Firm Performance. *Journal of Organizational Behavior* 24 (1): 45-68.
- Bakar, L. J. A., and Ahmad, H. (2010). Assessing the Relationship between Firm Resources and Product Innovation Performance. *Business Process Management Journal* 16 (3): 420-435.
- Baregheh, A., Rowley, J., and Sambrook, S. (2009). Towards a Multidisciplinary Definition of Innovation. *Management Decision* 47(8): 1323-1339.
- Blumentritt, T., and Danis, W. M. (2006). Business Strategy Types and Innovative Practices. *Journal of Managerial Issues* 18(2): 274-291.
- Bossink, B. A. G. (2004). Managing Drivers of Innovation in Construction Networks. [Article]. *Journal of Construction Engineering and Management* 130 (3): 337-345.
- Calantone, R. J., Cavusgil, S. T., and Zhao, Y. (2002). Learning Orientation, Firm Innovation Capability, and Firm Performance. [doi: 10.1016/S0019-8501(01)00203-6]. *Industrial Marketing Management* 31 (6): 515-524.
- Camison, C., and Lopez, A. V. (2010). An examination of the Relationship between Manufacturing Flexibility and Firm Performance. The Mediating Role of Innovation. *International Journal of Operations and Production Management* 30 (8): 853-878.
- Carneiro, A. (2008). When Leadership Means more Innovation and Development. *Business Strategies Series* 9 (4): 176-184.
- Chanal, V. (2004). Innovation Management and Organizational Learning: a Discursive

- Approach. *European Journal of Innovation Management* 7 (1): 56-54.
- Chen, C.-J., Huang, J.-W., and Hsiao, Y.-C. (2010). Knowledge Management and Innovativeness. *International Journal of Manpower* 31 (8): 848-870.
- Chen, Y., and Yuan, Y. (2007). The Innovation Strategy of Firms: Empirical Evidence from the Chinese High-Tech Industry. *Journal of Technology Management* 2 (2): 145-153.
- Cho, H.-J., and Pucik, V. (2005). Relationship between Innovativeness, Quality, Growth, Profitability, and Market Value. *Strategic Management Journal* 26 (6): 555-575.
- Crossan, M. M., and Apaydin, M. (2010). A Multi-Dimensional Framework of Organizational Innovation: A Systematic Review of the Literature. [Article]. *Journal of Management Studies* 47 (6): 1154-1191.
- Damanpour, F. (1991). Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators. *The Academy of Management Journal* 34 (3): 555-590.
- Damanpour, F., and Evan, W. M. (1984). Organizational Innovation and Performance: The Problem of "Organizational Lag". *Administrative Science Quarterly* 29 (3): 392-409.
- Danneels, E., and Kleinschmidt, E. J. (2001). Product Innovativeness from the Firm's Perspective: Its Dimensions and Their Relation with project Selection and performance. *The Journal of Product Innovation Management* 18: 357-373.
- Darroch, J., and McNaughton, R. (2002). Examining the Link between Knowledge Management Practices and Types of Innovation. *Journal of Intellectual Capital* 3 (3): 210-222.
- Dervitsiotis, K. N. (2010). A Framework for the Assessment of an Organisation's Innovation Excellence. *Total Quality Management* 21 (9): 903-918.
- Desouza, K. C., Caroline, Dombrowski, Awazu, Y., Baloh, P., Papagari, S., et al. (2009). Crafting Organizational Innovation Processes. *Innovation: management, policy and practice* 11: 6-33.
- Drejer, A. (2006). Strategic innovation: a New Perspective on Strategic Management. *Handbook Of Business Strategy*: 143-147.
- Elenkov, D. S., Judge, W., and Wright, P. (2005). Strategic Leadership and Executive Innovation Influence: An International Multi-Cluster Comparative Study. *Strategic Management Journal* 26 (7): 665-682.
- García-Morales, V. J., Llorens-Montes, F. J., and Verdú-Jover, A. J. (2006). Antecedents and Consequences of Organizational Innovation and Organizational Learning in Entrepreneurship. *Industrial Management and Data Systems* 106 (1): 21-42.
- Gerybadze, A., Hommel, U., Reiners, H. W., and Thomaschewski, D. (2010). *Innovation and International Corporate Growth*. Heidelberg: Springer.
- Gopalakrishnan, S., and Damanpour, F. (1997). A Review of Innovation Research in Economics, Sociology and Technology Management. [doi: 10.1016/S0305-0483(96)00043-6]. *Omega, International Journal Management Science* 25 (1): 15-28.
- Gunday, G., Ulusoy, G., Kilic, K., and Alpkın, L. (2011). Effects of Innovation Types on Firm Performance. *International Journal of Production Economics*.
- Gupta, A. K., Tesluk, P. E., and Taylor, M. S. (2007). Innovation At and Across Multiple Levels of Analysis. *Organization Science* 18 (6): 885-1023.



- Han, J. K., Kim, N., and Srivastava, R. K. (1998). Market Orientation and Organizational Performance: Is Innovation a Missing Link? *Journal of Marketing* 62 (4): 30-45.
- Harper, S. M., and Becker, S. W. (2004). On the Leading Edge of Innovation: A Comparative Study of Innovation Practices. *Southern Business Review* 29 (2): 1-15.
- Henriksen, B., and Andersen, B. (2010). Is There a Tactical Level of Business Processes? Emphasizing Processes that Enable Adaptability, Change, and Improvement. *The TQM Journal* 22 (5): 516-528.
- Hernández-Espallardo, M., and Delgado-Ballester, E. (2009). Product Innovation in Small Manufacturers, Market Orientation and the Industry's Five Competitive Forces: Empirical Evidence from Spain. *European Journal of Innovation Management* 12 (4): 470-491.
- Ibrahim, S., and Fallah, M. H. (2005). Drivers of Innovation and Influence of Technological Clusters. [Article]. *Engineering Management Journal*, 17 (3): 33-41.
- Jain, R. (2010). Innovation in Organizations: A Comprehensive Conceptual Framework for Future Research. *South Asian Journal of Management* 17 (2): 81-111.
- Jin, Z., Hewitt-Dundas, N., and Thompson, N. J. (2004). Innovativeness and Performance: Evidence from Manufacturing Sectors. [Article]. *Journal of Strategic Marketing* 12 (4): 255-266.
- Joaquín Alegre, Lapiedra, R., and Chiva, R. (2006). Measurement Scale for Product Innovation Performance. *European Journal of Innovation Management* 9 (4): 333-346.
- Johannessen, J.-A. (2009). A Systemic Approach to Innovation: the Interactive Innovation Model. *Kybernetes* 38 (1/2): 158-176.
- Johannessen, J.-A., Olsen, B., and Lumpkin, G. T. (2001). Innovation as Newness: What is New, How new, and New to Whom? *European Journal of Innovation Management* 4 (1): 20-31.
- Jong, J. P. J. d., and Hartog, D. N. D. (2007). How Leaders Influence Employees' Innovative behaviour. *European Journal of Innovation Management* 10 (1): 41-64.
- Judd, R., and McNeil, R. D. (2008). Large Firms and Small Firms: Job Quality, Innovation and Economic Development. *The Journal of American Academy of Business, Cambridge* 14 (1): 164-171.
- Julia C. Naranjo Valencia, Valle, R. S., and Jimenez, D. J. (2010). Organizational Culture as Determinant of Product Innovation. *European Journal of Innovation Management* 13 (4): 466-480.
- Kessler, E. H., and Chakrabarti, A. K. (1996). Innovation Speed: A Conceptual Model of Context, Antecedents, and Outcomes. *The Academy of Management Review* 21 (4): 1143-1191.
- Kim, W. C., and Mauborgne, R. (1997). Value Innovation: The Strategic Logic of High Growth. *Harvard Business Review*: 103-112.
- Knight, K. E. (1967). A Descriptive Model of the Intra-Firm Innovation Process. *The Journal of Business* 40 (4): 478-496.
- Lewis, M., Young, B., Mathiassen, L., Rai, A., and Welke, R. (2007). Business process Innovation Based on Stakeholder Perceptions. *Information Knowledge Systems Management* 6 (1/2): 7-27.
- Li, Y., Zhou, N., and Si, Y. (2010). Exploratory innovation, exploitative innovation, and performance. *Nankai Business Review International* 1 (3): 297-316.

- Love, J. H., and Roper, S. (2001). Outsourcing in the Innovation Process: Locational and Strategic Determinants. [Article]. *Papers in Regional Science* 80 (3): 317.
- Manimala, M. J., Jose, P. D., and Thomas, K. R. (2005). Organizational Design for Enhancing the Impact of Incremental Innovations: A Qualitative Analysis of Innovative Cases in the Context of a Developing Economy. *Creativity and Innovation Management* 14 (4).
- Marques, C. S., and Monteiro-Barata, J. (2006). Determinants of the Innovation Process: An Empirical Test for the Portuguese Manufacturing Industry. *Management Research News* 4 (2):114-125.
- McMillan, C. (2010). Five Competitive Forces of Effective Leadership and Innovation. *Journal of Business Strategy* 31 (1): 11-22.
- Menguc, B., and Auh, S. (2010). Development and Return on Execution of Product Innovation Capabilities: The Role of Organizational Structure.[doi: 10.1016/j.indmarman.2009.08.004]. *Industrial Marketing Management* 39 (5): 820-831.
- Michaelis, B. R., Stegmaier, R., and Sonntag, K. (2010). Shedding Light on Followers Innovation Implementation Behavior. The Role of Transformational Leadership, Commitment to Change and Climate for Initiative. *Journal of Managerial Psychology* 25 (4): 408-429.
- Mohamed, M. Z. (1995). Innovation implementations in Malaysian firms: Process, Problems, Critical Success Factors and Working Climate. [doi: DOI: 10.1016/0166-4972(95)96598-N]. *Technovation* 15 (6): 375-385.
- Mothe, C., and Thi, T. U. N. (2010). The Link between Non-Technological Innovations and Technological Innovation. *European Journal of Innovation Management* 13 (3): 313-332.
- Mundra, N., Gulati, K., and Vashisth, R. (2011). Achieving Competitive Advantage Through Knowledge Management and Innovation: Empirical Evidences from the Indian IT Sector. *IUP Journal of Knowledge Management* 9 (2): 7-19.
- Narvekar, R. S., and Jain, K. (2006). A New Framework to Understand the Technological Innovation Process. *Journal of Intellectual Capital* 7 (2): 174-186.
- Neely, A., Filippini, R., Forza, C., Vinelli, A., and Hii, J. (2001). A Framework for Analysing Business Performance, Firm Innovation and Related Contextual Factors: Perceptions of Managers and Policy Makers in Two European Regions. *Intergrated Manufacturing Systems* 12 (2): 114-124.
- Ortt, J. R., and Duin, P. A. v. d. (2008). The Evolution of Innovation Management Towards Contextual Innovation. *European Journal of Innovation Management* 11 (4): 522-538.
- Oxford Dictionaries. (Ed.) (2011) *Oxford Dictionaries: The World's Most Trusted Dictionaries*. Oxford University Press.
- Plessis, M. d. (2007). The Role of Knowledge Management in Innovation. *Journal of Knowledge Management* 11 (4): 20-29.
- Prajogo, D. I. (2006). The Relationship between Innovation and Business Performance - A Comparative Study between Manufacturing and Service Firms. *Knowledge and Process Management* 13 (3): 218-225.
- Pullen, A., Weerd-Nederhof, P. d., Groen, A., Song, M., and Fisscher, O. (2009). Successful Patterns of Internal SME Characteristics Leading to High Overall Innovation Performance. *Creativity and Innovation Management* 18 (3): 209-222.
- Rosenbusch, N., Brickmann, J., and Bausch, A. (2010). Is Innovation Always Beneficial? A Meta-Analysis of the Relationship between

Innovation and Performance in SMEs. *Journal of Business Venturing*: 1-17.

Rowley, J., Baregheh, A., and Sambrook, S. (2011). Towards an Innovation-Type Mapping Tool. *Management Decision* 49 (1): 73-86.

Salomo, S., Talke, K., and Strecker, N. (2008). Innovation Field Orientation and Its Effect on Innovativeness and Firm Performance. *Journal of Product Innovation Management* 25: 560-576.

Scozzi, B., and Garavelli, C. (2005). Methods for Modelling and Supporting Innovation Process in SMEs. *European Journal of Innovation Management* 8 (1): 120-137.

Shaochen, P., and Dier, D. (2010, 26-28 Nov. 2010). *Research on Innovation Orientation Outcomes*. Paper Presented at the Information Management, Innovation Management and Industrial Engineering (ICIII), 2010 International Conference on.

Simpson, P. M., Siguaw, J. A., and Enz, C. A. (2006). Innovation Orientation Outcomes: The Good and the Bad. [doi: DOI: 10.1016/j.jbusres.2006.08.001]. *Journal of Business Research* 59 (10-11): 1133-1141.

Stamm, B. v. (2009). Leadership for Innovation: What You Can Do to Create a Culture Conducive to Innovation. *Strategic Direction* 25 (6): 13-15.

Storti, A. J. L. (2006). Leadership for Innovation: What Leaders Must Do for Innovation to Happen. *Howe School Alliance For Technology Management* 10.

Vaccaro, I. G., Jansen, J. J. P., Bosch, F. A. J. V. D., and Volberda, H. W. (2010). Management Innovation and Leadership: The Moderating Role of Organizational Size. *Journal of Management Studies*.

Weerd-Nederhof, P. d., Pacitti, B. J., Gomes, J. F. d. S., and Pearson, A. W. (2002). Tools for

the Improvement of Organizational Learning Process in Innovation. *Journal of Workplace Learning* 14 (8).