

**THE INFLUENCE OF INTERNAL AND EXTERNAL FACTORS IN
MEASURING THE INNOVATIVENESS AMONG HOUSING
DEVELOPERS IN PENINSULAR MALAYSIA**

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DEVELOPERS IN PENINSULAR MALAYSIA**

by

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**PENGARUH FAKTOR-FAKTOR LUARAN DAN DALAMAN DALAM
MENYUKAT DAYA INOVATIF DI KALANGAN PEMAJU-PEMAJU
PERUMAHAN DI SEMENANJUNG MALAYSIA**

ABSTRAK

Status inovasi industri perumahan terus diperkatakan dan didokumentasikan dengan baik dalam literatur. Beberapa orang ahli akademik berpendapat bahawa industri perumahan tertinggal di belakang industri-industri lain dari sudut daya inovasi, sementara yang lain menghujahkan bahawa dakwaan ini tidak menggambarkan industri yang sebenarnya, di mana daya inovasi ini hanya kelihatan pada tahap tertentu sahaja. Walaupun begitu, kajian-kajian empirik dalam industri-industri lain telah menunjukkan bahawa terdapat beberapa faktor-faktor dalaman dan luaran tertentu yang mempengaruhi daya inovasi firma-firma ini. Seiring dengan perhatian yang sewajarnya diberikan terhadap daya inovasi di Malaysia dalam masa terdekat ini, dan perlunya industri perumahan di Malaysia untuk menyemai daya inovasi untuk menangani cabaran-cabaran yang dihadapi, kajian-kajian inovasi dalam industri perumahan di Malaysia didapati begitu terhad. Dalam menilai kadar inovasi, kajian ini bertujuan untuk mengesahkan dakwaan yang dibuat oleh sebilangan cendekiawan dalam literatur tentang inovasi dalam industri perumahan. Sebagai tambahan, melihat kepada faktor-faktor dalaman dan luaran yang mempengaruhi daya inovasi firma dalam kajian ini membolehkan mereka yang terlibat secara langsung dalam industri ini untuk menjurus kepada faktor-faktor yang didapati boleh mempengaruhi daya inovasi firma dengan ketara. Objektif-objektif kajian ini adalah untuk menilai kadar daya inovasi di kalangan para pemaaju perumahan di Malaysia, dan mengenalpasti faktor-faktor dalaman dan luaran yang boleh memberi

kesan kepada daya inovasi ini. Persampelan rawak mudah berstrata yang berkadar telah digunakan untuk memilih 504 pemaju perumahan yang berdaftar dengan Persatuan Pemaju Hartanah Dan Perumahan Malaysia (REHDA) di sebelas (11) negeri di Semenanjung Malaysia. Sejumlah 183 borang kajiselidik yang lengkap telah dikembalikan, seterusnya menghasilkan 36.3 peratus kadar maklumbalas. Statistik penghuraian, interpretasi skala Likert dan kategori inovatif Roger digunakan untuk mencapai objektif kajian yang pertama. Tambahan pula, objektif kajian kedua dan ketiga dilaksanakan melalui korelasi Pearson dan analisa pelbagai regresi berpiawai. Berkaitan dengan objektif yang pertama, kajian ini mendapati para pemaju perumahan beraya inovatif dan berada pada kategori inovatif “pengamal”. Berkaitan dengan objektif kedua, kajian ini mendapati struktur firma mempunyai perhubungan positif yang sederhana, budaya dan sumber-sumber firma mempunyai perhubungan yang kuat dan positif dengan daya inovasi. Tambahan pula, hanya budaya dan sumber-sumber firma mempunyai sumbangan yang ketara dalam memperjelaskan daya inovasi di kalangan para pemaju perumahan di Malaysia. Berhubung dengan objektif ketiga, sokongan kerajaan, ketidakpastian persekitaran dan persaingan dalam pasaran mempunyai perhubungan kukuh yang positif dan menyumbang secara ketara dalam menjelaskan daya inovasi di kalangan pemaju-pemaju perumahan di negara ini.

THE INFLUENCE OF INTERNAL AND EXTERNAL FACTORS IN MEASURING THE INNOVATIVENESS AMONG HOUSING DEVELOPERS IN PENINSULAR MALAYSIA

ABSTRACT

The debate on the innovativeness status of the housing industry is ongoing and well documented in the literature. While some scholars opine that the housing industry is generally lagging behind other industries in terms of innovativeness, others contend that this claim does not reflect the actual condition of the industry which is innovative to a certain extent. Despite this, empirical studies in other industries have shown that certain firms' internal and external factors do influence innovativeness of the firms. Coupled with the considerable attention on innovativeness in Malaysia in recent times, and the need for the Malaysian housing industry to be innovative in order to address the challenges it is facing, studies of innovativeness in the Malaysian housing industry are scarce. With regards to assessing the extent of innovativeness, this study aims at verifying the claim by some scholars in the literature about the innovativeness of housing industry. In addition, examining the internal and external factors influencing firms' innovativeness in this study will enable stake holders in the industry to pay much attention to the factors that have been found to significantly influence firms' innovativeness. The objectives of this study are to assess the extent of innovativeness among housing developers in Malaysia, and to examine the internal and external factors that influence their innovativeness. A Proportionate stratified simple random sampling was used to select 504 housing developers registered with the Real Estate and Housing Developers Association (REHDA) in eleven (11) states of the Malaysian Peninsula. A

total 183 duly completed and valid questionnaires were returned, yielding 36.3 percent response rate. Descriptive statistics, the Likert scale interpretation and Rogers' innovativeness category were used to achieve the first research objective. In addition, the second and third objectives were achieved by performing Pearson correlation and standard multiple regression analyses. Relating to the first objective, this study has found that housing developers are innovative and have taken up the "adopter" category of innovativeness. Relating to the second objective, this study has found that while the firms' structure has a moderate positive relationship, their culture and resources also have a strong and positive relationship with innovativeness. In addition, only firm culture and resources have shown significant contribution in explaining the sense of innovativeness among housing developers in Malaysia. Relating to the third objective, the government support, environmental uncertainty and market competition have demonstrated a strong, positive relationship and contributed significantly to the innovativeness prevalent among housing developers in Malaysia.

CHAPTER ONE

INTRODUCTION

This chapter begins by providing a background of the study at the international level followed by the Malaysian scenario. Then, in the second section the issues in the Malaysian housing industry will be presented followed by a discussion of the research gap to be filled by this study and a presentation of the research questions to be answered in this study. The third section presents the objectives which this study seeks to achieve. The fourth section presents the scope of the research followed by the significance of the study. Finally, organization of the research is presented in the last part of the chapter.

1.1 Background

This study seeks to answer the following research questions: What is the extent of innovativeness of housing developers in Malaysia and what are internal and external factors that influence their innovativeness?

Various definitions of the term *firm innovativeness* have been provided by scholars (Jain, Siddiquee, & Singal, 2010). In this study, firm innovativeness is defined as the propensity or capacity of a firm to adopt innovative building products, construction methods, or processes, or concepts, and business systems that are new to the firm and/or the housing industry. The purpose is not just for maximizing profits, but also to meet the needs of the customers or end users, taking into consideration sustainability and the environment.

Innovativeness has been recognized as a key success factor, not only for the overall performance and growth of firms, but also for their survival in a competitive market (Jain *et al.*, 2010). In the global arena, innovativeness has been described as the solution to the challenges facing the real estate market globally. There is an urgent need to address these challenges that result from the market dynamics triggered by the current global economic crisis, if environmental and economic sustainability is to be achieved (Morad, 2010). Perhaps the housing industry in many developed as well as developing countries are facing greater challenges such as the poor quality of their housing products, abandoned projects, lack of focus on the customer, and ineffective and inefficient housing delivery systems. Consequently, some countries have initiated innovative products and processes in the provision of housing.

The Japanese housing industry, for example, is able to deliver customized houses through an innovative production system. First, they practice good market orientation by offering their customers as much as 300 standard designs to choose and adapt from. Second, firms in the housing industry have good business relationships with building manufacturers for such things as bathroom and lighting accessories to enable customers to have varieties of choice. The third is in terms of production system in which houses are delivered on time with the required quality standard and consistent use of parts that are interchangeable, preassembled components such as in timber, steel, and external cladding. This is a concept underpinned by economies of scope involving the process that enables the production of different models by the same machinery and materials (Barlow & Ozaki, 2004).

Similarly, the Korean housing industry has introduced the concept of mass customization as a strategy aimed at promoting the housing market (Ozaki, 2003). Additionally, it is intended to provide products or services customized to customers in high volumes and at lower costs (Shin, Cho, Kim, & Kang, 2008). By mass customization, the housing developer provides a variety of designs from which house buyers can make choice and customize the home they intend to buy (Barlow, 2003; Gann, 2003; Naim & Barlow, 2003). In essence, customers are given the privilege to participate in the design of their proposed home to suit their needs (Oh & Cho, 2003).

Likewise, the United State Department of Housing and Urban Development promotes innovativeness in the provision of homes and discourages manufacturers of building products and home builders from using the traditional materials and practices (Koebel, Papadakis, Hudson, & Cavell, 2004).

There have been significant research interests among scholars in the firm innovativeness across various fields such as sociology, economics, marketing, and management, as well as in industries such as manufacturing and housing (Knowless, Hansen, & Dibrell, 2008; Jain, *et al.*, 2010). Advancement in this field of research has culminated into substantial number of research interests that focus on measuring innovativeness (e.g., Vazquez-Casielles, Santos-Vijande, & Ivarez-Gonza Lez, 2001; Artz, Norman, Hatfield, & Cardinal, 2010; Shook & Ganus, 2004), dimension of innovativeness (e.g., Hovgaard & Hansen, 2004; Wang & Ahmed 2004), and assessing factors that stimulate firm innovativeness (e.g., Nystrom, Ramamurthy & Wilson, 2002;

Sandvik & Sandvik, 2003; Theoharakis & Hooley, 2008; Tuominen, Rajalab, Moller & Anttila, 2004).

However, the debate surrounding the best methodology or scale to use in measuring firm innovativeness has often been the source of considerable controversy. For this reason, Crespell, Knowles, and Hansen (2006); Desphande, and Farley (2004) called for a universally reliable and valid measuring scale for innovativeness which is robust enough, void of the weaknesses associated with existing scales.

Following Fell, Hansen and Panches (2002) who segmented single-family home builder in Washington, and California, and identified their demographic characteristics of *early adopters*, *majority adopters* and *late adopters* base on Rogers (1995). This study, adapts the Rogers (2003) five innovativeness categories to determine the extent of innovativeness of Malaysian housing developers. The categories are laggard, late majority, early majority, adopters and innovators; laggard being the least, and innovator being the highest in ranking. Rogers's adopters categories was preferred because of its relevance in determining which adopters category housing developers in Malaysia belong base on their propensity to adopt (as a parameter), using mean score as indicator. Additionally, Rogers's adopters' category has been identified as being simple to apply because it relies on mean score and standard deviation. Further more; it has been used in previous innovativeness studies (Fell, *et al.*, 2003).

According to Hult, Hurley and Knight (2004), very little is known about how the antecedents of innovativeness operate under different conditions the firms are in. More so that innovativeness has idiosyncratic properties that make it untransplantable from one firm to another or from one trade to another (Menguc & Auh, 2006). Additionally, despite the enormous breath of literature on innovativeness (Subramanian & Nilakanta, 1996; Fell, *et al.* 2002; Blake, Neuendorf, & Valdiserri, 2003; Hult *et al.*, 2004; Salavou, 2004; Shook & Ganus, 2004; Wang & Ahmed 2004; Das & Joshi 2007; Knowles, Hansen, & Dibrell, 2008; Tajeddini, 2010), assessing the extent of firm innovativeness, yet it has not been given considerable attention. While a firm or industry might be found to be relatively innovative, the pertinent question that should be answered is, to what level is that firm or industry innovative.

Given the aforementioned, the present study is undertaken to assess the extent of innovativeness and examine the influencing factors of housing developers in Malaysia. Accordingly, factors influencing firm innovativeness were conceptualized as either internal or external. The internal factors are firm structure conceptualized as formalization and centralization, while firm culture is conceptualized as adhocracy culture and market orientation. Firm resource is conceptualized as transformational leadership style and organizational learning. Likewise, external factors are conceptualized as government support for innovation, environmental uncertainty, and market competition.

The intended principal contribution of the current study on the innovativeness literature was to ascertain the extent of innovativeness as well as the impact of internal and external factors on independent-dependent relationship. This endeavour could help to confirm whether the Malaysian housing industry is lagging in terms of innovation. Hanssell, Wong, Houser, Knopman, & Bernstein (2003), state that

... the assertion that the rate of innovation in housing has slowed or is slow compared to that in other industries is not uncommon among industry and other entities. However, there is no consensus on this claim and a lack of data makes it difficult and perhaps impossible to verify (p. xiv).

1.2 The Malaysian Scenario

Recently, innovativeness of small and medium enterprises (SMEs) has been given much attention in Malaysia (Hilmi, Ramaya, Mustapha, & Pawanchik, 2010). This can be attributed to the fact that SMEs (housing developers inclusive) have been acknowledged as a major representation of the strategic thrust in the economy of Malaysia (SME annual Report, 2005, 2006; Third Industrial Master Plan (IMP3), 2006-2020, 2006). Additionally, SMEs (housing developers inclusive) plays an important role in Malaysia's effort in achieving a developed nation status. SME serves as the technology provider and enabler to various industries. They constitute 96.1% of the Malaysia establishments (Hilmi *et al.*, 2010). Despite these contributions to the Malaysian economy, Shen-Li (2005) observes that SMEs need to urgently enhance their competitive advantage through innovativeness because of their being vulnerable to the dynamic nature of the world economy. In addition, innovativeness will enable SMEs to play a vital role in the quest to create home-grown multinational corporation (MNC).

Recently, innovation is one of 10 premises of the Tenth Malaysian Plan (2011-2015) presented by Prime Minister Dato Sri Mohd. Najib bin Tun Abdul Razak, on 10 June, 2010. This is a clear testimony that Malaysian government recognizes the importance of innovation in her quest to improving national productivity and performance.

Additionally, various seminars and workshops have been organized, and meetings held by both government agencies and nongovernmental organizations, such as the Economic Planning Unit (EPU), Construction Industry Board (CIDB), Real Estate and Housing Developers Association (REHDA), and House Buyers' Association (HBA). In those forums, the debate was on how to improve the quality of Malaysian housing industry, where subsequently, the question of how innovative are housing developers, has become a major issue of discussion.

The key issues being discussed in conferences, meetings, and workshops organized by Real Estate and Housing Developers Association (REHDA), House Buyers Association (HBA), Ministry of Housing and Local Government (MHLG) or Construction Industry Development Board (CIDB) relate to the following issues regarding the Malaysian housing industry. First, an innovative housing delivery system needs to be adopted to solve the problem of abandoned and late delivery of housing projects (Yusof, Mohd Shaiei & Sofri, 2008) and substandard quality housing projects (Sufian & Ab.Rahman, 2008). Second, an innovative housing construction concept and

practice such as sustainable housing, needs to be adopted (Economic Planning Unit bulletin 2004; Majdalani, Ajam & Mezher, 2006; Hussein, 2007). Third, there is a need for the adoption of innovative management practice (Hussein, 2007).

Also, there have been several calls on the housing developers to re-evaluate their approach to construction methods and practices, new techniques and technology towards Industrialized Building System and their management practices, improvement in design, selection of construction materials, and in reuse of discarded materials or recyclables that would result in cost-saving, and cooler-buildings. These have to be done without compromising the damage done to the ecosystem, yet they have design their projects towards sustainable development for the future generations (Hussein, 2007). The right of house buyers to purchase quality houses constructed with good materials and workmanship is clearly stated in the standard Sales and Purchase agreement (SPA) of the Housing Development (Controlling and Licensing) regulation, 1989. However, the complaints made by home buyers about substandard quality of houses have shown that not all house buyers have enjoyed this provision of the law.

While the objective of any housing delivery system is to avail all residents to acquire decent and affordable accommodation, the STB system of housing delivery force home buyers make instalment payments to developer for the unfinished houses at the same time pay the monthly rental fee for the house they live in (Yusof, Mohd Shaiei, Yahya & Marwani, 2009).

While the Malaysian government encourages the industry players to adopt innovative housing construction and technology (Economic Planning Unit bulletin, 2004), the housing developers are capable of defining opportunities to advance sustainable construction through innovative construction operation and technology (Majdalani *et al.*, 2006). This role to be played by the housing developers will include the adoption of innovative management and business practice, innovative design, focusing on efficient and sustainable construction, utilization of innovative and high performance materials and system throughout the residential development processes (Civil Engineering Research Foundation, 1999).

1.3 Problem Statement

The long-term survival of the housing industry partly depends on innovativeness of housing developers (Koebel, 2008). The need for innovativeness of all industries in Malaysia including the housing industry has become a national issue of concerns to all the major stakeholders in the housing industry (Hilmi & Ramayah, 2008). As a result, seminars, workshops, and meetings are being held to address the issue of innovativeness in the housing industry with particular focus on the housing developers (Loong, 2001; Economic Planning Unit Bulletin, 2004; Hussein, 2007; REHDA Bulletin, 2009). For example, REHDA Institute Malaysia has organized a workshop on 18 March, 2009, with a theme “Innovative and Successful Marketing Strategies.” The workshop was held at the Saujana Kuala Lumpur from 9.00 a.m. – 5.00 p.m. Seventy four REHDA registered

housing developers from Klang Valley and Johor Bahru attended the workshop (REHDA Institute, 2009).

Quite a number of scholars have suggested that certain internal feature of a firm, such as culture and structures (Kimberly & Evanisko, 1981; Kanter, 1988; Thong, 1999; Russell & Hoag, 2004); firm characteristics, such as firm size (Damanpour, 1991); firm structure and slack resources (Subramanian & Nilakanta 1996) will influence the firm to adopt innovation. While a firm is capable of managing its internal factors to enhance innovative capability, the external factors, such as role of stake holders, usually are beyond the control of the firm (Yusof, *et al.*, 2008). Competitive business environment also plays an influencing role on the innovative capability of a firm (King & Anderson, 1995). There seems to be no known research that examines innovativeness from a multidimensional perspective. The same goes with the influence of firm structure, culture, resources, and external factors on innovativeness of the Malaysian housing developers in a single study. Hagedoorn and Cloudt (2003)'s study highlights the advantage of using multiple or composite indicators in determining a firm's innovativeness. The reasons are that innovativeness has been examined by scholars as a construct with dimensions and found to be firms' key success factor for overall performance and success (Jansen, Van Den Bosch, & Volberda, 2006).

Multidimensional approach to innovativeness research will enable the researcher to identify the innovative firms by examining all aspects of the firm innovativeness such as the propensity to adopt innovative building products, new construction concept and

practice, as well as new marketing strategies. Among the empirical studies that focused on firm innovativeness in other countries are Subramanian and Nilakanta (1996) in banking industry, Carayannis and Provan (2008) in manufacturing and service industry, Knowles, *et al.*, (2008) in wood industry, Khaflan & McDermott (2006) in construction industry, Fell, *et al.*, (2002); Barlow (2000) in housing industry.

Fell, *et al.* (2003) measured the innovativeness of single-family home builders in California, Oregon, and Washington using a questionnaire for conducting interviews. The respondents were asked to provide information on the use of six new engineering wood products. The results showed that larger firms that build mainly single-family homes, located in populated areas, and affiliated to National house builder association, were the most innovative.

Naim and Barlow (2003) explored the possibility of adopting lean and agile production concept to United Kingdom housing industry. The concepts of lean and agile production were both originally adopted from the automobile industry. According to Naylor, Naim & Berry (1999), organizations that practice agile production concept will be using market knowledge and virtual corporation to exploit profitable opportunities in a volatile market place. Furthermore, practicing lean concept means developing a value stream that ensures the elimination of wastes, including time, and a level schedule.

While the concept focuses on technical efficiency, agile concept focuses on process responsiveness. The authors emphasize the need to adopt both concepts in the housing industry. Previous studies have shown that adopting agile and lean concept in the housing industry can result to the delivering of total value to customer at lesser costs (Naim & Barlow, 2003). However, both lean and agile concepts are applicable to the supply chain in housing industry. Mentzer, DeWitt, Keebler, Min, Smith, and Zachara (2001b, p.22) defined supply chain as “the systematic, strategic coordination of the traditional business functions within a particular company and across business within supply chain for the purpose of improving the long-term performance of the individual companies and the supply chain as a whole”

Koebel (2008) conducted a national survey aimed at identifying the characteristics of innovative housing developers in the United States. Adoption of innovative building materials, practices, and processes were examined in the survey. Respondents were drawn from National Association of Home Builders (NAHB) membership list, comprising small and big firms. The results show that there is a relationship between types of building product, location, and firm innovativeness. Larger firms were found to be more innovative but take longer time to make decisions on adopting innovation.

Innovation studies in the Malaysian housing industry are few. To mention the few, Yusof *et al.* (2008) examined innovativeness of Malaysian housing developers from a one-dimensional approach. In their study, the authors found that the developers were

partially ready to adopt the new housing delivery system. Their study also reveals that the housing developer's readiness to implement the new BTS system is significantly influenced by external factors (government and stakeholder supports) and the market factor. The authors also highlighted the need for measuring innovativeness of housing developers from a multidimensional perspective.

Hilmi and Ramayah (2008); Hilmi, *et al.* (2010) are other innovativeness studies in Malaysia. In the former, the authors examined the market innovativeness of Malaysian small and medium enterprises (SMEs). Their study did not consider big firms such as public listed firms, neither have they specifically focused on housing developers. The latter study examined the effect of product and process innovativeness on performance of Malaysian SMEs, which, of course, is totally different from the current study. Their study suggests that only process innovativeness affects the performance of Malaysian SMEs.

Although there has been tremendous growth of housing development (Agus, 1997); and the housing industry has made an immense contribution to the Malaysian economy (Abu Jarad, Yusof, & Mohd Shafiei, 2010), there is however room for improving the reputation of the industry. Some of the issues that need to be addressed in the housing industry range for quality of housing products to late delivery, and to lack of customer satisfaction. Innovativeness will therefore benefit not only the innovative housing developers, the home buyers will also benefit from the innovative housing

product and process of acquiring the housing units. One best and most effective way to enhance competitive advantage of firms is by leveraging their resources and enhancing their innovativeness (Hilmi & Ramayah, 2008). Additionally, many firms understand the need to be innovative. However, little is known about the factors that influence firm innovativeness (Hult, *et al.*, 2004). Hence the need for further research on factors influencing firm innovativeness.

Since the current study aims at assessing the extent of innovativeness among housing developers in Peninsular Malaysia, and previous studies have shown that certain internal and external factors of firms do influence firm innovativeness (example, Kimberly & Evanisko, 1981; Subramanian & Nilakanta, 1996; Thong, 1999; Jantan, Nasurdin & Fadzil, 2003; Hult, *et al.*, 2004). This study will not be exhaustive enough without examining certain firm internal and external factors that have been found to influence firm innovativeness in previous studies. There is there for the need to examine certain firm internal and external factors found to have influence on firm innovativeness.

Further to assessing the extent of innovativeness from a multidimensional approach, this study seeks to fill the research gap created by scarcity of literature on innovativeness factors in Malaysian housing industry. This study therefore aims at examining the influence of firm structure, culture, resources, government support, environmental uncertainty and market competition on innovativeness among housing developers in Malaysia.

This study covers both public listed and non-public listed housing developers. In addition, it would be an extension of Yusof *et al.* (2008) which examines the adoption of one type of innovation by Malaysian Housing developers from a one-dimensional approach. Hence, the study seeks to provide answers to the following research questions summarized below:

1. Are housing developers in Peninsular Malaysia not innovative as claimed by some scholars that housing industry is generally lagging behind in terms innovativeness?
2. Do firm internal factors also influence the innovativeness among housing developers in Peninsular Malaysia similar those empirically found in other industries?
3. Does influence of firm external factors on firm innovativeness also applies to housing developers in Peninsular Malaysia?

1.4 Research Objectives

Accordingly, the objectives of this research are formulated as follows:

1. To assess the extent of innovativeness among housing developers in Malaysia.
2. To examine the relationship between internal factors and innovativeness among housing developers in Malaysia.
3. To examine the relationship between external factors and innovativeness among housing developers in Malaysia.

1.5 Scope of Research

Organizational innovation is broadly classified into administrative and technical (Tan & Nasurdin, 2010). Administrative innovation of an organization relates to the components that affect the social system and members of the organization, such as rules, roles, procedures, and structures that relate to communication and exchange between the members. The technical aspect of organizational innovation relates to the operating component that affects the technical system, such as equipment, methods of operation used in their production process. This type of innovation can be realized through the adoption of new ideas relating to the products, or services, or the introduction of new elements in production process or services of an organization. This study focuses on both administrative and technical innovation. The administrative innovation relates to the firm's internal and external factors which this study seeks to examine, while the technical innovation relates to innovativeness which this study seeks to assess.

In relation to research in the field of innovation, Kimberly and Evannisko (1981) are of the view that organization innovation research could be studied from two perspectives: adoption and diffusion. Further, Wolfe (1994) suggests three broad research interests: diffusion of innovation, organizational innovativeness, and process theory. Subsequently, Subramanian and Nilakanta (1996) grouped innovation research stream into two: first stream is called process of adoption of an innovation, also known as "innovation process research," the second stream is called "innovation variance research." Innovation variance research studies the relationships between innovativeness of firms, their organizational characteristics, their external environment, and their

organizational performance. The extents of such relationships are established by the amount of variance of the dependent variable explained by the independent variables. Salavou (2004) opines that the innovation variance research seems to need much more attention. This is due to the call for the identification of innovativeness determinants in various disciplines such as in marketing (Gatignon & Robertson, 1986), and in organizational behaviour (Kimberly & Evanisko, 1981).

This study is an innovation variance research which focuses on the influences between firm characteristics, firm resources, and firm's external factor on firm innovativeness located in eleven states of peninsular Malaysia. Sabah and Sarawak were excluded in this study because the private housing development activity is less when compared with most of the states in Peninsular Malaysia (Yusof & Mohd Shafiei, 2011).

Literature has shown that prime location of housing developer has a significant influence on their innovativeness (Fell *et al.*, 2002; Naim & Barlow, 2003). Micro, small, medium, and large as well as public listed housing developers are all included in this research. Data were collected from one representative of the firm who has the knowledge of innovative activities of the firm concerned.

1.6 Significance of the Study

The significance of this study can be classified into three major parts: academics, industry practice, and policy. The academic contribution can further be classified into

three: innovativeness in study in the context of housing developers, research model proposed in the study, and extending the readiness to change theory to suit the housing industry. Most innovativeness researches do not focus on the housing developers, this study attempt to fill such research gap.

An assessment of existing innovativeness framework shows that none was specifically suitable for measuring housing developers' innovativeness. Developing a new framework for assessing firm innovativeness of Malaysian housing developers will constitute a stepping stone in providing a means of assessing the innovativeness of housing developers.

The model developed in this research strives to determine the significance of internal and external factors claimed to affect the innovativeness of firms. Specifically, nine factors are grouped to develop two hypotheses based on both theoretical and anecdotal arguments. Based on the result findings, a final theoretical model of housing developer's innovativeness will be developed. This model can provide other researchers with the framework they need to explore other areas of innovativeness in housing industry.

Theoretically, this research test a model developed for housing developers that utilizes dependent variable (innovativeness) measure that is unique and suitable for housing developers when compared with previous innovation studies. In particular, this

research uses propensity measure of innovativeness that captures all elements of innovation in housing development. As a result, this innovation study specifically reflects the essence of innovation adoption models developed within construction and business related literature. Additionally, the research study can provide managers; REHDA institute/members; and policy makers with an instrument to assess how firm's external factors such as environmental uncertainty, competition, and government support for innovation could affect innovation adoption. Underpinned by readiness change theory, this study provides empirical evidence to bridge the knowledge gap with regard to measuring innovativeness to identify the innovative firms in Malaysian housing industry. While other innovation researches are underpinned by innovation theory, this study extends readiness to change theory to suit the context of innovativeness in housing theory.

In practice, identifying the innovativeness level of Malaysian housing developers can be a basis for a key performance indicator and benchmarking. Additionally, the present framework could provide the right impetus for change to the current inertia towards innovativeness in Malaysian housing industry.

This research advocates innovative culture by investigating the effect of adhocracy culture influence on firm innovativeness. Market orientation is an innovative culture; the corporate culture of a firm to have temperament towards continuous delivery of superior value to its customers. The substandard quality, the housing delivery system (sell then

build) and late delivery facing the house buyers in Malaysia will be addressed when housing developers inculcate innovative culture in their business system.

1.7 Organization of the thesis

This thesis is organized into six chapters; Chapter 1 provides the background information, including the problem statement, research objectives, and the significance of the study.

Chapter 2 presents an overview of issues in the housing industry, the need for housing developers to be innovative, and the role and characteristics of housing developers. Developers and innovation, innovativeness concept, working definitions, measurement, and factors that influence innovativeness and readiness theory, the conceptual framework for the research are presented. Lastly, research hypotheses are developed and presented at the end of the chapter.

Chapter 3 presents the research methodology. The chapter explains the research design, the process of sampling, the method of data collection, and finally, a brief explanation of the types of analysis used is given.

Chapter 4 presents the data analyses, research findings, reliability, and validity of the constructs and the analysis of data. The chapter also discusses the main findings of the study. The summary of the research findings is presented at the end of the chapter.

Chapter 5 presents the conclusion drawn and the suggestions offered for implementation and future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The business environment in which the housing industry operates is characterized by continuous changes and intense competition. To survive this challenging business environment, the housing developers must leverage their resources and manage both internal and external factors that influence their innovativeness.

This chapter presents the review of relevant literature. First, an overview of housing industries at the global level is discussed, followed by a brief review of the Malaysian housing industry. Next, housing developers and their roles in Malaysia are presented. The chapter then discusses the concept of innovativeness, firm innovativeness in tandem with readiness change theory, presents a definition and dimensions of firm innovativeness in the context of housing industry, and the tools used to measure firm innovativeness. Next, this chapter presents the internal and external factors, and firm characteristics influencing firm innovativeness. The theoretical frame work is presented at the end of the chapter followed by hypotheses developed based on previous studies. Lastly, a summary is presented to conclude the chapter.

2.1.1 Concept of Organization and Firm

Since this research is central to organizational innovativeness, providing the definition of organization will be most relevant to the study. In defining organization, management scholars look at the institutional arrangement and activities (inside). On the

other hand, Kay (2000) notes that economics look at organization from market point of view (outside). Menard (1995) defines an organization as

An institutional arrangement designed to make possible the conscious and deliberate coordination of activities within identifiable boundaries, in which members association on a regular basis through a set of implicit and explicit agreement, commit themselves to collective actions for the purpose of creating and allocating resources and capabilities by a combination of command and operation (p. 172).

Although this definition is comprehensive, it failed to capture the market dimension of an organization (Wijnberg, 2004).

Moran and Ghoshal (1999) provide a definition which says that present organizations and firms as meaning the same thing. The author refers to firms as specific organizations. Since the present study specifically focuses on housing developers in Malaysia, the term “firm innovativeness” will be use in lieu of “organizational innovativeness.”

2.2 Global Perspective of Housing Industry

Looking from a global perspective, the housing industry plays a very important role in the economic development of many countries. For a long time, investments in housing have been understood to be an important tool for political stability, economic development, and socioeconomic uplift (Hollander, 1963). This is because a major part of the funds invested in housing are expended on land, labour, and locally produced materials. Housing industry contributes between 2-8% of most countries’ gross domestic product (GDP) and between 5-10% of the flow of the associated housing services

(World Bank, 1993). For example, the industry contributes 1% in the India economy, 6% in Brazil, and 3% in the Russian economy (Mckinsey, 1997).

The industry is linked to the various sectors of the economy. Such links include real, financial, and fiscal sectors of the economy. Real effects of the industry on the economy of a nation are associated with investment output, employment, and prices. Financial effects are associated with financing of housing and related residential infrastructure, while the fiscal effects are associated with taxation and subsidization of housing (World Bank, 1993).

One of the major contributions of the housing industry to a nation's economy is employment. Employment in the housing industry constitutes 1-3 % of the economically active population in developing countries: in India 1%, 3% in Korea, Russia, and Brazil (Mckinsey, 1997). Interestingly, employment in the housing industry generates further employment in other industries in the ratio of 1:2. This means one job in the industry gives rise to two additional jobs in other sectors (World Bank, 1993). For example, one housing project will not only provide jobs to those within the industry in practice, it will also involve other practitioners such as bankers in the banking industry and lawyers in the legal industry. Involvement of government and financial institutions in the housing and mortgage markets play an important role in overall economic efficiency, as well as in managing economic shock (Catte, Girouard, Price, & Andre, 2004).

The influence of housing market is such that as limited housing supply increases price, it affects the economic activity in locations that have high house price (ODPM, 2005). Subsequently, this reduces labour mobility, flexibility, and performance of the economy, and therefore, brings wider macroeconomic instability. Additionally, housing plays an important role in the transmission mechanism, the means by which a change in interest rate affects the macro economy through its effects on real expenditure (Barker, 2004).

Housing has three distinct characteristics: It is unique, durable, and fixed. Because of its importance to the nation's economy, governments do have strong concern for the performance of the housing sector. Good housing policies lead to better social stability (ODPM, 2005). Housing investments are also used at time to "pump prime" the economy in order to reduce the effects of recession. In a study of investment in residential housing 1959-1992, Green, (1997) found that residential investments are caused by high GDP rates. In a similar study by Davis and Heathcote (2005) in the United States real estate sector during the period of 1948-2001, their finding shows that residential development leads the economic cycle while the nonresidential development lags the economic cycle. Studies show that each dollar invested in the housing sector gives rise to two dollars of economic activities in other sectors (World bank, 1993). The important of housing investment on other sector is obvious from the linkage with related industries estimated to be about 600 industries (Bestani & Klein, 2004).