

**THE RELATIONSHIP BETWEEN  
ORGANIZATIONAL CHARACTERISTICS AND  
ENTREPRENEURIAL ORIENTATION AMONG  
EMPLOYEES OF CEMENT MANUFACTURERS  
IN JOHOR**

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**DOCTOR OF BUSINESS ADMINISTRATION  
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MANUFACTURERS IN JOHOR**

**DBA 2014**

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ENTREPRENEURIAL ORIENTATION AMONG EMPLOYEES OF CEMENT  
MANUFACTURERS IN JOHOR**

**By**

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Othman Yeop Abdullah Graduate School of Business,  
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**Kolej Perniagaan**  
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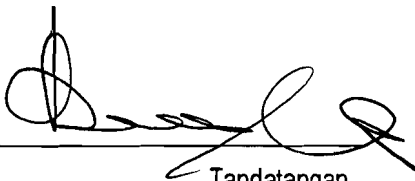
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## ABSTRACT

The purpose of the study is twofold. First, to examine the relationship between organizational characteristics and entrepreneurial orientation, and second to examine the mediating effect of knowledge management enabler between organizational characteristics and entrepreneurial orientation among employees of cement manufacturers in the state of Johor. Fifteen hypotheses were formulated; that there is significant relationships between organizational characteristics (work discretion, resource/time availability, management support and reward/reinforcement) and entrepreneurial orientation (innovativeness, risk-taking and pro-activeness) and knowledge management enabler mediates the relationship between organizational characteristics and entrepreneurial orientation. The data for the quantitative study were collected from an online internet-based web survey questionnaire through a simple random sampling method. The population consisted of all employees who were working in the three cement manufacturing companies under study. The total number of respondents was 257 out of 300 employees randomly selected. An overall response rate of 70.4 per cent was obtained. Multiple regression analysis was utilized to analyze the survey data while ensuring that all the necessary assumptions are met. The results indicated that nine out of fifteen hypotheses tested were supported. Generally, the study provides empirical evidence that there is significant relationship between organizational characteristics and entrepreneurial orientation. Knowledge management enabler was also found to partially mediate the relationship between organizational characteristics and entrepreneurial orientation. Theoretical and managerial contributions were discussed as well as study limitations and suggestions for future research.

Keywords: entrepreneurial orientation, organizational characteristics, knowledge management enabler, cement manufacturers

## ABSTRAK

Kajian ini dijalankan berasaskan dua tujuan utama. Pertama untuk mengenalpasti hubungan antara ciri-ciri organisasi dan orientasi keusahawanan, dan kedua meneliti kesan pengantara pengurusan pengetahuan antara ciri-ciri organisasi dan orientasi keusahawanan di kalangan pekerja syarikat pengeluaran simen di negeri Johor. Lima belas hipotesis telah dibentuk; iaitu terdapat hubungan yang signifikan antara ciri-ciri organisasi (budi bicara kerja, ketersediaan sumber/masa, sokongan pengurusan dan ganjaran/pengukuhan) dan orientasi keusahawanan (inovasi, pengambilan risiko dan proaktif) dan pembolehubah pengurusan pengetahuan menjadi pengantara antara ciri-ciri organisasi dan orientasi keusahawanan. Data untuk kajian kuantitatif dikumpulkan melalui borang soal selidik yang berasaskan laman web di internet dengan memilih kaedah persampelan rawak mudah. Populasi kajian terdiri daripada semua pekerja di tiga syarikat pengeluaran simen. Jumlah responden adalah 257 daripada 300 pekerja yang dipilih secara rawak. Kadar respons keseluruhan sebanyak 70.4 peratus telah diperolehi. Analisis regresi berganda telah digunakan untuk menganalisis data kajian dengan memastikan bahawa semua andaian yang perlu telah dipenuhi. Dapatan kajian mendapati sembilan daripada lima belas hipotesis yang diuji telah disokong. Secara umumnya, kajian ini memberikan bukti empirikal bahawa terdapat hubungan yang signifikan antara ciri-ciri organisasi dan orientasi keusahawanan. Pembolehubah pengurusan pengetahuan juga didapati menjadi pengantara antara ciri-ciri organisasi dan orientasi keusahawanan. Sumbangan kajian terhadap pengukuhan teori dan bidang pengurusan serta batasan kajian dan kajian masa depan telah dibincangkan.

Kata Kunci: orientasi keusahawanan, ciri-ciri organisasi, pembolehubah pengurusan pengetahuan, pengilang-pengilang simen

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## ABBREVIATION OF TERMS

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<b>Abbreviation</b>	<b>Description of Abbreviation</b>
CIMA	Cement Industries of Malaysia Berhad
CIS	Cement Industries Sabah
CMS	Cahaya Mata Sarawak
EO	Entrepreneurial Orientation
ISA	Industrial Supply Agreement
KME	Knowledge Management Enabler
OC	Organizational Characteristics
PCA	Principal Component Analysis
Q-Q	Quartile-Quartile
VIF	Variance Inflated Factor

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background

The economic development of a nation is largely dependent on the contribution of construction sector (Agapiou, 2002) and the sector has a powerful role to play in generating the economic growth (Dlamini, 2012). Various scholars (e.g. Bon, 1992; Tan, 2002; Myers, 2008; Jackman, 2010) emphasized that construction sector remain an important sector to grow economy. The construction growth rate in the developing economies generally outpaces the gross domestic product growth rate. In addition to this, the construction sector doesn't only make extensive contribution to economic development but also connected to other sectors of economy.

In the building materials industry and construction sector, cement remains a vital component (Rehda, 2012) to fast growing economies (The Economist, 2013) and is the single most important and profitable product (Shankar, Agarwal, Goel & Jha, 2011) that facilitates growth and development of a nation (Vinayagamoorthy, 2012). It is the most preferred building material that is used in housing, industrial and infrastructural construction (Times of Oman, 2013). For a substantial period of time, production and consumption of cement was also used as a measure of national development (Treloar, Owen, & Fay, 2001; Pipilikaki, Katsioti, & Gallias, 2009). Therefore, the growth of the cement industry has been considered as the barometer of economic activity in a country (Mirza Rohail, 2008). In addition, it is undisputable fact that cement industry plays a pivotal role through the residential, infrastructural and industrial developments that is crucial in speeding up socio-economic

development of a nation (Mirza Rohail, 2008; Onyango, 2009). There is high dependency of construction sector towards domestic cement industry (Master Builders Association Malaysia, 2007) and this is very apparent in the developing countries (John, 2003). Cement is a homogeneous, low value commodity product (Salvo, 2004) and as a result cement manufacturing companies compete chiefly on price basis (Shankar, et al., 2011) and the industry is often characterized as an oligopoly market that is driven by fierce competition (Mirza Rohail, 2008). Shankar et al. (2011) highlighted that the buoyancy in the cement industry usually fuelled by the increasing infrastructural development programs by the government. Therefore, cement can be said to be a significant driver of realizing government development efforts and overall economy (Vinayagamoorthy, 2012).

In Malaysia, cement industry remain as one of the strategic industry (Emerging Markets Direct, 2013). Broadly speaking, Malaysia's cement market can be divided into two distinct markets: Peninsular Malaysia and East Malaysia. Today, companies operating in the industry include a mix of global manufacturers as well as locally based producers (CW Group, 2012). The entire Malaysia cement industry is driven by eight main cement manufacturers. Six of them have their footprint in the Peninsular Malaysia whereas the remaining two manufacturers are operating in the East Malaysia (The Star Online, 2012).

Data provided by Cement and Concrete Association of Malaysia which represents the interest of cement industry indicated that Peninsular Malaysia cement industry is driven and controlled by Lafarge, YTL, CIMA, Tasek, Holcim and Hume in that order of strength of presence while, the East Malaysia cement industry is controlled by Cement Industries Sabah

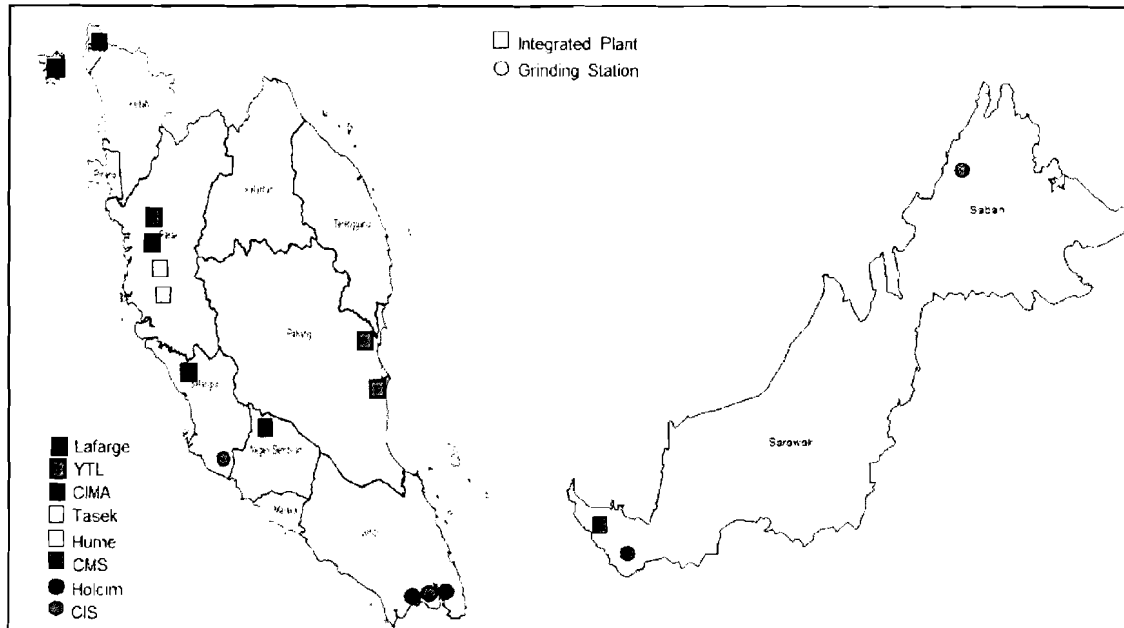
(CIS) and Cahaya Mata Sarawak (CMS). Generally, the cement manufacturers are categorized into two different operations namely integrated operation which controls the entire supply chain with a strong backward integration or grinding operation which does not possess backward integration, rather dependent on material from external suppliers only (Wikipedia).

According to cement manufacturers members directory by Cement and Concrete Association of Malaysia, only Holcim and CIS are non-integrated players in the cement industry in Malaysia since both organizations are fully involved in the cement grinding operation while depending on the other integrated manufacturers within domestic or international context to supply required raw materials in the production of cement. Both cement manufacturers possesses limited footprint of their business activities which is often limited to the state they are located (i.e. Johor and Sabah respectively).

Hence, the business setting of these two manufacturers are very unique as they do not possess cost advantages being enjoyed by the remaining cement manufacturers which better leverage them to compete in a market which is mainly driven by price factors. Nevertheless, although the remaining integrated manufacturers such as Lafarge, YTL, Tasek, Hume, CIMA and CMS are enjoying backward and/or forward integration within their business operations, Lafarge and YTL in comparison to the other integrated manufacturers possesses unique distinction as they have nationwide presence. However, both manufacturers are also experiencing similar limitation as Holcim and CIS whereby these two cement manufacturers

in the state of Johor are involved in cement grinding operation only without backward integration within the state (Cement and Concrete Association of Malaysia, 2010).

Figure 1.1 shows the footprint of cement manufacturers in Malaysia.



Source: Cement and Concrete Association, Malaysia

**Figure 1.1**

### Cement Manufacturers in Malaysia

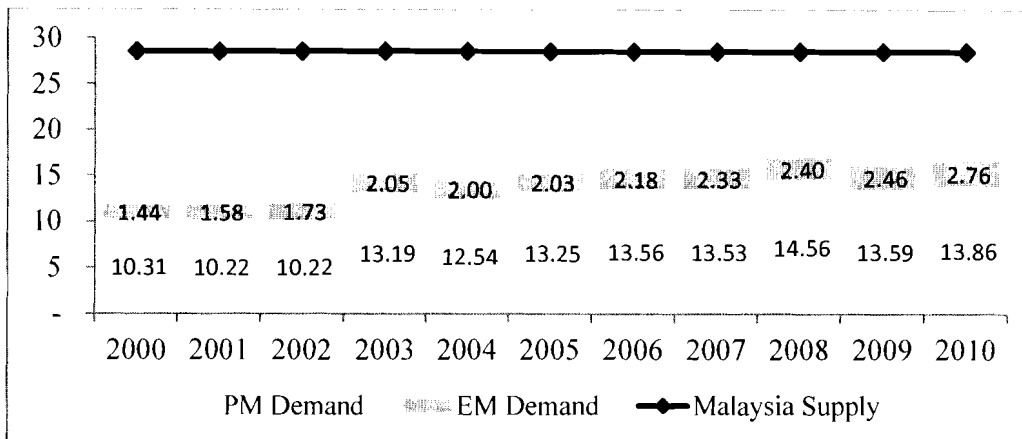
Several major events in the cement industry include abolishment of Industry Supply Agreement in mid-2006, removal of price control in 2010 as well as introduction of Competition Act in 2010. In Malaysia, the cement ceiling price was under government control since 1995 until 2006 and has remained unchanged at RM 198 per ton which was then raised by about 3 per cent to 10 per cent by end 2006 (Master Builders Association Malaysia, 2007). The price has gone up by about 43 per cent between 2008 and 2012 (Building Materials Distributors Association of Malaysia, 2012). Beginning from 2000 until mid-2008,

Peninsular Malaysia cement market particularly was also further regulated by Industry Supply Agreement which limits the market share for each cement manufacturer based on capacity nameplate (Cement and Concrete Association of Malaysia, 2008).

Both cement price control and market share limitation discouraged competition and product differentiation in the market. However, as soon as the Industry Supply Agreement was abolished by mid-2008, the cement manufacturers started to exercise their competitive behavior to secure as much as volume to increase their market share hence improves their financial performance and this was evident through monthly and annual sales statistics reported by Cement and Concrete Association of Malaysia and such competitive behavior was very prevalent among cement manufacturers who suffered excess capacity situation as a result of the market share and sales volume restriction during the period of Industry Supply Agreement. In addition, it has worsened the entire situation when government price control was lifted in 2010 whereby the cement manufacturers had a greater control over the prices and margin levels (The Star Online, 2012).

The growth of cement industry has been very phenomenal within the past decade. The rapid growth of the cement industry in the past eleven years is sufficient evidence of its general utility (CW Group, 2012). As of 2012, southern, central, east, northern regions of Peninsular Malaysia accounted for 8 per cent, 19 per cent, 4 per cent, and 59 per cent, while East Malaysia accounted for 9 per cent of total cement grinding capacity respectively (Ministry of Domestic Trade, Cooperatives and Consumerism, 2012).

Figure 1.2 shows the cement demand and supply balance in the past eleven years between 2000 and 2010 in Malaysia.



Source: Cement and Concrete Association, Malaysia

**Figure 1.2**

Cement Demand and Supply Balance in Malaysia

Cement industry registered a growth of 4 per cent to 5 per cent in the recent years driven by projects outlined under two major plans by the government of Malaysia, namely 10<sup>th</sup> Malaysia Plan and also Economic Transformation Programme (Malaysian Business, 2013). The country can continue to anticipate stronger cement in line with government projects in spite of constant rise in the price levels since the past few years (Rehda, 2013). Accordingly, Bernstein indicated that demand for cement in Malaysia will peak in the next five years (The Economist, 2013).

The Malaysia cement market has largely remained relatively stable in terms of the competitive set of cement companies in recent years, led by Lafarge and the domestic YTL group (Ministry of Domestic Trade, Cooperatives and Consumerism, 2012). Statistics provided by Cement and Concrete Association of Malaysia indicates that over the last eleven

years, Malaysian cement industry demand experienced a compounded annual growth rate of 3.2 per cent. Peninsular Malaysia cement market grew at a compounded annual growth rate of 2.7 per cent. After peaking in 2008 to about 17.0 million tons, domestic demand fell by 5 per cent the next year, hitting 16.1 million tons in 2009. Since then, demand has picked up again, rising by an estimated 4 per cent to 16.6 million tons in 2010 and 1.0 per cent to 16.8 million tons in 2011. As of 2013, the cement grinding capacity utilization of Malaysia stands at about 70% which means there is an excess capacity of 30% (Ministry of Domestic Trade, Cooperatives and Consumerism, 2012). Several planned upgrade and expansion projects have been undertaken in Malaysia in spite of current state of supply and demand imbalance which includes plants expansion by YTL, CIMA, and Lafarge apart from new plant set up by Hume (Cement and Concrete Association of Malaysia, 2013) which will increase the total capacity by at least 10 per cent by 2015 (CW Group, 2012).

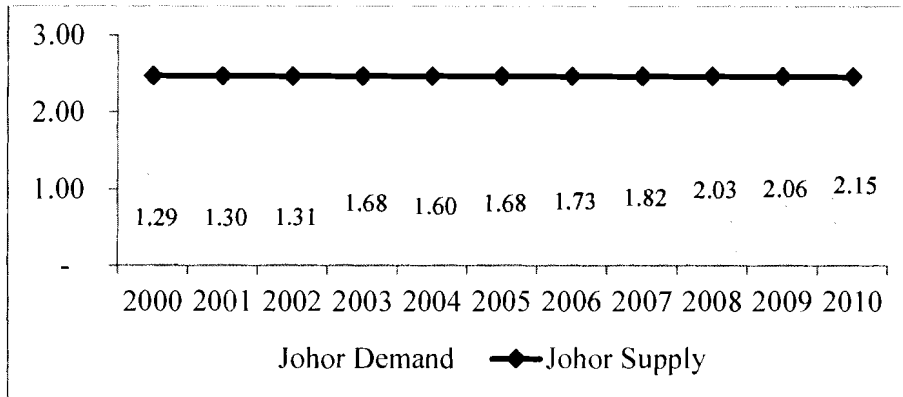
Peninsular Malaysia had a similar trend during the same period. The cement demand in Peninsular Malaysia was 14.56 million tons (2008), 13.59 million tons (2009), 13.86 million tons (2010) and 14.20 million tons (2011) witnessing a drop of 7 per cent in 2009 and a recovery of 2 per cent in 2010 and 2011 (Cement and Concrete Association of Malaysia and Ministry of Domestic Trade, Cooperatives and Consumerism, 2011). Given such cement demand developments, the cement grinding excess capacity of Peninsular Malaysia was about 40 per cent by 2013 (Ministry of Domestic Trade, Cooperatives and Consumerism, 2012). However, recent capacity additions by existing cement manufacturers and also new entrants as mentioned earlier expected to worsen the excess capacity situation if the cement demand in Peninsular Malaysia does not show any exceptional development in the coming years although government development plans expected to improve the situation (CW Group,



2012). Ultimately, this has call for market penetration geographically in order to keep their foot on the accelerator in spite of competitive behaviors which may hamper their growth objectives.

This is in contrary to the existing situation in the southern region, particularly in the state of Johor. Controlled by three main manufacturers, namely Holcim, Lafarge and YTL in the order of installed capacity, the state of Johor's existing total cement grinding capacity has reached its maximum capacity utilization by 2012 (Ministry of Domestic Trade, Cooperatives and Consumerism, 2012). The state of Johor which possesses a unique characteristic of fully cement grinding operation orientation has seen positive growth over the same period in contrast to the declining trend in entire Peninsular Malaysia and East Malaysia market. It has grown by about 1.0 per cent in 2009 while grew at a much higher rate in 2010 at about 5.0 per cent while the demand in 2011 was about the same as it was in 2010 (Cement and Concrete Association of Malaysia, 2010).

Figure 1.3 shows the cement demand development in Johor between 2000 and 2010.



Source: Cement and Concrete Association, Malaysia

**Figure 1.3**

Cement Demand and Supply Balance in Johor

As can be seen from the figure 1.3 above, contrary to the existing situation of Peninsular Malaysia, the excess cement grinding capacity in the state of Johor was narrowing and in 2012 have reached its maximum capacity utilization and has transformed itself as a lucrative market to cement manufacturers from other regions to find means of utilizing their excess capacities by channeling their products to Johor market. Cement sales statistics reported by Cement and Concrete Association of Malaysia indicate that as of 2010, Tasek and CIMA have successfully penetrated in the market of Johor, affecting the home base cement manufacturers.

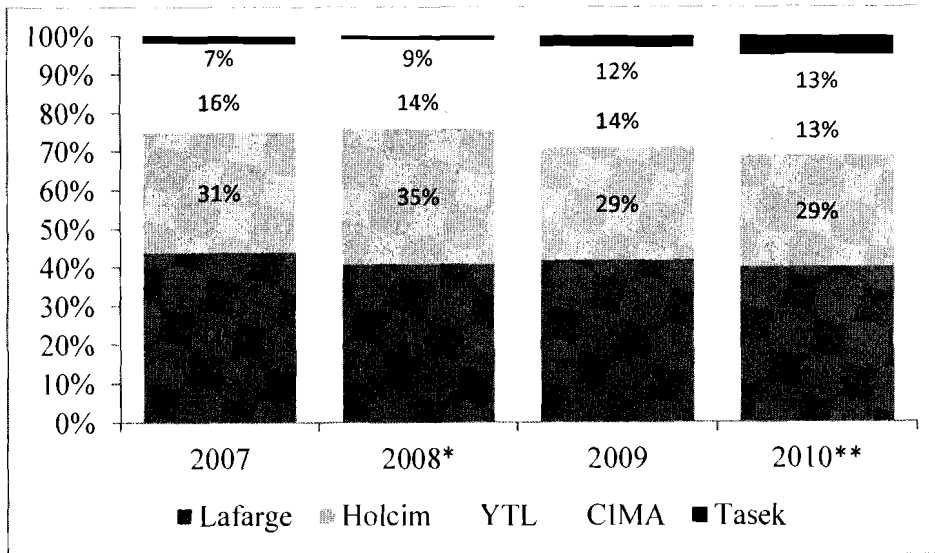
Further entry of Hume into the state of Johor has created intense competition among the six manufacturers currently competing in the Johor market to secure their market shares. As a result of Industry Supply Agreement abolishment which has restricted the sales volume of cement manufacturers between 2000 and mid 2008 (Cement and Concrete Association of

Malaysia, 2008) and lifting of price controls, home based cement players have experienced significant fluctuations and erosion of market shares between 2007 and 2010 which has turned to be a great challenge to them for their business sustainability (Cement and Concrete Association of Malaysia, 2010).

This capacity limitation, abolishment of Industrial Supply Agreement and removal of price controls have open up new avenues for central, north and east Peninsular Malaysia based cement manufacturers to penetrate into potential business opportunity within the state of Johor (Cement and Concrete Association of Malaysia, 2010). The flow of surplus cement from central, north and east Peninsular Malaysia was channeled to the state of Johor in anticipation of Iskandar Malaysian development plans realization. It was evident from sales statistics by Cement and Concrete Association that cement manufacturers from north, central and east of Peninsular Malaysia successfully penetrated geographically into the state of Johor by selling cement in distant markets to ensure realization of their long suffered excess capacity.

Recent years have shown that the state of Johor cement market have come under tremendous pressure due to its positive demand development. Based on sales statistics by Cement and Concrete Association of Malaysia, Lafarge possess the highest market share in the state of Johor (i.e. more than 40 per cent) followed by Holcim Malaysia (about 29 per cent) and YTL (about 13 per cent). The remaining market shares were absorbed by other entries such as CIMA and Tasek from central and north respectively.

Figure 1.4 depicts the market share standing of all players within the state of Johor between 2007 and 2010.



Source: Cement and Concrete Association, Malaysia

**Figure 1.4**

Market Share in Johor

\* Data taken for 8 months

\*\* Data taken for first half 2010

Figure 1.4 indicates that although Lafarge, Holcim and YTL are the home base cement manufacturers in the state of Johor, penetration of Tasek and CIMA has been quite aggressive in the recent years. This has resulted in loss of market share among home base cement manufacturers. All three home based cement manufacturers suffered a loss of market share. Strong penetration of CIMA and Tasek is evident from their market share development. CIMA has increased its market share by almost 100 per cent since 2007 while Tasek has gained 5 per cent by 2010. This clearly explains that home base cement manufacturers have lost control over the market and unable to compete with other entrants to the state of Johor and their business continuity is at risk. Therefore, the state of Johor have become an interest

area of study since it has differing characteristics in comparison to the remaining states on top of challenge faced by the home base cement manufacturers in ensuring their business continuity and sustainability as a result of other cement manufacturers' penetration into the market of Johor.

Cement can be considered as a standard product which can be interchanged across manufacturers having price as the most important sales parameter (European Cement Bureau). The cement manufacturers are operating in a very vibrant and turbulent environment (Kinyua, 2007) and these manufacturers are environment dependent and environment serving (Ansoff & McDonnel, 1990), hence environment remain a critical factor for their success and survival (Sauve, 2002) because the environment is not only dynamic and complex but also multifaceted with far reaching impact (Kazmi, 2002) with great speed, magnitude and unpredictability (Burnes, 1996). It is essentially driven by boom and bust of construction industry which is cyclical (Salvo, 2004). Therefore, to stay relevant and competitive in the marketplace, the organizations are required to embark into newness (Thomson, 1967). This requires organization to respond to external changes while ensuring strategic fit with internal environment (Pearce & Robinson, 1997).

In today's context, application based research and development efforts are still scarce in the cement industry (Shankar, et al., 2011). However, this will become crucial in the future in support of emerging environmental needs which require environment friendly cement products in an attempt to fulfill future demands of sustainable development by the customers and new business segments. Therefore, provision of solution based product offerings to the

customers as well as niche markets at high quality and cheapest cost in the most efficient manner which includes new technology introduction, process automation as well as greater control mechanisms become paramount, hence continuous renewal become essential to the industry (Shankar, et al., 2011). In addition to this, despite current commodity status of cement, Sangameshwaran (2002) indicated that branding of cement become very important in today's context and it will help the organization to better position the products based on the clusters the organization serves. Notwithstanding, to keep up with rapid changes taking place in the cement industry, Acharya (1999) explained that in order for an organization to enjoy excellent performance, it requires to ensure quality of international standard, ready to cope with free competition, occupy information technology for seamless integration and also enhance people capability in the industry.

## **1.2 Problem Statement**

Schenck and McCarl (1966) highlighted that for many years, cement industry had little emphasis on sales making them behave as an order taker. They further explained that this is mainly due to the environment which did not encourage competition among the manufacturers as a result of an oligopoly market structure. Abolishment of Industry Supply Agreement on 5<sup>th</sup> June 2008 (Concrete and Cement Association, 2008) which have limited the sales volume and also the geographic coverage was seen as a positive move by all cement manufacturers within Peninsular Malaysia and has led to serious fluctuation of cement market share among cement manufacturing companies (Concrete and Cement Association, 2007-2010). From the price perspective, there was no price increase for cement between 1995 and 2006, however, liberalization of cement industry in Malaysia on the 5<sup>th</sup> June 2008 has created immense price increase of about 22 per cent (The Star Online, 2009). In addition to this,

given the existing excess capacity situations, Cement and Concrete Association reported new capacity additions by several cement manufacturers such as Hume Cement at Perak, YTL at Kuantan and also recent expansion plan by Lafarge (The Star Online, 2013). Such situation will led the cement industry's direction to change as a result of continuing over capacity situation as well as open market competition whereby cement manufacturers will attempt to enter territory that they did not serve previously (Schenck & McCarl, 1966).

While the state of Johor is becoming a lucrative market as explained earlier, the competition within this market becoming more aggressive requiring the home based cement manufacturers to look into measures to engage employees into more entrepreneurial way to overcome such situation. Erosion of market share as illustrated earlier is becoming a serious concern to home based cement manufacturers. Therefore, entrepreneurial orientation among employees is gaining attention among Johor based cement manufacturers. In spite of top management alone, it is time to involve the entire workforce with entrepreneurial mindset to ensure organization long term sustainability.

Survival and success of organizations, especially among organization such as external forces dependent cement manufacturers require a blend of organizational entrepreneurship and individual entrepreneurship. Therefore, organizational rejuvenation is expected to happen by implementing employees' novel ideas. Creation and sustainability of competitive advantages require the entire population of the organization to be aligned towards entrepreneurial orientation. There is a need to understand the association between individual entrepreneurs and also the attributes of behavior (Stopford & Braden Baden-Fuller, 1994) and

entrepreneurial activities within the organization, especially among the middle management (Hornsby, et al., 2002; Kuratko, et al., 2005).

However, debates remain in the literature about the ability of the entire employees to exercise their entrepreneurial intention and also corresponding behaviors. Research indicate that there is a possibility of observing entrepreneurial behavior at all level of organizations as opposed to classical economics belief that it can only be observed at top management level (Ireland, et al., 2009). Although the organization is generally driven by the top management team, entrepreneurial opportunities should be captured by every individual subordinates from below in the organization (Vesper, 1984) and the manifestation of organizational entrepreneurial intentions as suggested by entrepreneurial orientation approach is merely a function of top management behavior (Lee & Peterson, 2000; Covin, et al., 2006). Therefore, as claimed by Birkinshaw (1997), the entrepreneurial behavior exists simultaneously with managerial capability and these abilities are in existence among all level of individuals in the entire organization consonant with autonomous behavior concept introduced by Burgelman (1983b) and Day (1994).

Despite extensive body of research on entrepreneurial orientation, several significant gaps exist. First, most of the studies conducted primarily focused at firm level perspectives instead of individual level perspectives (Miller, 1983; Covin & Slevin, 1991; Lumpkin & Dess, 1996; Antoncic & Hisrich, 2002). In addition, firm level factors such as management support, resource and time availability, rewards and reinforcement and supportive organization culture were of main priority in the past research (Zahra, 1991; Zahra & Covin, 1995; Janssen, 2000;



Baum, Locke & Smith, 2001; Hornsby, Kuratko & Zahra, 2002; Holt, Rutherford, & Clohessy, 2007; Antoncic, 2007). Kuratko, Montagno and Hornsby (1990) informed that these factors have shaped the views of managers and employees in pursuing entrepreneurial activities. Interaction between firm level factors and individual level factors such as innovativeness, pro-activeness, and risk-taking could provide new insights to examine how firm level organizational factors are creating entrepreneurial orientation and encouraging employees to pursue entrepreneurial activities.

Second, there is also limited research that examines why some individuals pursue entrepreneurial activities and why others do not, despite exposure to the same objective in the organization context such as structure, rewards, and culture (Mair, 2002). Lumpkin and Dess (1996) posit that entrepreneurial orientation can occur at lower levels via individual entrepreneurship. Similar argument was offered by Vesper (1984) who claims that entrepreneurial opportunities should be captured by individual subordinates from below in the organization. According to proponents of multilevel research (Ireland & Webb, 2007), particularly in the entrepreneurial research (Davidsson & Wiklund, 2001), a researcher is required to account for both organizational and individual factors in order to gain insights about entrepreneurial intentions.

In this regard, entrepreneurial behavior can be observed at organizational members' level as opposed to top management only (Ireland, et al., 2009). Therefore, every employee in the organization possesses capacity for entrepreneurial behavior (Birkinshaw, 1997). For instance, a mismatch between innovation and organizational characteristics and technical

excellence leads to low job satisfaction among employees (Watson, Hogarth-Scott & Wilson, 1998; Lena Lee, Poh Kam Wong, Maw Der Foo & Aegean Leung, 2008). This is further supported by Miller (1983) who claims that continuous organization renewal through innovativeness and risk taking behaviors in pursuit of new opportunities goes beyond an effort of key people in the organization.

Therefore, engaging employees from multiple stratum of organization to same level of entrepreneurial activities is the main focus of entrepreneurial orientation. The crux of entrepreneurial orientation in any organization is that all employees within the organization are required to identify and pursue opportunities (Stevenson & Jarillo, 1989). Hence, this is an indicative to the need of entrepreneurial orientation not only at firm level but also at individual level. Therefore, the construct of entrepreneurial orientation lends itself to study the element of behavior of employees in activation of entrepreneurial orientation in form of innovativeness, pro-activeness and also risk-taking. This is in line with claim by Lumpkin and Dess (1996) whom posit that although entrepreneurial orientation is generally a firm level phenomenon, it also involves behavior and intentions of the entire workforce in the organization.

Apart from that, the literature also revealed that some other constructs which influences entrepreneurial orientation creation among employees such as knowledge management enabler that particularly relates to individual level mechanisms have yet to be introduced into the study of entrepreneurial orientation. This gap provide an extension of existing research to identify organizational characteristics that facilitates creation of entrepreneurial orientation

among employees while also equally considering relevant constructs that surround such environments. It is envisaged that this study will provide additional theoretical and managerial implications in combining firm level factors and individual level factors particularly in Malaysian context among cement manufacturers.

Third, most of the entrepreneurship studies of entrepreneurial orientation have considered entrepreneurial orientation as an independent variable and some other instances where entrepreneurial orientation examined as dependent variable viewing it from unidimensional point of view. Beginning from Miller (1983) until recent studies in late 2000 have indicated that previous scholars have invested most of their studies in understanding entrepreneurial orientation and its dimensions towards firm performance, financial or non-financial. The studies have been expanded across various industries, industry sizes, across countries and some studies were also undertaken as a cross country studies. For instance, Covin, Prescott, and Slevin (1990), Naman and Slevin (1993), Covin, Slevin, and Schultz (1994), Becherer and Maurer (1999) and Stam and Elfring (2006) are some of the scholars who studied entrepreneurial orientation influence towards firm performance among small and micro organizations.

On the other hand, entrepreneurial orientation influence was also analyzed by several scholars across industries (e.g. Covin & Slevin, 1986; Arbaugh, Cox, & Camp, 2005). Generally, entrepreneurial orientation was given limited attention to evaluate the construct as a dependent variable in the entrepreneurship research, especially from a multidimensional perspective. Several studies (e.g. Srivastava & Agarwal, 2010; Demirci, 2013) have

considered entrepreneurial orientation as a dependent variable, however, it was considered as a unidimensional study which failed to address dimensions within the construct in order to provide greater insights. Therefore, this research attempts to study a different perspective of entrepreneurial orientation by viewing it as a multidimensional dependent variable, hence to add to existing body of knowledge about entrepreneurial orientation, its dimensions and the field of entrepreneurship. A detailed explanation of this gap will be provided in Chapter 2.

Fourth, a clearly distinguished perspective of managers and entrepreneurs was profound in most of the initial work on entrepreneurship conducted in order to examine the role of employees within an organizational setting. Kecharanata and Baker (1999) argued that studies which have compared managers and entrepreneurs' found that value orientation of entrepreneurs are significantly different than the managers with different mindsets (Reynierse, 1997) in spite of several studies which did not differentiate them (Colinson & Hearn, 1996; Anderson & Goldsmith, 1997). Majority of research work have considered an "entrepreneur" as an individual who initiates his own business whereas the term "manager" was used to those individuals who opted to work for an organization. It was found that entrepreneurs uses biases more than managers in decision making leading them to perceive lesser risk (Busenitz, 1997) while other studies show that innovation and achievement motivations are higher among entrepreneurs in comparison to managers (Stimpson, Narayanan & Shantakumar, 1993). Nevertheless, according to Penrose (1959), the practical side of entrepreneurship is generally carried out by the managers.

However, Bosma et al. (2012) found that innovation driven entrepreneurial employees are willing take risks when deciding to engage into entrepreneurial activities. In addition, Piperopoulos (2011) further highlighted that a manager can behave entrepreneurially although both the manager and entrepreneur might have different goals and working style (Stewart, et al., 1999). Therefore, do we concur that individuals employed by the organization is non-entrepreneurial is the gap that needed to be addressed. Since the behavior of an entrepreneur is driven by the environment within which he/she operates, thus the research envisages that supportive organizational characteristics together with relevant enabler will activate the entrepreneurial orientation among the workforce. Therefore, the research is expected to contribute to existing literature by providing further support of entrepreneurial orientation existence and activation among employees in the organization.

Finally, limited research on entrepreneurial orientation has been performed with a focus on cement industry. Driven by extremely competitive environment, cement players are facing significant challenges to their sustainability and long term success. Challenges such as rising competition from the other cement manufacturers in the form of capacity expansion and cost advantages and increasing competition to sustain market shares insisting cement manufacturers to develop an organizational climate the will create entrepreneurial orientation among employees. As a result of these challenges, there is an ultimate need for the research to better understand of how cement manufacturers can develop and promote a more entrepreneurially oriented workforce. Keeping in mind that Johor based cement players are very unique in terms of their operating style, organizational practices and culture, this research may yield specific knowledge and implications.

This study aims to address the preceding gaps and advance the discussion and research on entrepreneurial orientation by (a) examining individual level and firm level variables, (b) situating these mechanisms within the context of the cement manufacturing organizations where entrepreneurial orientations are understudied and much needed, and (c) to investigating the manager-entrepreneur perspective which is in debate for many decades. Overall, the inclusion of individual and organization level mechanisms, coupled with the introduction of previously unexplored or omitted constructs, placed in a cement manufacturing context, may yield both theoretical payoffs and a more fine grained understanding of the factors that may facilitate entrepreneurial orientations and activity among individuals in cement manufacturing organizations.

### **1.3 Research Questions**

The purpose of this research is to examine the organizational characteristics that affect employee entrepreneurial orientation in the organization. In addition, the research also explores the mediating effect of knowledge management enabler on the relationship between organizational characteristics and entrepreneurial orientation among employees. It attempt to identify contributing dimensions of organizational characteristics, knowledge management enabler and employee entrepreneurial orientation and the magnitude of each constructs. Thus, the following are the research questions of this research:

- a) Is there a significant relationship between organizational characteristics and entrepreneurial orientation?

- b) Is there mediating effect of knowledge management enablers between organizational characteristics and entrepreneurial orientation?

#### **1.4 Research Objectives**

The research investigates the emerging entrepreneurial orientation concept that has been proven as significant predictor of superior and sustainable performance (Miller, 1983; Lumpkin & Dess, 1996; Wilklund, 1999, Slater & Narver, 2000; Hult, Hurley, & Knight, 2004; Awang, Khaluid, Yusof, Kassim, Ismail, Davis, Bell, Payne & Kreiser, 2010; Clausen & Madsen, 2011; Kraus, Rigtering, Hughes & Hosman, 2012). This research attempts to examine the propensity of individual employees to behave entrepreneurially at work. It explores the premise of organizational characteristics and knowledge management enabler in activation of entrepreneurial orientation as a unique and novel approach among employees. It is envisaged that the study will provide a better understanding of organizational characteristics which encourages entrepreneurial orientation among employees. This research is also attempting to examine the mediating effect of knowledge management enabler on the relationship between organizational characteristics and entrepreneurial orientation among employees. More specifically, this research aims to achieve the following objectives:

- a) Determine the relationship between organizational characteristics and entrepreneurial orientation.
  - i. Determine the relationship between work discretion and innovativeness.
  - ii. Determine the relationship between work discretion and risk taking.
  - iii. Determine the relationship between work discretion and pro-activeness.
  - iv. Determine the relationship between resource/time availability and innovativeness.

- v. Determine the relationship between resource/time availability and risk taking.
  - vi. Determine the relationship between management support and innovativeness.
  - vii. Determine the relationship between management support and risk taking.
  - viii. Determine the relationship between management support and pro-activeness.
  - ix. Determine the relationship between resource/time availability and pro-activeness.
  - x. Determine the relationship between rewards/reinforcement and innovativeness.
  - xi. Determine the relationship between rewards/reinforcement and risk taking.
  - xii. Determine the relationship between rewards/reinforcement and pro-activeness.
- b) Determine the mediating effect of knowledge management enabler between organizational characteristics and entrepreneurial orientation.

Therefore, the primary objective of studying the relationship between organizational characteristics and entrepreneurial orientation while considering the mediating effect of knowledge management enabler is to investigate the relationship of organizational characteristics and entrepreneurial orientation and how much they influence each other. The research is also attempting to understand the mediating effect of knowledge management enabler between organizational characteristics and entrepreneurial orientation in activating entrepreneurial mindset among employees. The research is expected to provide insights to organization on how to choose effective organizational characteristics and knowledge management enablers based on the entrepreneurial orientation dimension that is being considered in the study.



## **1.5 Significance of the Study**

The importance and activation of entrepreneurial orientation through an appropriate set of organizational characteristics have been emphasized by many researchers since past few decades. This helps an organization to learn ahead of its competitors which creates sustainable competitive advantage (DeGeus 1988; Dickson, 1992) in anticipating and handling dynamic and turbulent business environment. Hence, this study is offering an opportunity to broaden empirical knowledge about entrepreneurial orientation activation and its influence in the organization. An investigation about the relationship between organizational characteristics and entrepreneurial orientation among employees is an interest area of this study apart from understanding the mediating role of knowledge management enabler. Advancement about the learning of the area of interest will be witnessed if the study postulates significant relationship between organizational characteristics and entrepreneurial orientation among employees. Such relationship is expected to contribute to academia and also to practitioners by identifying the influence of these factors in a dynamic business environment.

Viewing entrepreneurial orientation from a theoretical perspective, although there are many studies undertaken in the area of entrepreneurial orientation, no plausible study have been conducted by considering entrepreneurial orientation as an outcome variable, more importantly as a multidimensional construct before examining the same variable's influence towards organizational performance, financial and/or non-financial. In addition, most of the past studies considered entrepreneurial orientation as a firm level phenomenon, neglecting its influence at individual level. Hence, this study reinforces the weak findings theoretically and empirically in considering entrepreneurial orientation as an outcome variable as well as

viewing it as an individual level phenomenon. For a practitioner view, the study will provide insights and impetus to the organization about the relationship between organizational characteristics and also entrepreneurial orientation among employees. These insights will help the organization to redirect its focus to create an atmosphere which encourages exercise of entrepreneurial behavior among employees that ultimately aimed at delivering greatest payoff for the organizations, financial and/or non-financial. Examining entrepreneurial orientation as a multidimensional construct will help the organization to identify the influence and also magnitude of organizational characteristics facilitated by knowledge management enabler in activating entrepreneurial intentions and behavior at various levels of employees within the organization. These findings will help the organization to redesign its environment by indicating areas that require change, catering for current and future business needs, while indicating the present gaps to foster and realize entrepreneurial orientation activation among employees.

## **1.6 Scope of the Study**

This study identifies the relationship between organizational characteristics and entrepreneurial orientation among cement manufacturing organizations within the state of Johor. A mediation effect of knowledge management enabler is also analyzed. The following delimitations are the boundaries of the study. First, the participants' of this study is limited to three companies in the state of Johor, namely, Lafarge, YTL and also Holcim with a population size of about 300 employees. Second, since entrepreneurial orientation is prevalent among various level of organization, the respondents included the entire stratum of the organization consist of three levels namely top, middle and also operational level employees. Next, the geographic coverage of the study was limited to the state of Johor since

the companies within the state can be categorized as homogeneous sample (i.e. all companies in the state are operating grinding station only). This delimitation is also helping reduce or eliminate the influence of extraneous companies outside the state of Johor which are mainly running an integrated cement operation.

### **1.7 Definition of Terms**

The following table provides operational definitions used in the research.

Management Support - The extent to which management is willing to facilitate and promote entrepreneurial activity in the organization including championing innovative ideas (Damanpour, 1991; Kuratko, Hornsby, Naffziger & Montagno, 1993; Pearce, Kramer, & Robbins, 1997; Hornsby, et al., 2002)

Resource/Time Availability - The extent to which availability of resources (that includes time) for innovative activities to encourage experimentation and risk taking (Damanpour, 1991; Stopford & Baden-Fuller, 1994; Slevin & Covin, 1997; Hornsby, et al., 2002)

Work Discretion - The extent to which organizations are willing to take risks and have tolerance for failure (Sathe, 1985; Jennings & Lumpkin, 1989; Stopford & Baden-Fuller, 1994; Hornsby, Kuratko, & Montagno, 1999)

Rewards/ Reinforcement - The extent to which organizations has an effective reward system which consider goals, feedback, emphasis on individual responsibility, and results-based incentives (Sathe, 1985; Sykes, 1992; Hornsby, et al., 2002)

Knowledge Management - Management of a corporation's knowledge through a systematic and organizational specified process for creating, acquiring, organizing, sustaining, applying, sharing, and renewing both tacit and explicit knowledge from employees that is controlled and protected, and fulfill organizational objectives and improves organizational performance and to create value (Davenport & Prusak, 1998; Darroch, 2003; Park, 2006)

Knowledge Management Enabler - Organizational infrastructure to enhance efficiencies of knowledge management activities, such as codifying and sharing knowledge assets among individuals (Sarvary, 1999; Chan & Chau, 2005)

Technology - The presence of information technology support within an organization and is its ability to support communication, collaboration and the search for knowledge, and enable collaborative learning as both a key contributor and an enabler in the field of knowledge management (Davenport & Prusak, 1998; Lee & Choi, 2003)

Structure - The formal relationships and allocation of activities and resources among people with two critical structural dimensions of centralization and formalization that promotes

individualistic behavior (O'Dell & Grayson, 1998; McKenna, 1999; Gold, Malhotra, & Segars, 2001; Tata & Prasad, 2004)

Organizational Culture - Set of values, beliefs and norms, meanings and practices shared by personnel within an organization which influences how people respond to a situation and how the environment encompassing the organization is interpreted and creating suitable environments for knowledge exchange and accessibility (Janz & Prasarnphanich, 2003; Mavondo & Farrell, 2004; Robbin, 2004)

Entrepreneurial Orientation - The extent to which employees characterize their organization's entrepreneurial mindset in terms of tendency toward innovation, pro-activeness, risk taking, autonomy and competitive aggressiveness (Lumpkin & Dess, 1996)

Innovativeness - An employee's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services or technological processes, as well as the pursuit of creative, unusual, or new solutions to problems and needs (Lumpkin & Dess, 2001, Certo, et al., 2009)

Risk-Taking - An employee's tendency to engage in high-risk projects and managerial preferences or making relatively large resource commitments for bold versus cautious actions in order to achieve firm objectives with the interest of getting high returns (Miller, 1983; Lumpkin & Dess, 2001)

Pro-activeness - An employee's tendency to anticipate and act on future needs by seeking new opportunities which may or may not be related to the present line of operations, introduction of new products and brands ahead of competition, strategically eliminating operations which are in the mature or declining stages of the life cycle (Lumpkin & Dess, 2001)

## **1.8 Organization of the Thesis**

This dissertation is organized as follows. Chapter 1 was started with background of the problem. After the problem statement was discussed. Based on the problem statement, research questions and research objectives were identified. The chapter then continued with significance of the study. The scope of the study was clearly outlined. The chapter was concluded by outlining definition of key terms used in the dissertation. Chapter 2 and Chapter 3 will establish the theoretical and methodological framework for this study.

Chapter 2 addresses the scholarly literature relevant to the conceptualization and operationalization of entrepreneurial orientation and its dimensions. It begins with a definition of entrepreneurship, and continues on to an overview of the literature relevant to entrepreneurial orientation, including the dimensions of entrepreneurial orientation and how the concept has been operationalized in the past. Next, organizational characteristics and knowledge management areas are reviewed to formulate the conceptual framework. A conceptual model is proposed and discussed, and formal hypotheses are presented based on the theoretical underpinnings.

Chapter 3 explores the methodological foundations of the constructs described in Chapter 2 and research design used to test the hypothesized relationships. This chapter describes various research methodologies in conducting the study such as quantitative and qualitative methods, as well as a sample description and data collection and analysis procedures. It also presents the survey instrument while explaining modifications to the original instruments.

Chapter 4 provides the results of the statistical analyses. This chapter presents applicable descriptive graphs, findings, statistically significant results, and correlation tables. Lastly, Chapter 5 concludes with a discussion of the study findings, contributions to the literature and conclusions resulting from the research and expounds upon future research directions regarding the studied phenomena.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter opens with an explanation of the field of entrepreneurship within organization and also the evaluation of entrepreneurial orientation. It will then provide the theoretical foundations for organizational characteristics and its relationship to entrepreneurial orientation among employees. A thorough discussion of organizational characteristics, knowledge management enablers and entrepreneurial orientation will provide a review of the underlying dimensions of each construct. Throughout the discussion, a series of hypotheses will be developed followed by the conceptual framework.

#### **2.2 Entrepreneurship**

All organizations have entered a business arena which is dominated by conclusive change, unprecedented scope, breadth and also pace. In today's business environment, organizations need to be fast, fluid and flexible. As a result of globalization, the recent decade has witnessed major transformation as a consequent of competitive environment. The dynamic business environment is no longer an excuse to many organizations to fail in their business attempts. They are forced to stay competitive by thinking not only tactically but also strategically. Today, the organizations are in need to intensify their search for organization designs which will help them to attain sustainable competitive advantage hence assure their long term survival in the marketplace.



According to Popadiuk and Choo (2007), business intensification may come in form of differentiated product and processes which ultimately an outcome of constant innovative efforts within the organizations. Thus, in today's ever evolving situation, the organization has become more conscious about new ideas and inventions while constantly paying adequate level of attention to the employees and their capabilities and capacities as the growth drivers of the organizations. Therefore, innovation has turn to be a pre-requisite for success and survival of the organizations and it has gained vast attention among the academic researchers and organizations to understand entrepreneurship orientation and change to an entrepreneurial organization (Wang & Ahmed, 2004).

Today it is widely claimed that entrepreneurship is a vital component in the process of economic growth and development (Henderson, 2002). It provides millions of job opportunities, offers a variety of consumer goods and services, and generally increases national prosperity and competitiveness (Covin & Slevin, 1991; Henderson, 2002; Van Praag & Versloot, 2007). The role of field of entrepreneurship in moving and also boosting economy increased the research concentration in this area over the past few years (Green, et al., 1996; Morrison, 2000; Alstete, 2002). Absence of economic development is a result of absence of entrepreneurs and entrepreneurial intentions is an assumption indicated by academicians and also policy makers. According to Samli (2002), entrepreneurship plays an important role in developing economy. According to him, it develops the economy by initiating entrepreneurial activities such as establishing conducive business environments, product innovation, introduction of new technology, provision of related services which ultimately results in creation of employment opportunities and per capita income levels

improvement. These efforts require an entrepreneur to be willing to scan the environment and take risks in order to explore and exploit available opportunities in the marketplace.

Numerous scholars have been attracted to investigate entrepreneurship as its activity contributes not only to macroeconomic outcomes, but also business performance. While Kuratko (2009) pointed that it is important for every organization to realize that entrepreneurship have become an imperative in the 21<sup>st</sup> century, while Davidsson (2001) argued that entrepreneurship is relevant to firm performance, regardless of the firm's size, type or age. Entrepreneurial orientation has emerged as an important facet for the past two decades. Entrepreneurial mindset among organizational citizens receiving substantial attention from researchers acknowledging the fact that this is one of the major concern and growing phenomenon which require in depth understanding of the area. In anticipation of internal and external forces and turbulent environment that affects day-to-day operations, organizations are constantly finding ways to increase entrepreneurial mindset among employees through internal entrepreneurial activities and organizational climate that support such endeavors (Dess, Lumpkin & McGee, 1999).

Entrepreneurship is an area that interests a lot of people given the current economic climate and the ever changing nature of business. Entrepreneurship has strong ties with growth, globalization, competitive economies and also the ability of the organizations to grow their business in an agile market place. It is imperative for the organizations to sustain their competitive advantage and entrepreneurship has served as the means of achieving it.

According to Bygrave, Reynolds and Autio (2004), adaptation to changing economic systems has strong association with the field of entrepreneurship.

Entrepreneurship has attained enormous attention and interest since its emergence as a field of research since 1970s. However, according to Say (1880) and Marshal (1890) as quoted by Miller (1983), entrepreneurship has first become an interest area in the economics literature during late 1800's. Initial popularization of the term "entrepreneur" according to Miller (1983) was undertaken by an economist, Jean Baptise Say (1880). An individual who has a clear distinguishing feature of undertaking risk was classified as an entrepreneur. However, in 1940's and 1950's, entrepreneurship evolved further and a start-up of a new business was then considered to be an entrepreneurial activity guided by very initial discussions by Schumpeter (1949) according to Miller (1983).

Concept of entrepreneurial orientation which is derived from entrepreneurship is distinctive in nature. Instead of various perspectives offered by scholars on entrepreneurship, Miles and Snow (1978) study revealed that entrepreneurship is mainly concerns about an intention of an organization whether or not to enter into new business whereas entrepreneurial orientation explains more on what kind of business activity that the organization should opt to enter. According to Kuratko (2009), entrepreneurship is a dynamic process of vision, change and creation which carry essential ingredients of risks, effective team, resources, and opportunity recognition. Morris and Paul (1987) define entrepreneurial orientation as the propensity of a company's top management to take risky action, be innovative and proactive.

Lumpkin and Dess (1996) claimed that entrepreneurship is concerned with business entry whereas entrepreneurial orientation concerns about the process, methods and practices to invoke entrepreneurial behavior by adding autonomy and competitive aggressiveness as additional dimensions on top of three dimensions identified by Miller (1983). However, the field of entrepreneurship has limitation in its cumulative body of research due to several reasons. Among others, it includes the definition of the term, the constituents of entrepreneurship and also the weak measurements of key variables of the field of entrepreneurship (e.g., Shane & Venkataraman, 2000). There is no agreed definition of entrepreneurship to date and this will only change when it is studied more.

In spite of various definition of entrepreneurship, Miller (1983) cited that Schumpeter (1949) defined entrepreneurship as a combination of new resources in new ways. Although the focus of Schumpeter was very much on the resources utilization, Gartner, Bird and Starr (1992) claim that, a process of organizational emergence can be better defined as entrepreneurship. Nevertheless, as an extension of earlier debates about the definition of entrepreneurship, Wennekers and Thurik (1999) suggested that entrepreneurship is also considered as the ability and willingness to discover new opportunities while identifying specific ways to seize the opportunities in a market which is very uncertain and volatile. In spite of growing definition of entrepreneurship, Kuratko and Hodgetts (2004) claimed that entrepreneurship revolves around an integrated concept which infuses an organization in an innovative manner.

In view of debates about definition of entrepreneurship, Wiseman and Skilton (1999) argue that entrepreneurship is still in the theory building stage and is a “multidisciplinary jigsaw” (Harrison & Leitch, 1996: 69). This argument is in support of historical development of entrepreneurship whereby the literature revealed that there are at least three perspectives of entrepreneurship which has made the field of research more complex. In respect to the varying perspectives, traditionally, there are three characteristics which clearly bias the entrepreneurship research. The literature argues if the field of entrepreneurship should be perceived as firm level phenomenon, individual level phenomenon or merely an opportunity discovery at both firm and individual levels.

The first bias in entrepreneurship revolves around the firm level phenomenon claim by early scholars. As cited by Lumpkin and Dess (1996), Schumpeter (1942) who was one of the earliest scholars of entrepreneurship argued that entrepreneurship should be perceived as a firm level phenomenon. Consistent with his early definition of entrepreneurship which is combination of new resources in new ways, he claimed that research and development should be routine of the organization. In line with Gartner et al. (1992) claim of entrepreneurship as an organizational emergence, Baumol (1990) support the notion of Schumpeter (1942) that entrepreneurship can be more meaningful if it is conceptualized as a firm level phenomenon. In considering that entrepreneurship is a firm level phenomenon, Miller (1983) highlighted that organizations which are pioneer in entering market with proactive innovation and embracing risky ventures can be better described as entrepreneurial firm.

The second bias in the literature of entrepreneurship mainly concentrates at individual levels. The literature discusses entrepreneurship by assigning the entrepreneurial role to an individual, who is known as an entrepreneur. Historically, any individual who is able to identify market opportunity, acquire required resources, and start a new venture with an aim of exploiting identified opportunities to generate profit is perceived to be an entrepreneur. Specific characteristics which clearly distinguish an entrepreneur from a non-entrepreneur are undertaken by past scholars (Brockhaus, 1982). Miller cited that according to Schumpeter (1949), any individuals who introduce new products and processes can be best conceptualized as an entrepreneur. However, Mises (1949) claim that possession of privileged information which could facilitate an entrepreneurial actions is also essential to enable an individual to be a successful entrepreneur.

Nevertheless, since entrepreneurship is not only creation of new ventures but also exploitation of opportunities, “a person who habitually creates and innovates to build something of value around perceived opportunities” can also be better defined as an entrepreneur (Thompson, 2003: 49). As an extension of Thompson (2003), Kuratko and Hodgetts (2004) explained that any individual who is able to recognize opportunities and capable of being a change catalysts within their relevant marketplace can also be viewed as an entrepreneur. However, recent development in the entrepreneurship literature suggest that an entrepreneur should not only be efficient of opportunities discovery but also should be conceptualized as a person who have lower information cost than the other people in undertaking entrepreneurial actions (Casson & Wadeson, 2007).

Over concentration of opportunity discovery have been debated as the third bias in the entrepreneurship literature. Generally, the first and foremost important stage in the entrepreneurial process will be an entrepreneurial opportunity discovery. Busenitz (1997) and Shane (2003) pointed that opportunity discovery is a parallel and synonymous activity of entrepreneurship. In contrary to this view, Nickerson and Zenger (2004) indicated that opportunity discovery merely relates to problem solving activity. However, opportunity discovery which could be objective or subjective according to contemporary entrepreneurship scholars (McMullen & Shepherd, 2006; Companys & McMullen, 2007) includes not only technical skills such as market research and financial analysis but also other areas of entrepreneurship covering domain of team-building, creativity, leadership and problem solving which are less tangible (Hills, Lumpkin, & Singh, 1997; Hindle, 2004). Such endeavors are a combination of firm as well as individual level phenomenon which often complement each other.

Several scholars such as Drucker (1985), Gartner (2001) and Shane (2003) have clearly cited the importance and also benefit of the entrepreneurship. This is relevant to the existing business situation which is very volatile and entrepreneurial activities have become increasingly relevant to all organizations' survival. Viewing entrepreneurship from organizational perspective, there are many benefits associated with the entrepreneurship such as product leadership (Porter, 1980), wealth creation and competitive advantage (Hitt, Ireland, Camp, & Sexton, 2001). Therefore, new knowledge about entrepreneurship has become vital to speed up the adaptation to business environment while achieving desired outcomes. Nevertheless, entrepreneurship is clearly associated with entrepreneurial action in achieving the desired outcome. The literature suggests that opportunity seizing (Kirzner,

1997) and swift action (Bhide, 1994) is crucial in ensuring entrepreneurial success. Although there is a general conception that entrepreneurial actions are expected to yield better financial return and performance, Lumpkin and Dess (1996) claimed that not all organizations are capable of transforming entrepreneurial activity into financial gain. Therefore, a structured approach to entrepreneurship is essential to assist the organizations to achieve positive organizational outcomes. The following section will discuss about entrepreneurial orientation which will be the foundation of the research. Dimensions of entrepreneurial orientation such as innovativeness, pro-activeness, and risk-taking which are foundational characteristics to an entrepreneurial organization will also be discussed.

### **2.2.1 Entrepreneurial Orientation**

Entrepreneurial orientation has become a central concept in the domain of entrepreneurship. A large stream of research has examined this concept theoretically and empirically. According to Miles and Arnold (1991), generally, foundational philosophy of an organization will be its orientation. Lumpkin and Dess (1996) have made clear separation between entrepreneurship and also entrepreneurial orientation. They explained that entrepreneurship deals with a new entry whereas entrepreneurial orientation describes how the new entry is successfully undertaken by the organization. This is in accordance to claim by Wiklund and Shepherd (2003) highlighting that entrepreneurial orientation reflects how an organization operates and organized in order not only to discover but also to exploit the opportunities found in the marketplace.



An entrepreneurial organization engages in product innovativeness, undertakes risky business venture and most of the time will pioneer with proactive action (Miller, 1983). Considerable effort was invested to comprehend the area of entrepreneurial orientation for the past 30 years since it has critical importance to many organizations which aspires to grow continuously. In order for any organization to be successful, Ramachandran, Devarajan, and Ray (2006) claim that an organization must be able to adapt itself to competitive pressures apart from utilizing technological advancements to stay competitive in the marketplace. Various scholars including Covin and Slevin (1991), Smart and Conant (1994), Lumpkin and Dess (2001), Wiklund and Shepherd (2005), Huges and Morgan (2007) and Tat, Nguyen, Tuyet and Ng (2007) have acknowledged the importance of entrepreneurial orientation to the survival and performance of the organization.

In view of that, entrepreneurial orientation has been recognized long ago as a key driver of organization growth. The dynamic environment necessitates that all organization should behave entrepreneurially to adapt to the volatile marketplace as well as to cope with discontinuities which may arise as a result of inadequate entrepreneurial readiness within the organization. An entrepreneurial value within an organization will not only help transformation but also it will activate renewal and creation of new business. According to Janney and Dess (2006), entrepreneurial orientation is an independence of an action which paves way towards new ideas exploration while constantly pursuing new markets to attain market leadership status. This is in line with the claim by Nieman, Hough, and Nieuwenhuizen (2003) who advises that entrepreneurial orientation which is the secret of organizational survival should encompass a unique blend of culture, role models, work experience and personal orientation among other factors.

Traditionally, within the entrepreneurship literature, entrepreneurial orientation was viewed as organization wide perspective simply because the top management within the organization sets the overall strategic direction and the process, practices and culture in support of the direction. As a result, entrepreneurial orientation construct historically measured at top management level (Lumpkin & Dess 1996). Nevertheless, entrepreneurial orientation is strongly associated with the commitment of an organization which portrays to commit itself into entrepreneurial behavior (Brown, 1996). Hence, the success of an organization largely dependent on the entrepreneurial behavior exhibited by the organizational workforce and a combination of entrepreneurial orientation dimensions and entrepreneurial behavior would help to improve organizational performance as a whole (Kreiser, Marino & Weaver, 2002).

In understanding the significance of entrepreneurial orientation, entrepreneurship literature revealed that entrepreneurial orientation was commonly studied as a firm-level phenomenon. The past studies tried to explore the relationship between entrepreneurial orientation and firm performance. Covin and Slevin (1988, 1989) and Wiklund (1999) reported that there is positive association between entrepreneurial orientation and firm performance. The same findings were found by Rauch, Wiklund, Lumpkin and Frese (2009) in the recent meta-analysis of entrepreneurial orientation construct whereby more than hundred studies investigated the relationship between entrepreneurial orientation and firm performance. Nevertheless, Covin and Slevin (1991) concur with Miller's (1983) that both, organizations and individuals can behave entrepreneurially. Thus, behavioral process within the organization remains the essence of entrepreneurial orientation as it involves new ways of doing while observing new venture opportunities in marketplace which ultimately offer new and/or improved market value.

Within the entrepreneurship literature, there is variety of definitions assigned to the entrepreneurial orientation construct. The general consensus of entrepreneurial orientation in the literature exhibit that entrepreneurial orientation revolves around entrepreneurial activities which is clearly supported by methods, practices, decision making styles, cultures and many other entrepreneurial factors (Lumpkin & Dess, 1996). More specifically, it involves disposition of autonomy, experimentation, risk taking behavior and also aggressiveness in competing in the market (Janney & Dess, 2006).

According to Miller (1983), entrepreneurial orientation refers to the degree to which the top executives within the organization demonstrate their willingness to innovate, take risks and proactively compete with other rivalries. Since entrepreneurial orientation allows the organization to reconfigure internal and external capabilities to address rapidly changing environments, Covin and Slevin (1989) further enhanced the earlier entrepreneurial orientation definition pointing that although entrepreneurial orientation is characterized by the same dimensions indicated by Miller (i.e. innovativeness, pro-activeness, and risk taking), it is also involve the process, structures and behaviors of the organizations.

Collectively, entrepreneurial orientation represents manifest in product and process innovations (Ireland & Webb, 2007) and organization's processes, practices, philosophy methods, styles, and decision making activities in support of entrepreneurial activities (Lumpkin & Dess, 1996; Atuahene-Gima & Ko, 2001; Lumpkin & Dess, 2001; Zhou, Yim & Tse, 2005; Kroop & Zolin, 2005; Wiklund & Shepherd, 2005; Li, Huang & Tsai, 2009) by which the organization identify and launch corporate ventures while embarking on an

entrepreneurial mindset (Lumpkin & Dess, 1996) to alter the competitive scene to its advantage. Although there are varying definitions about entrepreneurial orientation, the most influential definition was drawn by Lumpkin and Dess (1996) indicating that entrepreneurial orientation is a combination of organizational process, methods, decision making activities and styles used to implement innovation or leads an organization towards a new entry.

Although scholars have debated on various definitions of entrepreneurial orientation, some consistencies are found across their definitions. Prominently, all researchers show a consensus that entrepreneurial orientation involves acceptance and encouragement of entrepreneurial behaviors (e.g. Miller, 1983; Lumpkin & Dess, 1996). Drawing on the literature regarding primary characteristics of entrepreneurial orientation, the researchers have conceptualized entrepreneurial orientation through central characteristics of innovativeness, proactiveness, risk taking, competitive aggressiveness and also autonomy (Miller, 1983; Covin & Slevin, 1989; Lumpkin & Dess, 1996). Although these are the common dimensions of entrepreneurial orientation, Lumpkin and Dess (2001) provided theoretical support and empirical evidence that these dimensions represent distinct constructs and may vary independently of one another in a given context.

Review of the entrepreneurship literature by scholars such as Kanter (1983), Miller (1983) and MacMillan and Day (1987) provide foundations for the salient dimensions of entrepreneurial orientation. The initial study by Miller (1983) proposed three dimensions of entrepreneurial orientation which have given an essence to the study of entrepreneurship. Miller indicated that entrepreneurial orientation is composed of three dimensions:

innovativeness, risk taking and proactiveness although an additional dimension of competitive aggressiveness said to be overlooked and many researchers have identified and tested only three dimensions of entrepreneurial orientation (Lumpkin & Dess, 1997). The same set of dimensions was used by Covin and Slevin (1991) to measure entrepreneurial orientation construct and linked them to enhance firm performance. These initial dimensions of entrepreneurial orientation found to enable firms to achieve continuous adaptation.

Building on prior literature and Miller's definition, numerous scholars such as Ginsberg and Venkataraman (1985), Miles and Arnold (1991), Morris and Paul (1987) and Smart and Conant (1994) have used entrepreneurial orientation to describe a fairly consistent set of related activities or processes. Lumpkin and Dess (1996) further expanded entrepreneurial orientation framework by developing two more dimension of entrepreneurial orientation construct which are competitive aggressiveness and autonomy, extending existing definition of Miller (1983). This definition was widely accepted and Dess and Lumpkin (2005) indicated that these are the five main entrepreneurial antecedents used by research to measure entrepreneurial orientation. However, the first three characteristics (i.e. innovativeness, proactiveness and risk taking) were found to be primary dimensions within the study of entrepreneurial orientation. According to Knight (1997) and Thomas and Mueller (2000), previous studies have indicated that the use of entrepreneurial orientation dimensions may differ across countries as well.

In order to leverage on entrepreneurial activities, the organizations required to deliberately enact entrepreneurial orientation and also entrepreneurial behavior among its workforce

regardless of whether all dimension of entrepreneurial orientation exist in the organization partly or fully (Morris & Paul, 1987). Therefore, this research addresses not only the climate of entrepreneurial orientation in the organization but it also explores the entrepreneurial behavior activation among employees to effectively utilize the human capital hence create new value for the organization or increase the market value.

Table 2.1 shows a summary of evolution and adoption of entrepreneurial orientation dimension by the scholars since the past three decades:

**TABLE 2.1**

## Dimensions of Entrepreneurial Orientation

<b>Study Undertaken</b>	<b>IV Dimensions Used</b>	<b>Measurement Scale</b>	<b>Dimensionality</b>	<b>DV</b>	<b>Sample Size</b>
Miller (1983)	• innovation, proactiveness, and risk-taking	• Miller (1983)	• Unidimensional	• Entrepreneurship	• 52
Miller and Friesen (1983)	• innovation, proactiveness, and risk-taking	• Miller (1983)	• Unidimensional	• Changes in strategy making for high level performance	• 86
Ginsberg & Venkataraman (1985)	• innovation, proactiveness, and risk-taking	• n/a	• n/a	• Performance	• n/a
Covin and Slevin (1986)	• innovativeness, proactiveness, and risk-taking	• 6-items Khandwalla (1977) to measure risk-taking, 2-items from Miller & Friesen (1982) to measure innovation, 2-items from Miller and Friesen (1983) to measure proactiveness	• Unidimensional	• Perceived financial & non-financial performance	• 76
Miller and Toulouse (1986)	• innovation	• Miller (1983)	• Unidimensional	• Perceived financial performance	• 97
Morris and Paul (1987)	• innovation, proactiveness, and risk-taking	•	• Unidimensional	• Marketing orientation	• 116
Covin and Slevin (1989)	• innovation, proactiveness, and risk-taking	• The specific items of this scale were adapted and adopted from existing instruments from Miller	• Unidimensional	• Financial performance	• 1225

**TABLE 2.1 (Cont'd)**

## Dimensions of Entrepreneurial Orientation

Study Undertaken	IV Dimensions Used	Measurement Scale	Dimensionality	DV	Sample Size
		and Friesen, 1982 and Khandwalla, 1976/77)			
Covin, Prescott, and Slevin (1990)	• innovation, proactiveness, and risk-taking	• nine items scale of Covin and Slevin (1989)	• Unidimensional	• Perceived financial performance	• 113
Covin and Covin (1990)	• competitive aggressiveness	• 3-item scale of Khandwalla (1976/1977)	• Unidimensional	• Perceived financial performance	• 143
Zahra (1991)	• innovation, proactiveness, and risk-taking	• 9-items Miller(1983)	• Unidimensional	• Perceived and archival financial performance	• 119
Naman and Slevin (1993)	• innovativeness, proactiveness, and risk-taking	• 9-item on 7-point Likert scale, Covin and Slevin (1986, 1988) based on the work of Miller and Friesen (1982), and Khandwalla (1976/77)	• Unidimensional	• Perceived financial performance	• 82
Covin, Slevin, and Schultz (1994)	• innovation, proactiveness, and risk-taking	• 9 items, 7-point scale Covin and Slevin (1989)	• Unidimensional	• Perceived financial performance	• 91
Zahra and Covin (1995)	• innovation	• 4 measurements (technology policies scale, aggressive technological posture scale, automation and process innovation	• Multidimensional	• Archival financial performance	• 103



**TABLE 2.1 (Cont'd)**

Dimensions of Entrepreneurial Orientation

Study Undertaken	IV Dimensions Used	Measurement Scale	Dimensionality	DV	Sample Size
		scale, and new product development scale) on 7-points scale			
Lumpkin and Dess (1996)	<ul style="list-style-type: none"> <li>• innovation, proactiveness, risk-taking, competitive aggressiveness, autonomy</li> </ul>	<ul style="list-style-type: none"> <li>• n/a</li> </ul>	<ul style="list-style-type: none"> <li>• Multidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• n/a</li> </ul>	<ul style="list-style-type: none"> <li>• n/a</li> </ul>
Knight (1997)	<ul style="list-style-type: none"> <li>• innovation, proactiveness</li> </ul>	<ul style="list-style-type: none"> <li>• Netemeyer, Durvasula, and Lichtenstein</li> <li>• 1991</li> </ul>	<ul style="list-style-type: none"> <li>• Multidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Entrepreneurial orientation</li> </ul>	<ul style="list-style-type: none"> <li>• 800</li> </ul>
Barrett and Weinstein (1998)	<ul style="list-style-type: none"> <li>• innovativeness, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>• 9-items Covin and Slevin(1989) on 7- points Likert scale</li> </ul>	<ul style="list-style-type: none"> <li>• Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived non-financial performance</li> </ul>	<ul style="list-style-type: none"> <li>• 142</li> </ul>
Zahra and Neubaum (1998)	<ul style="list-style-type: none"> <li>• innovation, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>• 7-item Miller (1983) on 5-point scale</li> </ul>	<ul style="list-style-type: none"> <li>• Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived non-financial performance</li> </ul>	<ul style="list-style-type: none"> <li>• 99</li> </ul>
Becherer and Maurer (1999)	<ul style="list-style-type: none"> <li>• proactiveness</li> </ul>	<ul style="list-style-type: none"> <li>• 9-items Likert scale adapted from Covin and Slevin (1989)</li> </ul>	<ul style="list-style-type: none"> <li>• Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived financial performance</li> </ul>	<ul style="list-style-type: none"> <li>• 215</li> </ul>
Chadwick, Dwyer, and Barnett (1999)	<ul style="list-style-type: none"> <li>• innovation, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>• 9-item on 7-point Likert type Strategic Posture scale developed by Khandwalla (1977)</li> </ul>	<ul style="list-style-type: none"> <li>• Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• perceived financial performance &amp; archival</li> </ul>	<ul style="list-style-type: none"> <li>• 535</li> </ul>

**TABLE 2.1 (Cont'd)**

## Dimensions of Entrepreneurial Orientation

Study Undertaken	IV Dimensions Used	Measurement Scale	Dimensionality	DV	Sample Size
				performance	
Gelder (1999)	• innovation, proactiveness, and competitive aggressiveness	• 9-item, developed based on Covin & Slevin, 1989	• Multidimensional	• Perceived non-financial performance	• 71
Richter (1999)	• innovation, risk taking, competitive aggressiveness and autonomy	• 15-item, developed based on Covin & Slevin, 1989	• Multidimensional	• Perceived non-financial performance	• 208
Wiklund (1999)	• autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness	• Miller and Friesen (1982)	• Unidimensional	• Firm growth and financial performance	• 808
Lee and Peterson (2000)	• innovation, proactiveness, and risk-taking	• n/a	• n/a	• n/a	• n/a
Slater and Narver (2000)	• innovativeness, risk taking and competitive aggressiveness	• 7 items Naman and Slevin (1993) on 5 Likert-type scale	• Unidimensional	• Perceived financial performance	• 53
Zahra and Garvis (2000)	• innovation, proactiveness, and risk-taking	• 7-items modified version of Miller (1983), on 5-points scale.	• Unidimensional	• Archival financial performance	• 98
Atuahene-Gima and Ko (2001)	• innovation, risk taking, proactiveness, and competitive aggressiveness	• 6-items Covin and Slevin(1989)	• Unidimensional	• Perceived financial performance	• 181
Lee, Lee, and Pennings	• innovation, proactiveness, and	• Innovation is measured with	• Unidimensional	• Perceived	• 137

**TABLE 2.1 (Cont'd)**

## Dimensions of Entrepreneurial Orientation

<b>Study Undertaken</b>	<b>IV Dimensions Used</b>	<b>Measurement Scale</b>	<b>Dimensionality</b>	<b>DV</b>	<b>Sample Size</b>
(2001)	risk-taking	suggestion of Lumpkin and Dess (1996), Miller and Friesen (1982), and Hage (1980). Risk taking is measured with Miller's (1983). Proactiveness is measured with Miller (1983) and Naman and Slevin (1993)		financial performance	
Lumpkin and Dess (2001)	<ul style="list-style-type: none"> <li>• innovativeness, risk taking, proactiveness and competitive aggressiveness</li> </ul>	<ul style="list-style-type: none"> <li>• Khandwalla (1977), Miller (1983), Covin and Slevin (1986, 1989a), and Covin and Covin (1990)</li> </ul>	<ul style="list-style-type: none"> <li>• Multidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived financial performance</li> </ul>	<ul style="list-style-type: none"> <li>• 94</li> </ul>
George, Wood JR, and Khan (2001)	<ul style="list-style-type: none"> <li>• innovativeness, risk taking, proactiveness, autonomy, and competitive aggressiveness</li> </ul>	<ul style="list-style-type: none"> <li>• 14-item, 7-point scale, of which nine items are from Naman and Slevin (1993) and five items were from Lumpkin and Dess (1996).</li> </ul>	<ul style="list-style-type: none"> <li>• Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Archival financial performance</li> </ul>	<ul style="list-style-type: none"> <li>• 70</li> </ul>
Yoo (2001)	<ul style="list-style-type: none"> <li>• innovation, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>• modified version of 9-item scale Covin and Slevin (1989) on 7-point Likert-type scale</li> </ul>	<ul style="list-style-type: none"> <li>• Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived financial &amp; non-financial performance</li> </ul>	<ul style="list-style-type: none"> <li>• 277</li> </ul>
Kreiser, Marino, and Weaver (2002)	<ul style="list-style-type: none"> <li>• innovation, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>• Covin and Slevin (1989) on five-point Likert scale.</li> </ul>	<ul style="list-style-type: none"> <li>• Multidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived non-financial performance</li> </ul>	<ul style="list-style-type: none"> <li>• 1671</li> </ul>
Marino, Strandholm, Steensma, and Weaver	<ul style="list-style-type: none"> <li>• innovation, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>• Covin and Slevin (1988, 1989)</li> </ul>	<ul style="list-style-type: none"> <li>• Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived financial</li> </ul>	<ul style="list-style-type: none"> <li>• 647</li> </ul>

**TABLE 2.1 (Cont'd)**

## Dimensions of Entrepreneurial Orientation

<b>Study Undertaken</b>	<b>IV Dimensions Used</b>	<b>Measurement Scale</b>	<b>Dimensionality</b>	<b>DV</b>	<b>Sample Size</b>
(2002)				performance	
Caruana, Ewing, and Ramaseshan (2002)	• innovation, risk-taking, and competitive aggressiveness	• 13-items developed from 5-items Miller and Friesen(1982)	• Multidimensional	• Perceived financial & non-financial performance	• 136
De Clercq, Sapienza, and Crijns (2003)	• innovation, proactiveness, and risk-taking	• 5-item scale by Miller (1983)	• Unidimensional	• Perceived financial performance	• 92
Swierczek and Thanh Ha (2003)	• innovativeness, proactiveness, and risk-taking	• 9 items on 5 point Likert scale adapted from Covin's (1991)	• Multidimensional	• Perceived financial & non-financial performance	• 478
Bhuan, Menguc, and Bell (2005)	• innovativeness, proactiveness, and risk-taking	• 11 items from Miller and Friesen (1982), and Morris and Paul (1987)	• Unidimensional	• Perceived Non-financial performance	• 231
Hult, Hurley, Knight (2003)	• innovativeness	• 5 items adapted from Naman & Slevin (1993) and C&S (1989) on 7-point Likert scale	• Unidimensional	• Perceived financial performance	• 181
Hult, Snow, and Kandemir (2003)	• innovativeness	• Entrepreneurship was measured by five items adapted from Naman and Slevin (1993). Innovativeness was measured by five items adapted from Hurley and Hult	• Unidimensional	• Perceived financial performance	• 764

**TABLE 2.1 (Cont'd)**

## Dimensions of Entrepreneurial Orientation

<b>Study Undertaken</b>	<b>IV Dimensions Used</b>	<b>Measurement Scale</b> (1998).	<b>Dimensionality</b>	<b>DV</b>	<b>Sample Size</b>
Vitale, Giglierano, and Miles (2003)	• innovation, proactiveness, and risk-taking	• Covin and Slevin (1989), and subsequent refinement done by other researchers	• Unidimensional	• Perceived non-financial performance	• 89
Wiklund and Shepherd (2003)	• innovation, proactiveness, and risk-taking	• 9-item of Covin and Slevin (1989)	• Unidimensional	• Perceived financial and non-financial performance	• 384
Richard, Barnett, Dwyer, and Chadwick (2004)	• innovation, proactiveness, and risk-taking	• 9-item entrepreneurial orientation scale by Covin and Slevin (1989)	• Multidimensional	• Archival financial Performance	• 153
Dimitratos, Lioukas, and Carter (2004)	• innovativeness, proactiveness, and risk-taking	• 7-point Likert type scales, Risk-taking are drawn from Khandwalla (1977), Miller & Friesen (1982), Naman & Slevin (1993); Proactiveness is drawn from Covin & Covin (1990); Innovativeness is drawn from Miller & Friesen (1982)	• Unidimensional	• Perceived non-financial performance	• 152
Arbaugh, Cox, and Camp (2005)	• innovativeness, proactiveness, and risk-taking	• 9-item of Covin & Slevin (1989)	• Unidimensional	• Perceived financial performance	• 1045
Jantunen, Puumalainen, Saarenketo, and Kyläheiko	• innovativeness, proactiveness, and risk-taking	• The measure was adapted from Naman and Slevin (1993), and	• Unidimensional	• Perceived and archival financial	• 217

**TABLE 2.1 (Cont'd)**

## Dimensions of Entrepreneurial Orientation

<b>Study Undertaken</b>	<b>IV Dimensions Used</b>	<b>Measurement Scale</b>	<b>Dimensionality</b>	<b>DV</b>	<b>Sample Size</b>
(2005)		Wiklund (1998), which were based on measures developed in Covin and Slevin (1988) and Miller and Friesen (1982)		performance, and perceived non-financial performance	
Monsen (2005)	<ul style="list-style-type: none"> <li>• innovativeness, proactiveness, risk-taking and autonomy</li> </ul>	<ul style="list-style-type: none"> <li>• 3-item scales from Covin and Slevin (1989) are used to measure risk-taking, innovativeness, and proactiveness; while autonomy is measured using 3-item self-determination subscale from Spreitzer's (1995, 1996) four factor empowerment</li> </ul>	<ul style="list-style-type: none"> <li>• Multidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived non-financial performance</li> </ul>	<ul style="list-style-type: none"> <li>• 1505</li> </ul>
Tarabishy, Solomon, Fernald and Sashkin (2005)	<ul style="list-style-type: none"> <li>• innovation, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>• Covin and Slevin's (1989) instrument with nine seven-point Likert-type scales.</li> </ul>	<ul style="list-style-type: none"> <li>• Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Entrepreneurial strategic posture</li> </ul>	<ul style="list-style-type: none"> <li>• n/a</li> </ul>
Wiklund and Shepherd (2005)	<ul style="list-style-type: none"> <li>• innovation, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>• 8-item of Miller</li> </ul>	<ul style="list-style-type: none"> <li>• Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived financial performance</li> </ul>	<ul style="list-style-type: none"> <li>• 413</li> </ul>
Covin, Green, and Slevin (2006)	<ul style="list-style-type: none"> <li>• innovation, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>• 9-items, 7-point scale Covin and Slevin (1989), and partially from Khandwalla (1976/1977) and Miller and Friesen (1982)</li> </ul>	<ul style="list-style-type: none"> <li>• Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Archival financial performance</li> </ul>	<ul style="list-style-type: none"> <li>• 110</li> </ul>
Rauch, Frese, Koenig, and	<ul style="list-style-type: none"> <li>• innovation, proactiveness, and</li> </ul>	<ul style="list-style-type: none"> <li>• 6-item of Covin and Slevin (1986)</li> </ul>	<ul style="list-style-type: none"> <li>• Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived</li> </ul>	<ul style="list-style-type: none"> <li>• 364</li> </ul>

**TABLE 2.1 (Cont'd)**

Dimensions of Entrepreneurial Orientation

Study Undertaken	IV Dimensions Used	Measurement Scale	Dimensionality	DV	Sample Size
Wang (2006)	risk-taking	scale		financial and non-financial performance	
Poon, Raja Azimah Ainuddin, and Sa'adah Haji Junit (2006)	<ul style="list-style-type: none"> <li>innovativeness, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>9-items adapted from Covin and Slevin (1989) and Miller and Friesen (1982), on 5 point Likert scale</li> </ul>	<ul style="list-style-type: none"> <li>Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>Perceived financial performance</li> </ul>	<ul style="list-style-type: none"> <li>96</li> </ul>
Stam and Elfring (2006)	<ul style="list-style-type: none"> <li>innovativeness, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>9-item of Covin &amp; Slevin (1989)</li> </ul>	<ul style="list-style-type: none"> <li>Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>Perceived financial performance</li> </ul>	<ul style="list-style-type: none"> <li>90</li> </ul>
Madsen (2007)	<ul style="list-style-type: none"> <li>innovativeness, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>7-point scale by Covin and Slevin's (1989)</li> </ul>	<ul style="list-style-type: none"> <li>Unidimensional</li> </ul>	<ul style="list-style-type: none"> <li>Firm performance</li> </ul>	<ul style="list-style-type: none"> <li>168</li> </ul>
Moreno and Casillas (2008)	<ul style="list-style-type: none"> <li>innovativeness, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>Lumpkin &amp; Dess (2001) and Lumpkin (1998)</li> </ul>	<ul style="list-style-type: none"> <li>Multidimensional</li> </ul>	<ul style="list-style-type: none"> <li>Firm growth</li> </ul>	<ul style="list-style-type: none"> <li>4735</li> </ul>
Lan and Wu (2009)	<ul style="list-style-type: none"> <li>innovativeness, proactiveness, risk-taking and competitive aggressiveness</li> </ul>	<ul style="list-style-type: none"> <li>7-point scale measures by Covin and Slevin (1986, 1989) and Lumpkin and Dess (2001)</li> </ul>	<ul style="list-style-type: none"> <li>Multidimensional</li> </ul>	<ul style="list-style-type: none"> <li>Degree of internationalization</li> </ul>	<ul style="list-style-type: none"> <li>200</li> </ul>
Awang, Khalid, Yusof, Kassim, Ismail, Zain and Madar (2009)	<ul style="list-style-type: none"> <li>innovativeness, risk taking, proactiveness, autonomy, and competitive aggressiveness</li> </ul>	<ul style="list-style-type: none"> <li>7-point scale by Miller and Friesen (1982), Khandwalla (1977) and Covin and Covin (1990)</li> </ul>	<ul style="list-style-type: none"> <li>Multidimensional</li> </ul>	<ul style="list-style-type: none"> <li>Firm performance</li> </ul>	<ul style="list-style-type: none"> <li>610</li> </ul>
Davis, Bell, Payne and Kreiser (2010)	<ul style="list-style-type: none"> <li>innovativeness, proactiveness, and risk-taking</li> </ul>	<ul style="list-style-type: none"> <li>Covin and Slevin (1989)</li> </ul>	<ul style="list-style-type: none"> <li>Multidimensional</li> </ul>	<ul style="list-style-type: none"> <li>Firm performance</li> </ul>	<ul style="list-style-type: none"> <li>156</li> </ul>

**TABLE 2.1 (Cont'd)**

## Dimensions of Entrepreneurial Orientation

<b>Study Undertaken</b>	<b>IV Dimensions Used</b>	<b>Measurement Scale</b>	<b>Dimensionality</b>	<b>DV</b>	<b>Sample Size</b>
Clausen & Madsen (2011)	• innovativeness, proactiveness and risk taking	• 7-point scale by Covin and Slevin's (1989)	• Unidimensional	• Firm performance	• 1721
Kraus, Rigtering, Hughes & Hosman (2012)	• innovativeness, proactiveness and risk taking	• 7-point scale by Covin and Slevin's (1989)	• Multidimensional	• Firm performance	• 6000

*Source: Adapted from Rauch, Wiklund, Lumpkin & Frese (2009)*



Although entrepreneurial orientation dimension evolved from three to five, numerous scholars (e.g. Miller, 1983; Morris & Paul, 1987; Covin & Slevin, 1989, 1991; Zahra, 1991; Zahra, 1993; Zahra & Covin, 1995; Knight, 1997; Kreiser, Marino, & Weaver, 2002) confirmed that only innovativeness, risk-taking and pro-activeness were used as prominent entrepreneurial dimensions in the entrepreneurship research by most of the researchers as shown in Table 2.1. Therefore, going forward, this research will only consider entrepreneurial orientation dimensions as suggested by Miller (1983), that is, innovativeness, proactiveness and risk taking as the research dimensions.

However, a significant observation from Table 2.1 is that most of conceptual and empirical studies conducted in the last three decades have utilized entrepreneurial orientation as an independent variable to predict its influence towards firm performance (which is mainly financial or non-financial). The studies have given vast evidence of entrepreneurial orientation towards firm performance. However, very little studies have considered entrepreneurial orientation is examined as a dependent variable or outcome variable. In this study, entrepreneurial orientation is a dependent variable and therefore, the findings of this research will provide new insights into previous studies which regarded entrepreneurial orientation as an independent construct with various dimensions. The following section will provide an in depth discussion about the entrepreneurial orientation dimensions identified in this study.

### **2.2.1.1 Innovativeness**

Although there are many factors that influence performance of an organization, according to Bueno and Ordonez (2004), innovation found to be one of the most prominent and crucial factor of all as it helps the organization to stay competitive throughout the business evolution. The ability of organizations in responding and adapting itself towards changes resulting from internal and/or external forces were the main focus of early research work in relation to innovation (Hull & Hage, 1982). At a broader perspective, the widely examined entrepreneurial orientation dimension throughout the entrepreneurship literature perhaps is innovation. This is in line with Covin and Miles (1999) who suggested that entrepreneurship would not exist without innovation. Combination of resources that make existing methods or products obsolete are also constitutes to innovation (Moris & Kuratko, 2002).

Scholars such as West and Iansiti (2003) and Brockman and Morgan (2003) found a direct effect between innovation performance and firm performance. Slater and Narver (1995) argue that innovation is an important driver in manufacturing channel which is also in alignment to findings by Ireland and Webb (2007) that entrepreneurial actions found to have direct effects on product and process innovation. However, Covin and Miles (1999) explained that although organization's innovativeness and innovative capabilities are the main focus of the literature, innovation by itself does not deem to be entrepreneurial instead must be complemented by opportunity seeking and advantage seeking dimensions to create sustainable competitive advantage. Zahra, Jennings, and Kuratko, (1999) and Lumpkin and Dess (2001) are also in agreement with Covin and Miles (1999) that entrepreneurial orientation, innovation performance and the remaining dimensions of entrepreneurial orientation are linked with each other.

On a broad view, strong commitment from organizations to create and introduce new products, services, processes in the market supported by technological advancements characterize innovativeness. Continuous innovation is essential among entrepreneurial organizations to grasp the opportunities. Innovative organizations which generally employ large number of skill workers (Lumpkin & Dess, 1996) always considers innovations in areas such product and processes through the technology and engineering, product-market (market research, product design, and innovation in advertising and promotion) and new management systems, control techniques and new organizational structure for effective administration in order to achieve competitive advantage.

According to Edison, Nauman and Torkar (2013), the relevance and importance of innovativeness in the entrepreneurship literature was first discussed by Schumpeter (1949) before it was thoroughly debated by several scholars in the last three decades. According to Schumpeter (1949), introduction of new goods and services will drive changes to existing market structure hence will help to grow the economy. Miller and Friesen (1982) advanced the definition of Schumpeter by explaining that introduction of new products, services and processes is a result of support and encouragement into new ideas, experimentations and also creativity (Peters, 1990). Several other scholars (Ginsberg & Venkataraman, 1985; Morris & Paul, 1987; Covin & Slevin, 1989; Schafer, 1990) concur with earlier definitions but included research and development activities on top of new idea generation and experimentation as later suggested by Slater and Narver (1995).

Lumpkin and Dess (1996) together with Covin and Miles (1999) in their research attempted to further explain innovativeness as organization's tendency to identify creative solutions with new methods and renewal of technological processes which they claim to be an absolute necessity for survival among entrepreneurial organization, however the organizations are required to support their employees to undertake such endeavors. More specifically, Lumpkin and Dess (1996) categorized innovation further into product innovation, market innovation or technological innovation by explaining that it is viewed as basic willingness to venture beyond current paradigms by departing from existing processes and practices towards a new state of art. Miller and Friesen (1978) explained that the product and market innovation mainly concerned about the product design, market research, and advertising and promotion.

The technological innovation involves product development, process development, engineering, research and development (Neely & Hii, 1998) and technical expertise together with industry knowledge (Maidique & Patch, 1982). Dess and Lumpkin (2005) further enhanced the definition of innovation by suggesting that innovativeness related efforts shall focus at discovery of new opportunities and required solution. Morris (1998) identified several perspectives of innovation: creation of wealth, creation of change, creation of innovation, creation of employment, creation of enterprise, creation of value and creation of growth. Nevertheless, Lumpkin and Dess (1996), Lumpkin and Dess (2001) and Certo, Moss, and Short (2009) further indicated that innovativeness may also result in unusual solutions to the problems and needs of the marketplace.

### **2.2.1.2 Risk-Taking**

The high level of uncertainty is an important characteristic of entrepreneurship. This idea is a central part of business today in relation to entrepreneurship and also entrepreneurial orientation. Entrepreneurship is often characterized by stiff competition in the marketplace and that only entrepreneurial organization will be able to survive. Traditional entrepreneurship research reveal that entrepreneurs are risk seeking or at least less risk averse than others. Shapiro (1994) indicated that the risk taking orientation encourages organizations to take high risks, hence, expect high returns by committing large amount of resources to invest in an unexplored technology and also opportunities. However, Brockaus (1980) found that risk taking propensity not necessarily a distinguishing characteristic of an entrepreneur, especially among entrepreneurs of new ventures. Therefore, in order to understand entrepreneurship and entrepreneurial orientation, it is essential to thoroughly examine risk taking element within entrepreneurial orientation perspective.

Miller and Friesen (1978) defined risk taking as the willingness of the managers to make commitments which are large and risky. It is also concerned about an organization's preferences for bold actions by engaging themselves into high risk projects in order to achieve organizational objectives (Miller, 1983). However, according to Lumpkin and Dess (1996), the degree to which each individual differs in their willingness to take risk constitute to the entrepreneurial orientation element of risk taking. Nevertheless, according to Shane (1994), early entrepreneurship literature suggest that risk taking behavior was conceptualized in a manner that it is associated with self-employment as opposed to working with or under another individual or entity in exchange for a compensation which involve personal or financial sacrifice (Nieman, Hough, & Nieuwenhuizen, 2003). However, in viewing risk

taking as a dimension of entrepreneurial orientation, Lumpkin and Dess (2005) defined that a willingness to pursue an opportunity in an uncertain situation regardless of the outcome of such endeavor constitute to the risk taking behavior. They also added that such bold actions reflects organization's high investment and commitments towards technology and risky projects which come with high costs and taking bold and prompt actions to reduce the losses. Further enhancement to the definition of risk taking was contributed by Coulthard (2007) who concur to earlier contribution from other scholars yet emphasized that the organization should not only commit to large investments and also required resources but also should be positioned to accept costly failures as a result of risk acceptance. Cautioning on the definition of risk taking by Coulthard (2007), Jennings and Lumpkin (1989) in their earlier studies concluded that entrepreneurial organizations usually promotes calculated risk taking behavior only within the organization and further supported by Morris (1998) arguing that entrepreneurs are moderate and calculated risk takers.

However, entrepreneur with high need for achievement grasp opportunities with difficulty and fully aware of the risk associated with their business ventures. They are believed to anticipate uncertain situations calmly although it is difficult to predict the outcome of risky undertakings. This is clearly indicated by research conducted by Fable and Larwood (1995) concluding that entrepreneurs score high on risk taking behavior in comparison to non-entrepreneurs. This view was also further strengthened by Saravathy, Simon, and Lave (1996) who found that entrepreneurs are more prone to accept risks in their daily business activities.

### **2.2.1.3 Pro-activeness**

Relatively a stable tendency of an individual to take action in order to influence the environment for a change is known as proactivity which should be preoccupied with future goals. Crant (1996) inform that an individual who is taking initiative to identify opportunities, act on these opportunities, and preserve it to bring about a meaningful change can be better described as proactive individuals. Usually, proactive individuals show positive influence towards innovation (Siebert, Kramer & Crant, 2001). This is clearly demonstrated by past research informing that there is relationship between entrepreneurial intentions and proactivity (Crant, 1996).

Miller and Friesen (1978) are the very first to describe proactiveness. They defined proactiveness as acting ahead of competition. Subsequent research attempts by Venkataraman (1989) claimed that proactiveness involves actions to anticipate and act on seeking new opportunities in support of present or future demands by staying ahead of competition and iterated that proactiveness remains as an integral ingredient of entrepreneurship. In addition to this, proactiveness also ensures that actions are taken to secure and protect market share with forward looking perspective (Covin & Slevin, 1989; Lumpkin & Dess, 1996). Along the same line, Lumpkin and Dess (1997) articulated that an aggressive competitive orientation represents proactivity. As an extension of past definitions, Lumpkin and Dess (2001) further elaborated that proactiveness concerned about an organization's effort to steadfast others through information technology advancements, introduction of new products and services in the market and continuously tapping opportunities arising from the marketplace.

Although the definition of proactiveness is being enhanced through the decades, Dess and Lumpkin (2005) indicate that this conceptualization still holds true until now since there is consensus among all the entrepreneurial orientation scholars that proactiveness commonly revolve around identification and pursuit of new opportunities in competition with the rivalries. However, proactiveness which is also viewed as opportunity seeking and forward looking perspective (Morris & Kuratko, 2002) is not necessarily meant to be first mover in the market (Lumpkin & Dess, 1996).

Guided by high need for achievement and fear of losing opportunities, entrepreneurs carefully analyze the entire situation and expected conditions so that proactive actions taken will help the organization to exercise adequate level of control over their customers and competitors instead of awaiting market to respond (Miller & Toulouse, 1986). By being so, the proactive organizations will be able to champion exploitation of opportunities and anticipate changes and emerging trends and problems which may lead towards new venture opportunities (Dess & Lumpkin, 2005). According to Venkataraman (1989), an organization may behave proactively through introduction of new products and services, eliminating non-value adding operations and participating in emerging markets which will help the organization to stay ahead of competition while pursuing new opportunities.

## **2.2.2 Conceptualization of Entrepreneurial Orientation**

### **2.2.2.1 Individual vs. Firm Level Perspective**

In order for organization to prosper in competitive business environment, entrepreneurial orientation becomes inevitable. Entrepreneurial orientation has been discussed in the



literature from various angles. However, Cahill (1996) pointed that entrepreneurship research have achieved its state of fragmentation. It has still been a topic of much debate in management and entrepreneurship literature for past few decades. As far as social sciences concerned, there are still gaps in the literature. To date, one of the prominent debates within the entrepreneurship literature is whether entrepreneurship research shall be viewed as individual level or firm level phenomenon. In view of this debate, Covin and Miles (1999) extended certain level of clarity by indicating that individual level entrepreneurship occurs when an individual champion ideas within corporate context while firm level entrepreneurship come into play when there is an existence of entrepreneurial philosophy that permeates the entire organization's outlook and operations.

Early researchers attributed entrepreneurial orientation to individual level perspectives. These researchers argued that while considering entrepreneurial orientation as individual level perspective, it will enable the organization to comprehend behavior that drives entrepreneurial activities. An underlying reason that supports this claim is that elements that underpin growth of an organization such as innovation, risk taking, renewal of the organization and other related facets are not merely a sole responsibility of the owner or top management. Instead, it goes beyond than that and is driven by the entire organizational workforce at all levels. However, Schumpeter (1942) made a contrasting attempt by shifting his analysis from the individual level perspective to firm level phenomenon.

An underpinning reason for this shift was his claim that eventually, entrepreneurship can only be dominated by firms which could devote resources in undertaking innovative efforts. Since

then, most of the entrepreneurship research was focused at firm level (Zahra, Jennings, & Kuratko, 1999). On the suggestion of Miller (1983) that entrepreneurship researchers shall study firm level phenomenon considering unique characteristics that each firm of different types may have, wide array of entrepreneurship studies were conducted either conceptually (Covin & Slevin, 1991; Zahra, 1993) or empirically (Covin & Slevin, 1989; Zahra & Covin, 1995; Lumpkin & Dess, 1996, Wiklund, 1999; Davidson & Wiklund 2001; Wiklund & Shepherd, 2005; Keh, Nguyen, & Ng, 2007) and considerable evidence were produced into the investigation of the relationship between entrepreneurial orientation and the firm performance. In addition, Lee, Lee, and Pennings (2001) concluded that identification of factors that encourage or constrain entrepreneurial orientation and organizational performance remain an important agenda in the entrepreneurship research.

Zahra, Jennings and Kuratko (1999) indicated that entrepreneurial orientation questionnaire measure developed by Covin and Slevin (1986) which focused at entrepreneurial orientation dimensions that was proposed by Miller (1983) which is an adaptation of Miller and Friesen's (1983) and Khandwalla's (1976, 1977) work was mainly used among owners and managing directors as a representative of the organization. This is based on the classical economics approach which claimed an individual entrepreneur as a firm. Therefore, there is clear distinction between the business owner and also manager and other employees in conduct of firm level entrepreneurship research although the research assessment was on an individual entrepreneurial orientation.

There are continuous criticisms in adopting individual approaches to entrepreneurship as opponents of this approach (e.g. Gartner, 1989; Low & MacMillan, 1988) claim that it does not provide adequate explanatory value of entrepreneurial behavior. In spite of these arguments, Cunningham and Lischeron (1991) argue that there are still theorists who believe that unique values and attitudes of individuals will help them to behave entrepreneurially. However, an objective measure of entrepreneurial orientation should include multiple levels of the organizational hierarchy with an aggregation of the individual data at the organization level (Klein & Kozlowski, 2000). The importance of individuals in entrepreneurial orientation research was apparent when Wiklund (1999) indicated that it is difficult to attribute firm level outcome to individual as it don't portray the actual situation.

As discussed, most of the early researchers have attempted to study entrepreneurial orientation dimensions antecedents in relation to firm performance. However, the antecedents of entrepreneurial orientation at individual level perspective have rarely been discussed. Considering that most of the entrepreneurial orientation research has been focusing at firm level phenomenon that investigates firm growth and performance, this research attempt to take an individual level perspective. Due to the mixed results accumulated from the past literatures discussed above, it is the basic premise of this research to examine the interaction between entrepreneurial orientation dimensions and organizational characteristics antecedents at every level of organization rather than distinguishing business owners from managers or the general population.

### **2.2.2.2 Independence of Entrepreneurial Orientation Dimensions**

The independence of entrepreneurial orientation dimensions has been debated by entrepreneurship scholars for decades. Several claim the entrepreneurial orientation dimensions to be independent (Miller, 1983; Covin & Slevin, 1989; Wiklund, 1999; Madsen, 2007) while few others claim the same to co-vary (Lumpkin & Dess, 1996; Kreiser, et al., 2002; Richard, Barnett, Dwyer, & Chadwick, 2004; Moreno & Casillas, 2008). The following section will offer discussion about two streams of scholars who had differing opinion about entrepreneurial orientation dimension, whether one should consider it as a unidimensional construct or a multidimensional construct.

The initial research about entrepreneurial orientation dimensions by Miller (1983) treated entrepreneurial orientation as a unidimensional construct. Since then the debate has surfaced to which entrepreneurial orientation should be considered to be unidimensional or multidimensional construct. Acting on Miller's (1983) claim, Covin and Slevin (1989) conducted a research among small manufacturing companies to investigate the factor loading of each dimension within entrepreneurial orientation construct. The study found that a single factor resulted in higher factor loading implying that the entrepreneurial orientation dimensions are empirically related, therefore it provides sufficient evidence to conclude that entrepreneurial orientation constitute a distinct, unidimensional orientation. Similar kind of findings were also reported by Wiklund (1999) who considered three dimensions of entrepreneurial orientation construct namely, innovativeness, proactiveness and risk taking whereby these three dimensions converged into one entrepreneurial orientation construct. On a separate study, Madsen (2007) in his research concluded that the research findings provided

sufficient evidence to conclude that it is acceptable to consider entrepreneurial orientation as a unidimensional measure.

Nevertheless, different stream of scholars such as Lumpkin and Dess (1996), Kreiser et al. (2002), Richard et al. (2004) and Moreno and Casillas (2008) found a contrasting finding in regards to unidimensional claim of Miller (1983) and his proponents of entrepreneurial orientation construct. Early research by Lumpkin and Dess (1996) proposed entrepreneurial orientation as a multidimensional construct. His argument was further supported by Kreiser et al. (2002) in his study which involved firms from six countries attempting to investigate the dimensionality issue of entrepreneurial orientation construct in regards to firm growth. The study revealed that entrepreneurial orientation dimensions found to be better and robust predictor of firm growth than viewing the dimensions as a summated single entrepreneurial orientation construct. In order to further defend the independence of the dimensions and to provide further support of multidimensionality of entrepreneurial orientation constructs,

Richard et al. (2004) conducted additional research and provided sufficient empirical evidence to conclude that entrepreneurial orientation dimensions should be regarded multidimensional rather than viewing it as a unidimensional construct. In the study, Richard et al. (2004) found that the firm's performance was independently affected by two main dimensions of entrepreneurial orientation construct, that is, innovativeness and risk taking. Subsequent research by Moreno and Casillas (2008) investigated the same concern among small and medium enterprises. The study utilized Structural Equation Model (SEM) to further

investigate the entrepreneurial orientation dimensionality issue and improved the certainty that entrepreneurial orientation is a multidimensional construct.

Many empirical investigations have been undertaken in the past to understand the dimensionality issue of entrepreneurial orientation construct. However, scholars from each stream have still not concluded the issue. This issue is still lasting to which future researchers' should view entrepreneurial orientation construct as a unidimensional construct or multidimensional construct. Nevertheless, intervention of Covin, Green, and Slevin (2006) has somehow provided certain level of clarity and guidance on this issue. According to Covin, Green, and Slevin (2006), several theoretical aspects have been overlooked by proponents of unidimensional and also multidimensional construct. They claimed that Miller (1983) have viewed entrepreneurial orientation as a formative construct. Therefore, decomposing the constituents of entrepreneurial orientation into its dimensions is not applicable in Miller's research context. In contrast, Lumpkin and Dess (1996) provided critical attention to each of the entrepreneurial orientation dimension on an argument that every entrepreneurial orientation dimension may have different level of significance (high on a dimension and/or low on the other dimensions) on an organization.

Therefore, composing all dimensions into a single entrepreneurial orientation construct may not be acceptable considering the different influence entrepreneurial orientation dimensions would have on the organization. On this vein, Covin, Green, and Slevin (2006) finally concluded that entrepreneurial orientation dimensionality is no longer a point of disagreement because Miller (1983) and Lumpkin and Dess (1996) proposed entrepreneurial orientation

construct on a clearly different perspectives. Thus, the debate on entrepreneurial orientation construct dimensionality issue in the entrepreneurship literature is somewhat misleading.

Although the proponents of both streams (unidimensional and multidimensional) are still debating on how should one perceive entrepreneurial orientation construct, various studies have shown that both streams are highly valid and reliable in many studies in the past in providing optimal model fit (e.g. Wiklund 1999; Kreiser, et. al., 2002; Green, Covin, & Slevin 2008; Runyan, Droge, & Swinney 2008). For the purpose of this research, entrepreneurial orientation construct will be viewed as a multidimensional construct as proposed by Lumpkin and Dess (1996) and his proponents. Given the competitive conditions surrounding organizations today, observing entrepreneurial orientation dimensions as a multidimensional construct is expected to explore the underlying organizational characteristics (which will be explained in the following section) that activate employee entrepreneurial orientation. In addition, recognizing entrepreneurial orientation as a multidimensional construct would contribute to the greater understandings of entrepreneurial orientation at individual level. The study is expected to investigate the significance of each entrepreneurial orientation dimensions on activation of employee entrepreneurial orientation. It is envisaged that this study will provide further empirical evidence to continuing disagreement about entrepreneurial orientation dimensionality issue.

Kuratko, Goldsby, and Hornby (2012) indicated that in order for an organization to take advantage of new business opportunities, it is needed to be dynamic and flexible as being argued by many other earlier researchers. However, the organizational climate remain an

important element in realizing entrepreneurial intentions among organizational citizens. Therefore, creating a work environment which forms the underlying organizational characteristics that encourage employees to engage into entrepreneurial activities become a central attention in the organization (Kuratko, Hornsby, & Covin, 2014).

### **2.3 Organizational Characteristics**

According to Zahra (1991) and Zahra and Covin (1995), the impact of entrepreneurial activities on successful company performance has attracted research into the organizational factors that can promote or impede these activities. Often, the type of entrepreneurial activities that an organization pursues is influenced by its internal organizational factors (Burgelman, 1983a, b). The importance of internal organizational dimensions in promoting entrepreneurial orientation among organizational citizen has been acknowledged by many researchers in the past (Hornsby, Kuratko, Shepherd, & Bott, 2009; Kuratko, Ireland, & Hornsby, 2001; Kuratko, Montagno, & Hornsby, 1990). Various variables including internal factors that serve as important antecedents of entrepreneurial efforts which determines interest in and support of entrepreneurial initiatives within an organization were investigated by past researchers. Among others, it includes incentive and control systems (Sathe, 1985), culture (Kanter, 1985; Hisrich & Peters, 1986; Brazeal & Herbert, 1999), organizational structure (Covin & Slevin, 1991; Naman & Slevin, 1993; Dess, Lumpkin, & McGee, 1999), and managerial support (Stevenson & Jarillo, 1989; Kuratko, Hornsby, Naffziger, & Montagno, 1993).



Entrepreneurship literature in the recent time converge the organizational characteristics which influences entrepreneurial efforts into five main factors although there is no universal agreement or consensus on which factors offers significant influence in promoting entrepreneurship efforts. The following section will offer an evolution of organizational characteristics that influences organizational entrepreneurial actions since the last two decades.

Past and current research has identified an array of organizational constructs that drives entrepreneurial orientation among employees. Entrepreneurial orientation proponents identified management support (Damanpour, 1991; Kuratko, Hornsby, Naffziger, & Montagno, 1993; Pearce, Kramer, & Robbins, 1997; Hornsby, Kuratko, & Zahra, 2002), resource and time availability (Damanpour, 1991; Stopford & Baden-Fuller, 1994; Slevin & Covin, 1997; Hornsby, Kuratko, & Zahra, 2002), work discretion (Sathe, 1985; Jennings & Lumpkin, 1989; Stopford & Baden-Fuller, 1994; Hornsby, Kuratko, & Montagno, 1999), rewards and reinforcement (Sathe, 1985; Sykes, 1992; Twomey & Harris, 2000; Hornsby, et al., 2002) and supportive organizational culture (Sathe, 1985; Zahra, 1991; Covin & Slevin, 1991; Hornsby & Naffziger, 1992; Hornsby, et al., 2002).

Entrepreneurship literature provided little agreement on which internal organizational factors are essential in stimulating entrepreneurial activities. However, Kuratko, Montagno, and Hornby (1990) synthesized the literature and identified a set of key internal organizational factors which determine the level of entrepreneurial culture within an organization. These include top management support, reward and resource availability, risk taking, time

availability and organizational structure and boundaries. The study identified that only management support, reward, resource availability and organizational structure were influencing employees in considering entrepreneurial actions. This has called for further research to identify other organizational characteristics that foster entrepreneurial action among employees.

In view of that, a subsequent study by Hornsby, Naffziger, Kuratko, and Montagno (1993) used management support, work discretion/autonomy, rewards/reinforcement, time availability and organizational boundaries to analyze the influence of these factors on employee entrepreneurial actions. The study found that all of these organizational characters to be significant. A further research by Hornsby, Naffziger, Kuratko, and Montagno (1993) among Canadian and US managers was conducted to determine if these managers differed in how they perceived work environment in related entrepreneurial actions. The study found that supportive work environment resulted in statistically significant level of entrepreneurship and provided empirical evidence that organization innovative behaviors are related to the existence of innovative climate within the organization.

Janssen (2000) conducted another research to identify the relationship between effort-reward and innovative work behavior among employees. The effort-reward fairness was defined as a fair balance of work efforts relative to work rewards. The study examined non-managerial industrial workers within food industry. Based on the study results, it was identified that employees tend to respond more innovatively when their efforts perceived fairly and

rewarded appropriately by the organizations. This finding has lent empirical evidence to organizational characteristic of rewards/reinforcement.

A year later, Baum, Locke, and Smith (2001) conducted a research among architectural woodworking firms to learn their individual and organizational characteristics that influence their entrepreneurial actions and also venture growth. CEOs and employees from these companies were surveyed and the study identified that the organizational characteristics such as management support, work discretion, rewards/reinforcement and time availability were in support of entrepreneurial actions within the organization. Further support of organizational characteristics that influences entrepreneurial actions within organization was offered by Hornsby, Kuratko and Zahra (2002). Midlevel managers from a university and manufacturing and financial organization throughout the US and Canada were surveyed to find further support into relationship between organizational characteristics and also employee entrepreneurial actions. Five organizational characteristics (management support, autonomy/work discretion, rewards/reinforcement, time and organizational boundaries) were tested. While all the other organizational factors was having higher factor loadings (more than 0.7), organizational boundary found to have weaker loading and eventually was eliminated in further studies. The study provided empirical evidence into the importance of organizational characteristics in developing and implementing new ideas in the organization.

Further study by Janssen (2005) intended to investigate the relationship between supervisor supportiveness, employees' perceived influence and employee innovation behavior among Dutch employees from the energy industry. The results show that employees who perceived

to have influence over the organization possess high propensity to be innovative in the organization. In addition, the study also found that there is positive relationship between supervisor supportiveness and also employee innovation behavior. This study has provided empirical evidence into two main organizational characteristics of management support and also work discretion/autonomy.

Holt, Rutherford, and Clohessy (2007) conducted a research among employees at US Air Force installations to investigate the relationship between individual and organizational characteristics and entrepreneurship within the organization. In this study, empirical analysis revealed that management support, work discretion and rewards/reinforcement were positively related to entrepreneurial actions in the organizations. During the same period, Antoncic (2007) conducted another study among participants from Slovenia and Ohio. In this study, management support work discretion, time availability, and rewards/reinforcement were investigated. The study extended adequate evidence that all of the organizational characteristics found to positively correlate with entrepreneurial actions.

In a recent study by Knol and Van Linge (2008), the relationship between structural/psychological empowerment and employee innovative behavior was investigated among participants from a hospital in the Netherlands. For the purpose of this research, structural/psychological empowerment was defined as having the opportunity to learn and grow; access to information needed to perform job requirements; support from leadership and peers; and access to resources such as supplies, money, equipment, and time with four main dimensions: meaning (employees perception about their work), competence (level of

employee confidence in meeting their job requirements), self-determination (employees freedom and autonomy in doing their work) and impact (level of employee influence and acceptance of their ideas in their work). The study showed that structural/psychological empowerment was statistically significant and positively related to employee innovative behavior. This study again lent empirical evidence into organizational characteristics which influences entrepreneurial actions such as management support, work discretion, and resource and time availability.

The literature review revealed that management support, resource and time availability, rewards/reinforcement and work discretion are the most commonly used and profound organizational characteristics. These key variables found to be significant and extend empirical evidence into the relationship between organizational characteristics and entrepreneurial actions among employees within the organization. Therefore, in this study, management support, resource and time availability, rewards/reinforcement and work discretion will be used and the following section will provide in depth discussion of each of these organizational characteristics.

#### **2.3.1.1 Work Discretion**

Past literature have analyzed two different terms namely job autonomy and employee work discretion. However, both are synonyms and job control and decision latitude are synonyms of discretion. In general terms, work discretion can be defined as amount of freedom provided to an employee in planning, organizing and executing their work which usually takes into account the methods as well as the timing of their work schedule (Hackman &

Oldham 1975; Jackson, Wall, Martin, & Davids, 1993). Hackman and Oldham (1976) was the pioneer who coined the term job autonomy.

Hackman and Oldham (1976: 258) define autonomy as “the degree to which the job provides substantial freedom, independence and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out”. An introduction of greater work discretion was popularized in the growing literature of high Performance Work Systems (Osterman 1994, 2000; Appelbaum, Bailey, Berg & Kallerberg, 2000). The past literature have also provided evidence that employees with greater work discretion tend to be better motivated and as a result, generates greater well-being. Appelbaum et al. (2000) highlighted that an improvement in the areas of production covering three main areas that is volume cost and quality can only be realized if the employees are given sufficient level of work discretion. In addition, study by Nagar (2002) among branch managers in the United States banking sector indicated that managers from innovative banks are enjoying significantly higher work discretion than the stable, less volatile banks.

According to Kuratko, Ireland, Covin, and Hornsby (2005), work discretion refers to organization’s commitment to provide relevant decision making latitude and freedom in undertaking entrepreneurial endeavors while being able to tolerate failure as a result of entrepreneurial attempt. An organization in general and the management team in particular should be able to tolerate failure resulting from entrepreneurial endeavors (Mohammad Reza & Amir Hossein, 2013). They should also allow an appropriate level of decision making latitude among employees. However, they shall exercise decision making authority

delegation without excessive oversight and this describes the work discretion dimension of organizational characteristics construct. However, Sathe (1985), Stopford and Baden-Fuller (1994), and Hornsby, Kuratko, and Zahra (2002) indicated that employees should not be criticized when making errors while involving into entrepreneurial activities.

### **2.3.1.2 Resource and Time Availability**

Sathe (1985), Stopford and Baden-Fuller (1994) and Dess and Teng (1997) highlight that availability of time and resources is of critical importance to encourage entrepreneurial activities. Employees perceive that if they are equipped with adequate resources and time, it enable them to engage into entrepreneurial activities. (Souder, 1981; Kanter, 1985; Sathe, 1985; Sykes, 1986; Sykes & Block, 1989; Hisrich & Peters, 1986; Katz & Gartner, 1988; Stopford & Baden-Fuller, 1994; Das & Teng, 1997; Slevin & Covin, 1997; Hornsby et al. 2002; Goosen 2002; Kreiser et al. 2002; Mohammad Reza & Amir Hossein, 2013).

Institutionalization of entrepreneurial mindset and behavior among employees requires adequate level of resources which includes money and also time. This has turn to be a constant concern of most researchers in the entrepreneurship literature. There is an absolute need to perform a check on availability of resources, especially monetary resources and also the capability of existing equipment, systems and processes to identify if they are supportive enough to activate entrepreneurial behavior among the employees. Not only that, but the organization should also undertake an assessment on existing workload among employees and to ensure that they are given needed time to pursue their entrepreneurial interests. This is in line with the claim by Burgelman and Sayles (1986) that experimentation to develop new

ideas can only be encouraged if the organization ensures the availability of slack resources. Therefore, their job structure should be carefully designed in order to provide them required time to have themselves involved into entrepreneurial activities apart from fulfilling their day to day routines in order to achieve short and long term organizational goals (Kuratko, Ireland, Covin, & Hornsby, 2005).

### **2.3.1.3 Management Support**

Entrepreneurial activities will not yield an expected outcome itself without an organization's intervention. Strategic intention towards entrepreneurial activity which should be exhibited by top team remains an essential element in creating such environments in the organization (Ireland, Covin, & Kuratko, 2009). In view of that management support is considered to be one of the key elements that will enable activation of entrepreneurial behavior among employees in the organization. According to Stevenson and Jarillo (1989), Damanpour (1991), Pearce, Kramer, and Robbins (1997) and Morris, Kuratko, and Covin (2008), management support has a significant role to play in order to facilitate and promote entrepreneurial initiatives within the organizations. Floyd and Lane (2000) and Ireland, Hitt, and Vaidyanath (2002) inform that in order for the organization to be successful, managers who also constitute to management team at all organizational levels should play critical strategic roles in fulfilling organizational objectives.

Various scholars (e.g. Damanpour 1991; Chandler, Keller, & Lyon 2000; Morris & Kuratko 2002) have tried to explain the core of management support as one of the organizational characteristics dimension in activation of entrepreneurial behavior among employees. In a



nutshell, the willingness of the management to facilitate and also to promote entrepreneurial activities and behaviors within the organization describes management support dimension (Quinn, 1985; Hisrich & Peters, 1986; MacMillan, 1986; Sykes & Block, 1989; Sathe, 1989; Stevenson & Jarillo, 1989; Damanpour, 1991; Kuratko, Hornsby, Naffziger, & Montagno, 1993; Pearce, Kramer, & Robbins, 1997, Mohammad Reza & Amir Hossein, 2013). Kuratko, Ireland, Covin, & Hornsby (2005) added that on top of facilitating and promoting entrepreneurial behavior, the management support also refers to provision of resources that employee require to initiate entrepreneurial actions.

While top executives interests are captivated in board room discussions (Morris, Kuratko, & Covin, 2011), management support is also found to be beneficial in driving the organizational workforce to achieve corporate objectives. This claim was justified by Merrifield (1993) who found that top management support and involvement have positive influence towards activation of entrepreneurial behavior among employees. In addition to this, encouragement (Hisrich & Peters, 1984), support, commitment, and style, and the staffing and rewards (MacMillan, 1986) was also found to be other areas of support that can be extended by management in driving entrepreneurial actions within the organization.

On top of this, management support can also take other forms such as providing required and adequate resources and expertise (Kanter, 1984; Pinchot, 1985), taking lead in championing innovative ideas, training and rewarding employees, and establishing procedures for dealing with new ideas (Zahra, 1993), and also training opportunities (Stevenson & Jarillo, 1989) to

detect opportunities in institutionalizing the entrepreneurial mindset not only among the employees but also within the organization's system and processes in place.

#### **2.3.1.4 Rewards/Reinforcement**

Generally, creation of entrepreneurial behavior among employees will not materialize unless the employees perceive that they will be rewarded accordingly. Recognition for their significant contribution or exceptional entrepreneurial performance is what an employee expects in pursuit of entrepreneurial intention and atmosphere activation. Stevenson and Gumpert (1985) indicated that when an employee is rewarded for the performance, they remain intact with the organization and increase their loyalty to the organization.

Kuratko, Ireland, Covin, and Hornsby (2005) indicated that rewards and reinforcement concerns with development and utilization of system which analyzes reward based performance structures while highlighting employees' significant achievement with an aim to encourage employees to pursue more challenging work. In addition, Mohammad Reza & Amir Hossein (2013) highlighted that in pursuit of challenging work, performance based reward and reinforcement systems are playing an important role in engaging employees towards significant achievements.

Usually, rewards and reinforcement will be drawn and put in practice in the organization to recognize performance, significant achievements, and important contributions. This is done by developing and using systems which capture employees' continuous performance to

encourage undertaking of challenging tasks. Salvato (2002) found that compensation systems which reward employees positively associated with entrepreneurial orientation. The entrepreneurship literature have discovered that in order for an organization to spur entrepreneurial mindset among employees, it should have in place an effective reward system which must consider individual responsibility, their goals, resulting feedback driven by results-based incentives. Therefore, an appropriate use of rewards (Scanlan, 1981; Souder, 1981; Kanter, 1985; Sathe, 1985; Block & Ornati, 1987; Sykes, 1992; Barringer & Milkovich, 1998) is imperative in activating entrepreneurial orientation among employees. Research undertaken by Twomey and Harris (2000) found that reward and reinforcement systems and entrepreneurial behavior of employees correlate positively illustrating that an effective reward program promotes the entrepreneurial mindset.

Although organizational characteristics play an important role in activating entrepreneurial intentions, the importance of knowledge in facilitating such intentions can never be neglected. The role of knowledge in achieving organization performance was previously tested and proven (Davenport & Prusak, 1998; Darroch, 2003). In addition, Ipe (2003) highlighted that knowledge remain a strategic asset to organization, therefore, knowledge management deserves an equal attention while trying to understand the entrepreneurial orientation phenomenon in the organization.

## **2.4 Knowledge Management**

Knowledge has been an important consideration in organizational success since very long ago. Grant (1996) and Foss and Pedersen (2002) highlighted that attainment of sustainable

competitive advantage in a dynamic economy requires knowledge and remain a critical organizational resource. Therefore, an efficient management of knowledge as a strategic resource of an organization is critical for organizational success (Ipe, 2003). It is proven by previous management literature which has seen a boom in dealing with organizational knowledge as an intangible dimension of the organization (Von Krogh, Nonaka and Aben, 2001).

Liao, Wu, and Chih (2007) explained that in order for an organization to learn new techniques, developing core competencies, solving problems, and evaluating new situations, knowledge remain an important resource. In the past, knowledge was perceived as value adding component in the organization. However, such perception has changed over the time and in today's context, knowledge has transformed into a necessity in the organization to remain competitive and steadfast the competitors. Crossan et al. (1999) indicated that accumulation of knowledge and institutionalization of individual practices leads to organizational learning in integrating both employees and also entrepreneurship.

Organizational ability to create, utilize and develop knowledge based assets said to be the success formula to many organizations (Hill, Nancarrow, & Wright, 2002; Morrison, 2001) since knowledge is a source of growth which reflects organizational performance (March & Sutton, 1997). According to Earl (2001), knowledge management has been recognized as being central to product and process innovation, executive decision making, and organizational adaptation and renewal. Past literature reveals that there is a common understanding about the "knowledge" term. In a wider context, knowledge is defined as

truths and beliefs (Nonaka & Takeuchi, 1995; Wiig, 1994) and imbuing formatted data and information (Fahey & Prusak, 1998; Raisinghani, 2000) which is validated through test of proof (Liebeskind, 1996) that can be communicated or shared (Allee, 1997) generated through the capacity for effective action (Sveiby, 1997) and also past experiences (Allee, 1997; Leonard & Sensiper, 1998; Wijnhoven, 1998).

Traditionally, knowledge recognition and articulation have been the emphasis of knowledge management. However, Sabherwal and Beccerra-Fernandez (2003) posited that management of important tacit knowledge is also equally crucial for organizational survival. Nevertheless, Nonaka (1991) claimed that knowledge includes explicit (that built up from data and information from a domain of information system) and tacit knowledge (that resides in the mind of individuals within the organization, normally as skills and competences).

Just like many other concepts, the definition of knowledge management is also being debated in the literature. There are many emerging definition of knowledge management since it was first introduced in a 1986 keynote address to a European management conference. Various scholars (Hannabus, 1987; Gopal & Gagnon, 1995; Leonard-Barton, 1995; Nonaka & Takeuchi, 1995; Wiig, 1995; Demarest, 1997; Bair, 1997; Spek & Spijervet, 1997; Knapp, 1998; Davenport & Prusak, 1998; Pan & Scarbrough, 1998; Schuppel, Muller-Stewwen, & Gomez, 1998; Holsapple & Joshi, 2000; Bock, 2001; Darroch, 2003; Keskin, 2005; Park, 2006) have contributed in establishing an appropriate definition of knowledge management.

Initial definition of knowledge management by Hannabus (1987) right after it was introduced in 1986 surrounds around the set of information that users know, the amount of knowledge they possess, their attitudes and also the way they make decisions while interacting with others.

This definition was found rather vague and further research by Gopal and Gagnon (1995) expanded initial definition by shifting their perspective from individual level to firm level. They claim that knowledge management includes the assessment of category of knowledge that is readily available and possibility of knowledge transfer to fill identified gaps and improve knowledge base to be more powerful which is needed in support of overall business strategy. Extending the definition of Gopal and Gagnon (1995), knowledge management can also be described as a systematic underpinning, observation, instrumentation and optimization of a firm's knowledge (Demarest, 1997) by capturing the knowledge that employees need in a central repository (Bair, 1997) through organizational specified appropriate processes for acquiring, organizing, sustaining, applying, sharing and renewing both explicit and tacit knowledge to improve organizational performance and create value (Davenport & Prusak, 1998; Darroch, 2003) effectively and timely (Holsapple & Joshi, 2000) which is aimed at satisfying and exceeding customer's expectations (Keskin, 2005). Park (2006) concur with the definition by these researchers, however, insisted that another main area of knowledge management is that the information and the knowledge of the organization must be controlled and protected in order to fulfill organizational objectives.

In view of knowledge management within an organization, Wiig (1994) indicated that an organization should consider at least three perspectives: business perspective, management perspective and hands on operational perspectives. Each of these perspectives varies in their scopes and purposes. While business perspectives emphasizes on why, where and to what extend an organization should invest to exploit knowledge, the management perspective focused at determining, organizing, directing and monitoring knowledge related activities in pursuit of organizational objectives. The last perspective concerned about application of the professional skill to conduct explicit knowledge related tasks. All these three perspectives are essential for an entrepreneurial organization. Viewing entrepreneurial orientation at individual level clearly explain that these three perspectives covers the entire stratum of the organization workforce (that is business perspectives relates to top management, management perspective relates to middle management while hands on operations relates to operational level).

Hence, knowledge management, both soft and hard at every level of organization is certainly crucial. There is tendency that entrepreneurial activities can be nullified by poor knowledge management practices since an entrepreneur requires adequate level of information and also resulting insights in making beneficial decision for the growth of the organization.

In addition, entrepreneurship analyzed from a knowledge-based perspective as an extension of the Resource-based View (RBV) of the firm proposes that the development of knowledge can underpin the growth of the organization through entrepreneurship (Guadamillas, Donate, & Sánchez de Pablo, 2008). Nevertheless, most organization which possesses explicit and

tacit knowledge does not gain utmost benefit of this knowledge especially when there is an absence of an effective set of knowledge management enablers. Knowledge possession alone will not help an organization to utilize information unless it provides sufficient and suitable enablers that can encourage employees to communicate the information available. Availability of knowledge management enablers will initiate information exchange across the entire organization and this approach is crucial while investigating entrepreneurial orientation from individual level perspective. The importance of knowledge management enablers and the underlying dimensions will be further discussed in the subsequent sections to provide greater clarity of this construct in activation of entrepreneurial orientation among employees within the organization.

#### **2.4.1 Knowledge Management Enabler**

When an organization is confronted with competitive business environment or new business phenomenon, they always look for new techniques of management to guide their business operations. Organizations believe that knowledge management could be one of the areas of attention in dealing with such situations. Madhavan and Grover (1998) posited that in order to create and develop new insights and capabilities, an organization should facilitate communication and also exchange of knowledge through effective knowledge management. However, literature claims that many organizations are confused while attempting to deploy knowledge and also related efforts (Junnarkar, 1997). Some organizations tend to invest heavily on information technology as a mean of knowledge management (Hansen and Oetinger, 2001).



Yet, an underlying question to be addressed by the organization will be to understand the enablers of knowledge management which can make its employees better informed in making business decisions and initiating necessary actions. According to Chan and Chau (2005), knowledge management enablers refers to influencing factors which can facilitate knowledge management activities that includes codification and knowledge sharing among employees. This claim is in line with Lin (2007) indicating that individual factors and also organizational factors on top of technological factors are the core enablers of knowledge sharing.

In order to close this gap, previous research have investigated various knowledge management enablers that is essential in managing information effectively apart from helping the employee to possess adequate amount of information to behave entrepreneurially. Literature has addressed a variety of knowledge management enablers since last two decades (Leonard-Barton, 1995; Ichijo, Krogh, & Nonaka, 1998; Sawhney & Prandelli, 2000). Generally, the knowledge management enablers considered in the past literature ranges from a single factor (Pentland, 1995) to as much as ten factors (Nevis, Dibella, & Gould, 1995). The following section will provide an in-depth discussion about knowledge management enablers.

Early researchers such as Walsh and Ungson (1991) indicated that individual, culture, structure, transformation, ecology, and external achieves are important enablers of knowledge management. However, over the years, this list of knowledge enablers was further expanded into several other factors such as culture and strategy, technology, organizational learning and measurement (Pan & Scarbrough, 1998). This list of knowledge management factors

continue to expand in the next decade. For instance, Gold, Malhotra and Segars (2001) adopted three factors approach by considering technology, culture and structure as knowledge management enabler in their attempt to investigate knowledge management capabilities and organizational effectiveness through data collected from senior executives. The study indicated strong evidence that knowledge management enablers influence capabilities, hence, improves organizational effectiveness.

The sharing of knowledge is not a natural act (Davenport & Prusak, 1998). Jordan and Jones (1997) claimed that both tacit and explicit knowledge must be managed simultaneously in order to obtain greater results. Laupase (2003) investigated this premise in Australian environment. The study utilized case study approach to explore conversion of tacit knowledge to organizational explicit knowledge. This researcher also investigated three knowledge management enablers, namely, culture, organizational structure and information technologies. The study provided evidence that organizations perceive culture and organizational structure as their priorities in converting tacit knowledge into explicit knowledge. However, it is claimed that incentives or exchange mechanism are needed in order to share the knowledge that is embodied in the minds of employees.

Further study investigating relationship between organizational elements and performance of knowledge transfer in a public sector was undertaken by Syed-Ikhsan and Rowland (2004). This study used five factors of knowledge management enabler. They are organizational structure, organizational culture, technology, people/human resources and political directives. The study suggested that one of the knowledge management enabler (i.e. organizational

structure) needed further research. A follow-up study by Ngoc (2005) among Vietnam IT companies considered communal culture, organizational communication system, transformational leadership, and information technology as essential knowledge management enablers. The results indicated that all of these knowledge management enablers were positively influencing the knowledge sharing.

As mentioned earlier, a number of knowledge management enablers were studied in the past and many of the enablers are overlapping (Von Krogh, Ichijo, & Nonaka, 2000; Malhotra & Majchrzak, 2004; Baskerville & Dulipovici, 2006).

Table 2.2 provides a summary of key knowledge management enablers investigated in the past.

**TABLE 2.2**

Knowledge Management Enablers

<b>Study Undertaken</b>	<b>Enablers Used</b>
Walsh and Ungson (1991)	<ul style="list-style-type: none"> <li>• Individual, culture, structure, transformation, ecology, external achieves</li> </ul>
Leonard-Barton (1995)	<ul style="list-style-type: none"> <li>• strategic intent, skill, creative abrasion, core capability, continuous experimentation, information-porous boundaries, cognitive variety</li> </ul>
Nonaka and Takeuchi (1995)	<ul style="list-style-type: none"> <li>• autonomy, organizational intention, fluctuation and creative chaos, information redundancy, requisite variety</li> </ul>
Pentland (1995)	<ul style="list-style-type: none"> <li>• social interaction</li> </ul>
Wiig (1995)	<ul style="list-style-type: none"> <li>• task/process, structure, people, power</li> </ul>
Szulanski (1996)	<ul style="list-style-type: none"> <li>• knowledge content, context, source and recipient</li> </ul>
Demarest (1997)	<ul style="list-style-type: none"> <li>• culture, operational, technical</li> </ul>
Spek and Spijervet (1997)	<ul style="list-style-type: none"> <li>• organization and personnel, IT, management, culture,</li> </ul>

**TABLE 2.2 (Cont'd)**

## Knowledge Management Enablers

<b>Study Undertaken</b>	<b>Enablers Used</b>
	motivation
Arthur D. Little (1998)	<ul style="list-style-type: none"> <li>organizational culture, IT, strategy, knowledge management processes, content</li> </ul>
Pan and Scarbrough (1998)	<ul style="list-style-type: none"> <li>culture and strategy, technology, organizational learning, measurement</li> </ul>
Probst (1998)	<ul style="list-style-type: none"> <li>top management support, organizational structure</li> </ul>
Wijnhoven (1998)	<ul style="list-style-type: none"> <li>individual, culture, transformation, structure, ecology, external archives</li> </ul>
Gold, Malhotra and Segars (2001)	<ul style="list-style-type: none"> <li>technology, structure, culture</li> </ul>
Lee and Kim (2001a)	<ul style="list-style-type: none"> <li>knowledge worker, content, IT, knowledge management processes</li> </ul>
Laupase (2003)	<ul style="list-style-type: none"> <li>organizational structure, culture, information technologies</li> </ul>
Syed-Ikhsan and Rowland (2004)	<ul style="list-style-type: none"> <li>organizational culture, organizational structure, technology, people/human resources, political directives</li> </ul>
Ngoc (2005)	<ul style="list-style-type: none"> <li>organizational communication system, communal culture, transformational leadership, information technology</li> </ul>

The comparative analysis of prior studies regarding knowledge management enablers indicates an important observation. There is no common or generic set of knowledge management enablers. However, it is important that knowledge management enablers are recognized in a comprehensive and unified manner (Holsapple & Joshi, 1999). On this note, Pan and Scarbrough (1998) indicate that knowledge management enablers can be viewed from a socio-technical perspective according to a socio-technical theory. While attributes of people and their relationships and organizational structure being represented by social perspective, technical perspective deals with technology requirements in transforming inputs to outputs (Bostrom & Heinen, 1977).

The literature review indicates that generally, knowledge management enablers converge into three main common dimensions in line with socio-technical perspective. They are technology, structure and culture. Therefore, for the purpose of this research, considering that organizational structure, culture and technology are the most commonly used knowledge management enablers, organizational structure and culture will be adopted as far as social perspective is concerned and technology will be used as far as technological perspective is concerned. The following section will further discuss each of the elements adopted.

#### **2.4.1.1 Technology**

Eliminating communication boundary to encourage seamless flow of information is important to improve operational efficiency. Additionally, removing this obstacle is also essential in making an employee to behave more entrepreneurially in deriving the business decisions. Interaction among different parts of the organization is one of the important elements in achieving corporate wide objectives. Several researchers (e.g. Leonard, 1995; Grant, 1996; Teece, 1998; Alavi & Leidner, 2001) indicated that linking organizational information and knowledge integration requires information technology infrastructure. Kendall (1997) posited that to enable, intensify and expand the interaction among organizational members and business units, communication technology become essential. Failure to have an appropriate platform will result in conflicts among business units which will be a hindrance for an organization which aspires to view each of its employees as an entrepreneur. In support of this, Davenport and Prusak (1998) claimed that technology has a role to play in the organization as an enabler and also contributor in the field of knowledge management through knowledge creation (Gold, Malhotra, & Segars, 2001).

Lee and Choi (2003) defined technology as presence of information technology support within the organization. Technology presence is concerned with the ability of the technology as a platform which supports search for knowledge, communication of the knowledge, and collaboration and collaborative learning (Ngoc, 2005). Effective knowledge management can be done through various communication technologies and channels such as email, video conferencing any many more. However, in an organization that expects its employees to behave with an entrepreneurial mindset, technology infrastructure which includes information technology and its capabilities (Raven & Prasser, 1996; Zack, 1999c) and decision aiding technologies which increases the capacity of an employee, organization or team in order to develop solutions and alternatives (Kendall, 1997; Ngoc, 2005) such as information database, decision support systems and expert systems which can store and retrieve large amount of existing and new information are of paramount importance in facilitating effective decision making process (Song, Zhang, Bij, & Weggeman, 2001).

Availability of information communication technology according to Marwick (2001) eliminates communication constraints, increases the range and depth of information access and promotes the knowledge sharing rapidly and conveniently. This is certainly critical in an organization's attempt to instill entrepreneurial mindset to ensure that common organizational objectives and aspirations are communicated and entire employees' entrepreneurial intentions are aligned towards the organizational goals.

Information technology which decides how the knowledge is used and accessed (Leonard-Barton, 1995) if managed effectively helps an organization to realize the benefits (Ndlela &

Toit, 2001). In addition, according to Alavi and Leidner (2001), existence of information technology extends an individual's reach which goes beyond formal communication lines since it increases knowledge transfer activity in the organization. In view of that, it is observed that organizations are in need to have an appropriate technology platform in storing and communicating information across the organization in enabling entrepreneurial orientation among employees. When the right technology is installed, managers believe that the information sharing will flow accordingly in the organization (Davenport, 1994). However, measures should be in place to ensure that this information are not stolen or used inappropriately (Gold, Malhotra, & Segars, 2001).

#### **2.4.1.2 Structure**

An organizational structure plays an important role in determining the sharing of knowledge and subsequently the behavior of the employees. Structure has been considered as one of the prominent organizational factor by many scholars (e.g. Miller, 1983, 1987; Bahrami & Evans, 1987; Sandberg & Hofer, 1987; Covin & Slevin, 1988; Jennings & Lumpkin, 1989; Slevin & Covin, 1990; Naman & Slevin, 1993). The structure may promote or inhibit an employee from accessing and using the information on structural grounds (Hedlund, 1994; Nonaka & Takeuchi, 1995; O'Dell & Grayson, 1998; Gold, Malhotra, & Segars, 2001). As a consequent, there is a high tendency for the organization to encourage or discourage an employee's exercise of entrepreneurial orientation. It is important for the organization to design a structure which has adequate level of flexibility in order to allow the employees to share information across organization with an ultimate intention of using knowledge management as a source of entrepreneurial orientation activation. Salvato (2002), in his research on family enterprise provided empirical evidence that there is positive relationship

between degree of delegation and informalization and entrepreneurial orientation. Given the presence of knowledge, Hurley and Green (2005) indicated that reward which is a critical structural factor will influence employee behavior and also decision making.

McKenna (1999) defined structure of an organization as formal relationships and allocation of activities and resources among people. Traditionally, there are two variables that underlie structural dimensions: centralization and formalization (Menon & Vadarajan, 1992; Tata & Prasad, 2004). The influence of these structural dimensions in the organization is widely recognized (Riggins & Rhee, 1999; Eppler & Sukowski, 2000; Lubit, 2001). Hierarchical structure that portray decision making authority explains the centralization dimension whereas formalization is described as an existence of written documentations, rules and procedures within the organization (Schminke, Ambrose, & Cropanzano, 2000) in conduct of the business which will have strong influence towards employee behavior.

Several researchers (Kohli and Jaworski, 1990; Woodman, Sawyer, & Griifin, 1993) argued that centralized organizational structure tends to hinder interdepartmental communication and sharing of ideas which is in contrast to decentralization which promotes a collaborative environment by emphasizing empowerment and information sharing among employees (Hurley & Green, 2005) in spite of other claims such as chaotic situation and duplication of efforts which may arise because the decentralization (Adler, 1999). On the other hand, although formalization is claimed to provide effective means of information collection and dissemination (Segars, Grover, & Teng, 1998), an absence of the same in the organization is



perceived to be beneficial as it will allow communication among the organizational members (Jarvenpaa & Staples, 2000).

Although organizations which are driven by formal rules and procedures aim more towards realization of processes than goals and possess less tendency in promoting entrepreneurial orientation in the organization (Barringer & Bluedorn, 1999), Stevenson and Gumpert (1985), Covin and Slevin (1991) and Zahra (1993) argue that lower level of formalization in the organization still flourishes new ideas. Burgelman (1984) informed that lower level of formalization in the organization still practices delegation of power to employees and as a result, it increases employees' chances for frequent experimentation and creation of novel ideas while participating in making influential decisions in solving problems that they encounter around their work environment.

As claimed by Aldrich and Wiedenmayer (1993), sociopolitical environment of the organization is a powerful source to create entrepreneurial climate in the organization. Therefore, a supportive environment as part of organizational structure requires serious consideration among organization in their pursuit of creating entrepreneurship climate. It is aimed at developing and nurturing entrepreneurship and entrepreneurial orientation among employee through entrepreneurial activities. Covin and Slevin (1989) suggested that an analysis of entrepreneurship should start by considering environmental factors which shapes the structure of the organization and indicated that these factors moderate the relationship between entrepreneurial posture and firm performance.

### **2.4.1.3 Culture**

Acknowledging the fact that culture is a building block of an organization, Demarest (1997), Davenport and Prusak (1998), and Gold, Malhotra, and Segars (2001) posited that organizational culture remain an essential element of knowledge management and is an important enabler of knowledge management. Usually, people within the organization, the ethics in the organization, and type of organizational structure in place shapes the organization culture. According to Mavondo and Farrell (2004), people's behavior in the organization is shaped and controlled by the organizational culture. Various researchers (e.g. Kanter, 1982, 1983; Burgelman, 1984; Stevenson & Gumpert, 1985; Burgelman & Sayles, 1986; Stuart & Abetti, 1987) have studied culture as an important factor in the organization.

Organization culture refers to a system of shared meaning held by organizational members that distinguishes one organization from another (Schein, 2004) driven by a set of values, beliefs and norms, and practices (Robbin, 2004). Robbin (2004) further informed that it serves as a sense-making and control mechanism in guiding and shaping employee attitudes and behaviors in interacting with each other. An effective organizational culture can be achieved by creating suitable and supportive working environment (Janz and Prasarnphanich, 2003). Considering that knowledge is an important element in ensuring that employees are equipped with adequate cross functional information and also insights derived from external environment, Leonard-Barton (1995), Davenport and Prusak (1998), Holsapple and Joshi (2000), Ndlela and Toit (2001) and Lee and Kim (2001b) advised that creating a knowledge friendly culture is critical to ensure knowledge sharing and learning among employees. It is found that a collaborative organizational culture enhanced by a strong sense of trust will foster more innovation among employees apart from making them committed to their tasks

(Goffee & Jones, 1996; DeTienne, Dyer, Hoopes, & Harris, 2004). Technology alone will not encourage knowledge sharing if the element of trust fails (Davenport & Prusak, 1998) and an incentive system can further enhance knowledge sharing initiatives (Park, 2006).

For the purpose of this research, organizational culture will be considered as an enabler of knowledge management within the organization. It will be further analyzed in terms of its ability to encourage knowledge sharing among employees, ultimately support them in behaving entrepreneurially.

## **2.5 Employee Entrepreneurial Orientation**

Turbulent environment in nowadays business operation is unavoidable and this has put great pressure to organization resulting in continuous search of measures that will enable organizations to overcome such situations to be more competitive hence improving the performance (Dodd, 2005). Since economic challenges become a norm in today's business arena, involvement of employees throughout the organization become essential to improve productivity and profitability levels in ensuring sustainability (Al-Alawi, 2005).

Among many top priorities in the organization, implementations of new and innovative entrepreneurial ideas remain one of the most important priorities in the 21st century (Rigby 2003; Planting 2006; Morris, Kuratko, & Covin, 2008) although it is very challenging and risky (Ahmed, 1998). Failure to constantly accept newness to fulfill changing demands will lead an organization to suffer growth as well as to risk its sustainability in the long run. Hence, entrepreneurial behavior in the organization is viewed as a critical element to create

value not only to the customers but also to the owner of business (Zahra & Garvis 2000; Goosen, DeConing, & Smit 2002; Leibold, Voelpel, & Tekie, 2004) resulting in competitive advantages (Lee, Lee, & Pennings 2001; Morrow, Sirmon, Hitt, & Holcomb, 2007). Therefore, the organization as a whole is required to support the attempt by creating an environment that supports entrepreneurial climate (Mokoena, 1999) and it requires swift actions and cannot be achieved with 'lip service' only (Hof, 2004).

Intersection of strategy and entrepreneurship is known to be strategic entrepreneurship (Hitt, Ireland, Camp, & Sexton, 2001). It encompasses elements such as innovation (Ireland, Hitt, Camp, & Sexton, 2001; Hitt, et al., 2001; Ireland, Hitt, & Sermon, 2003; Ketchen, Ireland, & Snow, 2007), entrepreneurial culture (Ireland, Hitt, & Sirmon, 2003; Ireland & Webb, 2007; Kraus & Kauranen 2009), entrepreneurial leadership (Ireland, Hitt, Camp, & Sexton, 2001; Ketchen, Ireland, & Snow, 2007; Kraus & Kauranen, 2009) and growth (Ireland, et al., 2001). However, strategic entrepreneurship found to provide its unique propositions although generally literature argues that strategic entrepreneurship in actual fact no different than strategic management. In spite of the perception that both concepts are similar, the latter (i.e. strategic management) is known to lead the organization through strategies and strategic orientations whereas the former (i.e. strategic entrepreneurship) more focused in driving the organization through entrepreneurial mindset and entrepreneurial orientation to stay ahead of the competitors.

Zahra (1991, 1993) and Antonic and Hisrich (2002) claimed that entrepreneurship is a firm behavior. However, Long et al. (1995) indicated that attitudinal and behavioral components

are core of entrepreneurial process. Generally, the entrepreneurial behavior of individual employee is associated with discovery, evaluation and exploitation entrepreneurial activities (Shane & Venkataraman, 2000) and also opportunities legitimization (Latour, 2005). This is in line with early works by several researchers about individual entrepreneurs characteristics within the organization (Souder 1981; Pinchot, 1985, Mckinney & Mckinney, 1989; Luchsinger & Bagby, 1987; Lessem, 1988; Jones & Butler, 1992; Jennings, et al., 1994). The willingness which is referred to as an “entrepreneurial orientation” to identify new opportunities and assuming adequate level of responsibility to effect a change by an individual or organization best describes attitudinal component of entrepreneurial process (Miller & Friesen, 1982). On the other hand, behavioral component undertakes activities such as opportunity evaluation, establishing a business model, assessing and acquiring required resources and executing such endeavors to harvest financial performance.

Entrepreneurial orientation is known as manifest in product and process innovations (Ireland & Webb, 2007) which involve processes, practices, and decision-making activity that leads to new entry (Lumpkin & Dess, 1996). In discovering existing and new market opportunities, it is essential for the employees in the organization to possess entrepreneurial attitudes and behaviors which are critical for new ventures facilitated by existing and new knowledge (Wiklund & Shepherd, 2003). This has triggered organization to create an organizational climate which encourages nearly all dimensions of entrepreneurial process which includes innovation, risk-taking capacity, employee pro-activeness, autonomy or independence and competitive aggressiveness.

According to Drucker (1986), entrepreneurial orientation is an innovative process in which new products and services opportunities are confirmed and created to generate greater capabilities in order to create new wealth. On the other hand, Miller (1983) stated that entrepreneurial orientation concerns decision making styles, methods and practices which are essence of an entrepreneurial action. Moreover, Covin and Slevin (1989) and Lumpkin and Dess (1996) highlighted that organization's entrepreneurial traits and entrepreneurial culture described by organizational values, unique concepts and key organizational characteristics constitute to entrepreneurial orientation. It includes two aspects: new way of doing and thinking and exploring opportunities and organizing resources to offer new market value. It is claimed that the success of an organization is largely depends on the entrepreneurial behavior driven by entrepreneurial orientation of the entire organization. However, Kreiser, Marino and Weaver (2002) indicated that an organization may have to select certain combination of entrepreneurial orientation dimensions to improve performance.

Research reveals that entrepreneurially oriented companies tend to outperform other organizational types in volatile environments (McKee, Varadarajan, & Pride, 1989) and stronger adaptation during the turbulent settings help the organization to perform better than conservative organizations (Bourgeois, 1980; Snow & Hrebiniak, 1980; Covin & Slevin, 1991). The nature of field of entrepreneurship that focuses at environmental adaptation and opportunities exploration (Hitt, Ireland, Camp, & Sexton, 2001) have transformed the organization's attention from being sustainably strong to continuously innovative, realizing that the essence of entrepreneurship is the creation and newness and newness is a result of innovation (Shane & Venkataraman, 2000).

Firms which are driven by entrepreneurial orientation is expected to result in new products (Li, Liu, & Zhao, 2006), change in existing technology and/or practices (Kimberly, 1981) and services or technological processes (Lumpkin & Dess, 1996). According to Zahra (1991), Zahra and Covin (1995) and Wiklund (1999), better than average performance can be attained by organizations which are demonstrating more entrepreneurial orientation. However, practice of entrepreneurial orientation in the organization cannot be done through force coercion strategies. It should be exhibited by all level of employees instead of imposition of such requirement by top management team (Stevenson & Jarillo, 1989).

Dealing with turbulent environment call for entrepreneurial mindset not only among business owners or managing directors only but it requires involvement from the entire organization. Failing to behave with entrepreneurial mindset will lead organization towards losses since opportunities can be grabbed by the rivals within lapse of time. Top management alone will not be able to make an organization to excel in its business undertakings. Although strategic directions are usually set by top team, execution of strategic priorities in form of initiatives and resulting action plans involves the entire spectrum of the business. This is in line with claim by Burgelman (1983b) and Day (1994) indicating that autonomous behavior offering full job discretion executes entrepreneurial behavior among employees. This indicates that it involves the entire workforce of the organization. Therefore, ensuring every employee to behave with entrepreneurial orientation has become a necessity, no longer an option to many organizations. Active participation of entire employees becomes crucial (Bosjtan & Hisrich, 2001). The essence of entrepreneurial orientation focuses on the behavior process of entrepreneurs and when the organization perceives every employee as entrepreneurs, it will involve the behavior of the entire workforce. The behavior of workforce can be influenced by

many factors including the organizational characteristics and also the employees' readiness in anticipating situation with entrepreneurial orientation.

Bosjtan and Hisrich (2001) indicated that fostering growth in the organization require active participation of employees in generating new, innovative ideas. In support of this claim, several authors (e.g. Chisholm, 1987; McGinnis & Vemey, 1987; Kuratko, Montagno, & Hornsby 1990; Carrier, 1996) highlighted that stimulation and creation of creative energy of employees can best done best through corporate entrepreneurship and intrapreneurship. However, there is paucity of empirical investigation along these topics, especially in considering individual employees as the unit of analysis. Hence, in considering involvement of various levels of organization in the study of entrepreneurial orientation, concept of corporate entrepreneurship and intrapreneurship deserves an essential attention. According to Sharma and Chrisman (1999) and Antoncic and Hisrich (2003), corporate entrepreneurship and intrapreneurship are closely related, however possesses distinct differences when it is applied across organizational levels.

Corporate entrepreneurship which refers to a top-down process at organizational level emphasizes the role of top management team in developing management strategy which is generally aimed at fostering employees to engage themselves into initiatives and efforts in developing new ideas. In contradictory, intrapreneurship focuses at individual level engagement of entrepreneurial intentions. It involves a bottom up approach which recognizes the innovative and proactive behavior of individual employees in undertaking work related efforts and initiatives. Several researchers (Crant, 2000; Lumpkin, 2007; Parker & Collins,



2010; Pinchot, 1985) indicated that intrapreneurship involves aspects among others actively searching for information, idea generation, opportunity seeking, championing, taking charge, finding solutions, and to some degree, risk taking. Hence, combining influences and insights from both concepts are essential in understanding entrepreneurial orientation activation in the organization.

Consistent with earlier discussion about corporate entrepreneurship, entrepreneurial orientation construct is strongly associated with highest level of an organization (Lee and Peterson, 2000; Ireland et al, 2009) who engages into strategic renewals and also new ventures (Zahra, 1996; Sharma & Chrisman, 1999). This is mainly because the top management behaves as a canvas for individual entrepreneurial attempts by setting and articulating vision of the organization and also by providing necessary resources as a support of entrepreneurial attempts. In addition, they are also communicating the need for being entrepreneurial by installing necessary structures, encouraging continuous innovations and providing an entrepreneurial organization climate to fit the organizational strategies. This is best described as entrepreneurial management by Stevenson and Jarillo (1989) and Brown et al. (2001) consonant with findings by Lumpkin and Dess (2005).

Although several studies have identified the role of middle management in entrepreneurial orientation activation in the organization, the general idea indicate that middle management is helping to take up on the ideas of top management and engage into further development of the idea although it does not necessarily mean to be execution or completion of the idea. As outlined by Kuratko et al. (2005), the middle management generally engages into activities

such as endorsement, refinement and navigation of entrepreneurial opportunities across the organization while identifying, acquiring and deploying the resources required to undertake these opportunities. It may also include project definition and action planning (Kanter, 2004) or initiation, development and execution (Russel, 1999).

Hence, the middle management tends to be entrepreneurial individuals who reconcile interest of various levels across organization, hence, influence the decision makers, usually, the top management team. This helps the middle management to coalesce the entrepreneurial ideas around the subordinates from below the organization with resource support from the top management guided by trust and also informal networks (Prasad, 1993). This is in line with claim by Pinchot (1985) that an intrapreneur can bridge the ideas and successfully execute this idea regardless of whether this person is the author of the idea or not. In view of this, Kuratko, Ireland, Covin and Hornsby (2005) pointed out that commitment from managers at all level of organization is crucial in fostering entrepreneurial mindset in the organization.

Employees from below in the organization are also possessing capacity to exercise operational level entrepreneurial behaviors. As postulated by Vesper (1984), employees from below in the organization exercise their entrepreneurial intentions and behaviors unasked or with permission by the higher management which could be a middle management or top management depending on the magnitude of such entrepreneurial actions. In practicality, employees from below in the organization, better known as operational employees are coming up with all kind of ideas stemming from their day to day affairs in their work. Their engagement into various operational experimentations, resulting issues and problem solving

attempts (Floyd & Lane, 2000; Kuratko, 2007) translates into being responsible in creation of innovative solutions while conforming to middle and top management directions. Such endeavors require these employees to be fully proactive in improving their work performance which ultimately enhances the organizational success and sustainability.

In spite of differing roles by all three levels of the organization, activation of entrepreneurial orientation is evident to be at these levels at varying degrees. In summary, top management plays a role in intuiting new ideas consistent with organization strategic direction, aspirations, and future needs with aggressive posture to combat industry threats (Dess & Lumpkin, 2005) apart from empowering the employees to undertake innovation, creativity and experimentation and establishing and installing compensation system (Mom, et al., 2007). Lumpkin (2007) also insist that it is the responsibility of top management to provide signals to the middle management in matters relating to structure, formulation and presentation of the organization ideas in accordance to organizational objectives.

On the other hand, middle management help the top management to interpret these ideas, transforming them into viable actions, gaining acceptance and creating congruence across the levels in the organization and frame the challenge for the subordinates (Russell, 1999; Kanter, 2004; Kuratko, 2007). Middle management also strives to scout for new ideas by combining and incorporating old and new knowledge (Floyd & Lane, 2000; Kuratko, 2007; Hornsby, et al., 2009) whereas the operational level put these ideas into practice and experiment and trouble shoot them and find appropriate solutions and suggest improvements by utilizing their expertise and skills. Several scholars (e.g. Vesper, 1984; Pinchot, 1985;

Floyd & Lane, 2000; Kuratko, 2007) indicated that operational level employees are usually focused at problem solving orientation due to poorer overview of possibilities of strategic direction set by top management and way and means set by middle management. This indicates that in an organization, an employee may portray different behaviors subject to the situation and also size of the firm (Hayton & Kelley, 2006).

For instance, as claimed by Hornsby et al (2002) and Kuratko (2007), championing of ideas of innovations may occur at top management as well as middle management. However, when entrepreneurial orientation activation is investigated at operational level employees, the concern mainly lies around an issue whether execution of entrepreneurial ideas are happening with or without official approval (Hornsby, et al, 1999). Although there are notable differences between motivation levels, cognitive characteristics and decision making ability and capacity in entrepreneurial orientation activation across the levels of the organization, combining them together in order to explore and exploit opportunities expected to create unanimity across the organization in achieving corporate objectives.

This research addresses that not only the business owners possess entrepreneurial orientation but entire employees can also be invoked to behave entrepreneurially by acting innovatively and proactively with calculated risk while effectively leveraging available resources given that the environment (i.e. knowledge management enabler) and also organizational design (i.e. organizational characteristics) provide sufficient opportunities for the employees to exercise their entrepreneurial orientation. Fundamentally, a shift from current state of activities to future improvements can be facilitated and accomplished by knowledge resource

(Mahoney, 1995). However, views of managers and entrepreneurs in pursuing entrepreneurial efforts are shaped by the existence of appropriate organizational factors (Kuratko, Montagno, & Hornsby, 1990). According to Wiklund and Shepherd (2005), combining power of available slack in the organization and the knowledge is expected to improve the level of entrepreneurial orientation in the organization. Availability of knowledge encourages the opportunity exploitation with calculated risks (Morris & Kuratko, 2002). In addition, these combinations found to embrace new problems (Baker & Nelson, 2005) and discover high number and profitable entrepreneurial opportunities (Eckhardt & Shane, 2003; Wiklund & Shepherd, 2005; Kor, Mahoney, & Michael, 2007).

## **2.6 Underpinning Theories**

### **2.6.1 Resource Based View Theory**

Adaptation to change from external environment requires reconfiguration and reintegration of internal resources. Enhancing ongoing strategic adaptation within the organization is essential to articulate development of ideas and innovation. The organization will be better positioned in the marketplace when new ideas and innovations are well designed and translated in such a way that these competitive strategies are difficult to be imitated by rivals.

Organizational and individual entrepreneurship is crucial for ultimate survival of an organization. However, materializing such concept remains a debatable issue. This requires an integration of one of the fundamental perspective in strategic management known as the resource-based view (Alvarez & Busenitz, 2001). Entrepreneurship characteristics of exploiting available information or insight to create profit generating opportunities over

extended period of time show that there is a close connection between entrepreneurship and also resource-based view. Resource-based view of the firm is widely used theoretical framework in the management literature (Beard & Sumner, 2004; Runyan, Huddleston, & Swinney, 2006; Foss & Ishikawa, 2007; Newbert, 2007; Teece, 2007) that is centered in creating competitive advantage from its unique set of resources. It offers theoretical basis for understanding the significance of various types of resources for firm's overall competitiveness and performance.

According to resource-based view, attainment of competitive advantage can be materialized only if the firm resources are valuable, rare, inimitable, and non-substitutable (Wernerfelt, 1984; Barney, 1991). Recent developments in the study of resource-based view of the firm have expanded the scope and nature of resources a firm may acquire or develop in pursuit of sustainable competitive advantage (Wernerfelt, 1984; Barney, 1991; Newbert, 2007; Chrisholm & Nielsen, 2009; Locket, Thompson, & Morgenstern, 2009). Basically, resource-based view describes integration of resources within a firm which often limited to those attributes that enhance effectiveness and efficiency of the firm (Wernerfelt, 1984) apart from having some capability to generate profits or to avoid losses (Miller & Shamsie, 1996).

Resources can be in form of assets, capabilities, knowledge, information, and technology (Collis, 1991; Wernerfelt, 1984). Inconsistencies in terminology of resources have also resulted in various definitions of resources. They include intangible resources (Hall, 1992) such as knowledge, skills and reputation, entrepreneurial orientation (Runyan, et al., 2006), capabilities (Grant, 1991), core competences (Prahalad & Hamel, 1990), strategic assets or

resources (Amit & Schoemaker, 1993), critical resources (Wernerfelt, 1989), firm-specific competences (Pavitt, 1991), and valuable resources (Collis & Montgomery, 1995, Grant, 1991).

Despite wide diversity of resources definition, scholars have made several classifications of the resources. Among others it includes tangible and intangible resources (Hall, 1992; Amit & Schoemaker, 1993), strategic resources (Day, 1994; Day & Wensley, 1988), human resources, social resources, organizational resources, technological resources, location resources (Greene & Brown, 1997), assets, and capabilities (Day, 1994; Barney, 1991; Amit & Schoemaker, 1993). The foci of resource-based view are competitive advantages generated by the firm from its unique set of resources (Wernerfelt, 1984; Barney, 1986, 1991; Peteraf, 1993). Therefore, the main driver of firm growth and success is found inside the organization in the form of resources and superior capabilities by sustaining the competitive advantage (Peteraf, 1993).

Usually an entrepreneur will assemble and modify specialized resource-base to exploit opportunities identified from the market place. This is important because differential endowment of organizational resources determines the strategy and also performance as implied by resource-based view (Chen, Tzeng, Ou, & Chang, 2007). Wiklund and Shepherd (2003) indicated that entrepreneurial orientation enhances the relationship between knowledge-based resources and business performance. However, acquisition of resources found to be considerably a challenging issue to many firms (Knight, 2001; Chiao, et al., 2006; Zhao & Hsu, 2007). Nevertheless, Alvarez and Barney (2001) noted that development

of resources and resource-based view serves as an important foundation to entrepreneurship. Therefore, understanding the sources of sustained competitive advantage for firms has become a major area of research in strategic management (Wernerfelt, 1984; Barney, 1991; Grant, 1991). Although resource-based view had been criticized for its narrow focus on the success of the organization, introduction of dynamic capabilities notion have overcome such critics.

In a nutshell, dynamic capabilities refers to dynamic change mechanisms concerning with organization resource development (including introduction of new ones) to change operational capabilities while improving the process of innovation. Development and management of specific dynamic capabilities helps the organization explains how competitive advantage can be sustained by renewing physical resources and skills and achieves congruence with turbulent external environment (Eisenhardt & Martin, 2000). Hence, focusing on optimum set of resource combinations drives the entrepreneurial activity to extend the existing boundaries of capabilities in pursuit of achieving entrepreneurship aspirations of creating wealth and achieving organizational performance.

According to Mosakowski (2002), the resource-based view is aligned to main dimension of entrepreneurship through exploration and exploitation of opportunities to create value and achieve sustainable competitive advantage. In the context of entrepreneurship, resource and capabilities are viewed as performance driving mechanisms that are necessary to achieve organization performance. Thus, entrepreneurship found to provide a useful framework to



develop necessary resources and capabilities for execution of entrepreneurial actions, strategic actions, strategic orientation and also strategic renewal.

### **2.6.2 Contingency Theory**

According to Venkataraman (1989b), the contribution of Contingency Theory is fundamental for development of the management sciences and is well recognized in considering performance implications in the organizations. Interaction of many elements within the organization such as competitive business environment, internal organization and firm performance being explored and has constitute to a rich stream of literatures in the past four decades. Bain (1968) and Brown (1983) explain this interaction as a contingency structure which addresses a proper fit between environment, strategy and structure (e.g., Child 1972; Galbraith & Nathanson 1978) in response to environment in ensuring firm performance.

From the traditional viewpoint, contingencies include the environmental complexity (Burns & Stalker, 1961; Lawrence & Lorsch, 1967), organizational strategy (Chandler, 1962; Child, 1972), technology (Woodward, 1965; Thompson, 1967) and organizational size (Narayanan & Nath, 1993; Donaldson, 2001). Studies by Gebauer, Putz, Fischer and Fleisch (2007), Andrews (2010), and Christensen and Knudsen (2010) reflect that there is a connection between various aspects of organizational structure and performance. An ability of the organization to adapt its structure to an array of contingencies determines the effectiveness of the organization (Donaldson, 2001). The major focus of Contingency Theory during 1960s and 1970s was about organizational design and performance (Van de Ven & Drazin, 1985), however, it has lost ground to other theoretical perspectives The attention was shifted to

configurational approach which explains that superior performance of organization is a function of multiple interacting environmental and structural characteristics rather than one or two primary contingencies (Galunic & Eisenhardt, 1994; Gresov & Drazin, 1997).

In view of that, various theoretical frameworks were generated to help in understanding an organization. Although resource-based view is appropriate, the relevance of Contingency Theory cannot be neglected. Acknowledging the fact that all organizations are required to adapt constantly to changing circumstances, Contingency Theory may have some relevance in addressing this issue in the organizational context. Not only internal culture but also the wider environment and the variations in values within the organization have been recognized by Contingency Theory with requirement for different adaptations to the environment which may influence survival. Continuous adaptation in uncertain situations includes continual adjustment and integration of new ideas for innovation and change in the organizations.

The basic premise of Contingency Theory is the congruence or fit among key variables which includes industry conditions and organizational processes which are critical to achieving optimum performance in the organization (Lawrence & Lorsch, 1967). This claim was also proven by past researches indicating that correct alignment of key variables found to improve organizational performance (e.g. Naman & Slevin, 1993). The theory holds that the relationship between two variables is dependent on the third variable which addresses the alignment issue between these variables. Therefore, introduction of mediators into bivariate relationships expected to reduce possibility of deducing misleading inferences hence provide better understanding of the relationship between the variables considered in a study. Past

literature addressed the use of internal variables such as knowledge (Wiklund and Shepherd, 2003) and various environmental variables (e.g., Tan & Tan, 2005) in the study of entrepreneurial orientation.

In the creation of entrepreneurship oriented organization, environment seen as a key contingent variable that affects how entrepreneurial orientation functions in an organization. According to Kropp, Lindsay, and Shoham (2006), environmental factors may influence the relationship between entrepreneurial dimensions and performance. Accepting the notion that there is no one best way of formulating organizational strategies, Contingency Theory articulates that in the process of strategy formulation, environment tends to be one of the most contributing factors. The theory also asserts that there is no best structure or strategy for a firm, therefore, strategy or structure will not be equally effective under different environmental conditions. Four important ideas of Contingency Theory are: there is no universal or one best way to manage, the design of an organization and its subsystems must 'fit' with the environment, effective organizations not only have a proper 'fit' with the environment but also between its subsystems and the needs of an organization are better satisfied when it is properly designed and the management style is appropriate both to the tasks undertaken and the nature of the work group (Fiedler, 1964).

Each organization is coming with its very unique settings in which they operate. Since the organization is exposed and vulnerable to internal factors in the form of strength and weaknesses and external forces in the form of opportunity as well as threat, careful scanning of both internal and external environment is essential. Therefore, an optimal organization is

contingent upon various internal and external constraints. An in depth understanding of the situation (internal and external) will help an organization to better understand its current positioning, hence, designing contingency plans which may circumvent the achievement of organizational performance. Jeong, Pae and Zhou (2006) argue that in turbulent environmental settings, the firm is forced to facilitate the gathering and processing of information for superior responsiveness. Failing to identify and to incorporate contingency plans within organizational strategic direction may lead the organization towards unanticipated situations resulting in non-achievement of intended performance levels. According to this theory, factors such as organizational structure, available resources, leadership style, organizational culture, technology and distinctive capabilities are among important dimensions in formulating and developing strategies that will create entrepreneurship oriented organization (Weill & Olson, 1989).

Classical perspective indicates that optimal use of resources and capabilities will help an organization to achieve desired performance levels. However, driven by organizational perception that there is no one best way to operate a business, organizational science scholars argue that Contingency Theory is an integration of classical viewpoints and modern behavioral theories (e.g. Lindsay & Rue, 1980; Narayanan & Nath, 1993; Luo, 1999; Donaldson, 2001). Contingency theorists claim that fit between appropriate level of strategic action and certain inevitable contingencies decides the firm performance. In view of this, shaping a contingency variable which mediates the organizational characteristics in achievement of employee entrepreneurial orientation is crucial. Under normal circumstances, the business might not survive but Contingency Theory may help explain more on the behavior of the employees than other theories do so that the business can be sustained.

It is envisaged that Contingency Theory provides a useful means of conceptualizing the relationship between contingency variable and also organizational entrepreneurial direction. In this study, a contingency indicates the availability of adequate knowledge management enablers within the business environment that each employee perceive to be important as it relates to equipping employees with conducive work environment that facilitates activation of entrepreneurial orientation. In considering this, culture, structure and technology are seen as contingencies as indicated by Weill and Olson (1989) within the organization and therefore, Contingency Theory will be applied to investigate employee behavior in response to such contingencies. Using the Contingency Theory as a suitable theoretical underpinning is therefore applicable in this study.

## **2.7 Hypotheses Development**

Entrepreneurial orientation has been evolving since last two decades. The development of the concept was mainly focused at proactively pursuing new opportunities, risk-taking and also innovativeness (Covin & Slevin, 1989, 1991; Miller, 1983; Zahra, 1991). Nevertheless, the number of entrepreneurial orientation dimensions has evolved from three to five (Richard, Barnett, Dwyer, & Chadwick, 2004) when Lumpkin and Dess (1996) added two more dimensions into existing concept of entrepreneurial orientation namely autonomy/independence and competitive aggressiveness and further generalized it. However, only innovativeness, risk-taking and pro-activeness were used as prominent entrepreneurial dimensions in the research by most of the researchers (Covin & Slevin, 1991; Zahra, 1991; Kreiser, Marino, & Weaver, 2002). Considering the literature which emphasized that innovativeness, risk-taking and pro-activeness are the most vital dimensions of entrepreneurial orientation, thus, this study will focus mainly on these dimensions.

This section will discuss the hypotheses development of the study proposed. This research will include three variables including the mediating variable. The variables proposed for this study are as follows: (1) organizational characteristics; (2) knowledge management enabler; and (3) entrepreneurial orientation. Organizational characteristics being an independent variable will encompass four dimensions namely: (1.1) management support; (1.2) work discretion; (1.3) resource/time availability and (1.4) rewards/reinforcement. On the other hand, knowledge management enabler will be the mediating variable between organizational characteristics and entrepreneurial orientation. Finally, the dependent variable of entrepreneurial orientation will be measured by using following dimensions: (3.1) innovativeness; (3.2) risk-taking and (3.3) pro-activeness. It is envisaged that the selection of the study variables will provide greater motivation to learn more about the relationships between organizational characteristics, knowledge management enabler, and employee entrepreneurial orientation. The development and also descriptions of the hypotheses proposed for each variable are offered in the following section.

### **2.7.1 Work Discretion and Employee Entrepreneurial Orientation**

A conducive organizational architecture which encourages work discretion is an important element in cultivating entrepreneurial orientation among employees. However, there are many reasons on why an organization discretion to in stimulating entrepreneurial intentions (Foss & Foss, 2000) which includes motivation improvement as well as self-esteem (Billikopf, 2006). Entrepreneurial mindset can only be developed if there are employee empowerment, active participation and also creativity and shared responsibility (Ngo & Lau, 2004) because these attributes improves employees' involvement, commitment and awareness about entrepreneurial activities (Damanpour, 1991).

Capability to tolerate failure, providing decision making authority without excessive oversight and delegating authority and responsibility constitute to entrepreneurial oriented work discretion (Ireland, et al., 2007). This will encourage employees to take risks while exercising entrepreneurial intentions (Hornsby, et al., 2002). Pearce et al. (1997) among others recognized the importance of middle managers in enhancing and cultivating self-directed behavior. Rutherford and Holt (2007) highlighted that triggering an innovation in the organization requires top management to provide adequate level of freedom and decision making latitude to the employees to embark into entrepreneurial activities.

Existence of work discretion expected to enhance willingness among the employees to be more innovative by practicing pro-active behaviors while engaging themselves into risk taking activities. Subjective feeling of the employees which is the psychological ownership element can only be formed if an employee enjoys a feeling of self-efficacy which in turn will help to invest their time and energy to generate new innovative ideas (Jong & Wennekers, 2008). In addition, as indicated by Kuratko and Hodgetts (2007), allowing employees to enjoy freedom which help them to make their own judgments in their work processes without excessive oversight while not criticizing potential errors and mistakes during their entrepreneurial attempt is essential in propagating entrepreneurial orientation within the organization. In order for entrepreneurial orientation occur in the organization, Lumpkin and Dess (1996) argued that employees must be given freedom to exercise their creativity hence champion promising ideas.

Similarly, Kuratko et al. (2014) highlighted that in order to recognize entrepreneurial intentions, employees should be given an opportunity to exercise their work discretion in performing their duties while equally encouraging them to engage actively in the experimentation in their day to day activities. This leads to authorizing employees to undertake initiatives that improves business performance which include among other things, quality improvement, customer service excellence and cost cutting or cost saving measures (Anandji, 2006). However, the employees shall not be criticized for making errors while attempting entrepreneurial endeavors (Kuratko & Zahra, 2002).

Therefore, the following hypotheses are formulated for the construct:

*H1a*: There is a significant relationship between work discretion and innovativeness.

*H1b*: There is a significant relationship between work discretion and risk-taking.

*H1c*: There is a significant relationship between work discretion and pro-activeness.

### **2.7.2 Resource/Time Availability and Employee Entrepreneurial Orientation**

Although entrepreneurs are expected to possess ability to grab opportunity in the market, exercise of effective entrepreneurial role and exploitation of opportunities require committed resources. Several scholars (e.g. Wernerfelt, 1984; Barney, 1986) highlighted that availability and access to resources enables an employee to exploit opportunities more aggressively well before time as compared to other rivalries as a result of competitive and pressure driven business environment. In order to encourage continuous experimentation and exercise risk taking behaviors, Damanpour (1991) highlighted that organization should ensure adequate



availability of slack resources failure which it will reduce employees' commitment towards assigned tasks and goals (Chandler, et al., 2000).

In addition, Hornsby et al. (2002) informed that time availability is also equally important in activating entrepreneurial intention in the organization. The literature have also witnessed consistent studies about time availability in fostering entrepreneurial orientation (e.g., Kuratko, Montagno, & Hornsby, 1990; Kuratko, Hornsby, Naffziger, & Montagno, 1993; Slevin & Covin, 1997; Hornsby, Kuratko, & Montagno, 1999). This claim was further enhanced by Kuratko, et al (2005) pointing out that in order to continuously engage employees in entrepreneurial actions, an element of time become very crucial. As being informed by Ireland et al. (2007), an assessment of employee workload is essential so that they have adequate time to engage themselves with entrepreneurial activities. Implementing strategies which create values to the organization requires such resources (Eisenhardt & Martin, 2000) although tangible resources are seen as important driver of an organization success (Andersen & Kheam, 1998; Fahy, 2002).

According to Schumpeter (1934) as explained by Miller (1983), combination of existing and new resources best explains entrepreneurship. Hence, in an attempt for the employees to be entrepreneurial, adequate resources and time is crucial. Fahy (2002) indicated that not only access to resources but an efficient allocation of reorganization of resources is important in entrepreneurial orientation failure which it will lead to wastage of such resources and result in an adverse effect or an offset to the organization. For instance, an innovation process requires reorganization of resources by combining existing and also new resources (Grant, 1996;

Galunic & Rodan, 1998; Teece, et al., 1997) and often very sensitive to the resource allocation process (Gilberstson, 2002).

An empirical investigation by Covin and Slevin (1991) and Wiklund (1998) indicated that easy access to resources will help an organization to exercise greater entrepreneurial orientation. Ensuring that the employees have sufficient time and required resources will help the organization to create entrepreneurship-conducive work atmosphere. In line with that, resources must be made available to the employees for them to engage into entrepreneurial activities (Kanter, 1985; Sathe, 1985; Sykes & Block, 1989; Hisrich & Peters, 1986; Katz & Gartner, 1988; Stopford & Baden-Fuller, 1994; Das & Teng, 1997; Slevin & Covin, 1997; Kuratko et al, 2014). Availability of slack resources will enhance entrepreneurial behaviors among employees and help them to engage into more entrepreneurial activities. The availability of slack resources usually encourages experimentation and risk-taking behaviors (Burgelman & Sayles, 1986, Kuratko et al, 2014).

Thus, based on these, the following hypotheses are formulated for the construct:

**H2a:** There is a significant relationship between resource/time availability and innovativeness.

**H2b:** There is a significant relationship between resource/time availability and risk-taking.

**H2c:** There is a significant relationship between resource/time availability and pro-activeness.

### **2.7.3 Management Support and Employee Entrepreneurial Orientation**

An organization's effort to facilitate and promote entrepreneurial behavior and activities by providing required resources is known as management support (Hisrich & Peters, 1986; MacMillan, Block, & Narasimha, 1986; Sykes & Block, 1989; Stevenson & Jarillo, 1989; Damanpour, 1991; Kuratko, et al., 1993; Pearce, et al., 1997). Numerous scholars (e.g. Damanpour, 1991; Chandler, Keller, & Lyon, 2000; Morris & Kuratko, 2002) have iterated the importance of organizational management and support in activating entrepreneurial activities in the organization. This includes the way management promotes entrepreneurial orientation mindset in the organization which will have impact on employee entrepreneurial behavior (Rutherford & Holt, 2007) apart from sharing a vision for the future, acknowledging and approving new ideas, and providing resources that is needed to activate entrepreneurial intentions (Srivistava & Lee, 2005) as well as successful product introduction and development (Brown & Eisenhardt, 1995).

According to Janssen (2000) and Janssen (2005), employee's innovation behavior is being affected by organizational characteristics especially management support. This notion was also further supported by Thornberry (2003) who indicated that an important ingredient in transforming managers to entrepreneurs will be management support. The kind of management support that could activate entrepreneurial orientation among employees includes institutionalization of an innovative, proactive and risk-taking behaviors among organizational citizens to identify their fullest potential in support of organizational performance achievement. According to Bhardwarj, Sushil & Momaya (2007), the extent to which management is willing to support its employees in their entrepreneurial attempts considered as the best means of activating entrepreneurial orientation among employees.

However, Holt, Rutherford and Clohessy (2007) indicated that significant variations still exist in the management support construct in promoting entrepreneurial orientation among organizational citizen. At the same time, the management support in form of adequate resources and expertise shall be given sufficient attention in creating employee entrepreneurial orientation. Entrepreneurial orientation activation will also involve support from the middle management level by providing necessary leadership so that the employees can champion innovative ideas given that needed resources and expertise are in place (Hornsby, et al., 2002). Notwithstanding, Morris and Kuratko (2002) further informed that employees will thrive better if there is an existence of pro-active management style. This is in line with findings by Kuratko et al (2014) that direct positive relationship is observed between management support and also entrepreneurial outcomes.

Hence, based on these, the following hypotheses are formulated for the construct:

**H3a:** There is a significant relationship between management support and innovativeness.

**H3b:** There is a significant relationship between management support and risk-taking.

**H3c:** There is a significant relationship between management support and pro-activeness.

#### **2.7.4 Reward/Reinforcement and Employee Entrepreneurial Orientation**

Appropriate use of rewards found to activate entrepreneurial behavior among employees (Kanter, 1985; Sathe, 1985; Block & Ornati, 1987; Sykes, 1992; Barringer & Milkovich, 1998, De Jong & Wennekers, 2008). Stevenson and Gumpert (1985) indicated that when an

employee is rewarded for their performance, they found to remain intact with the organization due to improved loyalty resulting in retention of these employees for a longer period. Similar findings were reported by Chandler et al. (2000) that reward system positively influences innovation and reinforce innovative activities. In line with this, Fritscher (2009) indicated that reward could be regarded as a positive reinforcement while in recognizing a specific desired behavior while Daniels and Daniels (2006) indicated that positive reinforcement could carry characteristics such as personal, immediate, earned, needs to be frequent and also is not necessarily financial.

Development of reward system with performance as a base while highlighting significant achievement and continuously unlocking the potential of the employees are seen as a driver in activating entrepreneurial orientation among employees. Miller (1983) informed that “value based compensation system” encourages employees to interact effectively with internal and external environment which enables the employees to identify potential opportunities, hence, improve the firm value. Therefore, scholars argue that effective rewards system will help to spur entrepreneurial intentions among employees which help them to be more adaptive towards internal and external environments and proactively handle various situations. The reward system should consider elements such as challenging responsibilities, goals, feedback, while emphasizing employees’ individual responsibilities (Kuratko & Hodgetts, 2004). Adoption of appropriate reward system is expected to motivate middle managers and create a desire for them to be innovative and proactive while assuming required level of risks associated with entrepreneurial activity. In other words, there is positive association between reward system and employee entrepreneurial orientation when compensation systems are in place to contributing employees on the basis of value added to

the organization (Salvato, 2002; Bhardwarj, Sushil, & Momaya, 2007). Thus, based on these, the following hypotheses are formulated for the construct:

*H4a*: There is a significant relationship between reward/reinforcement and innovativeness.

*H4b*: There is a significant relationship between reward/reinforcement and risk-taking.

*H4c*: There is a significant relationship between reward/reinforcement and pro-activeness.

### **2.7.5 Knowledge Management Enabler as Mediator**

Knowledge is central to creating an organization that performs better in uncertain business environment that affects organizational agility (Beckman, 1997). Attainment of organizational effectiveness and resulting performance creates greater emphasis on knowledge management, knowledge sharing as well as the mechanisms that encourages these activities. Therefore, knowledge found to be another area that has crucial role to play in creating employee entrepreneurial orientation. It entails storing and also retrieval of information quickly and easily to adjust organizational orientation in alignment to market shift, hence facilitating problem solving as well as decision making process to ultimately improve organizational efficiency (Almeida, 1996).

In view of that, an availability of technological facility which administers the information gathered internally and externally is essential. Several researchers (Leonard, 1995; Grant, 1996; Teece, 1998; Alavi & Leidner, 2001) have emphasized that availability of information technology infrastructure and application that links organization information is essential in

organizational knowledge integration. Systematic storing, access, simulation and prediction of technological capabilities will help an employee to utilize this information in day-to-day operations. Alavi and Leidner (2001) indicated that breaking a formal communication line and extending an individual's communication beyond such formal environment can only be done with information technology. This breakthrough will also create a collaborative work environment regardless of time and place while fostering communication among all the employees.

An adequate level of knowledge is essential to assist the employees to consider cause and effects before engaging themselves into entrepreneurial activities. Acknowledging the fact that both internal and external information is crucial in entrepreneurial decision making, Leonard (1995) noted that technology helps an organization to locate specific type of information arising from internal and external environment while continuously tracking the source of the information. An organization through its employees will be better positioned to achieve its short and long term objectives if the employees are equipped with necessary level of knowledge while also ensuring that knowledge management enabler is in place. Nevertheless, adoption of technology will not ensure organization success. Instead, user friendly technology is important to promote the systems in the organization while promoting the use of the system among the employees so that their decisions are backed by adequate level of information. Addressing the needs of the employees as part of technological application development is paramount to increase the benefit of technological investment so that the technology serves the intended purpose in the organization while fostering more entrepreneurial decision making among employees (King, 1999).

According to Sathe (1985), Hisrich and Peters (1986), Sykes and Block (1989), Bird (1988), Covin and Slevin (1991), Zahra (1991), and Hornsby and Naffziger (1992), supportive organizational culture is one of the main drivers in creating employee entrepreneurial orientation. Supportive organizational culture is expected to keep the momentum among employees in ensuring that they equip themselves with latest development within their industry so that they could promptly act on changes and reap economic benefit of these changes. Moreover, According to Von Krogh (1998) and Cohen and Prusak (2001), an active knowledge sharing among employees can only be realized if trust and openness is promoted by the organization culture.

In addition to this, a collaborative work environment among the employees, both formal and informal relationships in sharing varying knowledge perspectives (O'Dell & Grayson, 1998) will foster knowledge sharing activities that will instill mutual faith in each other's behaviors, intentions, and ability while encouraging each and every one of them to reflect their commitment to the company as a whole. In order to foster free communication among employees, trustworthiness plays an important role whereby it empowers the employees to share their tacit and explicit knowledge, hence enhances and speed up the communication process (Von Krogh, 1998). Although work discretion provides freedom and decision making latitude to the employees, readiness of the organization to tolerate failure reflects the trusting relationship between the organization and employees that eliminates fear of failure and deception (Nonaka, 1990).



In addition, the organizational structure is also another important element of knowledge management enabler that facilitates employee entrepreneurial orientation (Burgelman & Sayles, 1986). Several scholars such as Creed and Miles (1996) and O'Dell and Grayson (1998) have discussed the importance of organizational structure element in the knowledge sharing process in the organization. In general context, organizational structure encompasses three main dimensions which include centralization, formalization and performance based reward systems. Providing reasonable level of authorities and freedom to act freely with necessary supervision will help employees to discover their untapped potentials. For instance, according to Creed and Miles (1996), hierarchical structure in the organization usually limits or hinders knowledge sharing and communication between employees or between employees and their superiors.

Although typically an organization put in place written procedures in conduct of a business and does not allow ignorance of the rules and reach informal agreements to handle some situations, certain level of flexibility may help the employees to uncover their potential in contributing to the performance achievement of the organization. O'Dell and Grayson (1998) concurs with this claim informing that flexibility shall be allowed within the organization structure in order to promote information sharing, collaboration and communication beyond the traditional organizational boundaries.

However, flexibility within the organizational structure alone will not able the organization citizens to practice information sharing. Inadequate motivation among employees tends to be one of the common impediments in knowledge transfer within the organization (Szulanski,

1996). Instead, an appropriate performance based rewards systems should be installed to motivate employees to engage themselves into such practices hence share readily available knowledge, generate new knowledge, and actively participate in cross functional information and knowledge sharing (Leonard, 1995; O'Dell & Grayson, 1998). Neely (1998) concur with this argument indicating that performance based reward systems are suitable mechanisms to foster involvement and communication among organizational members apart from collecting, processing and disseminating information. Acknowledging that knowledge could influence the employee entrepreneurial orientation, the following hypothesis is formulated for the construct:

*H5a:* There is a mediating effect of knowledge management enablers between organizational characteristics and employee entrepreneurial orientation.

## **2.8 Theoretical Framework**

The theoretical framework of the study which explains why the problem under study exists is crucial in the research. Thus, the theoretical framework serves as a basis for conducting research. It is the own position of researcher in identifying direction to the problem in the study. However, it can also be an adaptation of a model used in a previous study, with modifications to suit the inquiry. Aside from showing the direction of the study, through the conceptual framework, the researcher will be able to show the relationships of the different constructs that needed investigation in the study.

According to Guba and Lincoln (1994), theoretical framework is an epistemology of constructivism that assumes a pluralist and relativist view of the reality. Nevertheless, the theoretical framework will also serve as a foundation of hypothetico-deductive research as it is the basis of the hypotheses that the researcher will develop (Sekaran & Bougie, 2010). Therefore, establishing a clearly defined theoretical framework guided by specific set of hypotheses supported by underpinning theories is essential for the conduct of the research study. A research framework presents a model that defines the logical relationships among several factors that have been identified as important to the research problem (Cavana, Delahaye, & Sekaran, 2001).

Smith and Hitt (2005) highlighted that theory offers basis for knowledge and it also helps in understanding important relationships within the discipline. Theory which advances science by providing efficiency, cohesion, and a structure to research question and designs (Kerlinger, 1973; Van de Ven, 1989) guides a researcher to further investigate and identify factors or variables for the study under consideration apart from providing reasoning for the relationship among these factors or variables (Smith & Hitt, 2005). In addition to this, Whetten (1989) further elaborated that the theory will also clearly state the conditions and boundaries for such relationships.

As explained earlier, attaining superior performance and gaining competitive advantage in the market place require a blend of internal and external environments. Sambamurthy, Bharadwaj and Grover (2003) and Teece (2007) suggested organizational, technological and environmental factors as enabler of organization to respond to competitive actions in order to

survive in the turbulent business environment. Resource Based View which focuses at resources and capabilities in generating economic rents indicate that there must be a fit between internal resources and external market environment. However, such fit emanates from possession of organizational knowledge which embedded through various organizational attributes such as culture, policies, processes, systems and also employees (Nonaka, 1991; Nonaka & Takeuchi, 1995).

Therefore, knowledge management enablers are required to be employed by the organizations. This is further supported by Addicott, McGivern, and Ferlie (2006) highlighting that knowledge management initiatives have become an integral part of business strategy. It helps in improvement activities, facilitates better decision making and also supports organizational adaptation and renewal (Earl, 2001). In view of this, a parallel view of resource-based and knowledge-based perspectives was offered by Gold et al. (2001) who identified that technology, culture and structure are rare resources in the organization that improves organizational capability.

Similar findings were reported by Lee and Choi (2003) and also Park (2006) indicating that knowledge management enablers improves the performance. However, Grant (1996) cautioned that knowledge sharing within organization shall be done through a common language in sharing the common knowledge with recognition of knowledge domains. Superior organizational and individual knowledge management endeavors when implemented appropriately found to be successful in dealing with competitive markets (Darroch, 2005) and leads to competitive advantage when the managers employs effective

knowledge management (Nonaka, Toyama, & Nagata, 2000) apart from benefiting the organization by ensuring faster adaptation to environment and market changes (McAdam & McCreedy, 2000; Thompson & Walsham, 2004). This was proven in the research work by Sambamurthy and Subramani (2005) who found that knowledge management is a critical mediator in improving organizational performance. In considering culture as one of the dimension of knowledge management enablers, Maryam, Yaghoubi, Shahgholian and Seyyed Ali (2012) indicated that a culture is appropriate and in support of knowledge management only when it values creativity and also innovation.

Allowing employees to undertake trial and error exercises encourage them to learn as well as transfer knowledge for organizational growth and such culture promotes fair knowledge sharing in the organization (Niaz Azari and Amooei, 2008). Scholars (e.g. Chong, 2006; Bozbura, 2007; Tabarsa & Ormazdi, 2009; Hasanzadeh, 2010; Salavati & Haghazar, 2010; Valmohammadi, 2010; Momghani & Akhavan, 2011) further strengthened the notion by highlighting that several components such as management support, involvement in the decision making and sense of ownership towards organization complement such cultures in the organization. Apart from culture, new information technology facilities which consists information systems and processes of obtaining information (Sivan, 2000) enables knowledge management and tends to enhance the knowledge among the employees and subsequently improves performances.

Therefore, Resource Based View postulates that organizational resources are crucial to attain or sustain the competitive advantage. Contingency theory on the other hand is concerned with

availability of knowledge management initiatives and resulting enablers within and outside the firm. A blend of both helps organization to anticipate the challenges and outperform the counterparts through resources as well as knowledge. Several researchers (e.g. Weill & Olson 1989; Chan & Reich, 2007) have also started to use Contingency Theory to examine the relationships between organizational variables and organizational performance. In addition, Fiedler (1964) has also argued that organizational design is contingent upon various internal and external constraints which not only fit with the environment but also the subsystems and any misalignment could result in dysfunction or inferior performance (Tosi & Slocum, 1984).

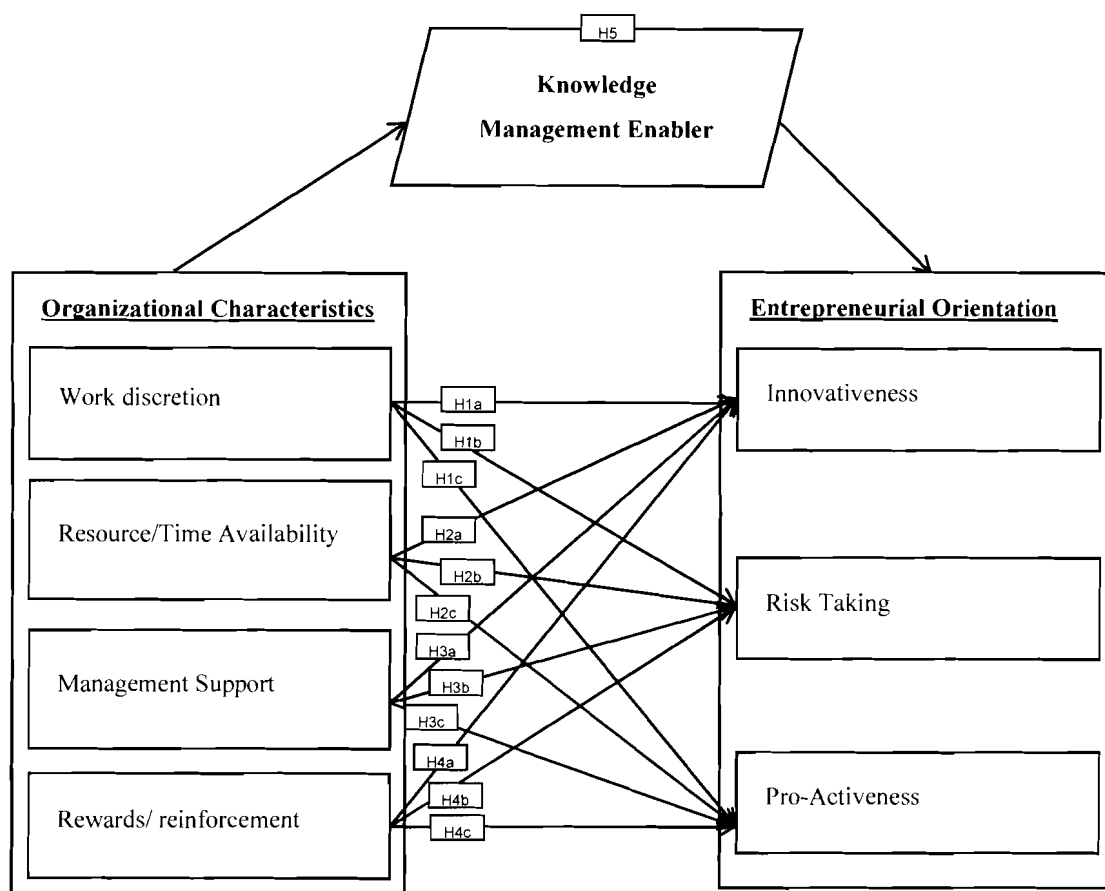
Contingency Theory has indicated that dimensions such as technology, structure and culture are contingent upon various forces in creating entrepreneurial climate hence creating superior performance in the organization. This claim of contingency variables were also supported by several scholars (e.g. Hughes & Scott Morton, 2006; Ifinedo, 2007) while continuously empowering the employees (Brynjolfsson & Brown, 2005) supported by top management commitment (Wade & Hulland, 2004) to generate entrepreneurial intentions. Melville et al. (2004) also further strengthened this notion by arguing that combining organizational factors with contingency variables will result in greater synergies.

Knowledge-based perspectives have become recent extension of resource based view which recognize organizations as an entity which not only generates knowledge but also disseminate the knowledge across the organization as a strategic asset in anticipation of market competitiveness in determining overall effectiveness (Gold, Malhotra, & Segars, 2001; Narasimha, 2000; McEvily & Chakravarthy, 2002; Lopez, 2005). Hence, adopting a resource

based view of a firm blended with knowledge management perspective becoming central to any organization that operates in a very dynamic business environment.

This research answers this by studying how organizational characteristics interact with entrepreneurial orientation. In particular, the research proposes to evaluate the mediation effect of knowledge management enabler between organizational characteristics and entrepreneurial orientation. The central question underlying the research from mediating perspective is whether different knowledge management enablers' contingent variables influencing entrepreneurial orientation. Throughout the literature review, a detail analysis was provided about the organizational characteristics, entrepreneurial orientation and knowledge management enabler. These variables, the corresponding dimensions and their patterns are supported by the Resource Based View Theory as well as Contingency Theory.

Considering this, Figure 2.1 depicts the conceptual framework proposed for the research in formulating specific and testable research questions for this study. The model proposes that the organizational characteristics construct as the independent variable includes work discretion, resource and time availability, management support and reward and reinforcement while entrepreneurial orientation as the dependent variable includes innovation, risk taking and pro-activeness. The model proposes that organizational characteristics directly influence entrepreneurial orientation which is measured through dimensions mentioned above. It also proposes that knowledge management enabler mediates the relationship between organizational characteristics and entrepreneurial orientation.



**Figure 2.1**  
Conceptual Framework

## 2.9 Chapter Summary

The preceding chapter established the theoretical framework for this study. The chapter began by addressing entrepreneurship in general. Thereafter, it has discussed entrepreneurial orientation and the dimensions of the construct. The other constructs that is organizational characteristics together with its dimensions were also discussed. It had also provided support for its relevance as a context for this research. A description of organizational characteristics and its relationship with employee entrepreneurial orientation was provided. Knowledge management enablers were then set forth as a mediator that explained the relationship



between organizational characteristics and entrepreneurial orientation. It provided the theoretical underpinnings of the concepts of organizational characteristics, entrepreneurial orientation and also knowledge management enabler and the building of this theoretical model were illustrated. Based on these constructs, the foundational hypotheses were established. Hypotheses were set forth that predicted a relationship between organizational characteristics and entrepreneurial orientation, as well as knowledge management enablers and entrepreneurial orientation. Having established the theoretical framework for investigation, the next chapter will provide the exact methodology, measures and procedures through which this study was under taken.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter discusses about the methodology set forth to examine the proposed conceptual model. It will begin with research design. Thereafter, it discusses the procedure used to obtain participation from respondents. Measures and instrumentation, data collection procedures, data analysis and techniques and finally the validity and reliability issues of the variables addressed to answer the research questions and test the hypotheses set forth in Chapter 2.

#### **3.2 Research Design**

Undertaking a research require formulation of proper design on how the research can be conducted best. This has call for a clear understanding of available research designs so that an appropriate design can be suggested to undertake the intended study. A plan to conduct research which consists of element to be researched, and procedures to be followed are known as research design (Sproull, 1995). This is also in line with Zikmund (2000) who posited that specification of techniques and procedures to collect and analyze required information shall be prepared as a master plan since it is essential in any research. Inadequate consideration of the selection of techniques and procedures may invite debates on appropriateness of the use of proposed design. The importance of research design is further conformed by Kumar (1996) claiming that there are two major components that require careful and adequate attention in undertaking a research work on research design perspective: identification and development of procedures for commencement of the study and assuring

that validity, objectivity and accuracy is obtained as a result of proper selection of techniques and procedures.

### 3.2.1 Types of Research Design

Generally, there are many research designs that can be considered in undertaking a study. Among others, it includes action research, case study, ethnography, experiment, exploratory study, grounded theory, and survey.

Table 3.1 provides a summary of these methods.

**TABLE 3.1**

Types of Research Design

<b>Attribute</b>	<b>Type</b>	<b>Description</b>
Quantitative	Survey	<ul style="list-style-type: none"> <li>• A method of information collection, which based on communication with a representative sample of individuals.</li> </ul>
Qualitative	Action research	<ul style="list-style-type: none"> <li>• A method that focuses on the purpose of a close collaboration between practitioners and researchers for an immediate problematic situation and the goals of social science.</li> </ul>
	Case study	<ul style="list-style-type: none"> <li>• One case is studied in detail in order to gain a rich understanding of the context of issue being explored.</li> </ul>
	Ethnography	<ul style="list-style-type: none"> <li>• A method by which the researcher participates in people's daily lives over an extended time period, watching what happens, listening to what is said, asking questions and collecting any other relevant data, so that the research will constantly be developing new patterns of thought about what is being observed.</li> </ul>
	Experiment	<ul style="list-style-type: none"> <li>• A method whose purpose is to allow the researcher to control the research situation so that one or more variables can be manipulated to test a hypothesis or to</li> </ul>

**TABLE 3.1 (Cont'd)**

Types of Research Design

<b>Attribute</b>	<b>Type</b>	<b>Description</b>
		evaluate the causal relationships among variables.
	Exploratory studies	<ul style="list-style-type: none"> <li>• A method to find out what is happening in order to seek new insights; also a type of initial research aims to clarify and define the nature of problems.</li> </ul>
	Grounded theory	<ul style="list-style-type: none"> <li>• A method whose purpose is to generate theory from data.</li> </ul>

*Sources: Saunders et al, 2000 & Zikmund, 2000*

### 3.2.2 Philosophical Assumptions

Sound research requires a systematic and rigorous approach in designing and implementing the study apart from collecting and realistically reporting the findings. A systematic and rigorous approach will help to answer many unpacked ambiguities concerning with feelings, subjective experiences, and the meanings different types of people attribute to events and situations. All research is based on some underlying assumptions about what constitutes to a valid research (Myers, 2008). In order to overcome these issues, there are philosophical perspectives that govern quantitative research approach subject to original aim of the researcher and his/her research questions. It helps in shaping aspects of research which includes formation of research question(s), data collection techniques, analysis methods and reporting of the findings. There are two legitimate ways to investigate an issue which are quantitative and qualitative research (Johnson & Christensen, 2008). Each of these research methodologies can be viewed as a strength or weakness depending on the original purpose of the research. Apart from that, both approaches differ in the degree of the researcher's immersion within the context being analyzed (Johnson & Christensen, 2008).

Quantitative and qualitative methods remain important research approaches as far as social science is concerned although quantitative research originated from natural science. Both methods help in achieving an in depth and holistic understanding of social science phenomena. According to Wolfer (2007), quantitative approach is quite systematic and hypothesis oriented, draws heavily upon numbers, and applies statistical tests to analyze the data and measure causal relationships of the variables under study (Denzin & Lincoln, 1994) while qualitative research will encompass broad research questions with a less systematic organization and data may take the form of narratives or explanations with analysis focusing upon general trends or patterns and the researcher interact with the study objects by establishing a strong link (Guba & Lincoln, 1994; Denzin & Lincoln, 1994).

Qualitative research is also assuming multiple realities that are socially constructed (Berger & Luckmann, 1966, Johnson & Christensen, 2008) without adequate reference to compare the claims of truth (Smith, 1983) due to constant changes of the truths. Quantitative and qualitative research differs in various ways including size of data collection (Carey, 1993) and the treatment of information, and in the way the data applied and analyzed in the research. Often, they produce differing findings that add depth to the same research question. However, there are continuous debates in identifying the superiority of both methods in social science research area.

Neuman (2004) and Wolfer (2007) have indicated the following comparisons between quantitative and qualitative research.

**TABLE 3.2**

Quantitative vs. Qualitative Research Characteristics

<b>Attribute</b>	<b>Quantitative Research</b>	<b>Qualitative Research</b>
Neuman (2004)	<ul style="list-style-type: none"> <li>• Test hypothesis that the research begins with.</li> <li>• Concepts are in the form of distinct variables.</li> <li>• Measures are systematically created before data collection and are standardized.</li> <li>• Data are in the form of numbers for precise measurements.</li> <li>• Theory is largely causal and is deductive.</li> <li>• Procedures are standard, and replication is assumed.</li> <li>• Analysis proceeds by using statistics, tables, or charts discussing how what they show relates to hypothesis.</li> </ul>	<ul style="list-style-type: none"> <li>• Capture and discover meaning once the researcher becomes immersed in the data.</li> <li>• Concepts are the form of themes, motifs, generalizations, and taxonomies.</li> <li>• Measures are created in an ad hoc manner and are often specific to the individual setting or research.</li> <li>• Data are in the form of words, images, documents, observation, and transcripts.</li> <li>• Theory can be causal or non-casual and is often inductive.</li> <li>• Research procedures are particular, replication is very rare.</li> <li>• Analysis proceeds by extracting themes or generalizations from evidence and organizing data to present a coherent, consistent picture.</li> </ul>
Wolfer (2007)	<ul style="list-style-type: none"> <li>• Researcher is expert.</li> <li>• Research is hypothesis and theory driven</li> <li>• Concepts are clearly defined by research (to the point where they are easily understood by all).</li> <li>• Systematic steps for research facilitate replication.</li> <li>• Data primarily in the form of numbers.</li> <li>• Analysis involves statistical tests, for significance and association.</li> </ul>	<ul style="list-style-type: none"> <li>• Participant is expert.</li> <li>• Research is driven by broad research questions.</li> <li>• No focus on concept definition until in the form of identification of themes.</li> <li>• No systematic research steps. Replication is not a strong goal.</li> <li>• Data are in primarily in the form of participant explanations, hence quoted or paraphrased conversations.</li> <li>• Analysis is in the form of general patterns or trends. Any numerical analysis is descriptive with no detailed statistical tests for significance or association.</li> </ul>

*Sources: Neuman (2004) & Wolfer (2007)*

Generally, the positivist and interpretive philosophical assumptions underpin the quantitative and qualitative research respectively (Secker, et al., 1995; Sale, Lohfeld, & Brazil, 2002). Quantitative research focuses mainly on numerical observation and measurement of collected information. It uses instruments such as questionnaire and other measuring tools to test and verify theories through hypotheses development and testing it with statistical analytical support. However, qualitative method, on the other hand, searches for values, meanings, feelings, beliefs and thoughts that characterize the investigated phenomena (Johnson & Christensen, 2008).

In an attempt to improve the predictive understanding of entrepreneurial orientation phenomena, a quantitative, descriptive design was proposed in this research since quantitative survey method found to be more accurate and reliable (Clark, 1998). The ultimate objective of quantitative research is to quantify the relationship between variables (Khalid, Hillman & Kumar, 2012) as the numbers impress better (Snider, 2010) and the ability to smaller group of people to generalize and make inferences about the population (Holton & Burnett, 1997; Lind, Marchal & Wathen, 2008) in line with traditional assumption of determinism which explains that events are determined by one or more causes (Salmon, 2007). Therefore, occupying larger sample size in predicting and explaining a phenomenon calls for a quantitative research (Cooper & Schindler, 2006). This approach also assumes that behavior is highly predictable and explainable (Johnson & Christensen, 2012).

Apart from that, quantitative research is also adopted since it provides various benefits which include time and cost saving and access to greater detail of information which may not be

available otherwise (Bluman, 2009) apart from minimizing the subjective judgments (Kealey & Protheroe, 1996). Considering the notion that entrepreneurship is still emphasizes the theoretical development instead of empirical investigation (Ireland, et al., 2001; Hitt, et al., 2001; Ireland, et al., 2003; Ireland & Webb, 2007; Ketchen, et al., 2007; Kraus & Kauranen, 2009), this approach is expected to empirically identify elements that underpin the field of entrepreneurial orientation, especially observing the same as individual-level phenomenon instead of firm-level phenomenon which have been in practice for a substantial period of time. This research is envisaged to uncover elements that significantly contribute to the achievement of entrepreneurial orientation among the employees in the organization and is expected to establish practically accepted relationship between the constructs of organizational characteristics, knowledge management enabler and entrepreneurial orientation.

### **3.3 Measures and Instrumentation**

#### **3.3.1 Measures**

This research adopted measures and instruments either partly or in full that were developed by other researchers in the past depending on suitability of the measures. The questionnaire is in five-points-Likert-scale. The five-points-Likert-scale will range over 'strongly disagree', "disagree", "neutral", "agree" and "strongly agree". Although there are varying degrees of intensity measured, most settle on a minimum of 4-5 dimensions (Isaac & Michael, 1995; Neuman, 2004; Wolfer, 2007) and five-points-Likert-scale is one of the common continuums for the respondents to locate their attitudes (Wolfer, 2007). The scoring will range from 1 to 5 respectively. It was designed in such a manner that the respondent had to just tick the appropriate score indicating the degree of acceptance or agreeableness. The questionnaire



was designed in such a way that respondents will have to select a best option that reflect themselves by providing only “close-ended questions”. According to Zikmund (2000), this type of questions encourages respondents to answer and consume lesser time for completion. In addition, it helps in better comparison and analysis of data allowing efficient analysis of the data collected (Oppenheim, 1992).

### 3.3.2 Instrumentations

Fraenkel and Wallen (2006) argue that reliable instrument is crucial in the research as it is expected to provide consistent results. Therefore, the validity of the instruments used in the research is of central attention. Failure to utilize valid instruments may lead to unwarranted conclusions which could not explain the original aim of the research.

The table below highlights the development of entrepreneurial orientation scale by past researchers.

**TABLE 3.3**

Development of Entrepreneurial Orientation Scale

<b>Author</b>	<b>Originality</b>	<b>Dimensions</b>	<b>Number of Items</b>
Khandwalla(1977)	Original	<ul style="list-style-type: none"> <li>• Innovativeness</li> <li>• Pro-activeness</li> </ul>	• Nine
Miller and Friesen (1983)	Original	<ul style="list-style-type: none"> <li>• Innovativeness</li> <li>• Pro-activeness</li> <li>• Risk Taking</li> </ul>	• Eight
Ginsberg and Venkataraman (1985)	Modified	<ul style="list-style-type: none"> <li>• Innovativeness</li> <li>• Pro-activeness</li> </ul>	• Five

**TABLE 3.3 (Cont'd)**

## Development of Entrepreneurial Orientation Scale

<b>Author</b>	<b>Originality</b>	<b>Dimensions</b>	<b>Number of Items</b>
		• Risk Taking	
Morris and Paul (1987)	Modified	• Innovativeness • Pro-activeness • Risk Taking	• Thirteen
Covin and Slevin (1989)	Modified	• Innovativeness • Pro-activeness • Risk Taking	• Nine
Knight (1997)	Modified	• Innovativeness • Pro-activeness	• Eight
Kreiser et al. (2002)	Modified	• Innovativeness • Pro-activeness • Risk Taking	• Eight

*Source: Adopted from Hong-yun ZHANG & Nai-ding YANG (2010)*

As being indicated by Table 3.3, although entrepreneurial orientation measures five constructs generally, the evolution of scale development shows that various degree of scales were used in the past based on the study being conducted. In measuring corporate entrepreneurship, Khandwalla (1977) developed a nine-item scale which measured only two dimensions of entrepreneurial orientation, which are innovativeness and pro-activeness due to the strong reliability and validity found from the past literature on these two dimensions. In contrast, Miller and Friesen (1983) used eight items which was measured in form of seven-point scale on all three dimensions of entrepreneurial orientation (i.e. innovativeness, risk-taking and pro-activeness). Khandwalla and Miller-Friesen's definition was later adapted by Ginsberg and Venkataraman (1985) to develop a multi-item scale of entrepreneurial

orientation. Their scale established foundation for subsequent scale-development efforts by Morris and Paul (1987).

Further development of entrepreneurial orientation measure was undertaken by Covin and Slevin (1989) based on Miller-Friesen's and Khandwalla's scales with adoption of Ginsberg's (1985) on several items. Further effort to test reliability and validity of the earlier scales on an international utility examining a cross cultural context was conducted by Knight (1997) and Kreiser et al. (2002). Based on the above contributions of entrepreneurial orientation scale, abundant of scholars tested and modified the current instrument under entrepreneurial orientation construct.

As far as instruments concerned, previously developed instruments were adopted and some minor modifications were done to make it applicable to cement manufacturing organization context. Previously developed questionnaires of the variables proposed were adopted and adapted to suit local setting. Each of the variables encompasses important dimensions as proposed in the theoretical framework. Organizational characteristics variable was measured for work discretion, resource/time availability, management support and rewards/reinforcement dimensions and entrepreneurial orientation will contain dimensions such as innovativeness, risk taking, and pro-activeness. Test instruments developed by Hornsby, Kuratko, and Montagno (1999), Lee and Choi (2003), and Covin and Slevin (1989) and Seibert, Kraimer, and Crant, (2001) was adapted for organizational characteristics, knowledge management enabler and entrepreneurial orientation variables respectively. This is in line with claim by Yin (2003) that future research along same area may adopt procedures

and reasoning being documented by past researchers which is expected to improve the reliability of past studies. Each of organizational characteristics, knowledge management enabler and entrepreneurial orientation variables contains 21, 26 and 23 items with four, one and three dimensions in that order.

The following table indicates instruments adopted and adapted in this research.

**TABLE 3.4**

Research Test Instruments

<b>Author</b>	<b>Construct</b>	<b>Dimensions</b>	<b>Number of Items</b>
Hornsby, Kuratko, and Montagno (1999)	Organizational Characteristics	<ul style="list-style-type: none"> <li>• Work Discretion</li> <li>• Resource/Time Availability</li> <li>• Management Support</li> <li>• Rewards/ Reinforcement</li> </ul>	• 21
Lee and Choi (2003)	Knowledge Management Enabler	<ul style="list-style-type: none"> <li>• Technology</li> <li>• Culture</li> <li>• Structure</li> </ul>	• 26
Covin and Slevin (1989), Seibert et al. (2001)	Entrepreneurial Orientation	<ul style="list-style-type: none"> <li>• Innovativeness</li> <li>• Pro-activeness</li> <li>• Risk Taking</li> </ul>	• 23

### 3.4 Data Collection

#### 3.4.1 Sampling

##### 3.6.1.1 Sampling Procedure

Neuman (2004) explained that sampling involves the process of systematically selecting respondents or cases to be included in the research. The sampling process is adopted in the research because it is not feasible to include the entire population in the study. The time and

financial constraints are also preventing a research attempt to cover the entire population for the study. Nevertheless, it is also equally important that the sampling frame includes almost all members of the population so that it will be a good representative of the population (Lowhorn, 2007).

This research attempts to study employees' entrepreneurial orientation as a dependent variable with organizational characteristics as independent variable mediated by knowledge management enabler. The following section will provide a detail explanation about the sampling procedure used in this research.

### **3.6.1.2 Sampling Frame**

Fowler (2002) explained that the sample frame is the set of people that has a chance to be selected, given the sampling approach that is chosen and sampling frame corresponds to the population of the research. However, in the research work, target population, commonly known as accessible population is what is usually being considered instead of actual population considering the time and financial constraints. Taking into account the limitation of time, money and effort, a more narrowly defined population will be useful however it may limit generalizability of the findings (Frankel and Wallen, 2006). In considering the sampling frame, Fowler (2002) proffers three characteristics that need attention: comprehensiveness, probability of selection and efficiency.

The survey was targeted at employees from cement manufacturers in the state of Johor. In order to eliminate the influence of extraneous organizations outside the state of Johor which operates an integrated operation contrary to grinding operation in the state of Johor, the geographical coverage of the respondents was limited to the employees from home based cement manufacturing organizations in the state of Johor. Therefore, the population of this study comprises only Holcim, Lafarge and also YTL employees based at Johor. Based on the Human Resources Division information, the population was estimated to be about 300 employees.

### **3.6.1.3 Sampling Size**

According to Ary, Jacobs, and Razavieh (2002), all things being equal, the larger the sample size, the better the representativeness of the population. However, they indicated that usually, the main concern of any sample within a research is not really the size, rather the representativeness of the sample towards the target population. Although larger sample size is found to be better than the smaller ones in producing reliable and generalizable results, Roscoe (1975) argue that sample size which is larger than 30 and less than 500 should be appropriate for most research.

This research is concerned with entrepreneurial orientation among employees of cement manufacturers in the state of Johor. Considering that there are only three cement manufacturers in the state of Johor, hence, population size found to be smaller. However, Lowhorn (2007) indicated that the size of the population, whether narrow or broad is not a concern in a research as long as relevant individuals who fit into the study are considered.

### 3.6.1.4 Sampling Technique

Issue of sampling and the sample size is an important element in the survey. Right choice for the elements of the sample to make it representative of population is important. There are many ranges of techniques in setting the sample size. Among others it includes probability sampling, and non-probability sampling in which case selected sample will represent the entire target population (Saunders, Lewis, & Thornhill, 2000). There are different types of probability sampling which includes random sampling, stratified sampling, cluster sampling, systematic sampling and other types of sampling techniques.

Table 3.5 provides a summary of different sampling techniques.

**TABLE 3.5**

Sampling Techniques

<b>Technique</b>	<b>Description</b>	<b>Advantages</b>	<b>Disadvantages</b>
Simple random	Random sample from whole population	Highly representative if all subjects participate; the ideal	Not possible without complete list of population members; potentially uneconomical to achieve; can be disruptive to isolate members from a group; time-scale may be too long, data/sample could change
Stratified random	Random sample from identifiable groups (strata), subgroups, etc.	Can ensure that specific groups are represented, even proportionally, in the sample(s) (e.g., by gender), by selecting individuals from strata list	More complex, requires greater effort than simple random; strata must be carefully defined
Cluster	Random samples of successive clusters of subjects (e.g., by institution) until small groups are chosen as	Possible to select randomly when no single list of population members exists, but local lists do; data collected on groups	Clusters in a level must be equivalent and some natural ones are not for essential characteristics (e.g., geographic: numbers equal, but

**TABLE 3.5 (Cont'd)**

## Sampling Techniques

<b>Technique</b>	<b>Description</b>	<b>Advantages</b>	<b>Disadvantages</b>
	units	may avoid introduction of confounding by isolating members	unemployment rates differ)
Stage	Combination of cluster (randomly selecting clusters) and random or stratified random sampling of individuals	Can make up probability sample by random at stages and within groups; possible to select random sample when population lists are very localized	Complex, combines limitations of cluster and stratified random sampling
Purposive	Hand-pick subjects on the basis of specific characteristics	Ensures balance of group sizes when multiple groups are to be selected	Samples are not easily defensible as being representative of populations due to potential subjectivity of researcher
Quota	Select individuals as they come to fill a quota by characteristics proportional to populations	Ensures selection of adequate numbers of subjects with appropriate characteristics	Not possible to prove that the sample is representative of designated population
Snowball	Subjects with desired traits or characteristics give names of further appropriate subjects	Possible to include members of groups where no lists or identifiable clusters even exist (e.g., drug abusers, criminals)	No way of knowing whether the sample is representative of the population
Volunteer, accidental, convenience	Either asking for volunteers, or the consequence of not all those selected finally participating, or a set of subjects who just happen to be available	Inexpensive way of ensuring sufficient numbers of a study	Can be highly unrepresentative

*Source: Source: Black, T. R. (1999). Doing quantitative research in the social sciences: An integrated approach to research design, measurement, and statistics. Thousand Oaks, CA: SAGE Publications, Inc. (p. 118)*



Simple random sampling best suit in a situation where the population is fairly homogenous for the characteristic of interest (Munizzo & Musial, 2009). Therefore, this survey occupied simple random sampling considering the fact that the population frame is rather smaller and all the possible samples that we can choose from the population have the same probability of being chosen, this is, all the elements of the population have the same probability of being chosen to belong to the sample. This is in line with claim by Sekaran (2003) that a simple random sampling technique assigns equal opportunity to each element of population for being chosen as a subject. Apart from that, Fraenkel and Wallen (2006) further highlighted that when random sampling is employed, the likelihood that the sample will represent the population is much better although population representation is not guaranteed.

Once the respondents' information was received, each respondent were numbered. Once the numbering of the respondents was completed, Microsoft Excel function (i.e. RANDBETWEEN) was used to randomly create a number. The number generated was matched to the respondent in the respondents' master list and the survey was sent to the selected respondent accordingly and the exercise was repeated until at least the minimum sample size was reached.

### **3.4.2 Data Collection Procedures**

#### **3.6.2.1 Pre-Test and Pilot Test**

According to Johanson and Brooks (2010), pilot studies are often recommended by scholars to address a variety of issues, including preliminary scale or instrument development. An important component in the data collection process is the pilot study, which is a trial run to

test the procedure planned for the research (Monette, et al., 2002) to determine the degree of clarity of questions and to identify problem areas that need attention (Borg & Gall, 1979). Better understanding of questionnaire and also the procedures to execute the survey is crucial (Oppenheim, 1992; Czaja & Blair, 1996).

Therefore, pilot test to refine the questionnaire to ensure that the questions are unambiguous and respondents do not have any problems in answering the questions is important. A well-conducted pilot study, giving a clear list of aims and objectives within a formal framework will encourage methodological rigor, ensure that the work is scientifically valid and publishable, and will lead to higher quality (Lancaster, Dodd, & Williamson, 2004). Pilot-testing a questionnaire is necessary to avoid problems that may arise when the questionnaire is administered to the whole sample. According to Saunders et al. (2000), pre-test and pilot test will most likely help to increase the validity and reliability of the research findings. Selection of pre-test and pilot test samples will take into consideration the concern of representing the population of the research.

The questionnaire developed was administered to several employees in the organization. The responses were collected and analyzed to evaluate if the responses were explaining expected outcomes and thereafter to further streamline the words and sentence structures. In addition, questionnaire designed was shared with entrepreneurial experts. Factor analysis and reliability tests were conducted. Questionnaire was revised based on pre-test and pilot test results. Any question which does not provide useful information was altered or completely discarded based on the importance of the question to the study. Necessary revision of the

questionnaire was carried out. According to Monette et al. (2002), a sample of 20 respondents for pilot testing will be good for a survey method while Isaac and Michael (1995) claim that a sample of 10 to 30 respondents for pilot survey will be sufficient and advantageous when there is a paucity of financial resources while some scholars just specify as “small set of respondents” instead of an absolute number (Neuman, 2004).

A pilot test was conducted among 32 respondents to evaluate the reliability of the test instruments. The respondents were randomly selected from various functional units by self-administering the questionnaire and provide required explanation where necessary. A total of 70 items were tested comprise of three variables namely organizational characteristics, knowledge management enabler and entrepreneurial orientation. Each of the variables consists of 21, 26 and 23 items respectively. The results are provided in the following table:

**TABLE 3.6**  
Reliability Results of Survey Instrument

<b>Construct</b>	<b>N</b>	<b>No of Items</b>	<b>Cronbach Alpha</b>
EO	32	23	0.887
KME	32	26	0.817
OC	32	21	0.730
Overall	32	70	0.882

The test results of the pilot survey shows that the Cronbach’s Alpha estimates more than 0.80 which is acceptable for further analysis as it is more than the minimum requirement of 0.60 (Malhotra, 2004). The test instruments were found to be reliable and therefore were used to collect data from respondents in the research study context.

### **3.6.2.2 Data Collection Process**

Structured questionnaires was developed and distributed to collect required data. The questionnaire designed consists of seventy nine questions. The questions were grouped in five sections which include personal information, organizational information, organizational characteristics, knowledge management enabler and entrepreneurial orientation. Conceptual framework which covers variables such as organizational characteristics, knowledge management enabler and entrepreneurial orientation encompasses four, one and three dimensions respectively. Entrepreneurial orientation explores dimensions such as innovativeness, proactiveness and risk taking to identify how organizational characteristics relate to entrepreneurial orientation among employees in the organization. In addition, data were also collected for mediating variable of knowledge management enabler. The magnitude of mediating effect of knowledge management enabler between organizational characteristics and entrepreneurial orientation was explored.

Survey which allows a researcher to collect sizeable amount of data in an economical way (Saunders, et al., 2000) is one of the popular and common data collection method in business and management studies (Ghauri, Gronhaug, & Kristianslund, 1995; Saunders, et al., 2000) that is easy to administer because people are familiar with survey mechanism (Baxter & Babbie, 2004; Fraenkel & Wallen, 2006). However, Oksenberg, Cannell, and Kalton (1991) argue that the outcome of survey research largely depends on the kind of questions being asked and the way these questions are being asked to the potential respondents.

According to Kerlinger (1973), survey research involves the study of large and small populations, selecting and studying samples chosen from the populations to discover the relative incidence, distribution and interrelations of sociological and psychological variables. Survey research uses instruments such as series of questions in a questionnaire and interviews to gather information from groups of subjects and permits the researcher to summarize the characteristics of different groups or to measure their attitudes and opinions toward some issue (Jobe & Mingay, 1991; Ary, Jacobs, & Razavieh, 2002). A survey which tends to be quantitative in nature provides a systematic method of collecting data from a population of interest such that the results are representative of the population within a certain degree of error. Survey helps to obtain quick, inexpensive and accurate data in dealing with people opinions, perceptions and attitudes apart from explaining the relationship and differences between variables (Kerlinger, 1973).

Table 3.7 shows advantages and disadvantages of survey method.

**TABLE 3.7**

Advantages and Disadvantages of Survey

<b>Advantages</b>	<b>Disadvantages</b>
<ul style="list-style-type: none"> <li>• Can complete structured questions with many stakeholders within a relatively short time frame.</li> <li>• Can be completed by telephone, mail, fax, or in-person.</li> <li>• It is quantifiable and generalizable to an entire population if the population is sampled appropriately.</li> <li>• Standardized, structured questionnaire minimizes interviewer bias.</li> <li>• Tremendous volume of information can be</li> </ul>	<ul style="list-style-type: none"> <li>• More difficult to collect a comprehensive understanding of respondents' perspective (in-depth information) compared to in-depth interviews or focus groups.</li> <li>• Can be very expensive.</li> <li>• Requires some statistical knowledge, sampling and other specialized skills to process and interpret results.</li> </ul>

**TABLE 3.7 (Cont'd)**

## Advantages and Disadvantages of Survey

<b>Advantages</b>	<b>Disadvantages</b>
<ul style="list-style-type: none"> <li>collected in short period of time.</li> <li>• Can take less time to analyze than qualitative data.</li> </ul>	

*Source: Streiner and Norman (1999)*

Surveys can be classified by their method of data collection. There are many methods for obtaining survey research. The method of administration will affect costs and response rate, and will also influence which questions may be asked and how they are asked. Generally, there are two main types of data collection methods: self-administered and investigator administered (Streiner & Norman, 1999). Advantages and disadvantages of the various methods are provided in Table 3.8 and Table 3.9.

**TABLE 3.8**

## Self-Administered Survey Methods

<b>Method</b>	<b>Advantages</b>	<b>Disadvantages</b>
Mail	<ul style="list-style-type: none"> <li>• Social desirability bias is minimized</li> <li>• Administrative costs and costs per respondent are significantly reduced.</li> <li>• Can send the exact same questionnaire to many people and they allow respondents to fill it out at their own convenience.</li> </ul>	<ul style="list-style-type: none"> <li>• It is often not possible to determine the demographics and characteristics of non-respondents and/or reasons for refusal.</li> <li>• Some questions may not be complete on returned questionnaires.</li> <li>• The time elapsed before receiving completed questionnaires can be long (1-3 months).</li> <li>• Low response rate.</li> <li>• No way for the respondent to seek clarification if questions are unclear.</li> </ul>
Web Survey	<ul style="list-style-type: none"> <li>• Less expensive.</li> <li>• Can reach out to large audience.</li> </ul>	<ul style="list-style-type: none"> <li>• Authenticity of the person responding can be difficult to prove.</li> </ul>

**TABLE 3.8 (Cont'd)**

Self-Administered Survey Methods

<b>Method</b>	<b>Advantages</b>	<b>Disadvantages</b>
		<ul style="list-style-type: none"> <li>• Response rate may be low.</li> <li>• Persons responding to the questionnaire would be confined to those who have internet access which may not be representative of the population.</li> </ul>

*Source: Streiner and Norman (1999)*

**TABLE 3.9**

Investigator-Administered Survey Methods

<b>Method</b>	<b>Advantages</b>	<b>Disadvantages</b>
Face to face	<ul style="list-style-type: none"> <li>• Interviewers can document characteristics of non-respondents and reasons for refusal.</li> <li>• Usually results in a higher response rate</li> <li>• Preferable for survey addressing complex issues where some explanation may be needed.</li> <li>• Reduces non-response to individual questionnaire items</li> </ul>	<ul style="list-style-type: none"> <li>• A social desirability bias may affect the accuracy of responses, especially when survey is addressing sensitive issues.</li> <li>• Recruitment and training of interviewers is time consuming and expensive.</li> <li>• Cost per interview is expensive.</li> </ul>
Telephone	<ul style="list-style-type: none"> <li>• It is possible to achieve high response rates.</li> <li>• Interviewers are able to document characteristics of non-respondents and reasons for refusal.</li> <li>• The amount of non-response to questionnaire items can be minimized.</li> <li>• Able to obtain results quickly</li> <li>• Less costly than face to face interviews (but more expensive than mail surveys).</li> </ul>	<ul style="list-style-type: none"> <li>• Sometimes difficult to reach a selected resident of a household.</li> <li>• Long and/or complex questions should be avoided, as it is difficult for respondents to retain the questions and response categories.</li> </ul>
Group Administered	<ul style="list-style-type: none"> <li>• Able to capture a relatively large sample of respondents in one sitting.</li> <li>• Response rate is relatively high.</li> </ul>	<ul style="list-style-type: none"> <li>• Gathering all respondents in sitting is not easy.</li> <li>• Presence of the researcher may make respondents feel that their</li> </ul>

**TABLE 3.9 (Cont'd)**

Investigator-Administered Survey Methods

<b>Method</b>	<b>Advantages</b>	<b>Disadvantages</b>
	<ul style="list-style-type: none"><li>• If the respondents are unclear about the meaning of questions they could ask for clarification.</li></ul>	answers are less anonymous

*Source: Streiner and Norman (1999)*

In addition, an option of internet based approach also explored to reach the respondents. Internet-based survey can be conducted in two ways: web-based survey and e-mail survey (Dommeyer & Moriarty 2000). According to Sheehan and Hoy (1999), internet-based approach is an efficient and relatively low cost survey method although there are possibilities of duplication of questionnaires since it can be filled and sent more than once by the same respondent. However, as claimed by Smith (1997), email and self-administered survey will be suitable to technologically savvy respondents which are relevant in assessing the employees as they actively involved in usage of information technology facilities.

Nevertheless, each survey technique possesses different degree of complexity, varying quality of data and differing response rates (Dickson, 1994). Table 3.8 below offers a summary of different survey techniques.



**TABLE 3.10**

Comparison of Major Survey Research Techniques

<b>Criteria</b>	<b>Direct/Cold Mailing</b>	<b>Mail Panels</b>	<b>Telephone</b>	<b>Personal In- Home</b>	<b>Mail Intercept</b>
Complexity and versatility	<ul style="list-style-type: none"> <li>• Not much</li> </ul>	<ul style="list-style-type: none"> <li>• Not much</li> </ul>	<ul style="list-style-type: none"> <li>• Substantial, but complex or lengthy scales difficult to use</li> </ul>	<ul style="list-style-type: none"> <li>• Highly flexible</li> </ul>	<ul style="list-style-type: none"> <li>• Most flexible</li> </ul>
Quantity of data	<ul style="list-style-type: none"> <li>• Substantial</li> </ul>	<ul style="list-style-type: none"> <li>• Substantial</li> </ul>	<ul style="list-style-type: none"> <li>• Short, lasting typically between 15 and 30 minutes</li> </ul>	<ul style="list-style-type: none"> <li>• Greatest quantity</li> </ul>	<ul style="list-style-type: none"> <li>• Limited, 25 minutes or less</li> </ul>
Sample control	<ul style="list-style-type: none"> <li>• Little</li> </ul>	<ul style="list-style-type: none"> <li>• Substantial, but representativeness may be a question</li> </ul>	<ul style="list-style-type: none"> <li>• Good, but non-listed households can be a problem</li> </ul>	<ul style="list-style-type: none"> <li>• In theory, provides greatest control</li> </ul>	<ul style="list-style-type: none"> <li>• Can be problematic; sample representativeness may be questionable</li> </ul>
Quality of data	<ul style="list-style-type: none"> <li>• Better for sensitive or embarrassing questions; however, no interviewer is present to clarify what is being asked</li> </ul>		<ul style="list-style-type: none"> <li>• Positive side, interview can clear up any ambiguities; negative side, may lead to socially accepted answers</li> </ul>	<ul style="list-style-type: none"> <li>• There is the chance of cheating</li> </ul>	<ul style="list-style-type: none"> <li>• Unnatural testing environment can lead to bias</li> </ul>
Response	<ul style="list-style-type: none"> <li>• In general, low; as low as 10%</li> </ul>	<ul style="list-style-type: none"> <li>• 70–80%</li> </ul>	<ul style="list-style-type: none"> <li>• 60–80%</li> </ul>	<ul style="list-style-type: none"> <li>• Greater than 80%</li> </ul>	<ul style="list-style-type: none"> <li>• As high as 80% rates</li> </ul>
Speed	<ul style="list-style-type: none"> <li>• Several weeks; completion time will increase with follow-up mailings</li> </ul>	<ul style="list-style-type: none"> <li>• Several weeks with no follow-up mailings, longer with follow-up mailings</li> </ul>	<ul style="list-style-type: none"> <li>• Large studies can be completed in 3 to 4 weeks</li> </ul>	<ul style="list-style-type: none"> <li>• Faster than mail but typically slower than telephone surveys</li> </ul>	<ul style="list-style-type: none"> <li>• Large studies can be completed in a few days</li> </ul>

**TABLE 3.10 (Cont'd)**

## Comparison of Major Survey Research Techniques

<b>Criteria</b>	<b>Direct/Cold Mailing</b>	<b>Mail Panels</b>	<b>Telephone</b>	<b>Personal In- Home</b>	<b>Mail Intercept</b>
Cost	<ul style="list-style-type: none"> <li>• Inexpensive</li> </ul>	<ul style="list-style-type: none"> <li>• Lowest</li> </ul>	<ul style="list-style-type: none"> <li>• Not as low as mail; depends on incidence rate and length of questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>• Can be relatively expensive, but considerable variability</li> </ul>	<ul style="list-style-type: none"> <li>• Less expensive than in-home, but higher than telephone; again, length and incidence rate will determine cost</li> </ul>
Uses	<ul style="list-style-type: none"> <li>• Executive, industrial, medical, and readership studies</li> </ul>	<ul style="list-style-type: none"> <li>• All areas of marketing research, particularly useful in low-incidence categories</li> </ul>	<ul style="list-style-type: none"> <li>• Particularly effective in studies that require national samples</li> </ul>	<ul style="list-style-type: none"> <li>• Still prevalent in product testing and other studies that require visual cues or product</li> </ul>	<ul style="list-style-type: none"> <li>• Pervasive-concept tests, name tests, package tests, copy test prototypes</li> </ul>

*Source:* Peter R. Dickson, *Marketing Management* (Fort Worth, TX: The Dryden Press, 1994), 114.

As far as this research is concerned, primary data collection method was Internet-based survey. This is because the use of internet-based web survey is highly accepted and more popular (Porter & Whitcomb, 2003; Dillman, 2007) in comparison to traditional practice of mail or telephone (Couper, 2000; Atif, Richards, & Bilgin 2012) and common approach for population of the study which are geographically diverse (Solomon, 2001; Dillman, 2007). This method also provided an advantage of increased flexibility to tailor the questionnaire, global reach, ease of data analysis, time saving in reaching the potential respondents apart from providing quick, inexpensive, efficient and accurate information with respect to population (Zikmund, 2000; Berrens, et al., 2003; Parks, et al., 2006; Dillman, 2007; Marta-Pedroso, et al., 2007; Fleming & Bowden, 2009; Olsen, 2009). Questionnaire was emailed to individual respondents. However, a follow up was considered should the respondents seek detail clarifications of the instruments. According to Rea and Parker (2005), this method is also helpful in reaching the entire population possible in spite of targeted sample size only.

### **3.6.2.3 Non-Response Bias**

Non-response is referred as participant's action of not answering some or all items in the survey instrument. According to Fraenkel and Wallen (2006), those whom did not respond to questionnaire may differ from those responded and therefore, conclusions drawn from respondents responses will mislead or may not reflect the true view of the population. The data for this study were collected through questionnaire. Thus, there is tendency that the survey responses will experience potential response bias (Polit & Hungler, 1999). This is mainly because the responses will be self-reported which is not being validated either to further support or refute by co-workers or superiors. However, according to several scholars (e.g. Solomon, 2001; Rogelberg & Stanton, 2007), a researcher can lower the non-response

bias when the questionnaire is designed carefully in the simplest form and the length is managed properly accompanied by clear and personalized cover letter. On the other hand, the research used measures and instruments developed by earlier researchers and there could be tendency that some of the important dimensions of organizational characteristics, knowledge management enabler and entrepreneurial orientation are omitted or not considered. In addition, the response rate of the questionnaire is uncertain as it depends on the method of data collection and subject to the population which is rather smaller since there are only three cement manufacturers. Therefore, independent t-test and KMO test were conducted to address the issue. However, Schaefer and Dillman (1998) and Dillman (2000) highlighted that the use of internet-based web survey potentially help to reduce the non-response bias while Hansen et al. (2007) indicated that little is known about non-response bias when conducting an internet-based web survey.

### **3.5 Data Analysis**

Returned Internet-based responses were numbered for the purpose of easier identification for data analysis. Data in the questionnaires were coded and entered into the Statistical Package for the Social Science (SPSS) version 19.0 ready for analysis. Missing responses were identified (if any) and coded separately from non-applicable responses in order to increase the reliability of the data analysis. SPSS version 19.0 statistical package was used to analyze responses. Cronbach's alpha scores were calculated to estimate the reliability of the data collected. The reliability rule of thumb indicated by Malhotra (2004) was used: alpha coefficients below 0.6 considered as weak reliability, alpha coefficients between 0.6 and 0.8 considered to be moderately strong and alpha coefficients of more than 0.8 considered as very strong reliability. The research utilized multiple regression analysis. Multiple regression

analysis used to detect the correlations and relationships between organizational characteristics, knowledge management enabler and entrepreneurial orientation. Regression statistical measures such as correlation coefficients (R), coefficient of determination ( $R^2$ ) and tests of significance (F) were calculated. Factor Analysis was carried out to explore the relationships between the variables and also as a means of data reduction.

Table 3.11 shows the statistical tests conducted to answer the research questions.

**TABLE 3.11**

Research Questions and Proposed Statistical Analysis

<b>Research Question</b>	<b>Proposed Statistical Analysis</b>
RQ1 • Is there a significant relationship between work discretion and innovativeness?	• Multiple regression
RQ2 • Is there a significant relationship between work discretion and risk taking?	• Multiple regression
RQ3 • Is there a significant relationship between work discretion and pro-activeness?	• Multiple regression
RQ4 • Is there a significant relationship between resource/time availability and innovativeness?	• Multiple regression
RQ5 • Is there a significant relationship between resource/time availability and risk taking?	• Multiple regression
RQ6 • Is there a significant relationship between resource/time availability and pro-activeness?	• Multiple regression
RQ7 • Is there a significant relationship between management support and innovativeness?	• Multiple regression
RQ8 • Is there a significant relationship between management support and risk taking?	• Multiple regression
RQ9 • Is there a significant relationship between management support and pro-activeness?	• Multiple regression
RQ10 • Is there a significant relationship between rewards/reinforcement and innovativeness?	• Multiple regression

**TABLE 3.11 (Cont'd)**

Research Questions and Proposed Statistical Analysis

<b>Research Question</b>	<b>Proposed Statistical Analysis</b>
RQ11 • Is there a significant relationship between rewards/reinforcement and risk taking?	• Multiple regression
RQ12 • Is there a significant relationship between rewards/reinforcement and pro-activeness?	• Multiple regression
RQ13 • Is there mediating effect of knowledge management enabler between organizational characteristics and entrepreneurial orientation?	• Barron and Kenny (1986) three step approach

### **3.6 Reliability and Validity**

According to Saunders et al. (2000), adequate attention must be paid to reliability and validity to ensure that results are appropriate and increases the credibility of research findings. There are major concerns about reliability and validity within quantitative analysis. According to Kimberlin and Winterstein (2008), key indicators of the quality of a measuring instrument are the reliability and validity of the measures. Arguments among the quantitative research proponents about standards of judging the quality of quantitative research raised the issues of reliability and validity. The perception that reliability and validity are separate constituents is invalid (Golafshani, 2003). In most cases, reliability and validity seem to conflict. In fact, they're related to each other.

Often, the research can be criticized for several reasons which could include poor conceptual framework (Pettersen, Veenstra, Guldvog and Kolstad, 2004), unanticipated results (Calnan, 1988; Williams, 1994), and lack of valid and reliable instruments (Sitzia, 1999). It's important to integrate the idea of reliability with the other major criteria for the quality of

measurement, validity and develop an understanding of the relationships between reliability and validity in measurement (Kimberlin & Winterstein, 2008). In view of the same, Campbell, Braspenning, Hutchinson, and Marshall (2002) argued that indicators should be used to compare institution, organizations and practitioners with similar institution, organizations and practitioners.

The terms “validity” and “reliability” refer to ability to measure an outcome or characteristic (Lewis, 1999). Quantitative research is not free of validity and reliability issues. In addition, researcher’s capabilities in ensuring most practical responses are provided by participants are also key. Failure to capture the reality of the variables observed in the setting may lead to serious validity and reliability issues. Although repeating trail will help to reaffirm the earlier findings, time factor remain a hindrance to most of the researchers. Data and the means to collect these data is the source of validity and reliability issues. Therefore, the researcher will have to ensure that techniques used in the quantitative research are given careful consideration and attention of both validity and reliability. A measurement technique which is reliable but not valid is said to be “biased” if the errors tend to occur in one direction more than another or if is influenced by a factor that we do not intend to measure (Lewis, 1999). Hence, crucial component of the quantitative research quality will be application of valid and reliable measurement instruments to minimize potential bias in the research findings.

### **3.6.1 Reliability**

Generally, reliability deals with repeatability and thereafter consistency of the measures. It engages into process that produces consistent findings on repeated trails. According to Lewis

(1999) and Saunders et al. (2000), the term reliability refers to possibility of yielding same results when measurements taken under identical circumstances are repeated. Use of bias-free measurement with wide array of relevant variables is critical to enhance the reliability of any process. There is some variation in what researchers consider acceptable levels of reliability, ranging from more than 0.60 (Malhotra, 2004), 0.75 or more (Bailey, 1987) while others opt for the ideal of at least 0.85-0.90 (Monette, Sullivan, & DeJong, 2002). Along the same issue of reliability, Devellis (1991) commented that acceptable levels of reliability for ability/aptitude tests and personality tests are 0.80 and 0.70 respectively.

Reliability of an instrument used in the research is also important in provoking consistent responses within a given context. Along with that, understanding the different types of measurement error is equally important in ensuring reliability of the research. A clear understanding of measurement error types which make the measurements different between one occasion to another occasion (Gay, 1987) will help the researcher to keep constant attention while collecting data, hence, reduce the reliability related issues. There are different means of estimating the reliability of any measure. Usually, pretesting or pilot testing the measurement instrument allows for the identification of such errors and allows refinement of the instrument in order to minimize the measurement error (Gehlbach & Brinkworth, 2011). In addition, Rattray and Jones (2007) indicated that Bowling (1997) and Burns and Grove (1997) have provided further direction into this issue by indicating that relying on multi-item scales will help to reduce the measurement error hence improves the misinterpretation and biasness of the findings.



### 3.6.2 Validity

The validity of a measurement can be defined as the degree with which the measured value reflects the characteristic it is intended to measure (Lewis, 1999). According to Streiner and Norman (1996), validity in relation to research is a judgment regarding the degree to which the components of the research reflect the theory, concept, or variable under study. Worth of the results in any quantitative research has a direct correlation with the quality and validity of the test instrument and research design used. For a test instrument to be valid, it needs to be reliable, however, a reliable test instrument not necessarily valid (Cook & Beckman, 2006). Generally, validity is evaluated through two dimensions namely internal validity and also external validity. Internal validity refers to the likelihood that experimental manipulation indeed was responsible for the differences observed whereas external validity refers to the extent to which the results of the study can be generalized to the larger population (Polit & Hungler, 1999).

As mentioned earlier, generalizing the findings of the research found to be one of the major challenges. The issue of generalizability will worsen further if the issues of both reliability and validity are not considered carefully in the quantitative research. Nevertheless, higher level of reliability and validity will improve the chances of comparing the findings across similar settings and the issue of generalizability will be resolved even though it is not the ultimate goal of quantitative research.

Table 3.12 below shows the tests to be undertaken to establish validity and reliability of the survey instrument:

**TABLE 3.12**

## Validity and Reliability of Survey Instrument

<b>Type of Validity</b>	<b>Measures</b>	<b>Means to Establish</b>
Content Validity	<ul style="list-style-type: none"> <li>• The degree to which a test appropriately represents the content domain it is intended to measure</li> </ul>	<ul style="list-style-type: none"> <li>• Panel of experts</li> <li>• Literature review</li> </ul>
Face Validity	<ul style="list-style-type: none"> <li>• The degree to which a test appears to measure what it purports to measure</li> </ul>	<ul style="list-style-type: none"> <li>• Panel of experts</li> <li>• Pilot test</li> </ul>
Construct Validity	<ul style="list-style-type: none"> <li>• The degree to which a test measures an intended hypothetical construct</li> </ul>	<ul style="list-style-type: none"> <li>• Factor analysis</li> </ul>
Reliability (Internal consistency)	<ul style="list-style-type: none"> <li>• The degree to which a test consistently measures whatever it measures</li> </ul>	<ul style="list-style-type: none"> <li>• Cronbach's alpha</li> </ul>

*Source: Salkind & Rasmussen (2007)*

### 3.7 Chapter Summary

Objective of this chapter was to outline the proposed methodology for investigating the research questions and also hypotheses highlighted in the first two chapters. The chapter began with discussion about target sample and a detailed analysis about the nature of both qualitative and quantitative methodologies. It offered discussions about research design, sampling procedure which includes sampling frame and technique and sampling size, measures and instrumentation for the independent, dependent and mediating variables that will be used in the research and also data collection methods and procedure. A further analysis of reliability and validity of research is also provided while extending an overview of data analysis options for this research. The following chapter will provide the statistical results and a discussion of the collected data.

## **CHAPTER FOUR**

### **ANALYSIS AND FINDINGS**

#### **4.1 Introduction**

This chapter will present information about the sample used for this study and the results of the study. It will examine the relationship between organizational characteristics and entrepreneurial orientation among employees while measuring the mediation effect of knowledge management enablers. In addition, methods proposed in Chapter 3 such as descriptive and inferential statistics will be occupied to test the hypotheses set forth in Chapter 2 to answer the research questions posed by this study and to offer a platform for future research. SPSS 19.0 was used to analyze data collected from online survey. The reliability and validity of the measurement scales were also examined and reported.

#### **4.2 Data Collection Process and Survey Responses**

Employees of three cement manufacturing companies were targeted as the population for this survey. As being mentioned in chapter one, all level of employees were targeted as population of this survey. The sampling frame was determined by contacting the Human Resources Division of the organization. Altogether, there were about 300 employees from all levels of the organization made up the population size. Given the population size, a minimum sample size of 155 was set at 95 percent confidence level based on suggestion by Krejcie and Morgan (1970). About 257 questionnaires were sent out to collect data.

The data for survey was collected via email. Email invitations were sent out to contact employees for this study. A cover letter was prepared in delivered together with the invitation

indicating the purpose of the study research. Assurance of confidentiality of responses as well as anonymity of respondents' identity was also indicated in the cover letter to promote participation from the employees (Hair, et al., 2006). The email was sent to all level of employees within these organizations by providing a brief description of the survey along with a link to the survey itself which contained additional information. Abd Aziz and Mahmood (2011) indicated that five folds distribution of questionnaire is important in order to capture adequate level of sample size. Considering that the population of this study is rather small, it was decided that the more than 80% of the population will be included in the survey.

During the first mailing, 94 usable questionnaires were received from the respondents. This was about 52% of the response rate. Considering the smaller population size, it was decided to further increase the response rate. A reminder was sent to all the respondents through email as well as word of mouth to improve respondents' participation in the survey so as to collect more data for the research. A thank you note was also sent together with the reminder letter to thank respondents who participated in the survey. After the first reminder, 87 usable questionnaires were received. In total, 181 usable questionnaires were received (70.4% response rate) in two waves of data collection after a period of approximately three months. The response rate is adequate for the population under investigation (Krejcie & Morgan, 1970). This sample size have fulfilled the rule of thumb set by Roscoe (1975) who mentioned that sample size between 30 and 500 will be appropriate for majority of the research. A cursory examination of the demographics of the respondents reveals that a fair amount of various demographic characteristics are represented by the respondents.

### **4.3 Non Response Bias**

An observation that there are systematic differences of opinions between respondents who participated in the survey and returned the questionnaire and with those who did not return the questionnaire best reflects non response bias. The non-response bias is performed in order to potentially ferret out any bias that may exist between respondents and non-respondents in the data collected. Miller and Smith (1983) were the pioneers who discussed the nonresponse error and their article was highly accepted and cited. There are generally six possible types of common survey error in a sample survey research and non-response bias have been identified as one of them (Dillman, 2000).

There are two instances where the research will be experiencing this error. First, this error is observed when the respondents included in the survey sample do not provide usable responses. Next, these respondents are different than those who do on the characteristics of interest in the study. However, this bias can be tested by comparing responses of those who return the questionnaires in the first mailing (early respondents) against those who did so in the second mailing (late respondents). This test assumes that the respondents who returned the questionnaire in the second mailing are known as non-respondents and they represent the group. Saunders et al. (2007) indicated that non-response bias test will be not appropriate between early responders and late responders because the number of responses received in the survey was 181, more than the minimum sample size of 155 set by Krejcie and Morgan (1970). However, Armstrong and Overton (1977) indicated that there are possibility of non-response bias between early respondents and also late respondents if there are huge differences between them.

In order to test for non-response bias, a comparison between early respondents (N=94) and late respondents (N=87) were performed. Existence of significant difference in the mean value between early respondents and late respondents were tested by performing independent T-tests for all variables. Table 4.1 highlights the results of independent t-tests.

**TABLE 4.1**

*Test of Significant Difference between Means of Early Respondents and Late*

*Respondents*

Measure	Timeline	n	Sig.	Mean	SD	Mean Difference
Work Discretion	Early	94	0.988	3.3739	0.5618	0.0011
	Late	87		3.3727	0.4715	0.0011
Resource and Time Availability	Early	94	0.431	2.8085	0.4738	(0.0467)
	Late	87		2.8552	0.2920	(0.0467)
Management Support	Early	94	0.610	3.2617	0.4986	(0.0371)
	Late	87		3.2989	0.4782	(0.0371)
Reward and Reinforcement	Early	94	0.783	3.2447	0.7396	(0.0283)
	Late	87		3.2730	0.6318	(0.0283)
Knowledge Management Enabler	Early	94	0.387	3.1960	0.4160	0.0501
	Late	87		3.1459	0.3566	0.0501
Innovation	Early	94	0.694	3.5319	0.4346	0.0227
	Late	87		3.5092	0.3287	0.0227
Risk Taking	Early	94	0.104	3.2482	0.6428	(0.1464)
	Late	87		3.3946	0.5534	(0.1464)
Pro-Activeness	Early	94	0.668	3.7489	0.4092	(0.0246)
	Late	87		3.7736	0.3575	(0.0246)

The independent samples t-test indicates that the 2-tailed p-value is not significant applying the conventional level of significance of  $p < .05$ . Therefore, we can accept the null hypothesis that there are no significant differences between early responders and late responders.

Therefore, non-response bias is no longer a concern for subsequent statistical tests in this research.

#### **4.4 Data Screening**

##### **4.4.1 Detection of Missing Data**

Hair et al. (2006) indicated that unavailability of information in a single case best describes missing data. Missing data in a single case possesses high tendency to mislead the findings, hence create validity issues in research, therefore, identifying and immediately rectifying the issue is crucial in the research according to Sekaran (2003). Some scholars (e.g. Schafer & Graham, 2002; Hair, et al., 2006) highlighted various techniques in dealing with missing data issues in the research. However, Nakagawa and Freckleton (2008) explained that deletion of cases with missing data remain a widely accepted technique in the research. While Tabachnick and Fidell (2007) suggest that the case with missing data should be simply dropped, Hair et al. (2010) offer a different approach by indicating that any case which has more than 15 percent missing data shall be dropped provided that the remaining sample size after the drop of missing data cases is adequate for further analysis.

Therefore, omission of cases with incomplete data was opted in this research. However, all the respondents were accounted for in the study because the survey instrument was designed in a way that a respondent will have to respond to all questions failure which he/she will not be able to submit the survey. Therefore, a total of 181 responses received and valid hence used in the data analysis procedures. Case processing summary table presents the frequency and percentage of valid and invalid responses as shown in Table 4.2 below.

**TABLE 4.2***Case Processing Summary*

<b>Measure</b>	<b>Valid (N)</b>	<b>%</b>	<b>Missing (N)</b>	<b>%</b>	<b>Total (N)</b>	<b>%</b>
Work Discretion	181	100%	0	0%	181	100%
Resource and Time Availability	181	100%	0	0%	181	100%
Management Support	181	100%	0	0%	181	100%
Reward and Reinforcement	181	100%	0	0%	181	100%
Knowledge Management Enabler	181	100%	0	0%	181	100%
Innovation	181	100%	0	0%	181	100%
Risk Taking	181	100%	0	0%	181	100%
Pro-Activeness	181	100%	0	0%	181	100%

**4.4.2 Detection of Outliers**

According to Tabachnick and Fidell (2007), observations which are unique and distinctly different when compared to all other observations explain an element of outlier in the research. Hawkins (1980) and Barnett and Lewis (1994) added that when an observation arouses suspicion as it deviates markedly from all other observations in which it occurs and inconsistent with the remainder of the data (Johnson, 1992) reflects outlier existence in the data set. Several other scholars (e.g. Grubbs, 1969; Mendenhall, et al., 1993; Pyle, 1999) have also explained that outlier is a single, or very low frequency, occurrence of the value which lie far away from the middle of the distribution and deviate markedly from the remaining data points. In addition, Hair et al. (2010) concur with earlier suggestions by indicating that cases which will have significant impact on results in the form extreme high or extreme low values shall be omitted. Therefore, it is important that the outliers are detected and eliminated in order to ensure the reliability and also validity of the findings because it will not represent the



population under study (Liu, et al., 2004, Tabachnick & Fidell, 2007). Several scholars (e.g. Sekaran, 2003; Hair, et al., 2006; Field, 2009) have indicated several methods of detecting outliers. They include box plots, normal probability plots, histograms mahalanobis distance and z-score to name a few. However, box plot analysis found to be very appropriate in detecting outliers and the extreme cases in the univariate analysis (Tabachnick & Fidell, 2007). Box plot analysis was conducted to the data set and the findings are shown in APPENDIX B. There were only two outliers detected in the whole data set.

Nevertheless, Filzmoser (2004) informed that several methods such as scatter or quartiles of the data are having some disadvantages especially in the univariate analysis and one of the prominent disadvantages will be that they are independent from the sample size. Although outliers were detected through box plot analysis, Mahalanobis (1927; 1936) indicated that multivariate outliers can also be detected with Mahalanobis' distance. The standard method of multivariate outlier detection will be estimation of Mahalanobis' distance of the parameters and comparing it with critical value of chi square distribution, however, values which are greater than critical values calculated through Mahalanobis distance analysis are not necessarily outliers; therefore, it can still belong to the data set (Rousseeuw and Zomeren, 1990).

In order to compare the Mahalanobis distance against chi square values to identify outliers, Garrett (1989) introduced chi-square plot that measures distribution of Mahalanobis distance and also chi square values. If a break in tail of distribution is identified, there is an existence of outliers hence should be deleted prior to further analysis. An examination of the

Mahalanobis distance values was conducted. The results indicated that there are no outliers found, that is, at an alpha level of 0.001, no values are equal to or greater than critical chi-square value of 61.918. In view of this, the detected outliers were not omitted from the data set.

#### **4.5 Descriptive Statistics**

The total usable questionnaire was 181 of total sample of 257 employees within three cement manufacturing companies in the state of Johor. This represents about 70.4 per cent of response rate. Profile of the respondents was analyzed on various characteristics of the sample.

#### **Profile of Respondents**

Various demographic profiles of the respondents are provided in Table 4.3. This demographic information includes years of service in the organization, age, gender, education levels as well as respondents' function within the organization.

**TABLE 4.3***Sample Characteristics: Respondents Profile*

<b>Particulars</b>	<b>Variables</b>	<b>Frequency</b>	<b>Percent</b>
Gender	Female	53	29.3
	Male	128	70.7
	Total	181	100.0
Age	20 - 30	49	27.1
	31 - 40	92	50.8
	41 - 50	34	18.8
	> 50	6	3.3
	Total	181	100.0
Years of Service	0 - 5 Years	136	75.1
	6-10 Years	25	13.8
	11 - 15 Years	8	4.4
	16 - 20 Years	1	.6
	20 - 25 Years	7	3.9
	> 25 Years	4	2.2
	Total	181	100.0
Function	Administration	5	2.8
	Customer Service	10	5.5
	Finance and Controlling	16	8.8
	Human Resources	12	6.6
	Information Technology	5	2.8
	Operations	78	43.1
	Others	12	6.6
	Sales and Marketing	43	23.8
	Total	181	100.0
Education	Certificate	20	11.0
	Diploma	30	16.6
	Degree	93	51.4
	Masters	24	13.3
	PhD or DBA	2	1.1
	Professional Qualification	7	3.9
	Others	5	2.8
	Total	181	100.0

The table shows that the about 70.7 per cent of the respondents were male while the remaining were female. This indicates that the industry is male dominant considering the

nature of the business. The composition of the respondents' in term of age range reflects that at least half of the respondents are in the age range of 31 to 40 years old while the remaining respondents make up the other 50 per cent and very less respondents are constituting to age range of more than 50 years old. This reflects that younger workforce of the age range of 31 to 40 years old possesses higher tendency to take risks and accomplish their work with great amount of motivation, energy level and also self-commitment in order to succeed in their jobs (Stevenson & Jarillo, 1990; Storey, 1994).

The respondents' years of service categories ranged between 0 to 5 years at 75.1 per cent; 6 to 10 years at 13.8 per cent and the rest of the respondents who worked more than 10 years made up 11.1 per cent. As far as functional category is concerned, most of the respondents are distributed across sales and marketing and also operations. At least 66.9 per cent of respondents constitute to these two functions while the remaining respondents were coming from administration, customer service, finance and controlling, human resources, information technology and other functions.

In view of educational background, most of the respondents' possesses a degree. Respondents with a degree constitute to about 51.4 per cent of the total respondents. This is in line with claim by Storey (1994) who posited that employees with higher education degree possess ability to stimulate the business performance. The other three educational levels, namely certificate, diploma and also masters degree made up about 40.9 per cent being second highest educational levels among the respondents.

## **4.6 Assumptions for Multiple Regressions**

It is crucial that several assumptions are met before undertaking a multiple regression analysis. Pallant (2007), Tabachnick and Fidell (2007) and Hair et al. (2006, 2010) suggested that several underlying assumption which includes normality, linearity, homoscedasticity and multicollinearity shall be tested for further data analysis. Various methods such as scatter plot comprising Q-Q plot and normal probability (P-P) plot of the regression standardized residuals were used throughout the analysis.

### **4.6.1 Normality**

Most statistical analysis, parametric statistical analysis in particular requires the researcher to assess the assumption of normality. The parametric statistical analysis assumes that distribution of a set of data should be normal so that the interpretation and inferences derived out of the statistical analysis will be reliable as well as valid. Hair et al. (2006) informed that in multivariate analysis, the fundamental assumption of normality which measures normal distribution of data graphically or statistically is crucial. Such requirement postulates that testing for normality is important in any quantitative research and therefore, occupying relevant statistical analysis conforming data normality becomes essential. Literature review provides sufficient amount of normality test. Dufour, Farhat, Gardiol and Khalaf (1998) highlighted that statistical literature has provided nearly 40 tests of normality.

Graphical method and numerical methods are some of the common approaches in determining data normality. The graphical method typically includes normal quantile-quantile plot (Q-Q plot), histogram, box plot as well as stem-and-leaf plot. On the other hand,

numerical method consists of Shapiro-Wilk (SW) test, Kolmogorov-Smirnov (KS) test, Anderson-Darling (AD) test and Lilliefors (LF) test among others (Nornadiah Mohd Razali & Yap Bee Wah, 2011). In spite of numerous numerical approaches, each test is applied with certain assumptions since each test tends to provide differing findings in identical situations.

Although graphical methods are good in reflecting data normality, these graphical methods are deemed to be insufficient, and hence occupying formal numerical methods remain an important concern to test whether examined set of data follows a normal distribution before making conclusive evidence about data normality (Nornadiah Mohd Razali & Yap Bee Wah, 2011). Initial techniques to detect normality were undertaken by Pearson (1895) by measuring skewness and also kurtosis coefficients (Althouse, Ware, & Ferron, 1998).

In spite various normality test suggested by the statistical literature, this research occupied Shapiro-Wilk test to assess the data normality. Although Shapiro-Wilk test was initially constrained the sample size to 50 only, this test was found to be the first test which able to detect the departures of normality due to either skewness or kurtosis or both (Althouse et al., 1998). In addition, Mendes and Pala (2003) indicated that Shapiro-Wilk test remain the preferred test due to its good power properties. Considering the sample size restriction, Royston (1982a) modified the test further which enlarged the sample size to 2000 which was further broaden to be between sample range of 3 and 5000 (Royston, 1982b).

The variables were tested for assumption of normality based on past studies by Mendes and Pala (2003) who claim that Shapiro-Wilk test remain the preferred test in detecting the

departures of normality. Table 4.4 below shows the statistical test undertaken to test for the assumption of normality in the research.

**TABLE 4.4**

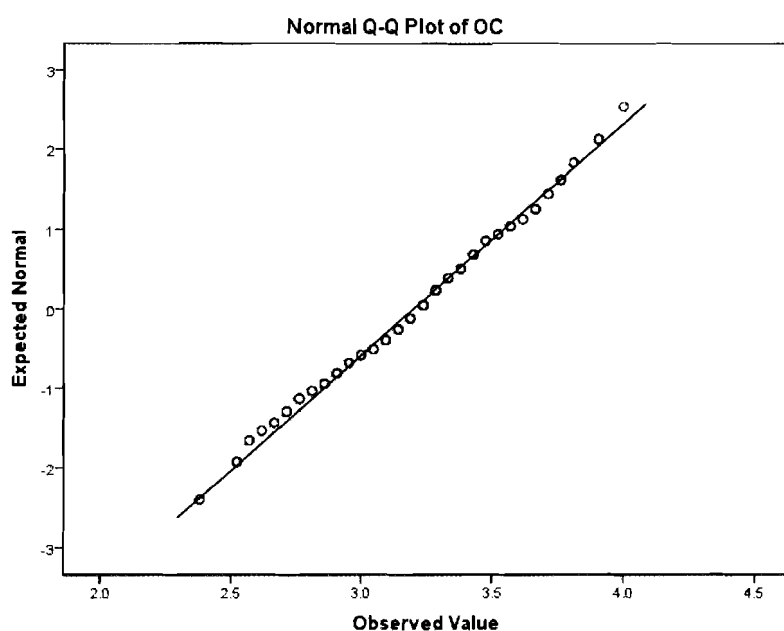
*Test of Normality: Shapiro-Wilk test*

<b>Variable</b>	<b>Statistic</b>	<b>df</b>	<b>Sig.</b>
Organizational Characteristics	0.989	181	.150
Knowledge Management Enabler	0.989	181	.200
Entrepreneurial Orientation	0.987	181	.103

The results show that all the variables tested for normality assumption were insignificant where the p-value resulted  $> 0.05$ . Therefore, it can be concluded that all the data set under study has not violated the assumption of normality, hence will not distort the data analysis.

Nevertheless, according to Hair et al. (2006), although histogram can be used to check for normality, probability plots still remain another preferred option as it can provide better and more reliable representation of normal distribution which can overcome the visual depiction of data distribution through histogram. In considering normal Q-Q plot to test for normality, Hair et al. (2006) explained that a straight diagonal line and the distribution of the data sets over this line explains the normality of the variable under study. If the actual data set plotted on the plot is close to the diagonal line, this indicates the non-violation of normality assumption. Along the same line, Norradiah Mohd Razali and Yap Bee Wah (2011) highlighted that an effective tool in diagnosing normality departure within the data set will be normal quantile-quantile (Q-Q) plot which is effective and commonly used.

From the Figure 4.1 below, it is evident that there is close correlation between the normal distribution line and also individual data points. As most of the data points are overlapping in the normal distribution line, it can be inferred that there is sufficient evidence of normal distribution of data collected for organizational characteristics variable. Hence, it is found to represent the population of the study.



**Figure 4.1**

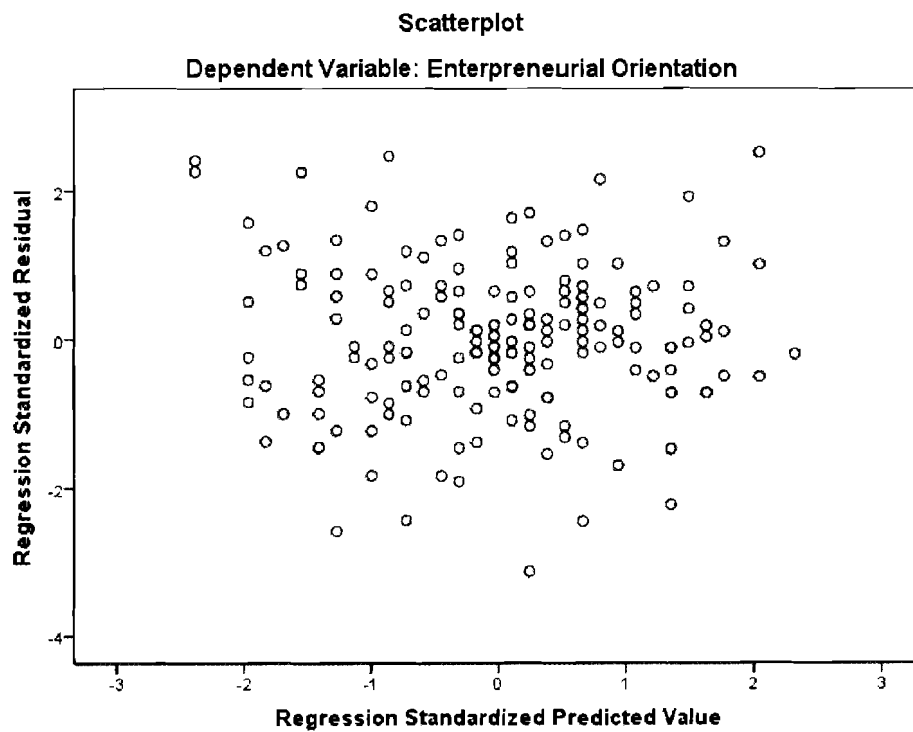
Normal Probability (Q-Q) Plot of Organizational Characteristics

#### 4.6.2 Linearity

Another fundamental assumption in data analysis is linearity. Tabachnick and Fidell (2007) indicated that it is important to observe a linear relationship between independent and dependent variable prior to engaging into data analysis process. Hair et al. (2010) also informed that if there is no any linear pattern of residuals in the output of an analysis, we can



ensure that the overall equation is linear which can be further conformed through residual plots. In order to conform to the data linearity assumption, Coakes et al. (2006) posited that scatter plot will be a useful tool in identifying data point's conformance to the assumption of linearity. They argued that the scatter plot should be able to reflect a linear relationship between observed variables if such relationship exists in the data collected. Therefore, scatter plot will be a useful tool in verifying an assumption of linearity. In support of Coakes et al (2006) suggestion to use scatter plot, Flury and Riedwyl (1988) and Tabachnick and Fidell (2007) explained that if the residuals are reflecting an oval shape conforming that the residuals are scatted around the zero points, there is high possibility that the assumption of linearity is met.



**Figure 4.2**

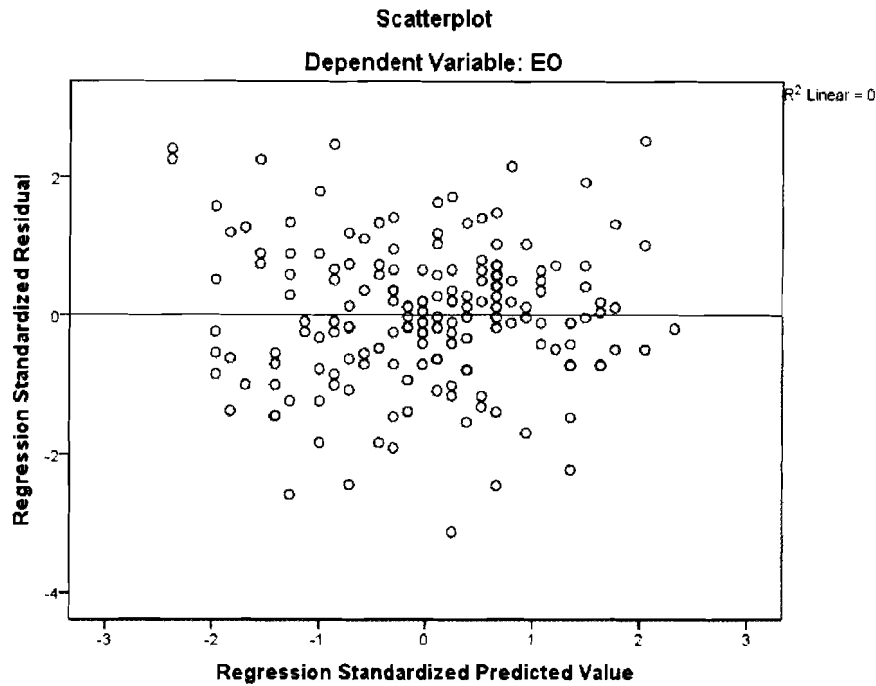
Linearity Scatter Plot Diagram

The scatter plot diagram above shows that the residual are well scatted around the zero points. In addition, it has an oval shape which conform an assumption of normality.

#### **4.6.3 Homoscedasticity**

Hair et al. (2006, 2010) infer that homoscedasticity is a phenomenon where at each observation of the independent variable, equal variances of dependent variable or constant variance of error term is observed and this can be determined through a graphical test of the histogram for the standardized residuals against the predicted values and/or the Q-Q plots. The same was also highlighted by Coakes et al. (2006) who further explained that variability in scores among the variables are about the same that concentrates uniformly about the regression line. According to Norusis (1999), homoscedascity exist when the data distribution does not observe any pattern with randomly scattered residuals around the horizontal line through zero.

As being mentioned by Norusis (1999) and Hair et al. (2006, 2010), a scatter plot analysis was undertaken to identify conformity to an assumption of homoscedasticity. The following figure indicates that there is sufficient evidence of constant variance of error term and that residuals are randomly scattered around the horizontal line through zero.



**Figure 4.3**

Homoscedasticity Scatter Plot Diagram

The null hypothesis for the test of homogeneity of variance states that the variance of the dependent variable (entrepreneurial orientation) is equal across groups defined by the independent variable (organizational characteristics), i.e., the variance is homogeneous. Since the residuals are randomly scattered around the horizontal line through zero, we accept the null hypothesis and conclude that the variance is homogeneous.

#### **4.6.4 Multicollinearity**

According to Hair et al. (2010), the degree of correlation among independent variables explain multicollinearity concept in data analysis. Generally, Pearson correlation is used to investigate the degree of correlation among independent variables and if multicollinearity

exists, there are methods available to diagnose the issue (Allison, 1999). Any correlation coefficient that is closer to positive one or negative one provides a strong evidence of multicollinearity (Sekaran, 2003). Kline (2005) highlighted that correlation coefficient that is greater than 0.90 indicates presence of collinearity problem. Although Hair et al. (2010) highlights similar observation as Kline (2005) that any value above 0.90 can be assumed as high correlation among independent variables, Cooper and Schindler (2006) argue that there are no any definite criterion that classifies the degree of correlation as serious multicollinearity issue. Nevertheless, scholars agree that any degree of correlation beyond 0.8 can be considered as an area of concern (Allison, 1999; Cooper & Schindler, 2006).

Table 4.5 displayed below shows the result of Pearson correlation among independent variables.

**TABLE 4.5**

*Pearson Correlation Statistics*

Independent Variables	Work Discretion	Resource and Time Availability	Management Support	Reward and Reinforcement
Work Discretion	1.000	.207	.281	.193
Resource and Time Availability		1.000	.151	.327
Management Support			1.000	.353
Reward and Reinforcement				1.000

Correlation coefficients results in the table above indicate that Pearson correlation between the independent variables is below 0.8. Therefore, it can be concluded that there is no existence of multicollinearity between independent variables.

In addition to the degree of correlation, Berenson, Levene and Krehbiel (2004), and Hair et al. (2006, 2010) have also indicated that variance inflated factor (VIF) and tolerance value can also be used to investigate multicollinearity issue whereby VIF of more than 10 and tolerance value of less than 0.10 is an indication of multicollinearity issue. However, Neter, William and Michael (1990) further strengthen the rule of thumb that VIF value of more than 5 should provide sufficient evidence of multicollinearity issue. As being highlighted by Neter, William and Michael (1990) and Hair et al. (2006, 2010), subsequent analysis on variance inflated factor (VIF) and tolerance value were undertaken to further conform the multicollinearity issue among the independent variables. The results are provided in the table below.

**TABLE 4.6**

*Variance Inflated Factor (VIF) and Tolerance Value*

Independent Variables	Multicollinearity Statistics	
	Tolerance Value	VIF
Resource and Time Availability	.892	1.121
Management Support	.874	1.144
Reward and Reinforcement	.799	1.252

The results in the table above show that the tolerance value values for all independent variables under test were above 0.10 while the VIF were well below the threshold of five as indicated by Neter, William and Michael (1990). Therefore, the assumption of multicollinearity is met for further data analysis.

After conducting the underlying assumption tests for multiple regression analysis, it has been concluded that all the assumption namely normality, linearity, homoscedasticity and multicollinearity has been met. Therefore, the data is ready for further analysis.

#### **4.7 Factor Analysis**

According to Hair et al. (2006), factor analysis provide a mean of examining if the theoretical constructs reflects a respondent's view while determining the construct dimensionality issue. Usually, factor analysis verifies the construct validity of the scales whereby throughout the analysis, according to Cavana et al. (2001), it reduces the number of variables into controllable set of factors for further analysis. Two measures are commonly used in performing factor analysis. They are Kaiser-Meyer-Olkin (KMO) which examines the adequacy of sample size. The other measure will be the communality or factor loading among the scale items.

##### **4.7.1 KMO and Sphericity Tests**

For the KMO statistic, Kaiser (1974) recommends a bare minimum of 0.5 and that values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are superb (Hutcheson & Sofroniou, 1999). Kaiser has

also described the KMO values in a different way: marvelous (0.9-1.0), meritorious (0.8-0.9), middling (0.7-0.8), mediocre (0.6-0.7) and miserable (0.0-0.5). Factor analysis will be more appropriate for the sampling population when the KMO value is closer to one (Kaiser, 1974). Kaiser also suggested that measures which falls below 0.5 levels is unacceptable for the further analysis.

In addition to KMO, Bartlett's (1954) test for sphericity is also used to ensure that the data set under study is suitable to be used for factor analysis. This test examine if the correlation matrix is an identity matrix or correlations in a correlation matrix are zero, therefore, unrelated. This test will be appropriate and highly recommended if a variable under study has less than five cases, however, if the sample size is substantial for the research, the test is likely to be significant in spite of existence of low correlations (Tabachnick & Fidell, 2007). Overall, in order to reject the null hypothesis, the Bartlett's test for sphericity should be significant.

Table 4.7 below indicates the test results of KMO and Bartlett's test for sphericity.

**TABLE 4.7**

*KMO and Bartlett's Test for Sphericity*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.717
Bartlett's Test of Sphericity	Approx. Chi-Square	6020.487
	df	2415
	Sig.	.000

The test results show that the KMO valued at 0.717, fulfilling the requirements set by Kasier (1974). It has fall into the range of middling (Kaiser, 1974) or good (Hutcheson & Sofroniou, 1999). Therefore, it can be concluded that the data is appropriate for factor analysis. On the other hand, Bartlett's test for sphericity result indicates that it is significant.

#### **4.7.2 Factor Loading**

As mentioned earlier, the second measure of factor analysis will be the factor loading or communality among the scale items. The relationship between a scale item and a construct or factor represented by factor loadings with higher loadings being better. According to Hair et al. (2006), a factor loading of 0.3 is the minimum requirement for factor analysis. Hair further explains that any factor loadings that result at 0.4 considered being more important while loadings of 0.5 or more deemed to be significant. On this ground, items which have a factor loading below 0.3 shall be discarded. Nevertheless, the coefficient of alpha was taken into consideration in order to ensure that deletions of item are minimized so as to sustain the comparability with established measures from previous studies. However, if deletion of a low factor loading item substantially improves the coefficient of alpha, it is suggested that the item shall be deleted for further analysis.

#### **4.7.3 Principal Component Analysis (PCA)**

In order to determine the constructs, a factor analysis procedure was conducted with SPSS. Principal Component Analysis (PCA) was used to conduct factor analysis. A varimax rotation method was used to analyze the underlying structure of the inter-relationships among the variables into a set of common dimensions. According to Kabiru, Mohd Rizal and



Norlena (2012: 205), “The central idea of principal component analysis is to reduce the dimensionality of a data set in which there are a large number of inter-related variables, while retaining as much as possible of the variation present in the data set”. As for the sample size based on the guideline by Coakes and Steed (2003), Hair et al. (2010) highlighted that each variable shall consist of minimum of five items to conduct factor analysis. As for this research, a minimum factor loading of 0.3 will be occupied based on the recommendation offered by Hair et al. (2006).

### **Organizational Characteristics**

The first factor analysis measures organizational characteristics by occupying varimax rotated Principal Component Analysis on 21 items. Prior to factor analysis, Kaiser-Meyer-Olkin (KMO) and Bartlett’s test for sphericity was conducted to ensure the suitability of the data.

The following table indicates the results of Kaiser-Meyer-Olkin (KMO) and Bartlett’s test for sphericity for organizational characteristics variable:

**TABLE 4.8**

*KMO and Bartlett’s Test for Sphericity for Organizational Characteristics*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.732
Bartlett’s Test of Sphericity	Approx. Chi-Square	669.293
	df	210
	Sig.	.000

Table 4.8 indicates that Kaiser-Meyer-Olkin and Bartlett's test for sphericity measures as 0.732 and 0.000 respectively. Kaiser-Meyer-Olkin statistics indicate that the KMO value is good (Hutcheson & Sofroniou, 1999) or middling (Kaiser, 1974) and therefore the requirement for sampling adequacy is fulfilled for further analysis. On the other hand, statistics of Bartlett's test for sphericity is also significant at  $p < 0.001$  (Bartlett, 1954) ensuring that the data is appropriate for factor analysis.

The varimax rotated principal component exploratory factor analysis was employed for the organizational characteristics scale for 21 items. Since factors with loading values of 0.30 and above were considered, eight items were deleted. The result of the factor analysis is provided in Table 4.9. The analysis resulted in four factor structure that explained 53.21 per cent of the variance. Eigenvalues of each factor were greater than 1.0, hence the factors were designated as work discretion (Factor 1), management support (Factor 2), resource/time availability (Factor 3) and reward/reinforcement (Factor 4). For the five items that were measuring work discretion, the highest loading was 0.759 with lowest loading of 0.600. Three items were extracted for resource/time availability with highest loading and lowest loading of 0.881 and 0.683 respectively. Management support was measured by three items and resulted in highest loading of 0.812 and 0.513 was lowest loading among the items extracted. Two items were measuring reward/reinforcement factor and the highest loading for the items was 0.589 with the lowest loading of -0.451. Organizational characteristics variable was tested for reliability for all dimensions comprising 13 items and the Cronbach Alpha resulted at 0.664 which is above minimum requirement (Malhotra, 2004).

**TABLE 4.9***Factor Analysis for Organizational Characteristics*

Items	Factor 1	Factor 2	Factor 3	Factor 4
It is basically my own responsibility to decide how my job gets done.	.631			
I have the freedom to decide what I do on my job.	.759			
I almost always get to decide what I do on my job.	.618			
I have much autonomy on my job and am left on my own to do my own work.	.727			
I have a lot of variety in how I carry out my daily work.	.600			
I have just the right amount of time, resources and workload to do everything well.			.683	
I always have plenty of time and resources to get everything done.			.760	
I feel that I am always working with time and resource constraints on my job.			.881	
This organization supports many small and experimental projects.		.619		
Employees are often encouraged to take calculated risks with ideas as long as organizational priorities are not compromised.		.812		
Managers encourage innovators to bend rules and rigid procedures in order to keep promising ideas on track.		.513		
My superior will give me special recognition if my work performance is especially good.				-.451
My superior will tell his/her boss if my work was outstanding.				.589
Eigenvalues	2.943	1.589	1.292	1.093
Percentage of Variance Explained	22.641	12.222	9.936	8.410

## Knowledge Management Enabler

Prior to factor analysis, Kaiser-Meyer-Olkin and Bartlett's test for sphericity were measured on knowledge management enabler variable. The results are provided in Table 4.10 below.

**TABLE 4.10**

*KMO and Bartlett's Test for Sphericity for Knowledge Management Enablers*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.824
Bartlett's Test of Sphericity	Approx. Chi-Square	2146.319
	df	325
	Sig.	.000

The table above indicates that Kaiser-Meyer-Olkin is 0.824 while Bartlett's test for sphericity is significant. Kaiser-Meyer-Olkin statistics indicate that the KMO value is great (Hutcheson & Sofroniou, 1999) or meritorious (Kaiser, 1974). This has fulfilled the sampling adequacy requirement and therefore the data is appropriate for factor analysis.

The knowledge management enabler scale for 26 items were tested with varimax rotated principal component exploratory factor analysis. All items with loading below 0.30 were discarded and therefore, 11 items were omitted.

Table 4.11 provides the results of the factor analysis.

**TABLE 4.11**

*Factor Analysis for Knowledge Management Enablers*

Items	Factor 1	Factor 2	Factor 3
My organization provides information technology support for collaborative work regardless of time and place.			.680
My organization provides information technology support for communication among organization employees.			.489
My organization provides information technology support for searching and accessing necessary information.			.700
My organization provides information technology support for simulation and prediction.			.539
My organization provides information technology support for systematic storing.			.789
I can take action without a superior.	.859		
I am encouraged to make my own decisions.	.837		
I do not need to refer to someone else to make decisions.	.902		
I do not need to ask my superior before taking action.	.906		
I can make decisions without approval.	.897		
I am satisfied with the amount of collaboration.		.740	
My colleagues are supportive.		.818	
My colleagues are helpful.		.762	
There is a willingness to collaborate across organizational units within my organization.		.690	
I have mutual faith in others' commitment to the company as a whole.		.452	
Eigenvalues	4.780	2.530	1.792
Percentage of Variance Explained	31.865	16.864	11.944

The analysis indicated a three factor structure and explained 60.67 per cent of the variance. Each factor resulted at eigenvalues of greater than 1.0, hence the factors were designated as structure (Factor 1), culture (Factor 2) and technology (Factor 3). Five items were extracted for technology factor with highest loading of 0.789 while the lowest loading was 0.489. For

five items that measured structure, the highest loading was 0.906 and lowest loading of 0.837. A highest loading and lowest loading of 0.818 and 0.452 were found for culture which was extracted by five items. Reliability test was conducted for extracted items and the result indicates that Cronbach Alpha value of 0.827, better than 0.824 before items reduction which is above minimum requirement (Malhotra, 2004).

### **Entrepreneurial Orientation**

Kaiser-Meyer-Olkin and Bartlett's test for sphericity were measured on entrepreneurial orientation variable. The results are provided in Table 4.12 below.

**TABLE 4.12**

*KMO and Bartlett's Test for Sphericity for Entrepreneurial Orientation*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.829
Bartlett's Test of Sphericity	Approx. Chi-Square	1209.088
	df	253
	Sig.	.000

From the table above, Kaiser-Meyer-Olkin is 0.829 and Bartlett's test for sphericity is found to be significant. Kaiser-Meyer-Olkin statistics indicate that the KMO value is great (Hutcheson & Sofroniou, 1999) or meritorious (Kaiser, 1974). Hence, there is sufficient statistical evidence that the data is suitable for factor analysis.

The entrepreneurial orientation scale for 23 items were tested with varimax rotated principal component exploratory factor analysis. As a rule of thumb, all items that results in loading

below 0.30 were discarded and therefore, 10 items were discarded. Table 4.11 provides the results of the factor analysis.

**TABLE 4.13**

*Factor Analysis for Entrepreneurial Orientation*

Items	Factor 1	Factor 2	Factor 3
I participate in discussions regarding improvements at work.	.727		
I discuss improvements at work with my colleagues.	.690		
I like to work with issues related to improvements at work.	.794		
I create new ideas for difficult issues I encounter at work.	.653		
I am able to generate original solutions to problems I encounter at work.	.605		
I am encouraged to undertake high-risk projects.			.637
I can adopt bold, aggressive stance when confronted with decision-making situations involving uncertainty to maximize potential.			.639
I am constantly on the lookout for new ways to improve my life.		.569	
Wherever I have been, I have been a powerful force for constructive change.		.637	
If I see something I don't like, I fix it.		.630	
No matter the odds, if I believe in something I will make it happen.		.785	
I love being a champion for my ideas, even against other people's opposition.		.539	
If I believe in an idea, no obstacle will prevent me from making it happen.		.586	
Eigenvalues	4.317	2.049	1.400
Percentage of Variance Explained	28.779	13.662	9.334

The factor analysis identified a three factor structure and explained 51.78 per cent of the variance. Each factor resulted at eigenvalues of greater than 1.0, hence the factors were designated as innovativeness (Factor 1), pro-activeness (Factor 2) and risk taking (Factor 3).

For five items that measured innovativeness factor, the highest loading was 0.794 while the lowest loading resulted at 0.605. Two items were extracted for risk taking factor with highest loading and lowest loading of 0.639 and 0.637 respectively. Six items were measured for pro-activeness and the factor resulted at highest loading of 0.785 while the lowest loading was 0.539. Entrepreneurial orientation was tested for reliability for all dimensions comprising 13 items after reduction and the Cronbach Alpha was 0.784 which is above the minimum requirement (Malhotra, 2004).

#### **4.8 Correlation Test**

According to Sekaran (2003), examination of association, direction, strength and significance between variables of the research can be done by occupying correlation analysis. The degree of correlation varies between 0.0 being no correlation to 1.0 being perfect positive correlation or -1.0 being perfect negative correlation. Rowntree (1987) classified correlation into various categories: 0.0 to 0.2 as very weak and negligible, 0.2 to 0.4 as weak and low, 0.4 to 0.7 as strong, 0.7 to 0.9 as high and 0.9 to 1.0 as very strong. On the other hand, Cohen (1992) has classified correlation coefficient as follows: weak correlation (0.10 to 0.29), medium correlation (0.30 to 0.49), and strong correlation (0.50 to 1.0).



Table 4.9 shows the results of inter-correlation among the dimensions under study.

**TABLE 4.14**

*Pearson Correlation Statistics*

Dimensions	Work Discretion	Resource/ Time Availability	Management Support	Reward/ Reinforcement	Technology	Structure	Culture	Innovativeness	Risk-Taking	Pro-Activeness
Work Discretion	1.000	.207**	.281**	.193**	.241**	.479**	.226**	.409**	.297**	.427**
Resource/Time Availability		1.000	.151**	.327**	.028	.170*	.181*	.158*	.138	.133
Management Support			1.000	.353**	.347**	.245**	.173*	.211**	.157*	.194**
Reward/ Reinforcement				1.000	.230**	.149*	.312**	.259**	.306**	.125
Technology					1.000	.135	.361**	.288**	.182*	.236**
Structure						1.000	.296**	.244**	.217**	.277**
Culture							1.000	.327**	.236**	.224**
Innovativeness								1.000	.397**	.388**
Risk-Taking									1.000	.495**
Pro-Activeness										1.000

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

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

In the event correlation coefficient results in more than 0.90 for any variable, Tabachnick and Fidell (2001) suggested dealing with such occurrence by deleting the variable concerned. From the table above, the results indicate that the correlation between all the dimensions were below 0.500 and statistically significant. The correlation values between these dimensions ranged between  $r=0.151$  ( $p<0.01$ ) to  $r=0.495$  ( $p<0.01$ ). Although clear association, the strength and nature of the relationship between the variables can be clearly seen in the correlation analysis, it is still found not to be used as a valid technique in analyzing the predictive nature of the variables in the relationship of two or more variables (Hair, et al., 2003). Therefore, regression analysis was used to reveal the variances that may cause by these variables as well as the relationship between these variables.

#### **4.9 Hypotheses Testing**

Multiple regressions were used to predict the relationship between organization characteristics and entrepreneurial orientation. Sekaran (2003) indicated that multiple regressions will provide insights about how much the dependent variable was explained by the independent variables. In order to conduct multiple regression analysis, necessary assumptions such as normality, linearity, homoscedasticity and multicollinearity was tested and met. In order to test for the mediating effect of knowledge management enabler, Baron and Kenny (1986) three step approach was used.

##### **4.9.1 Relationship between Work Discretion and Entrepreneurial Orientation**

There are three dependent variables considered in the study. They are innovativeness, risk taking and pro-activeness. Work discretion was hypothesized to have significant relationship

with these dependent variables. Multiple regression analysis was conducted in order to predict these relationships. All four independent variables were assessed simultaneously for each of the dependent variables in the model.

**H1a: There is relationship between work discretion and innovativeness**

H1a stated that there is significant relationship between work discretion and innovativeness.

Table 4.15 shows the result of the regression analysis.

**TABLE 4.15**

*Relationship between Work Discretion and Innovativeness*

Independent Variable	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
Work Discretion	0.339	4.801	0.000	0.220

The t-value is 4.801 at  $p < 0.05$ . The result shows that the H1a is supported. This indicates that there is significant relationship between work discretion and innovativeness. The strength of relationship which was measured by standardized beta value (i.e. 0.339) provide evidence that work discretion is a crucial predictor of innovativeness. Therefore, it can be inferred that the better the work discretion, the better will be innovative behavior among employees.

**H1b: There is relationship between work discretion and risk taking**

H1b stated that there is significant relationship between work discretion and risk taking.

Table 4.16 shows the result of the regression analysis.

**TABLE 4.16***Relationship between Work Discretion and Risk Taking*

Independent Variable	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
Work Discretion	0.151	1.981	0.049	0.091

At  $p < 0.05$ , the t-value resulted at 1.981. Based on the results obtained, H1b is supported. Therefore, there is significant relationship between work discretion and risk taking. The standardized beta value (i.e. 0.151) which measures the strength of relationship indicates that work discretion is a crucial predictor of risk taking. Therefore, it can be concluded that the higher the work discretion, the higher will be the risk taking intention among employees.

**H1c: There is relationship between work discretion and pro-activeness**

H1c stated that there is significant relationship between work discretion and pro-activeness. Table 4.17 shows the result of the regression analysis.

**TABLE 4.17***Relationship between Work Discretion and Pro-Activeness*

Independent Variable	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
Work Discretion	0.324	4.448	0.000	0.169

The t-value is 4.448 at  $p < 0.05$ . The result shows that the H1c is also supported. This indicates that there is significant relationship between work discretion and pro-activeness. The strength of relationship which was measured by standardized beta value resulted at

0.324. This provides evidence that work discretion is a crucial predictor of pro-activeness as well. Therefore, it can be inferred that when the employees are given greater work discretion, they are more likely to act pro-actively.

#### **4.9.2 Relationship between Resource/Time Availability and Entrepreneurial Orientation**

The three dependent variables considered in the study (i.e. innovativeness, risk taking and pro-activeness) were assessed for resource/time availability. Resource/time availability was hypothesized to have significant relationship with these dependent variables. Multiple regression analysis was conducted in order to predict these relationships.

#### **H2a: There is relationship between resource/time availability and innovativeness**

H2a stated that there is significant relationship between resource/time availability and innovativeness. Table 4.18 shows the result of the regression analysis.

**TABLE 4.18**

*Relationship between Resource/Time Availability and Innovativeness*

Independent Variable	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
Resource/Time Availability	-0.012	-0.177	0.859	0.220

The t-value is -0.177 at  $p < 0.05$ . The result shows that the H2a is not supported. This indicates that there is no significant relationship between resource/time availability and innovativeness. The strength of relationship which was measured by standardized beta value

(i.e. -0.012) failed to provide adequate evidence about the predictive ability of resource/time availability towards innovativeness. Therefore, it can be inferred that adequate availability of resources and time will not necessarily activate innovative behavior among employees.

**H2b: There is relationship between resource/time availability and risk taking**

H2b stated that there is significant relationship between resource/time availability and risk taking. Table 4.19 shows the result of the regression analysis.

**TABLE 4.19**

*Relationship between Resource/Time Availability and Risk Taking*

Independent Variable	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
Resource/Time Availability	0.013	0.175	0.861	0.091

The t-value is 0.175 at  $p < 0.05$ . The result shows that the H2b is also not supported. Therefore, it can be concluded that there is no significant relationship between resource/time availability and risk taking. The strength of relationship which was measured by standardized beta value (i.e. 0.013) did not provide sufficient statistical support about the predictive value of resource/time availability towards risk taking. Therefore, it can be inferred that adequate availability of resources and time will not necessarily encourage risk taking intention among employees.

## **H2c: There is relationship between resource/time availability and pro-activeness**

H2c stated that there is significant relationship between resource/time availability and proactiveness. Table 4.20 shows the result of the regression analysis.

**TABLE 4.20**

*Relationship between Resource/Time Availability and Pro-Activeness*

Independent Variable	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
Resource/Time Availability	0.129	1.841	0.067	0.169

The t-value is 1.841 at  $p < 0.05$ . The result shows that the H2c was not supported, however, the p-value is closer to 0.05. This indicates that there is potential evidence for relationship between resource/time availability and pro-activeness if a larger sample size is occupied in the study. The strength of relationship which was measured by standardized beta value (i.e. 0.129) have also provided support about the predictive ability of resource/time availability towards pro-activeness. Therefore, it can be inferred that adequate availability of resources and time possibly influence pro-activeness among employees.

### **4.9.3 Relationship between Management Support and Entrepreneurial Orientation**

The three dependent variables considered in the study were assessed for management support. Management support was hypothesized to have significant relationship with these dependent variables. Multiple regression analysis was conducted in order to predict these relationships.

### **H3a: There is relationship between management support and innovativeness**

H3a stated that there is significant relationship between management support and innovativeness. Table 4.21 shows the result of the regression analysis.

**TABLE 4.21**

*Relationship between Management Support and Innovativeness*

Independent Variable	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
Management Support	0.048	0.672	0.052	0.220

The t-value is 0.672 at  $p < 0.05$ . The result shows that the H3a is supported since the p-value is very close to critical value of 0.05. This indicates that there is significant relationship between management support and innovativeness. The strength of relationship which was measured by standardized beta value (i.e. 0.048) indicate that there is sufficient predictive ability of management support towards innovativeness. Therefore, it can be inferred that availability of management support will encourage employees to behave innovatively.

### **H3b: There is relationship between management support and risk taking**

H3b stated that there is significant relationship between management support and risk taking. Table 4.22 shows the result of the regression analysis.



**TABLE 4.22***Relationship between Management Support and Risk Taking*

Independent Variable	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
Management Support	0.113	1.473	0.143	0.091

The t-value is 1.473 at  $p < 0.05$ . The result shows that the H3b is not supported. Hence, there is no significant relationship between management support and risk taking. The strength of relationship which was measured by standardized beta value (i.e. 0.113) did not provide sufficient support about the predictive ability of management support towards risk taking. Therefore, it can be concluded that risk taking intention will not necessarily exist although there is management support.

### **H3c: There is relationship between management support and pro-activeness**

H3c stated that there is significant relationship between management support and proactiveness. Table 4.23 shows the result of the regression analysis.

**TABLE 4.23***Relationship between Management Support and Pro-Activeness*

Independent Variable	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
Management Support	0.178	2.416	0.017	0.169

The t-value is 2.416 at  $p < 0.05$ . The result shows that the H3c is well supported. Therefore, there is evidence of significant relationship between management support and pro-activeness.

The strength of relationship which was measured by standardized beta value (i.e. 0.178) provided adequate evidence about the predictive ability of management support towards pro-activeness. Therefore, it can be inferred that when there is an existence of management support, employees are tend to act more pro-actively.

#### 4.9.4 Relationship between Reward/Reinforcement and Entrepreneurial Orientation

Innovativeness, risk taking and pro-activeness were assessed with reward/reinforcement. Reward/reinforcement was hypothesized to have significant relationship with these dependent variables. Multiple regression analysis was conducted in order to predict these relationships.

##### H4a: There is relationship between reward/reinforcement and innovativeness

H4a stated that there is significant relationship between reward/reinforcement and innovativeness. Table 4.24 shows the result of the regression analysis.

**TABLE 4.24**

*Relationship between Reward/Reinforcement and Innovativeness*

Independent Variable	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
Reward/ Reinforcement	0.220	2.993	0.003	0.220

The t-value is 2.993 at  $p < 0.05$ . The result shows that the H4a is highly supported. This indicates that there is significant relationship between reward/reinforcement and innovativeness. The strength of relationship was measured by standardized beta value (i.e.

0.220) and offered adequate evidence about the predictive value of reward/reinforcement towards innovativeness. Hence, it can be concluded that employees who are rewarded and reinforced are more likely to behave innovatively.

**H4b: There is relationship between reward/reinforcement and risk taking**

H4b stated that there is significant relationship between reward/reinforcement and risk taking. Table 4.25 shows the result of the regression analysis.

**TABLE 4.25**

*Relationship between Reward/Reinforcement and Risk Taking*

Independent Variable	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
Reward/ Reinforcement	0.148	1.866	0.064	0.091

The t-value is 1.866 at  $p < 0.05$ . The result shows that the H4b is insignificant. Nevertheless, the p-value is 0.064 which is very close to critical value of 0.05. This indicates that there is a potential relationship between reward/reinforcement and risk taking. The strength of relationship which was measured by standardized beta value (i.e. 0.148) have also offered some support about the predictive ability of reward/reinforcement towards risk taking. Although the p-value is not below 0.05, it can be concluded that there are possibility that risk taking behavior of employees are partly influenced by the reward and reinforcement systems in the organization.

#### **H4c: There is relationship between reward/reinforcement and pro-activeness**

H4c stated that there is significant relationship between reward/reinforcement and proactiveness. Table 4.26 shows the result of the regression analysis.

**TABLE 4.26**

*Relationship between Reward/Reinforcement and Pro-Activeness*

Independent Variable	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
Reward/ Reinforcement	-0.099	-1.308	0.193	0.169

The t-value is -1.308 at  $p < 0.05$ . The result shows that the H4c is not supported. This indicates that there is no significant relationship between reward/reinforcement and pro-activeness. The strength of relationship which was measured by standardized beta value (i.e. -0.099) failed to provide adequate evidence about the predictive ability of reward/reinforcement towards pro-activeness. Therefore, it can be inferred that availability of reward and reinforcement element within the organization will not necessarily encourage employees to act pro-actively.

#### **4.9.5 Mediating Effect of Knowledge Management Enablers between Organizational Characteristics and Entrepreneurial Orientation**

Knowledge Management Enabler was considered as a mediator in the study. However, factor analysis resulted in a three factors structure. They are technology, structure and culture. Therefore, the original hypothesis was reformulated by assessing each factor separately resulting in three hypotheses. Each factor was hypothesized to have mediating effect between

organizational characteristics and entrepreneurial orientation. Baron and Kenny (1986) three step approach was conducted in order to predict these mediating effects.

**H5a: There is mediating effect of technology between organizational characteristics and entrepreneurial orientation**

H5a stated that there is mediating effect of technology between organizational characteristics and entrepreneurial orientation. Table 4.27 shows the result of Baron and Kenny (1986) three step approach.

**TABLE 4.27**

*Mediating Effect of Technology between Organizational Characteristics and Entrepreneurial Orientation*

Relationships	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
OC and Technology	0.333	4.719	0.000	0.111
Technology and EO	0.342	4.870	0.000	0.117
OC and EO	0.492	7.567	0.000	0.242
OC and Technology Predicting EO				
OC	0.426	6.302	0.000	0.278
Technology	0.200	2.969	0.003	

Following Baron and Kenny (1986) procedure for mediation, path *a* (organizational characteristics to technology) was assessed with regression analysis. The result indicated that path *a* was significant at t-value of 4.719 and  $p < 0.05$  supported ( $\beta = 0.333, p < 0.001$ ). Then the second step measuring path *b* was undertaken for technology and entrepreneurial orientation. The results obtained significant at t-value of 4.870 and  $p < 0.05$  supported path *b*

( $\beta = 0.342$ ,  $p < 0.001$ ). Path *c* (organizational characteristics and entrepreneurial orientation) was measured as the third step and the result was significant at t-value of 7.567 and  $p < 0.05$  and supported path *c* ( $\beta = 0.492$ ,  $p < 0.001$ ). First three steps were significant. Therefore, step four was performed to test for full mediation, partial mediation or no mediation. The fourth requirement for mediation, path *c* was assessed through a regression analysis (where paths *a* and *b* are controlled). The results obtained indicated that there is still a significant relationship (t-value of 6.302 and  $p < 0.05$ ), however with a reduced standardized beta value ( $\beta = 0.426$ ,  $p < 0.001$ ). Given the statistical findings, it was concluded that there is partial mediation in the relationship. Therefore, hypothesis 5a is supported indicating that there is partial mediation effect of technology between organizational characteristics and entrepreneurial orientation.

**H5b: There is mediating effect of structure between organizational characteristics and entrepreneurial orientation**

H5a stated that there is mediating effect of structure between organizational characteristics and entrepreneurial orientation. Table 4.28 shows the result of Baron and Kenny (1986) three step approach.

**TABLE 4.28**

*Mediating Effect of Structure between Organizational Characteristics and Entrepreneurial Orientation*

Relationships	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
OC and Structure	0.438	6.511	0.000	0.191
Structure and EO	0.379	5.480	0.000	0.144
OC and EO	0.492	7.567	0.000	0.242
OC and Structure Predicting EO				
OC	0.404	5.690	0.000	0.275
Structure	0.202	2.852	0.005	

Again following Baron and Kenny (1986) procedure for mediation, path *a* (organizational characteristics to structure) was assessed with regression analysis. The result indicated that path *a* was significant (t-value of 6.511 and  $p < 0.05$ ) and supported ( $\beta = 0.438$ ,  $p < 0.001$ ). Then the second step measuring path *b* was undertaken for structure and entrepreneurial orientation. The results obtained supported path *b* ( $\beta = 0.379$ ,  $p < 0.001$ ) and was significant (t-value of 5.480,  $p < 0.05$ ). Path *c* (organizational characteristics and entrepreneurial orientation) was measured as the third step and the result was significant and supported path *c* ( $\beta = 0.492$ ,  $p < 0.001$ ). Finally, the fourth requirement for mediation, path *c* was assessed through a regression analysis (where paths *a* and *b* are controlled). The results obtained indicated that there is still a significant relationship (t-value of 5.690,  $p < 0.05$ ), however with a reduced standardized beta value ( $\beta = 0.404$ ,  $p < 0.001$ ). It was concluded that partial mediation exists in the relationship. Therefore, hypothesis 5b is supported indicating that relationship between organizational characteristics and entrepreneurial orientation is partly mediated by structure.

**H5c: There is mediating effect of culture between organizational characteristics and entrepreneurial orientation**

H5a stated that there is mediating effect of culture between organizational characteristics and entrepreneurial orientation. Table 4.29 shows the result of Baron and Kenny (1986) three step approach.

**TABLE 4.29**

*Mediating Effect of Culture between Organizational Characteristics and Entrepreneurial Orientation*

Relationships	Standardized Beta	t-value	Sig. (p-value)	R <sup>2</sup>
OC and Culture	0.225	3.090	0.002	0.051
Culture and EO	0.200	2.729	0.007	0.040
OC and EO	0.492	7.567	0.000	0.242
OC and Culture Predicting EO				
OC	0.471	7.076	0.000	0.251
Culture	0.094	1.409	0.161	

Similar procedure was conducted for culture factor. From the procedure for mediation, path *a* (organizational characteristics to culture) was assessed with regression analysis. The result indicated that path *a* was significant (t-value = 3.090,  $p < 0.05$ ) and supported ( $\beta = 0.225$ ,  $p < 0.001$ ). The second step measuring path *b* was undertaken for culture and entrepreneurial orientation and the results obtained supported path *b* ( $\beta = 0.200$ ,  $p < 0.001$ ) and was significant (t-value = 2.729,  $p < 0.05$ ). Path *c* (organizational characteristics and entrepreneurial orientation) was measured as the third step and the result was significant and supported path *c* ( $\beta = 0.492$ ,  $p < 0.001$ ). Finally, the fourth requirement for mediation, path *c* was assessed through a regression analysis (where paths *a* and *b* are controlled). The results obtained indicated that there is still a significant relationship (t-value = 7.076,  $p < 0.05$ ),



however with a reduced standardized beta value ( $\beta = 0.471$ ,  $p < 0.001$ ). This provided evidence for partial mediation in the relationship. Therefore, hypothesis 5c is also supported indicating that structure mediates the relationship between organizational characteristics and entrepreneurial orientation.

### Summary of Hypotheses Tests

The following table provides a summary of hypotheses test results:

**TABLE 4.30**

*Summary of Hypotheses Tests*

<b>Hypothesis</b>	<b>Result</b>
H1a: There is relationship between work discretion and innovativeness	Supported
H1b: There is relationship between work discretion and risk taking	Supported
H1c: There is relationship between work discretion and pro-activeness	Supported
H2a: There is relationship between resource/time availability and innovativeness	Not Supported
H2b: There is relationship between resource/time availability and risk taking	Not Supported
H2c: There is relationship between resource/time availability and pro-activeness	Not Supported
H3a: There is relationship between management support and innovativeness	Supported
H3b: There is relationship between management support and risk taking	Not Supported
H3c: There is relationship between management support and pro-activeness	Supported
H4a: There is relationship between reward/reinforcement and innovativeness	Supported
H4b: There is relationship between reward/reinforcement and risk taking	Not Supported
H4c: There is relationship between reward/reinforcement and pro-activeness	Not Supported
H5a: There is mediating effect of technology between organizational characteristics and entrepreneurial orientation	Partial Mediation
H5b: There is mediating effect of structure between organizational characteristics and entrepreneurial orientation	Partial Mediation
H5c: There is mediating effect of culture between organizational characteristics and entrepreneurial orientation	Partial Mediation

#### **4.10 Chapter Summary**

In this chapter, the results of statistical analysis were provided in order to test the proposed theoretical framework. Various statistical analyses were conducted in order to validate the data and ensure fulfillment of required research criteria. Interpretation of various descriptive statistics and also inferential statistics including multiple regression analysis was provided to test the hypotheses developed in the study. In the next chapter, a discussion which integrates the result and the theoretical foundations upon which the study was built will be provided. Furthermore, the limitation of the study will be explained and the study will lay out directions for future research.

## **CHAPTER FIVE**

### **DISCUSSION, RECOMMENDATION AND CONCLUSION**

#### **5.1 Introduction**

This final chapter provides a discussion about the results analyzed in Chapter 4. The chapter begins by providing an overview of respondent's characteristics. Next, the regression analysis results pertaining to all of the hypotheses will be examined. Further to this, theoretical and managerial implications of the study will be presented and the chapter will be concluded by highlighting the limitations as well as avenues and direction for future research.

#### **5.2 Characteristics of Respondents**

From the study, it was observed that cement industry is generally male dominated due to the nature of the industry. At least 70.7 per cent of the respondents were male. Most of the respondents who participated in the survey are coming from an age group of 31 to 40 years old. This group constitute to at least 50 per cent of total respondents. On the other hand, at least 27.1 per cent of respondents are within the age range of 20 to 30 years old and 18.8 per cent in the range of 41 to 50 years. The remaining respondents are more than 50 years old. This indicates that a dynamic industry like cement requires young talents to be more aggressive and at the same time, it also takes into account more matured workforce to steer the organization.

As far as years of service are concerned, at least 75.1 per cent respondents have served the organization less than five years followed by service years of six to ten years which have accounted for about 13.8 per cent. Remaining respondents served the organization more than

10 years while 11 respondents achieved service years of more than 20 years. The findings of the study also revealed that heavy emphasis is given to sales and marketing as well as operations function. About 123 respondents from these two functional areas participated in the survey accounting for about 66.9 per cent. Other functional areas such as finance and controlling and human resources made up about 15.4 per cent while the remaining 32 respondents participated from functions such as administration, customer service, information technology and others.

From education perspective, the research indicated that an undergraduate degree is a common qualification standard in the cement industry. About 51.4 per cent of the participants possesses on undergraduate degree while diploma become the next in education requirements. About 30 participants possesses diploma among the total respondents who participated in the study. The industry shows that preferences are also given towards postgraduate degrees such as masters and also doctorate qualifications. 24 respondents possesses masters degree in various disciplines while at least two respondents having doctorate qualification. This shows that academic credentials are important in cement industry for various functional units.

### **5.3 Hypotheses Test Results**

Research question 1: Is there a significant relationship between organizational characteristics and entrepreneurial orientation?

There are four organizational characteristics namely work discretion, resource/time availability, management support and rewards/reinforcement. Each dimension tested three hypotheses for entrepreneurial orientation. Entrepreneurial orientation variable was consist of three dimensions namely of innovativeness, risk taking and also pro-activeness. In order to answer this research question, 12 hypotheses were formulated as follows:

All three hypotheses test for work discretion variable were supported and therefore retained. According to the results, it was found that there is significant positive relationship between work discretion and innovativeness, risk-taking and pro-activeness, therefore, hypothesis 1a, 1b and 1c were supported. Therefore, it can be inferred that employees with greater work discretion able to engage into innovative actions in the organization. In addition, employees are more inclined to undertake risky attempts when they are given work discretion. On top of that, it can be inferred that employees with adequate level of work discretion tend to behave more proactively in the organization.

These findings are consistent with Rutherford and Holt (2007) and Kuratko and Hodgetts (2007) who highlighted that availability of freedom and decision making latitude among employees will help them to embark into entrepreneurial activities better. This creates a sense of ownership resulting in self-efficacy which encourages the employees to invest their interest in innovative ideas generation (De Jong & Wennekers, 2008). Alpan et al. (2007) also indicated that work discretion which is an ability to take initiative in decision making enhances innovativeness and overall performance. Similar findings were found by Dess et al. (2003) whereby the study provided evidence of strong relationship between work discretion

and also entrepreneurial intentions. In addition to this, work discretion which includes delegation of responsibility and also authority are important in facilitating entrepreneurial orientation among employees (Holt, et al., 2007).

Greater work discretion also found to provide more freedom and create strong desire among employees in developing and implementing innovative ideas (Li, Huang, & Tsai, 2009). Viewing it from the risk taking perspective, capability to tolerate failure provides confidence in employees to attempt risky ventures as part of their entrepreneurial endeavors. (Ireland et al., 2009). Morrison and Robinson (1997) and Chandler et al. (2000) also indicated that in undertaking risky attempts, employees are turning to be very innovative when they are free from fear of punishment, adverse criticism, or loss of support when they fail in their attempts. Douglas and Morris (2006) indicated that an employee with work discretion will enjoy a greater span of control allowing them to disregard or deviate from formal rules and practices in the organization. Empirical support for this claim was provided by Frese, Garst, and Fay (2000) who posited that an attempt towards affordable risky initiatives will be a result of amount of work discretion an employee enjoys in the workplace.

In addition to this, research conducted by Hartman and Nelson (1996) further supported this findings that an individual tends to be more enthusiastic and less averse to risk only when there is independence in respect to taking business decisions pertaining to the organization. Grant and Parker (2009) explained that enactment of proactiveness among employees is a result of uncertain and transformational work environment. Frese and Fay (2001) indicated that employees are seen as a proactive when they focus on anticipatory actions which include

adoption of changes in how the jobs, roles and tasks are executed. In executing such changes, the employees tend to act in advance in response to future situation by taking control and subsequently cause the change (Parker & Collins, 2010) who ultimately contribute to organizational effectiveness (Tims, et al., 2012).

Overall, all three hypotheses tested for the relationship between resource/time availability and entrepreneurial orientation (i.e. H2a, H2b and H2c) were not statistically significant, hence were not supported and unable to be retained. The relationship between resource/time availability and innovativeness was negatively associated while the relationship between resource/time availability and risk taking and proactiveness were positively associated. Hence, the study indicated that provision of required resources and time will not necessarily activate innovative, risk taking and proactive behavior among employees. Similar findings were reported by Holt et al. (2007) whereby the findings indicated that there is no significant relationship between resource/time availability and innovativeness.

Recent research by Alpkhan et al. (2010) also informed that no empirical evidence was found for significant relationship between resource/time availability and innovativeness. Nevertheless, different set of findings were reported by several past scholars. For instance, Khalil (1996) and Bresnahan (1997) indicated that the likelihood of an employee being creative and/or innovative is subject to resource availability which includes the required equipment while management is required to support by ensuring availability of the resources. On the other hand, Gilbertson (2002) argues that resource allocation is very crucial in entrepreneurial behavior activation. Similarly, De Jong and Hartog (2007) found that

allocation of adequate amount of time as well as financial resources as an indication of innovation supportive organization is imperative in order to stimulate and also to activate entrepreneurial behaviors among employees.

Three hypotheses were tested for the relationship between management support and entrepreneurial orientation of which hypotheses 3a and 3c was significant while 3b was insignificant. The statistical results indicated that there is positive association and significant relationship between management support and innovativeness and proactiveness. According to Stevenson and Jarillo (1989), when management provide adequate support in the form of encouragement in generating new ideas, it enhances innovative interest and positively influences entrepreneurial behavior. Open and face to face communication as part of management support found to promote innovation by scholars such as Filipczak (1997), Bresnahan (1997) and Ahmed (1998).

In addition, Tushman and O'Reilly (1997) have also provided further support of these findings. They reported that when the management provides adequate support and tolerate failures, it promotes innovation. Antoncic and Hisrich (2002) and Goosen (2002) concur that management support helps an employee to behave more proactively resulting in innovation. On a separate study, by using multiple linear regression analysis, Alpan et al. (2010) utilized empirical data to test the relationship between organizational factors and innovativeness and provided evidence that there is relationship between management support and innovativeness. Antoncic and Hisrich (2002) and Goosen (2002) in their empirical investigation reported consistent findings with the results of this research. Besides, the literature have also shown



that management support remain as one of the prominent factor in encouraging innovative behavior among employees (Hornsby et al., 2009). From the resource perspective, Khalil (1996) and Bresnahan (1997) highlighted that provision of sufficient amount of resources as part of management support is also increasing the likelihood of employees being more innovative in the workplace.

Ideally, it is expected that an employee tend to be more innovative when there is an existence of strong management support for innovative attempts. This claim was justified by study conducted by Janssen (2005) and Amo (2006a) who argued that employees perceived themselves to be innovative when the management is supportive of innovation behavior. In line with this, in order to spur innovative behavior among employees, De Jong (2007) highlighted that emergence of direct management support is essential. In addition, verbal support (Krause, 2004) and enacted support through provision of required resources (Judge, Gryxell, & Dooley, 1997; Nijhof, Krabbendam, & Looise, 2002) apart from innovative efforts recognition (Judge, Gryxell, & Dooley, 1997) are also reported to trigger innovative behavior among individuals. The study indicated that there is no relationship between management support and risk-taking behavior. This result is in contrast to the findings by Antoncic and Hisrich (2002) and Goosen (2002).

Another study by Poon and Raja Azimah (1990) identified that when the management is supportive and willing to take calculated risks, employees enjoy greater satisfaction in their jobs. This claim was further supported by various scholars in the literature (e.g. Khalil, 1996; Arad, Hanson, & Schneider, 1997; Robbin, 2004) who posited that it is the responsibility of

the management to create values within the organization that supports risk taking behavior by demonstrating such behaviors as an acceptable behavior in the organization. Further to this, according to Frohman and Pascarella (1990) and Aber (1996), when management inculcate the risk taking values in the organization, employees are better motivated due to the potential of being successful than the outcome of the success.

Overall, in testing the relationship between reward/reinforcement and entrepreneurial orientation, only hypothesis 4a was supported, while 4b and 4c were insignificant, therefore were not supported. The results indicated that there is significant relationship between reward/reinforcement and also innovativeness and that these variables are positively associated. Therefore, it can be concluded that employees are behaving more innovatively when they are rewarded and also reinforced for their successful achievements. Similar kind of findings was reported by Morrison and Robinson (1997) whereby reward system of the company found to positively influence employee commitment towards innovativeness.

Therefore, availability of fair reward system and rewarding employees for their contributions is essential in order to create and also sustain entrepreneurial climate in the organization. In studying employee perceived reward fairness and innovative behaviors, numerous scholars (e.g. Hornsby, et al., 1999, 2002; Janssen, 2000; Holt, et al., 2007) found a significant and positive association between reward/reinforcement and innovativeness. In the study conducted by Kuratko, Hornsby and Bishop (2005) to understand entrepreneurial environment, it was found that greater emphasis on rewards/reinforcement influences managers to develop and implement not only new ideas but also improves the number of

unofficial improvement initiatives within the organization. However, the relationship between reward/reinforcement and risk taking is positively associated and not significant. The statistical results indicate that reward/reinforcement and pro-activeness negatively associated and failed to provide empirical evidence for significant relationship between reward/reinforcement and pro-activeness. Based on the Expectancy Theory (Vroom, 1964), it was indicated that individual efforts requires the individual to believe that their efforts will lead towards a reward failure which they are reluctant to engage into entrepreneurial behaviors.

### **Knowledge Management Enablers as Mediator**

Research question 2: Is there mediating effect of knowledge management enablers between organizational characteristics and entrepreneurial orientation?

In order to answer the second research question, the original hypothesis was reformulated to due to three factor structure result of the Principal Component Analysis. Based on the statistical analysis, all hypotheses (i.e. H5a, H5b and H5c) were supported. This explains that organizational characteristics and entrepreneurial orientation partially mediated by technology, structure and culture. This is in line with several past studies which investigated the impact of technology on organizational survival and sustainability. Environment remain an important element in determining an organization performance (Zaheer, et al., 2010) and technology is considered as an important component of environment in coping with uncertainties in ensuring organizational survival (Jeong et al., 2006).

Further support by Kropp et al. (2006) was found in support of this result whereby the study confirmed that environmental factor influence the dimensions of entrepreneurial orientation. Zahra and Nielsen (2002) posited that technology able to improve coordination across groups as it encourages the employees to interact among themselves apart from approaching and solving issues in a collaborative manner. Similar findings were reported by Kahn (1996) that technology helps a firm to create a better alignment between internal and external forces. The results supported hypothesis 5b indicating that structure mediates the relationship between organizational characteristics and entrepreneurial orientation. In spite of full mediation, only partial mediation was observed through the statistical results.

Therefore, it was concluded that organizational structure supports the entrepreneurial orientation activation in the organization. Similar findings were reported in the past literature. Structure which defines the allocation of responsibilities and also level of authority in the organization (Greenberg & Baron, 1997) provides greater and diffused flow of information in the organization for activation of entrepreneurial orientation. The statistical results provided evidence of mediation of culture between organizational characteristics and entrepreneurial orientation. However, there was no evidence of full mediation. The critical role of culture in cultivating and shaping entrepreneurial orientation in the organization was well emphasized by Kanter (1985). Generally, entrepreneurial culture focused at creation of new possibilities facilitated by various elements such as innovations, risk taking propensity and also pro-active behaviors by accepting as well as managing forces of change.

Various researchers (Martin, 1992; West & Berthon, 1997; Pennington, 2001) have addressed that behavior of individuals is influenced by the culture that is being practiced in the organization. Deal and Kennedy (2000) explained an element of culture as the ways and means things are taken up and completed in the organization. Often, management engages into entrepreneurial orientation by committing to it on a broader range in the organization. However, this transformation requires support from the entire organization through its organizational citizen. Robinson (2001) highlighted that entrepreneurial orientation will become a culture leading towards organizational renewal only if such efforts are nurtured through behavior and practices.

In spite of being pro-active and innovative, it is crucial that employees are experimenting entrepreneurial attempts without fear of reprisal especially when their attempts do not end with expected outcomes. Such culture found to promote continuous knowledge sharing in order to undertake risky attempts (Niaz Azari & Amooei, 2008). Further support was provided by Deshpande, Farley, and Bowman (2004) and Baughn, Cao, Le, Lim, and Neupert (2006) who found that cultural factor which includes organizational culture enhances the entrepreneurial orientation leading towards business success in the organization. In addition to this, Nguyen et al. (2007a) explained that an absence of strong entrepreneurial culture will indicate the presence of risk avoidance attitude since culture may positively or negatively affect willingness to take risks hence to make business decisions. In addition, organizational culture could create proper climate to encourage entrepreneurial behavior among employees and this is in alignment with studies by Lumpkin and Dess (2001), Ireland et al. (2006) and Hughes and Morgan (2007).

## **5.4 Limitation of the Study**

Despite the findings from this study, there were several limitations to the study. First, the sample size used for this study is moderately small and was one of the biggest concerns although it has fulfilled the sampling criteria (Krejcie & Morgan, 1970). As such, findings cannot be generalized with the organization and sectors that are outside the target population and it was conducted at one point in time. In order to further strengthen the findings, there is a need for larger sample size so that the hypotheses can be tested robustly. A larger sample size in a broader spectrum of different business sectors will not only provide further evidence to support or refute hypotheses under consideration but also will improve the generalizability of findings in regards to the relationship between organizational characteristics and entrepreneurial orientation apart from the mediating effect of knowledge management enablers. Besides that, triangulation, mixed-method design could have provided stronger insights in testing the constructs in regards to the relationship between organizational characteristics and also entrepreneurial orientation as well as the mediating effect of knowledge management enablers between these two constructs.

## **5.5 Contributions of the Study**

### **5.5.1 Theoretical Contributions**

This research provided several significant implications contributing towards theory and also practices. Entrepreneurial orientation is an important agenda to many organizations to ensure their survival in the dynamic market environment. Many studies including recent ones have continuously investigated entrepreneurial orientation in the organization and its influence towards performance. However, most of the past studies have examined entrepreneurial orientation as a unidimensional construct and the debate is still continuing so as to view

entrepreneurial orientation as unidimensional construct or multidimensional construct. In addition, the past literature indicated that entrepreneurial orientation was considered as a unidimensional (e.g., Covin & Slevin, 1989; Knight, 1997), independent variable in evaluating firm performance since past three decades. However, entrepreneurial orientation may occur in different combinations with each representing a different and independent aspect of the multidimensional concept of entrepreneurial orientation (Lumpkin & Dess, 2001; Covin, Greene, & Slevin, 2006; George, 2006).

While compiling past literature, the study suggested a conceptual framework which identifies constructs of organizational characteristics and knowledge management enabler that influences entrepreneurial orientation among organizational citizens. Constructs being developed in this study tested empirically to evaluate conformity of these constructs towards employee entrepreneurial orientation. This research differs from other current literature in a way that it have taken a different approach and investigated entrepreneurial orientation as a multidimensional construct. By systematically investigating the relationship between organizational characteristics dimensions and entrepreneurial orientations dimensions individually in the presence of knowledge management enabler as a mediator, this research is differentiated from the prior research studies whose literature has focused on the direct link between organizational characteristics dimensions and entrepreneurial orientation as a unidimensional construct, generally occupying the concept of corporate entrepreneurship or intrapreneurship.

The research offered explanation for conflicting findings about the debate to which one shall consider entrepreneurial orientation as a unidimensional construct or multidimensional construct. This study enriched the literature by showing which internal factors influence the dimensions of the entrepreneurial orientation and by assessing entrepreneurial orientation in a new context, the cement market environment. In addition, validation of the framework contributed to existing body of knowledge in the area of entrepreneurial orientation, especially in domestic settings.

Apart from that, to date, no past studies were conducted to investigate existence of entrepreneurial orientation in the cement industry setting. This study helped to extend the study of entrepreneurial orientation into new setting and uncharted contexts. In addition, the study provided some valuable direction to the industry in crafting right set of entrepreneurial strategies in anticipation of continuous changes and also dynamism. Most importantly, this study have provided some evidence into existence of entrepreneurial phenomena in the cement manufacturing organizations which can be further developed to unlock greater insights. In particular, identification of organizational characteristics dimensions that has strong influence in creating entrepreneurial orientation climate in the organization can be further investigated to produce more conclusive findings in the same settings.

Furthermore, inclusion of knowledge management enabler as a mediator between organizational characteristics and also entrepreneurial orientation breaks new ground in the fields of both organizational characteristics and also entrepreneurial orientation. This has called for a further investigation into it as it has set a new level of importance for



entrepreneurial orientation activation in the cement industry context. Cement industry probably were traditionally viewed as a conservative organization. However, the findings reported in this study indicates that there is possibility to articulate greater sense of entrepreneurial orientation among employees, therefore, it potentially creates further interest to investigate the unique characteristics the industry may possess in creating entrepreneurial orientation climate in the organization.

### **5.5.2 Managerial Contributions**

Entrepreneurial behavior exists among the organizational citizen at all levels. It is no longer a game of top management alone in the organization. However, there is a mismatch between various elements in the organization which should facilitate execution of entrepreneurial behavior. Employees in the organization keep challenging each other including top management about the objectives setting as well as means of achieving it. Not only that but these employees critically examines the possible alternatives for the organization which usually originates from top of their mind and share their difficulties and constraints in implementing them as a result of their experience in the organization. It indicates that this is an environment an organization should encourage to let the employees to exercise their entrepreneurial intentions.

Although external elements are important, internal elements within the organization is of crucial importance since the organization generally possesses control over how the internal environment being shaped. For an organization which operates in a business environment which is changing fast, swift decision making remain an important agenda. Information is

scattered across the organization, however, there is no proper medium which encourage sharing of these information for fast decision making in the organization. In view of that, this study investigated numerous aspects of entrepreneurial orientation that affects organization. In addition, the study also provided insights into a blend of organizational characteristics and also entrepreneurial orientation dimensions that are generally exist in most of the organization.

The study offered several important managerial implications as the business environment is becoming more competitive. Competitive behaviors among industry players, financial competitiveness in enhancing profit levels, changing market structure, combined with continuously emerging new requirements may put the industry at a distinct disadvantage if their businesses are not driven by entrepreneurial mindset oriented employees. Instilling entrepreneurial mindset among organizational workforce is no longer an option, rather has transformed into a necessity for continuity and ensuring sustainable position in the marketplace.

Firstly, the authority given to employees plays an important role in spurring entrepreneurial intentions among employees. While empirical evidence suggests that work discretion encourages employees to be more innovative, become better risk takers and also more proactive, the organizational climate which facilitates continuity of these behavior are of central attention in the organization. Allowing employees to consider all possibilities in accomplishing their duties allow them to choose the best practice in order to achieve the corporate goals in the most efficient way. Continuous work discretion without excessive

oversight promotes entrepreneurial mindset among employees and it transforms into a work culture and happens on a continual basis. Therefore, organization shall always ensure that the organizational philosophy permeates an environment where it allows an appropriate level of work discretion to employees so that the employees are always geared towards entrepreneurial mindset aiming at continuous improvement.

Secondly, the research indicated contradicting findings in spite of common perception that availability of resource and time will encourage entrepreneurial intentions. It is not negligible that resource and time has a bid role to play in helping employees to accomplish their entrepreneurial endeavors. However, the findings posit that availability of resource and time does not necessarily activate entrepreneurial attempts among employees. The essence to entrepreneurial orientation is the organizational philosophy. If the organization does not set a tone that portrays an entrepreneurial orientation, availability of resources and time does not behave as a means of employees to engage them into entrepreneurial attempts. Therefore, setting a organizational climate which induces entrepreneurial mindset among employees become prominent even before ensuring availability of resource and time in activating entrepreneurial behavior.

Thirdly, the entrepreneurship should start at the top. The foundational philosophy of the organization will be its orientation. Therefore, the entrepreneurial climate of the organization can only be activated if there is an existence of entrepreneurial philosophy that permeates the entire organization which such intentions. As posited by Zahra and Covin (1995), it is essential that organizations focus at entrepreneurial activities in order to foster growth as well

as improve profitability. However, entrepreneurial reflection should first start at the top and the management plays an instrumental role in setting up the entrepreneurial climate in the organization. Although entrepreneurial orientation is an organization wide phenomenon, top management play an instrumental role in creation of a supportive work environment which supports entrepreneurial attempts from its organizational citizens. A change from traditional organizational set up to entrepreneurial organization require strategic commitment from the top team, otherwise it provides little incentive for the organization to understand the need for the change. Although the findings indicates that management support driven by entrepreneurial philosophy encourages the employees to be innovative and proactive in their undertakings, there is still insufficient evidence which indicates the role of management in encouraging employees to engage themselves into risky ventures. While considering adequate attention towards work discretion, the top management shall also look into the possibility of encouraging employees to undertake risky ventures, however, within the capacity of the organization in accepting and exercising adequate level of tolerance in the event of failures.

Fourthly, reward/reinforcement is also found to cultivate entrepreneurial behavior among employees. While the empirical evidence indicate that there is clear link between reward/reinforcement and also innovativeness, it still lacks similar links to risk taking as well as proactive behavior of employees. Clearly, innovative attempts generally produce tangible benefits in which case such achievements are linked to performance management and ultimately reward/reinforcement in the organization. However, risk taking ventures which are uncertain in its nature and pro-activeness which is commonly an individual unseen strength requires proper parameters in aligning it towards performance management and ultimately

reward/reinforcement dimension in activating entrepreneurial attempt in the organization. In spite of looking at tangible benefits which yields financial return, intangible benefits which may take a form of process improvements, ideas sharing, and being the first to act to situations among others should be given equal attention by the organization so that these achievements can be included in the performance management of employees and rewarded/reinforced accordingly. Clearly, there is a missing link in addressing intangible entrepreneurial behaviors and attempts towards a performance management system of employees when such intentions should be captured and rewarded accordingly. Specifying expected contributions and establishing a clear link between entrepreneurial intentions and performance management become essential and it is equally important to communicate existence of such systems to entire organization in activating and cultivating entrepreneurial mindset among employees. However, this rewards/reinforcement can take forms of financial as well as non-financial which can be a signal to reinforce entrepreneurial behavior among employees.

Fifthly, as being discussed previously, entrepreneurial organization does not evolve successfully if there is an absence of enablers. These enablers may take multiple forms, however adequate level of information remain as an essence of entrepreneurial orientation activation. While organization provides supporting organizational climate, employees to act as entrepreneurs require enablers of knowledge which help them to react ahead of the situation as well as to make relevant decisions. In view of this, entrepreneurial postures require multiple organizational elements that constitute to complex interrelationships between contextual variables to be carefully addressed by the organization. Among others, as discussed, it includes technology, culture and structure. While technology platform generally

exist in most of the organization, the use and excess to the system remain a debatable issue. To certain extent, restriction in accessing information, immediately availability of information when it is required to act ahead of expected situation and data protection and confidentiality policies in the organization remain a hindrance in cultivating entrepreneurial behavior among employees. While exercising sufficient controls towards information, the organization will have to maximize the use of technology and to practice some form of flexibility in accessing and communicating information across the organization subject to the nature of the entrepreneurial attempts. In addition, having an organizational structure and culture which promote information sharing will also ensure that information is available as and when it is needed. The characteristics of structure and culture that exists in the organization will either support or impede the employee behavior in encouraging them to exercise their entrepreneurial intentions. Therefore, to the extent possible, the organization shall activate knowledge management enablers so that it will correlate with organizational characteristics and provide a room for employees to exercise their entrepreneurial intentions freely. Any characteristics within the organization which prohibits entrepreneurial orientation should be revisited in order realized entrepreneurial orientation among employees, hence to transform into entrepreneurial organization.

Finally, the role of training and development in execution of entrepreneurial mindset among employees can never be neglected. While organizational characteristics and knowledge management enablers are very important in this transformation, the skill set and also competency of the employees require equal attention. In order to transform employees to behave with entrepreneurial posture, it is essential for an organization to ensure that these employees are equipped with necessary skills set and capabilities so that the journey of

entrepreneurial transformation become a reachable goal. Addressing the competency gaps, putting appropriate measures to close these gaps, and establishing continuous skills set assessment and development agenda as part of organizational priority will help the organization to sustain entrepreneurial orientation in the organization. Investing in human capital competency development should be a non-negotiable priority in organization attempts of transforming its posture from a traditional organization to entrepreneurial organization.

In sum, entrepreneurial behavior exists at all level of organization. However, activation of entrepreneurial intention and exercise of entrepreneurial behavior is subject to organizational posture and also driving philosophy. Based on empirical evidence provided in this research, it can be concluded that all aspects of organizational characteristics and knowledge management enablers are crucial in order to create entrepreneurially oriented workforce. These results can be used by the organizations as a foundation in setting up an entrepreneurial orientation climate in the organization while keeping adequate attention all related contextual factors within the organization.

## **5.6 Suggestions for Future Research**

This study was conducted because little was known about the interaction between entrepreneurial orientation individual dimensions and organizational characteristics in activating entrepreneurial behavior among employees. The study provided important outcomes and implications, however, suffered several challenges. Despite the findings reported in the study, additional research is needed to better understand the study as well as to extend the study towards unaccounted variables and also dimension that affects

entrepreneurial orientation activation among employees. On top of this, there is no plausible research available in the cement industry context to understand the phenomenon on a greater depth. Based on the results of this study, the followings can be considered as avenues and direction for future research.

First, a triangulation method by triangulating the responses of respondent with secondary (qualitative) sources can be used to test these constructs in the similar context to add value to the existing theoretical findings in examining the relationship between organizational characteristics and entrepreneurial orientation as well as the mediating effect of knowledge management enablers between these constructs to generate more conclusive evidences. Occupying triangulation method will help to validate the quantitative findings and further strengthen the research outcome. Additionally, triangulation method will increase the confidence about the research allowing a blend of both quantitative and qualitative views while revealing unique outcomes and provide a clearer reflection about the issue under study.

In addition, other variables and/or dimensions which were not explored in this study can be included to construct a more accurate predictive model in the future research attempts to create more insights into the area of study about entrepreneurial orientation. For instance, additional dimensions suggested by Lumpkin and Dess (1996) such as autonomy and competitive aggressiveness can be included to identify their influence towards entrepreneurial orientation.



One key issue in the study was the sample size. The sample size of this study may have hindered unlocking of real strength of variable implications. This will also cause issues with generalizability of findings across industries. Different sector of business may also yield specific findings which will add to the existing depth of body of knowledge in the area of entrepreneurial orientation. In order to further generalize the findings, it is also suggested that large sample size shall be occupied covering wide spectrum of organization or multi-state in the future research work.

Another area of recommendation is to consider an inclusion of any moderating variable that will be able to explain the phenomena in a greater detail. There may be a theoretical support for the contention that both mediating and moderating variable should be considered since activation of entrepreneurial orientation involves various internal and also external factors. This inclusion may enrich the findings and provide a broader picture about entrepreneurial orientation activation in the organization.

## **5.7 Conclusion**

A general tendency in today's business environment will be the ability of any organization competing in a stiff environment to ensure their business continuity. Along this direction, most organization creates strategies which will help to position them in the safe zones. However, future growth streams of the organization and also business sustainability requires the organization to be on a constant search of opportunities identification, exploration and also exploitation. Therefore, adopting entrepreneurial strategic orientation and transforming the organization towards entrepreneurial institution become paramount. In view of that,

principles and enactment of entrepreneurial orientation have been one of the key success factors to most organization in almost every business setting. Hence, investigation of entrepreneurial orientation direction among the organization is a worthwhile scholarly endeavor.

While many organization characteristics together with knowledge management enablers found to activate entrepreneurial orientation in the organization, facilitation of such endeavors should be inculcated in the organizational philosophy and also driving core values. As mentioned by Ireland et al (2001), creating wealth is the heart of entrepreneurship and therefore entrepreneurship has been regarded as the ingredient of organizational success. Complementing organizational strategies with entrepreneurial posture and behavior while involving the entire organization will result at a positive effect on business performance. Entrepreneurial orientation helps an organization to invoke hidden capabilities and also tacit knowledge that is crucial in facilitating entrepreneurial endeavors and ultimately transform the entity into entrepreneurship organization.

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