ORGANIZATIONAL STRUCTURE, HUMAN RESOURCE PRACTICES, ORGANIZATIONAL CULTURE AND INNOVATION ACTIVITY AMONG SMALL AND MEDIUM-SIZED ENTERPRISES IN ALGERIA

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ABSTRACT

Despite the importance of innovation to small and medium-sized enterprises (SMEs), the review of the literature and past studies indicate that there are not many studies that have investigated organizational factors associated to innovation activity among SMEs, particularly in the Algerian context. As a result, there is little information about the linkage between organizational factors and innovation activity in Algerian SMEs. Given the research gap and limited information, this study attempted to investigate the relationships between organizational structure, human resources practices, organizational culture and innovation activity in Algerian SMEs. By using structured questionnaire, the data for the study was gathered from 77 SMEs operating in the manufacturing sector in the southern region of Algeria. The Least Squares Structural Equation Modeling (PLS-SEM) was utilized to analyze the data and test the hypotheses developed in the study. The results of the study indicate that organizational structure and organizational culture were significantly related to the innovation activity of the SMEs in the study. However, the results show not significant relationship between human resource practices and innovation activity.

Keywords: organizational innovation, organizational culture, human resource practices, innovation activity, SMEs.

ABSTRAK

Meskipun didapati inovasi adalah penting bagi perniagaan kecil dan serderhana (PKS), ulasan karya serta kajian terdahulu menunjukkan bahawa tidak banyak kajian yang mengkaji faktor organisasi yang mempunyai hubungkait dengan aktiviti inovasi di kalangan PKS, terutamanya di negara Algeria. Oleh yang demikian, terdapat maklumat yang terhad mengenai perhubungan di antara faktor organisasi dengan aktiviti inovasi di kalangan PKS di Algeria. Oleh kerana terdapat jurang penyelidikan dan maklumat yang terhad, kajian ini mencuba untuk mengkaji perhubungan di antara struktur organisasi, amalan sumber manusia, budaya organisasi dan aktiviti inovasi di kalangan PKS di Algeria. Dengan menggunakan soal selidik berstruktur, data untuk kajian ini telah diperolehi daripada 77 PKS yang beroperasi di sektor pembuatan di bahagian selatan Algeria. Least Squares Structural Equation Modeling (PLS-SEM) telah digunakan untuk menganalisis data serta menguji hipotesis kajian ini. Hasil kajian ini menunjukkan bahawa terdapat berhungan positif di antara struktur organisasi dan budaya organisasi dengan aktiviti inovasi di kalangan PKS yang telah dikaji. Walaubagaimanapun, hasil kajian ini mendapati tiada hubungan di antara amalan sumber manusia dengan aktiviti inovasi.

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LIST OF ABBREVIATIONS

SMEs	Small and Medium-sized Enterprises
IC	Internal Communication
MATC	Managerial Attitude toward Change
OC	Organizational Complexity
TDP	Training and development of practices
KS	Knowledge Sharing
SRC	Selection and Recruiting of Creative People
SE	Support for Experimentation
ENI	Encouragement of New Ideas and Provide Feedback
SL	Supportive Leadership
EE	Employee Empowerment
CJS	Criteria for Judging Success
TR	Tolerance of Risks
IPC	Involved in Planning Changes
IA	Innovation activity
Org Str	Organizational structure
Org Cul	Organizational culture
HRP	Human Resource Practices

CHAPTER ONE

INRODUCTION

1.1 Introduction

Innovation is not only transforming organizations but also providing them with more efficient and effective ways of management. For instance, major innovations in the interconnected digital technology have allowed business organizations such as small and medium-sized enterprises (SMEs) to be more connected and also given them more opportunities to expand their business activities both locally and globally. More importantly, innovation such as the digital technology is offering organizations new ways to develop their competitiveness as well as sustain their organizational performance (Smith, 2016; Rubalcaba, 2016).

Organizations need some form of competitive advantage to sustain their organizational performance. According to the literature, innovation has become one of the most important sources of competitive advantage for organizations. With the competitive advantage derives from innovation, organizations such as SMEs can not only strengthen their business models through the development of new and improved products, services and processes but also improve the ways in which they manage their organizations (Stampfl, 2016; Taneja, Pryor & Hayek, 2016; Prajogo & Oke, 2016; Simao, Rodrigues & Madeira, 2016; Bozkurt & Kalkan, 2014; Csath, 2012; Crossan & Apaydin, 2010).

The review of the literature indicates that there is no one universally accepted definition of innovation. Different authors used different definitions. For instance, innovation has been defined as new or improved products, new methods of production, new marketing or sales methods, new channels of distribution and new markets (Bozkurt & Kalkan, 2014; Deshati, 2016; Martínez-Román & Romero, 2016; Osman, Shariff, & Lajin, 2016).

Chang and Hughes (2012) suggested that there are two types of innovation. They include; exploitative and explorative innovation. These authors indicate that as far as innovation is concerned, the most important objective is for organizations to achieve an appropriate balance between exploitative and explorative innovation which will ensure their long-term viability as well as survival.

In addition, the innovation processes adopted by organizations today are considered not only much more open but they also require socio-economic systems to engage users as well as producers. The innovation processes have gone beyond the traditional (techno-economic) approach. The new approach includes new practices such as user innovation, personal fabrication, design innovation, open innovation, crowd sourcing and community innovation. All of these innovative practices are able to give organizations the competitive advantage that they need to compete with their competitors (Kamal, Yusof, & Iranmanesh, 2016; Osman et al., 2016; Rubalcaba, 2016).

Furthermore, researchers such as Armbruster, Bikfalvi, Kinkel, and Lay (2008), Martínez-Román and Romero (2016), OECD/Eurostat (2005) and Simao et al., (2016) have also been able to distinguish four different types of innovations. Among them include; innovations of technical product, innovations of non-technical service, innovations of technical process, and innovations of non-technical process.

1.2 Background of the Study

Given the importance of innovation to organizations, over the years, various studies have attempted to examine the impact of organizational factors on innovation activity in organizations. According to these studies, organizational factors such as management practices, processes, organizational structure, human resource practices and organizational culture that can help organizations become more innovative (Ikeda & Marshall, 2016; Kamal et al., 2016; Osman et al., 2016; Plotnikova, Romero, & Martínez-Román, 2016; Sanjeev and Bandyopadhyay, 2016; Christina, Michael, & Jing, 2015; Kraus, Pohjola, & Koponen, 2012; Hashim, Mahajar & Zakaria, 2006; and Jan & David, 2005).

In addition, past studies have also attempted to investigate issues related to innovation such as its definitions, dimensions and measurement. For instance, Pippel (2014) found there are studies that focused mainly on the technological innovation, specifically innovation of product and process. The concept of innovation however encompasses wider perspectives such as non-technological innovation that include organizational and marketing innovation. Moreover, there are differences between technological innovation and non-technological innovation,

particularly with regard to organizational innovation that include the process of innovation (Crossan & Apaydin, 2010; Makkonen, Johnston, & Javalgi, 2016; Mas-Verdú, Ortiz-Miranda, & García-Álvarez-Coque, 2016; OECD/Eurostat, 2005; Plotnikova et al., 2016; Simao et al., 2016; Ganter & Hecker, 2013; Kraus et al., 2012 and Mol & Birkinshaw, 2014).

The study by Jan, David and Alice (2005) found that different structural forms in organizations can result in different patterns of learning and knowledge creation as well as the development of innovative capabilities. For instance, Mas-Verdú et al. (2016) viewed that a growing strand of studies in innovation have shown that internal and external networks enhance the development of innovation capacities.

The other studies by West and Bogers (2014), Kang, Jo and Kang (2015) and Hossain (2016) indicated organizations also need the internal sources and external sources of knowledge and ideas to advance their innovation in technology. Meanwhile, other researchers concluded that the adoption and creation of innovation require change and adaption in organizations as well (Kamal et al., 2016; Kraus et al., 2012).

Findings of previous studies on innovation have also provided empirical evidence that suggests innovation is the engine that drives both global and local economies. More importantly, it helps organizations to become more competitive. This is because it enables them to become not only more flexible but also allow them to response rapidly to the changing demands of the market by aligning their business objectives with innovation activities (Ikeda & Marshall, 2016; Issar & Navon, 2016).

1.3 The Problem Statement

The importance of innovation to organizations has been emphasized in the literature. However, research in this area seemed to be not only restricted but also neglected. More specifically, the review of the literature indicates empirical studies that examine innovation activity among the small and medium-sized enterprises (SMEs) remained limited, especially in the context of developing countries such as Algeria.

Small and medium-sized enterprises play a key role as well as contribute significantly to the economy of Algeria. However, little is known about these firms in Algeria. For instance, although innovation is considered essential to organizations such as SMEs, the literature reveals there is little research that investigates innovation activity among Algerian SMEs. As a result, there is not much information about the innovativeness of small and medium-sized enterprises in Algeria (Amroune, 2014; Berbar Née Berrached, 2015; Berrah & Boukrif, 2013; Bouazza et al., 2015; Bouazza, 2015; Leghima, 2014).

The research gap as well as the lack of information concerning the innovativeness of SMEs in Algeria, suggest the need for more studies to be conducted in this area of study. One important area of research would be to examine the linkage between organizational factors and innovative activity among the Algerian SMEs. In view of the importance of innovation to SMEs, it would be useful to investigate the relationships between organizational factors such as organizational structure, human resource practices, organizational culture and innovative activity in these firms.

For instance, by studying and understanding the relationships between the organizational factors and innovative activity in SMEs may provide the insight into how these firms can become more competitive. In addition, knowing the association between organizational structure, human resource practices, organizational culture and innovation activity would also be useful in helping the owners as well as managers of Algerian SMEs to improve their innovative capabilities as well as in developing their competitive advantage (Aichouche & Bousalem, 2016 and Bouazza et al, 2015).

Most significantly, if the relationships between organizational structure, human resource practices, organizational culture and innovative activity can be effectively captured, then this information could be useful for several practical purposes such as developing more effective innovation evaluation programs, broadening existing assistance programs and improving business practices among the SMEs. These programs and business practices that can further help Algerian SMEs to become more innovative as well as competitive.

1.4 Research Question

This study attempted to investigate the relationships between organizational structure, human resource practices, organizational culture and innovation activity among Algerian small and medium-sized enterprises (SMEs) in the manufacturing sector. In particular, this study seeks to answer the following research questions:

1. Is there any relationship between organizational structure and innovative activity of SMEs in Algeria?
2. Is there any relationship between human resource practices and innovative activity of SMEs in Algeria?
3. Is there any relationship between organizational culture and innovative activity of SMEs in Algeria?
4. Is there any relationship between organizational structure, human resource practices, organizational culture and innovative activity of SMEs in Algeria?

1.5 Objective of the Study

This study strives to answer the above research question through the following objectives:

1. To examine the relationship between organizational structure and innovative activity of SMEs in Algeria.
2. To determine the relationship between human resource practices and innovative activity of SMEs in Algeria.
3. To examine the relationship between organizational culture and innovative activity of SMEs in Algeria.
4. To determine the relationships between organizational structure, human resource practices, organizational culture and innovative activity of SMEs in Algeria.

1.5 Scope of the Study

In Algeria, SMEs are located in four different regions in the country. The regions include; the northern region, the eastern region, the western region and the southern region. In view of their large numbers and different locations, this study selected SMEs involved in the manufacturing sector located in the southern region of Algeria. It is assumed that existing manufacturing SMEs in the southern region consisted of heterogeneous firms that rather reflects the general population of SMEs in manufacturing sector in Algeria.

The SMEs covered in this study are confined only to those firms that are registered with the Algerian Chamber of Commerce and Industry. The listing of SMEs obtained from the Chamber was used as the sampling frame of this study. The research model developed in this study was used to assess the innovation activity of the sample firms within this sampling frame. In addition, the study investigated only existing firms that met the following chosen size criteria; firms with not more than 250 employees and that these firms have been in operations for at least three years.

1.5 Significance of the Study

The main objective of the present study was to investigate the relationships between organizational structure, human resource practices, organizational culture and innovative activity in Algerian SMEs. Information from this study is believed to be useful for new and existing SMEs. The study would be able to provide the following theoretical and practical contributions.

Theoretical Contribution

The study will contribute to the literature on innovation and small business, specifically on innovation among Algerian SMEs. This study attempts to improve our understanding of organizational innovation in SMEs in Algeria. In addition, the present research is expected to add to the existing body of knowledge by providing empirical evidence on the important relationships between organizational structure, human resource practices and organizational culture for improving innovation activity in SMEs. In addition, this study may also provide information on the current understanding of innovation among the SMEs in the Algerian manufacturing sector.

Practical Contribution

This study would be able to offer some practical managerial contributions. It is hoped that this research will provide the SMEs owners the insight into the organizational factors for improving their innovation activity. Furthermore, the findings of the study could also be useful in identifying the relevant services and assistance programmers needed by the SMEs, particularly those related to training in skills and knowledge as well as consultancy services required to improve their level of innovation in order for them to become more competitive.

Findings of the study would also serve as a guide for improving the innovation activity of SMEs in the manufacturing sector. For instance, by understanding the link between the organizational factors and innovation activity, manufacturing firms would be able to prioritize the types of strategy to be developed by their firms. Finally, it is hoped that the is research

will provide current owners/managers of SMEs, especially in Algeria the insight into the importance of identifying and developing more effective strategies based on their innovation capabilities.

1.6 Definition of Key Terms

The operational definitions of the important terms adopted in the study are presented below.

Small and Medium-Sized Enterprises (SMEs)

In this study, SMEs are defined based on the number of employees and sales turnover. In Algeria, SMEs refer to firms with an annual sales turnover of less than 2 billion dinars and they employ less than 250 employees.

Organizational Structure

According to this study, organizational structure refers to the degree of organizational complexity, internal communication, and managerial attitude toward change.

Human Resource Practices

In this study, human resource practices refer to the use of practices such as training and development of practices, knowledge sharing, selection and recruiting of creative people and support for experimentation.

Organizational Culture

Organizational culture in this study is defined as encouragement of new ideas and provide feedback, supportive leadership, employee empowerment, tolerance of risks, criteria for judging success and involved in planning change.

Innovation activity

In this study, innovation activity refers to eight different types of activity namely; improve services, improved products, new products, new services, new methods of production, open new markets, new sources of supply and the new way of organizing.

CHAPTER 2

REVIEW OF THE LITERATURE

2.1. Introduction

This chapter presents the literature review on small and medium-sized enterprises (SMEs) as well as innovation in two sections. The first section begins by defining SMEs and describing their importance in Algeria. Following this, the second section reviews the literature and previous studies on innovation as well as the research variables relevant to this study. The information provided in this chapter explains not only the nature and importance of SMEs in Algeria but also the need to study these firms from the innovation perspective.

2.2. Defining Small and Medium-Sized Enterprises

According to Tewari, Skilling, Kumar, and Wu (2013), small and medium-sized enterprises (SMEs) have continued to attract the attention of policy makers in international institutions as well as governments in both developed and developing countries. However, the term SMEs means different things to different people in different parts of the world. As a result, there are numerous different definitions of SMEs presented in the literature.

As far as the definitions of SMEs are concerned, different criteria are used to define these firms. The literature reveals that in general, both qualitative and quantitative criteria are often

used to classify SMEs. However, of the two criteria adopted, SMEs are frequently defined based on the fixed quantitative criteria (Haron & Hashim, 2015; Berisha & Pula, 2015; and Hashim, 2011 and 2011a; Hashim & Abdullah, 2000).

The literature indicates that in both developed and developing countries, fixed quantitative criteria such as the number of employees, the amount of capital, the number of assets, annual balance sheet, and the sales turnover have been commonly being used to categorize the size of firms as small and medium (A. Bouazza et al., 2015; A. B. Bouazza, 2015; Haron & Hashim, 2015; Mi & Baharun, 2013; Hashim, 2010; 2011 and 2011a; Hashim & Wafa, 2002). Nonetheless, the survey by the World Bank (2014) suggested that how firms are defined should not be constrained to only their size but also the interaction of their size with the conditions in a country, in particular the income level.

2.3. Definitions of SMEs in Algeria

Similar to the practice of defining SMEs adopted in many other countries in the world, the SMEs in Algeria are also basically defined based on fixed quantitative criteria. More precisely, the fixed quantitative criteria used to define SMEs in the country include; number of employees, annual sales turnover and annual balance sheet. On the basis of these quantitative criteria, the Secrétariat général du gouvernement in Algeria specifically classified SMEs into three distinct groups. Table 2.1 presents the definitions of SMEs as adopted in Algeria.

Table 2.1
Definitions of SMEs in Algeria

Business Size	Number of Employees	Annual Turnover (Dinar Algeria)	OR Annual Balance Sheet (Dinar Algeria)
Micro	From 1 to 9	Less than 20 million	Less than 10 million
Small	From 10 to 49	From 20 to less than 200 million	From 10 to less than 100 million
Medium	From 50 to 250	From 200 to less than 2 billion	From 100 to less than 500 million

Source: official journal the Act N° 01-18 du 12/12/2001 on declaration 5, 6 and 7 Secrétariat général du gouvernement (2001).

2.4. Small and Medium-sized Enterprises Sectors in Algeria

Like in most countries in the world, there are a large number of SMEs in Algeria operating their businesses in various industries and several different economic sectors. According to the Ministry of Industry and Mines in Algeria (2016), the SMEs in the country can be found in six broad economic sectors. The six economic sectors include the following:

a. Agriculture Sector

The SMEs in this sector are involved in activities that are related to agriculture and fisheries.

b. Oil, Energy, Mines and Services Sector

In this sector, SMEs are involving in activities and woks related to water and energy, hydrocarbons, petroleum, mining and quarrying as well as business, maintenance and personal services.

c. Construction Sector

In this sector, the SMEs are mainly involved in small scale construction and public works related to infrastructure and buildings projects.

d. Manufacturing Sector

The SMEs that operate in this sector manufactured products that are mainly related to mechanical and electrical (ISMME), building materials, chemicals, plastics, food industry, textile industry, leather industry, manufacture of wood and paper, and other various products.

e. Services Sector

The SMEs in this sector provides services such as transportation and communication, commerce related services, hospitality, business services, services to households, financial institutions, corporate real estate, and contract services.

f. Craft Sector

In this sector, the SMEs produce local handicrafts products.

The following Table 2.2 shows the breakdown of the number of SMEs in Algeria according to the six economic sectors as reported by the Algerian Ministry of Industry and Mines in 2016.

Table 2.2

The SMEs Sectors in Algeria (as at the end of 2015)

	Activity Sectors	Private		Public		Total	Total
		Number	%	Number	%	(number)	(%)
I	Agriculture	5 625	0.60	180	33.83	5 805	0.62
II	Oil, Energy, Mines and Services	2 639	0.28	08	1.50	2 647	0.28
III	Construction	168 557	18.05	38	7.14	168 595	18.04
IV	Manufacturing	83 701	8.96	160	30.26	83 861	8.97
V	Services including the professions	456 373	48.86	145	27.26	456 518	48.85
VI	Craft	217 142	23.25	0	0	217 142	23.23
	Total	**934 037**	**100**	**532**	**100**	**934 569**	**100**
	Percentage (%)	**99.94**		**0.06**		**100**	

Source: the Statistical Information Bulletins SMEs, Algerian Ministry of Industry and Mines (2016).

2.5 Importance of SMEs in Algeria

The importance of SMEs to the economies of both developed and developing countries has been emphasized in the literature. For instance, the earlier studies by Hashim (2011) and Amit et al. (2011) viewed SMEs as an essential part of the economies in developing countries because collectively they play a key role in furthering innovation, economic growth and prosperity.

Other studies such as the study by Tewari et al. (2013) have also recognized SMEs as drivers of innovation and economic growth. In addition, the more recent study by Bouazza (2015) further considered SMEs as the heart of economic revival as well.

The Organization for Economic Co-operation and Development (OECD) estimated that SMEs account for 90% of organizations and 63% employees of the workforce in the world (Munro, 2013). More recently, the World Bank (2016) considered SMEs as the fundamental to the economic development in many countries because they are engines of growth in emerging markets and they also provide jobs opportunities as well. In terms of their economic contributions, the World Bank (2015) reported that SMEs in developing countries contributed up to 33% of their gross domestic product (GDP) as well as more than 45% of their total employment.

More specifically, in Algeria, the SMEs are considered as one of the most important levers of new source of economic growth. The Algerian governments view SMEs not only as an essential factor for wealth creation but also for generating employment opportunities as well as in terms of export diversification (Boujemaa Amroune, Hafsi, Bernard, & Plaisent, 2014, 2014; Bouazza et al., 2015; Bouazza, 2015; Bouyacoub, 2003; GHARBI, 2011).

According to the Small and Medium Enterprises and Investment Promotion Agency in the Algerian Ministry of Industry and Mines (2016), the role of the SMEs sector is becoming more important in the economic development of the country. For instance, in the past ten years, with the support from the government, the number of SMEs in Algeria have increased to 934, 569 firms (as at the end of 2015). At the same time, collectively, the SMEs in the country were able to create as many as 2, 371, 020 jobs. The Algerian Ministry of Industry

and Mines (2015) also indicated that SMEs accounted for almost 95% of the total number of businesses in the country. These firms also provide jobs to about 56% of the working population. In addition, in the private non-hydrocarbon sector, SMEs produce 52% of the total production and are also responsible for 35% of the value added in the sector.

Having discussed the definition of SMEs and their importance to the Algerian economy, the following section presents the literature review on innovation as well as the research variables relevant to this study.

2.6 The Concept of Innovation

The review of the literature indicates that over the years, different researchers and authors have offered different of definitions of innovation. For instance, the earlier studies by Kanter (1985), Young (1994) and Drazin and Schoonhoven (1996) referred to innovation as a means to create and maintain sustainable competitive advantage. In addition, other authors such as Drucker (1985) and Covin and Miles (2003) considered innovation as a fundamental component of entrepreneurship.

More specifically, Johannessen et. al (2001), in their study defined innovation as newness and used six different types of innovation activity to measure innovation as newness. Drawn from past studies, the study specifically developed the following six areas of innovation activity; new products, new services, opening new markets, new methods of production, new ways of organizing, and new sources of supply.

The third edition of the Oslo Manual (OECD/Eurostat, 2005) provided not only the different definitions of innovation but also identified several types of innovation. According to the Oslo Manual, there are basically four types of innovation. The four types include; product innovation, process innovation, organizational innovation, and marketing innovation.

Other more recent studies have also defined innovation in other different ways. For instance, the studies by Kraus et al. (2012) and Ghosh (2015) viewed innovation as successful implementation of the processes within an organization where new creative ideas are put into practice to create as well as to sustain the competitive advantage of the organization.

According to Csath (2012), innovation can also be considered as improvements that occurred anywhere in the organization. The improvements may not necessarily be confined to just products, services and processes but they may also include areas such as leadership, human resource, communication, organization, marketing and other business activities in the organization.

More recently, Martínez-Román and Romero (2016) suggested that due to the different nature of innovation, the concept of nature should be viewed from multidimensional perspective. According to the study, innovation has multidimensional character that can impact the inter-relationships that exist between technological innovations (product and process innovations) and also those innovations coming from the administrative system such as marketing.

2.7 Organizational Factors that Influence Innovation Activity in Organization

Given the importance of innovation to organizations, researchers have attempted to investigate various issues concerning innovation. For instance, over the years, a significant number of studies have continuously examined the important factors that can make organizations more innovative. With regard to this, the review of the literature on innovation indicates that findings of previous research have been able to identify several organizational factors that are able to stimulate innovation in business organizations.

As far as the organizational factors are concerned, past research findings have found three important organizational factors that can influence the level of innovation in organizations. According to the findings of these studies, organizational factors such as organizational structure, human resource practices and organization culture can affect the level of innovation in organizations (Ikeda & Marshall, 2016; Dobni, Klassen & Nelson, 2015; Mark, David, Nelson, Keld & Nicolai, 2013; Damanpour & Aravind, 2012; Martins & Terblanche, 2003; Mavondo & Farrell, 2003; Robbins & Coulter, 1999; Roffe, 1999; Michie & Sheehan, 1999; Ahmed, 1998; Ozsomer et. al, 1997; Utterback, 1979; and Pierce & Delbecq, 1977).

Of the research that investigated organizational factors that affect innovation activity in organization, the studies conducted by Ozsomer et. al (1997), Utterback (1979) and Pierce and Delbecq (1977) have discovered that organizational structure can influence the innovativeness of organizations.

More specifically, in the earlier studies by Utterback (1979) and Pierce and Delbecq (1977), the researchers found that organizations with flexible structure can help not only to advance the development and implementation of new ideas, but also that these organizations tend to be better at innovating than rigidly structured firms. Similarly, the study conducted by Ozsomer et.al (1997) concluded that organizations that adopted flexible organizational structures were able to pursue hot, new innovative ideas more quickly and easily.

Apart from organizational factors such as organizational structure, the review of the innovation literature indicates that studies conducted by Galia and Legros (2003), Roffe (1999), Michie and Sheehan (1999), and Salazar and Holbrook (2004) presented evidence that suggests good human resource practices have significant impact on the innovation performance of organizations.

Findings of the studies by Galia and Legros (2003), Roffe (1999), Michie and Sheehan (1999) and Salazar and Holbrook (2004) showed that organizations which emphasized on human resource practices such as training and development, sharing skills, extensive recruitment and selection, employment security, incentive reward systems, and innovative work practices produced not only the highest level of productivity but were also able to enhance their innovative capabilities and activities.

In addition, previous studies on innovation have also provided empirical findings that indicated the importance of organization culture in nurturing and promoting innovation in

organizations. The review of the findings of past studies showed that innovative organizations have certain distinctive cultural characteristics. Among the cultural characteristics identified by the studies included: strong and supporting leadership; employees commitment; employees involvement; encouragement of new ideas; tolerance of risks, ambiguity, conflict; open communication among employees; profit sharing, market and customer orientated as well as emphasis on entrepreneurial behavior (Mavondo & Farrel, 2003; Martins & Terblanche, 2003; Solomon et. al, 2002; Stringer, 2000; and Ahmed, 1998).

With regard to the organizational factors, evidence from the review of previous research suggests that there are at least three important organizational factors that can influence the innovation activity in organizations. The three important factors include; organizational structure, human resource practices and organizational culture. Accordingly, the following section explains these three organizational factors and innovation activity.

2.7.1 Organizational Structure

There is no one acceptable definition of organizational structure. However, most often organizational structure is defined as the formal allocation of work roles and administrative mechanism to integrate and control work activities (Fengjing & Chunsheng, 2010).

The study by Zhou, Vaccaro and Qi (2010) found that organizational structure plays an important role in a business organization. According to the study, organizational structure

helped to organize and cordite activities such as the integration of resources in various divisions, formulation of business strategy, making full use of advantages in international research cooperation and seeking more external resources.

In addition, the other study by Kaplan and Poole (2012) found that organizational structures have the ability to change and create complexity, offer the ideas and concepts for change as well as develop organizational climate that favors risk-taking and the motivation for change.

At the same time, Damanpour and Aravind (2012) indicated in their study that the strong performance management systems attached with structural conditions can not only support innovation in organizations but will also lead to successful adoption and generation of organizational innovation. More specifically, in the study, the researchers also discovered that the study impact of bureaucratic control (centralization of decision making and formalization of procedure) on innovation is not necessarily negative.

The other study by Kaplan and Poole (2012) revealed that organizational structures are able to promote innovation because they are relatively flexible and easy to change. Due to their flexibility and ability to change, the structures are able to encourage employee involvement, open communication, develop team processes that can mobilize employee skills and knowledge, help in effective problem solving and gain employee "buy-in" that can ease implementation of changes.

More recently, the study by Ikeda and Marshall (2016) indicate that most successful organizations attempted to develop strong and direct relationship between innovation activities and business objectives. According to the study, the relationship between innovation activities and business objectives was established by adopting "open" innovative organizational structures as well as creating teams that specialized in innovation in the organizations.

In short, findings previous studies on innovation have provided empirical evidence that suggests the relationship between organizational structure and innovativeness of organizations (Kim, 1980; Damanpour & Gopalakrishnan, 1998; Damanpour & Aravind, 2012; Fengjing & Chunsheng, 2010; Zhou, Vaccaro & Qi, 2010; Kaplan and Poole, 2012; Frezatti, Bido, Cruz, & Machado, 2015; Van Lancker et al., 2016).

2.7.2 Human Resource Practices

In general, human resource practices adopted in organizations incorporate those activities that include the supply as well as the coordination of human resources in an organization. More specifically, according to Bornschier and Chase-Dunn (1985), human resource practices involve not only managing people at work but also the practices seek to achieve integration and coordination with overall planning and other managerial functions in organizations.

Human resource practices have evolved and changed since they were first introduced to organizations. As good business practice, human resource practices have been defined in different ways. For instance, the study by Chen and Huang (2009) referred to human resource practices and policies as the key sources used by organizations to influence individuals' behaviors, skills and attitudes in organizations.

In another studies, Hashim (2011) and Hashim, M. K. (2010a) suggested six essential human resources practices that useful for adoption among small and medium-sized enterprises (SMEs). According to the author, the six practices include; recruitment, selection, compensation, employee empowerment, training and development, and performance appraisal. By adopting these practices effectively, SMEs will be able to improve their organizational performance as well as competitiveness.

In a similar manner, the studies conducted by Mark, David, Nelson, Keld, and Nicolai (2013), Sanders and Lin (2016), and Noor, Hashim, & Sa'ari (2016) defined human resource practices as all the activities that are related to employees in an organization. The activities included not only selection, recruitment, compensation and performance appraisal but also other activities such as job design, decentralization of decision-making, teamwork, job autonomy and job rotation.

Previous studies have shown not only the importance of human resource practices to organizations but also have found that these practices can facilitate the use of resources as well as internal communication that fostered managers' positive attitudes toward innovation in organizations (Damanpour & Aravind, 2012).

Findings of the studies by Eren and Gülsoy (2013) as well as the recent study by De Villiers and Moodley (2015) found the relevance of human resource practices to innovation activity in organizations. More precisely, the results of these studies showed that organizations that adopted effective human resource policies as well as practices are related to innovation activity in their organization.

In addition, according to the studies by Dobni, Klassen and Nelson (2015) and Taneja et al. (2016), organizations need human resources such as competent leaders with skills and who care about innovation as well as be able to use the innovation capabilities that they have to transform knowledge into new products, services and processes for the benefits of their organizations, stakeholders and society at large.

More recent studies by Sanders and Lin (2016) and Ikeda and Marshall (2016) have also uncovered the impact of human resource practices on innovation in organizations. For instance, the study by Sanders and Lin (2016) suggested that human resource practices can encourage innovative behavior among employees. Findings of the study indicate that there exists strong relationship between behavior of employees and innovation in organizations.

Similarly, the study by Ikeda and Marshall (2016) found that human resource practices such as teamwork and collaboration are related to innovation in organizations.

Findings of another recent study by Osman et al. (2016) has also indicated the linkage between human resource practices and innovation. According to the study, organizations that adopt human resource practices that emphasize on practices such as performance evaluation, improved administrative process, increased efficiency and effective work management can lead to innovation.

Findings of previous studies suggest not only the relevance and applicability of human resource practices to organizations such as SMEs but also indicate their important relationship to the innovation developed in these organizations (Chen & Huang, 2009; Fay, Shipton, West, & Patterson, 2015; Hashim et al., 2005; Jiang & Chi-Wei, 2012; Mark et al., 2013; McGuirk et al., 2015; Nieves & Quintana, 2016; Sanders & Lin, 2016; Sparrow, 2016).

2.7.3 Organizational Culture

Apart from organizational factors such as organizational structure and human resource practices, the literature reveals organizational culture as another important internal factor that is associated to innovation in organizations.

As far as the concept of organizational culture is concerned, the literature indicates there is not one standard definition. Various different definitions been offered by different authors. Although there are many definitions of organizational culture, most commonly, organizational culture has been referred to as a system of norms, attitudes, values, beliefs, and customs that governs the behavior of people within an organization.

According to Hashim (2008), organizational culture highlights not only the pattern of beliefs and expectations shared by the people in an organization, but it also shapes the behavior of individuals and groups within the organization as well.

Since organizational culture shapes the behavior of the people, it has an essential role to play in creativity and innovation. As such organizations need to create supportive organizational culture that motivates employees to be creative as well as innovative. Typically, in organizations, their CEOs and present or past founders develop their organizational culture. For instance, according to the long-term study of C-suite executives by the IBM Institute for Business Value, the opinions of the CEOs toward innovation has significant impact on innovation activity in organizations (Berman, Davidson, Ikeda, Korsten, & Marshall, 2016).

Findings of the earlier study by Tsui, Wang and Xin (2006) as well as the more recent study by Naqshbandi, Kaur and Ma (2015) have also shown the existence of the relationship between organizational culture and innovation. Both of these studies indicated that

organizations with organizational culture that values customer orientation, employee development, social responsibility and harmony, were able to improve their level of innovation activity.

More recently, Ikeda and Marshall (2016) indicated that organizational culture enable organizations to be innovative by maintaining their focus on innovation across important business activities, encouraging innovative behaviors as well as identifying the best ways to sustain the innovation momentum. According to the study, the organizational culture of innovative organizations emphasizes on placing innovation as the core value of their culture, build a climate of innovation and prioritize agility as a critical capability.

At the same time, the studies by Laforet (2016) and Taneja et al. (2016) that show not only the importance of organizational culture to innovation activity in organizations but also organizational structure and streamlined processes that supports organizational innovation that have positive impact on organizational performance.

As far as research on innovation is concerned, findings of past studies have provided empirical evidence that suggests the importance of organization culture in nurturing as well as promoting innovation in organizations. The review of the findings of prior studies further indicated that innovative organizations have certain distinctive cultural characteristics. Among the cultural characteristics identified by the studies were: strong and supporting leadership; employees commitment; employees involvement; encouragement of new ideas; tolerance of risks, ambiguity, and conflict; open communication among employees; profit sharing, market and customer orientated, and emphasis on entrepreneurial behavior (Issar &

Navon, 2016; Laforet, 2016; Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2016; Uslu, 2015; Naqshbandi et al., 2015; Hogan & Coote, 2014; Green & Cluley, 2014; Jamrog, Vickers, & Bear, 2006; McLean, 2005; Mavondo & Farrel, 2003; Martins & Terblanche, 2003; Solomon et. al, 2002; Stringer, 2000; and Ahmed, 1998).

2.7.4 Innovation Activity

As mentioned previously, innovation has been defined in many different ways. The literature indicates that there are numerous interpretations of innovation activities in previous studies. For instance, the earlier study by Johannessen et. al (2001) specifically referred to innovation as newness. In the study, the researchers adopted six different types of innovation activity to measure innovation as newness. According to the study, innovation involved the following six activities; new products, new services, new methods of production, opening new markets, new sources of supply and new ways of organizing.

In another earlier study by Sanidas (2005), innovation activity was defined as the factors that have impact on economic development. In the study, the author presented five specific factors. The five factors included: introduction of new goods, introduction of new methods of production, opening of new market, conquest of new supply of new materials and establishment of a new organization in an industry.

Apart from the five factors identified by Sanidas (2005), the other study by Hashim, Ali, and Fawzi (2005) found another other three factors as measurement of innovation activities in small and medium-sized enterprise. The other three factors included; improved products, improved services and new services.

The OECD/Eurostat (2005) proposed a very specific definition of innovation activity. According to OECD/Eurostat, innovation activity referred to the introduction of a new method of developing business practices (including knowledge management) in the workplace that has not been previously used in the organization.

The Community Innovation Survey (CIS IV) conducted by the European Commission (2012) examined the innovation activities among member countries in the European Union. In the survey, innovation activity was measured in terms of new business practices for organizing procedures, new approaches of organizing external relations, new methods of organizing work responsibilities and decision making as well as all types of research and development (R&D) activities.

According to the study conducted by Laforet (2013), organizations need to develop their innovation activity in order to sustain their performance. Findings of the study show that innovation activity developed in organizations has significant effect on their productivity and profit margin as well as other factors such as market leadership and working environment.

The research by Camisón and Villar-López (2014) suggested the need for organizations to not only focus on innovation activity but also to develop their technological innovation capabilities. According to the researchers, both innovation activity and technological innovation capabilities can result in superior as well as sustainability of organizational performance.

More recent studies have also emphasized on the importance of innovation activity. For example, according to Stampfl (2016), most innovation activities in organization derived from scientific, organizational, financial, commercial and technological advancement that eventually lead to the implementation of some form of innovations.

In addition, Simao et al. (2016) stressed that through innovation, organizations are able to reduce their administrative transaction costs as well as improve the satisfaction of their employees in the workplace. Similarly, the recent study by Deshati (2016) further indicated that innovation in the forms of new organizational process, improve commercial practices as well as conducive workplace are essential to organizations and their performance.

2.8 Summary

In summary, the literature emphasizes not only on the importance of SMEs but also the need for these firms be innovative. In addition, the review of the literature indicates the linkage between organizational factors such as organizational structure, human resource practice, organizational culture and innovation activity. Accordingly, the following chapter presents the research methodology adopted in this study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1. Introduction

This chapter provides the research methodology adopted in the study. More specifically, the chapter explains the research framework, the research hypotheses, the measurement of variables, the development of questionnaire, the sampling procedures and research subjects, the data collection method as well as the statistical analysis used to analyze the data gathered in the study.

3.2. Research Framework

As highlighted in the previous chapter, despite the increase in knowledge in the area of innovation, the concept of innovation in SMEs has not been the subject of much research. The literature indicates that previous studies on innovation in the context of SMEs do not offer much in the way of integrating the organizational variables which appeared to have significant relationships with their innovation activity, particularly among the SMEs in Algerian.

In an attempt to narrow the research gap in the area of innovation in SMEs, this study seeks to advance the understanding of innovation by empirically investigating the organizational variables that are associated to innovation activity in SMEs. More precisely, this research focuses on organizational structure, human resource practice, organizational culture and

innovation activity in Algerian SMEs. Based on the suggested relationships of these variables as presented in the literature and past studies, it was hypothesized that organizational structure, human resource practices, organizational culture are related to the innovation activity in Algerian SMEs.

Figure 3.1 below presents the research model of the study. As shown in Figure 3.1, the research model consisted of four research variables. The four variables include; organizational structure, human resource practices and organizational culture as the independent variables and innovation activity as the dependent variable.

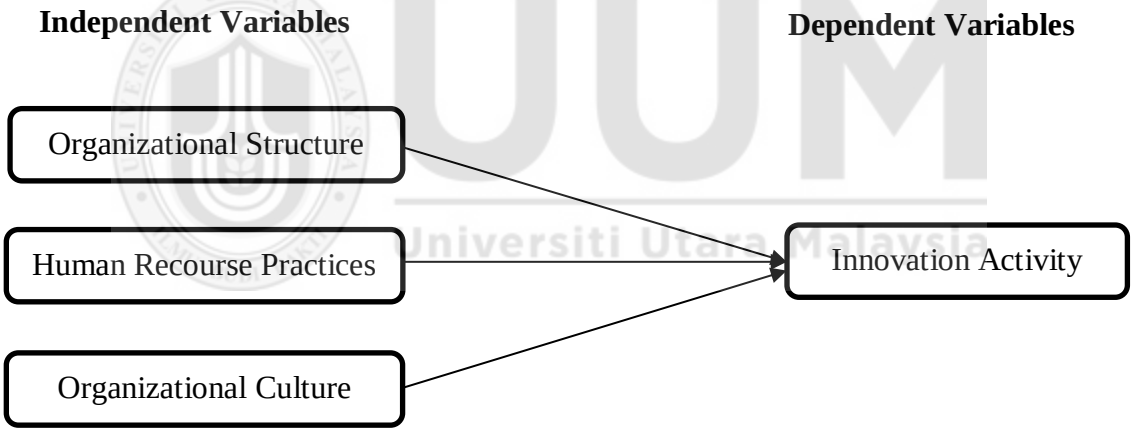


Figure 3.1. The Research Framework

3.3. Hypotheses Development

In order to test the proposed relationships between the variables presented in the research model, this study developed several hypotheses. As indicated earlier, the literature suggests the general proposition that organizational structure, human resource practices, organizational culture are

associated to the innovation activity in SMEs. Applying this general proposition generates the following hypotheses:

H1: There is a significant relationship between organizational structure and innovation activity in SMEs.

H2: There is a significant relationship between human recourse practices and innovation activity in SMEs.

H3: There is a significant relationship between organizational culture and innovation activity in SMEs.

H4: Organizational structure, human resource practices and organizational culture are significantly related to innovation activity in SMEs.

3.4 Measurement of Research Variables

As previously stated, the research variables involved in this study consist of organizational structure, human resource practices and organizational culture as the independent variables as well as innovation activity as the dependent variable. These variables were adapted from previous studies. A five-point numerical scale ranging from "totally disagree" to "totally agree" was used to measure the variables. Table 3.1, Table 3.2, Table 3.3, and Table 3.4 below summarizes the research variables, their dimensions as well as the studies from which the variables they were adapted from.

Table 3.2
Measurements of Organizational Structure

Research Variables	Dimension	No. of Items	Source
Organizational structure (section three)	Organizational Complexity	6	Grover et al. (2007), Terziovski (2010), , Frambach and Schillewaert (2002).
	Internal Communication	4	Hashim et al. (2006), Hogan and Coote (2014)
	Managerial Attitude Toward Change	4	Damanpour and Schneider (2006), Hashim et al. (2006)

Table 3.2

Measurements of Human Resource Practices

Research Variables	Dimension	No. of Items	Source
Human resource practices (section four)	Training and development of practices	6	Ghauri and Rosendo-Rios (2016), Nieves and Quintana (2016)
	Knowledge Sharing	4	Ghauri and Rosendo-Rios (2016), de Souza Bermejo, Tonelli, Galliers, Oliveira, and Zambalde (2016)
	Selection and Recruiting of Creative People	4	Ghauri and Rosendo-Rios (2016), de Souza Bermejo et al. 2016)
	Support for Experimentation	4	Terziovski (2010)

Table 3.3

Measurements of Organizational Culture

Research Variables	Dimension	No. of Items	Source
Organizational Culture (section five)	Encouragement of New Ideas and Provide Feedback	5	de Souza Bermejo et al. (2016), Stock and Zacharias (2011)
	Supportive Leadership	4	Naqshbandi et al. (2015)
	Employee Empowerment	5	Laforet (2016), Hashim et al. (2006)
	Tolerance of Risks	3	Hogan and Coote (2014)
	Criteria for Judging Success	5	Terziovski (2010)
	Involved in Planning Changes	5	Terziovski (2010)

Table 3.4

Measurements of Innovation activity

Research Variables	Dimension	No. of Items	Source
Innovation Activity (section six)	Improved product, improved services, new products, new services, new methods of production, new market, new sources of supply, new way of organizing	8	Hashim et al. (2005), OECD/Eurostat (2005b)

3.5 Questionnaire

The structured questionnaire developed in this study consisted of 84 items and the items were divided into six different sections (see Appendix 1). The six sections included;

Section 1 consists of nine items. These items were be used to seek information regarding the background of the respondents that include; gender, age, marital status, level of education, ownership, number of business started, reason for starting business, years of experience and position in company.

Section 2 contains eight items. The 35 items were used to gather the information on the background of the company. The information included; breath of business operations, year started operations, type of industry, legal form, number of products made and sold, source of capital and supporting agency.

Section 3 comprised 14 items that measured organizational structure. Of the 14 items, six items were used to measure organizational complexity, another four items assessed internal communication and the remaining four items rated managerial attitude toward change.

Section 4 included 18 items that measured human resource practices. Six of the 18 items evaluate training and development practices, another four items appraised knowledge sharing, the other four items assessed selection and recruiting practices and the remaining four items rated the support for experimentation practices.

Section 5 composed of 27 items that measured organizational culture. The 27 items were used to rate the following six dimensions of organizational culture, encourage of new ideas and

provide feedback (5 items), supportive leadership (4 items), employee empowerment (5 items), tolerance of risks (3 items), criteria for judging success (5 items) and involved in planning changes (5 items).

Section 6 focused on measuring the innovation activity of the SMEs by using seven items. The seven items included; improved product, improved services, new product, new services, new method of production, open new market, new sources of supply and new way of organizing.

3.6 Reliability and Validity of Measurement

The reliability of the measurement of the research variables was examined by using reliability analysis. The coefficient alphas of the measures were used to determine the reliability of the measurement (see pages 48 to 55). The questionnaire was also assessed for validity through the content (face) validity approach. Copies of the questionnaires were also showed to experts (associate professors and professors) and their feedback suggested that most of the measures reflected their conceptual content. Therefore, some tentative evidence of validity of the variables was obtained in this study.

3.7 Target Population and Sampling

The target population of this study was the SMEs operating in the manufacturing sector in southern Algeria. The SMEs involved in this were confined only to those firms that were registered with the Algerian Chamber of Commerce and Industry. The listing consisted of 260

SMEs obtained from the Chamber was used as the sampling frame of this study. From the listing, the study identified and selected 125 SMEs. These SMEs were chosen based on their number of employees (10 to 250 employees) and annual turnover (between 100 million and two billion Dinar Algerian).

3.8 Data Collection Method

The data for the study was collected by using the structured questionnaire. Given the proximity of the SMEs, the questionnaires were personally distributed to them. More specifically, the questionnaires were delivered to the Managing Director/CEO, General Managers and Senior Managers of the selected SMEs. During the distribution of the questionnaires, the 125 respondents were requested to answer the questionnaires and informed that the researcher would come back to collect them after two weeks. Of the 125 questionnaires distributed, the researcher was only able to collect back 98 questionnaires. From the 98 questionnaires, only 77 respondents completed the questionnaires. The response rate of was 61.6 percent.

3.9 Statistical Analysis

This study used the Least Squares Structural Modeling (PLS-SEM) to analyze the data collected as well as to test the hypotheses of the study. The first part of the data analysis involved descriptive statistics. This involves determining the percentages, means, modes, standard deviations, minimum and maximum value of the number of items used in collecting the data for the study. In the second part, the correlation analysis was used test hypothesis 1 through hypothesis 4. The correlation analysis was undertaken to determine the relationships

between organizational structure, human resource practices, organizational culture and innovation activity in the SMEs. More specifically, this method was employed to examine the statistically significant relationship that exists between organizational structure, human resource practices, organizational culture and innovation activity.

3.10 Summary

In short, this chapter presented the research methodology adopted in this study. More precisely, the chapter explained the research framework, the research hypotheses, research variables, the questionnaire, the research sample procedures, the data collection method as well as the analysis of the data collected in the study. Correspondingly, the following chapter 4 provides the results of the study.

CHAPTER 4

THE FINDINGS

4.1. Introduction

In this chapter, the results of the study are presented in two parts. In the first part, the chapter provides the descriptive statistics of the characteristics of the respondents, the profile of the participating SMEs as well as the research variables investigated in the study. Following this, the second part shows the results of the hypotheses testing. The research hypotheses developed in the study was tested by using the structural equation modeling (PLS-SEM).

4.2. Characteristics of the Respondents

The respondents of study comprised of owners of the companies, Chief Executive Officers and managers. Of the 77 respondents, 51 respondents were managers of their companies, another 16 were owners as well as Chief Executive Officer (CEO), the other eight respondents were owners as well as managers and the remaining two were owners but not manager.

The personal characteristics of the 77 respondents that participated in the study are summarized in the following Table 4.1. As shown in Table 4.1, out of the 77 respondents, 74 were males and only three respondents were female. The age of the respondents ranged from 20 years old to more than 50 years old. Of the 77 respondents, 62 were married, 13 were single and two were widowed. As for their education, 47 respondents graduated from university,

another 22 graduated from college (institute) and the remained two respondents completed their secondary school. Their work experience ranged from between 10 years to more than 20 years.

Table 4.1

Characteristics of the Respondents

Characteristics	Frequency	Percent
Gender:		
Male	74	96.1
Female	3	3.9
Age:		
20-29 years	9	11.7
30-39 years	26	33.8
40-49 years	28	36.4
Above 50	14	18.2
Marital Status:		
Married	62	80.5
Single	13	16.9
Widowed	2	2.6
Highest Level of Education:		
Secondary school	8	10.4
College or institute	22	28.6
University	47	61.0
Years of Experience:		
Less than 10 years	37	48.1
Between 10 to 20 years	22	28.6
Above 20 years	18	23.4

4.3 Profile of the Sample Firms

The profile of the SMEs that were involved in this study is presented in the following Table 4.Table 4.2. The profile included; the breath of their firms' operations, the age of the firms, types of industry, legal form, number of products produced and number of employees.

Table 4.2
Profile of the Sample Firms

Characteristics	Frequency	Percent
Breadth of Company's Operations		
International	6	7.8
National	53	68.8
Regional	16	20.8
Local	2	2.6
Firm Age		
3-10 years	39	50.6
11-20 years	22	28.6
above 21 years	16	20.8
Type of Industry		
Mechanical and Electrical (ISMME)	8	10.4
Building Materials	14	18.2
Chemicals or/and Plastics	11	14.3
Food Industry	17	22.1
Textile, Leather Industry	6	7.8
Manufacture of Wood and Paper	14	18.2
Other Industry	7	9.1
Legal Form		
Single Member Limited Liability Company	18	23.4
Limited Commercial Companies	2	2.6
Stock Companies	40	51.9
Limited Company	5	6.5
company personal	12	15.6
No. of Products		
1-5 products	47	61.0
6-10 products	16	20.8
above 11 products	14	18.2
No. of Employees		
5-9 Employees	8	10.4
10-49 Employees	29	37.7
50-250 Employees	44	57.1

4.4 Descriptive Statistics of the Research Variables

The descriptive statistics of the four research variables investigated in this study are summarized in the following Table 4.3. The statistics listed in Table 4.3 included; the mean, standard deviation, minimum and maximum values of the three independent variables (organizational structure, human recourse practices, and organizational culture) and the dependent variable (innovation activity).

As shown in Table 4.3, organizational culture (Org Cul) appeared to have the lowest mean value (3.541). Meanwhile, innovation activity (IA) has the highest mean value (3.883). The mean value for organizational structure (Org Str) was 3.818 and human resource practices (HRP) have a mean value of 3.586.

Table 4.3

Summary of the Descriptive Statistics

Variables/ Dimensions	N	Number of Items	Minimum	Maximum	Mean (M)	Std. Deviation (SD)
Org_Str	**77**	**14**	**1.00**	**5.00**	**3.818**	**0.891**
OC	77	6	1.00	5.00	3.660	0.925
IC	77	4	1.00	5.00	4.299	1.006
MATC	77	4	1.00	5.00	3.497	1.150
Org Cul	**77**	**27**	**1.00**	**5.00**	**3.541**	**0.956**
ENI	77	5	1.00	5.00	3.442	1.142
SL	77	4	1.00	5.00	3.731	1.235
EE	77	5	1.00	5.00	3.608	1.155
TR	77	3	1.00	5.00	3.589	1.017
CJS	77	5	1.00	5.00	3.366	1.228
IPC	77	5	1.00	5.00	3.509	1.138

Table 4. (Continued)

HRP	**77**	**18**	**1.00**	**5.00**	**3.586**	**0.995**
TDP	77	6	1.00	5.00	3.548	1.093
KS	77	4	1.00	5.00	3.672	1.147
SRC	77	4	1.00	5.00	3.815	1.188
SE	77	4	1.00	5.00	3.308	1.266
IA	**77**	**8**	**2.00**	**5.00**	**3.883**	**0.953**

Measurement based on a five-point scale anchored on 1 = strongly disagree to 5= strongly agree.

Note: Org_Str= Organizational Structure, OC=Organizational Complexity, IC=Internal Communication, MATC=Managerial Attitude Toward Change, HRP= Human Recourse Practices, TDP=Training and development of practices, KS=Knowledge Sharing, SRC=Selection and Recruiting of Creative People, SE=Support for Experimentation, Org_Cul= Organizational Culture, ENI=Encouragement of New Ideas and Provide Feedback, SL=Supportive Leadership, EE=Employee Empowerment, TR=Tolerance of Risks, CJS=Criteria for Judging Success, IPC=Involved in Planning Changes, IA=Innovation activity.

4.5 Assessment of the Measurement Model

The theoretical model in the study was estimated by using the PLS structural equation modeling (PLS-SEM) SmartPLS software application (Ringle, Wende, & Will, 2010). The PLS SEM is based on two significant multivariate techniques including factor analysis and multiple regressions (Joseph F Hair, 2010). The goodness of the measurement model or the outer model was determined by using the construct validity and convergent validity tests. The following section presents and explains the results of the construct validity and convergent validity tests.

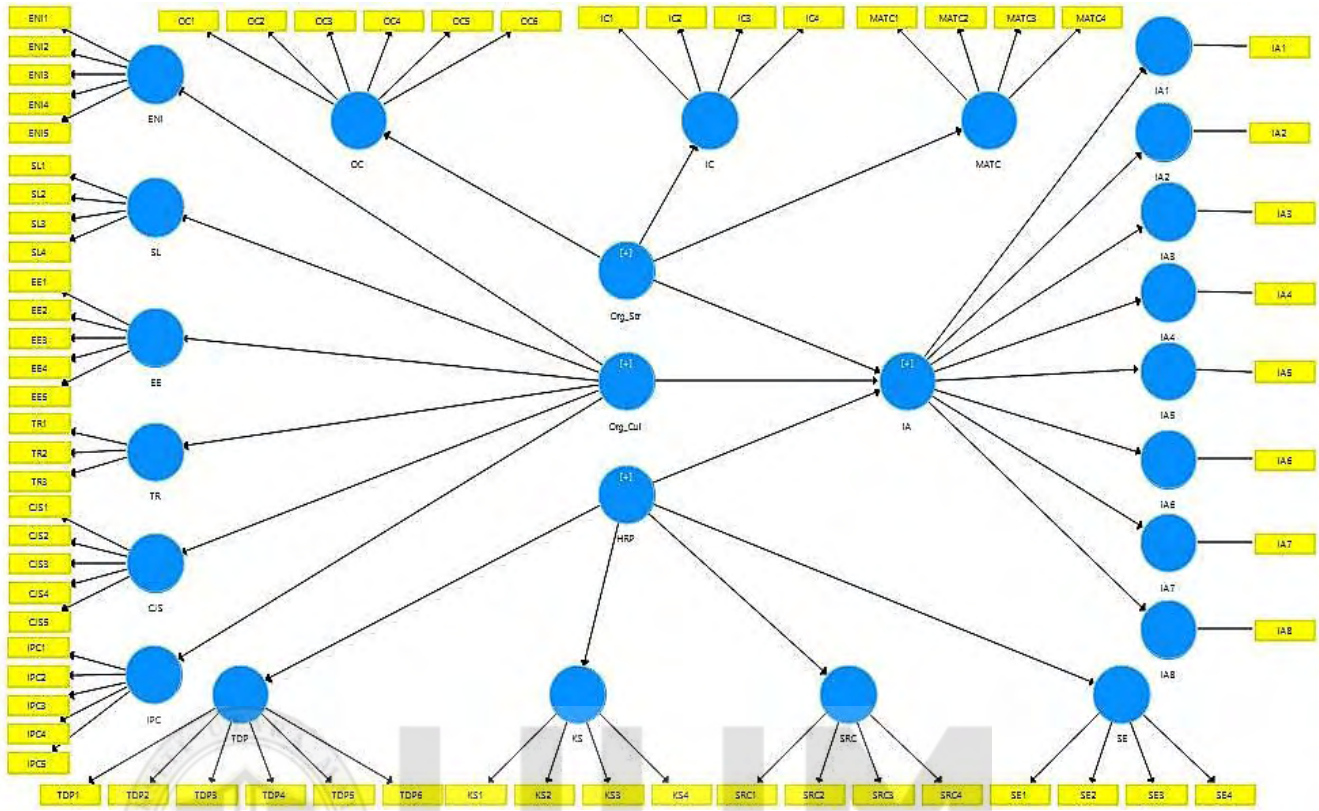


Figure 4.4

The Second Order Structural Model for Individual Latent Variable in First Stage

4.5.1 Construct Validity

The construct validity was determined based on the level of the proposed items properly measured the concept of the construct that they intended to measure (Joseph F Hair, 2010). Items that measure a construct should load higher on their respective constructs. In the study, the construct validity was assessed through discriminant validity and convergent validity (Sekaran and Bougie, 2013).

4.5.1.1 Discriminant Validity

In determining the discriminant validity, the study followed the recommendation by Joseph F Hair (2007) . According to the author, outer model loading of 0.50 and above reflected acceptable and valid model. Following this suggestion, it was found that out of the 67 measurement items in the current study, four items have outer loadings below 0.50 and they were deleted accordingly. The four items included; OC1, OC2, IPC1, and IA3. The remaining 63 items were retained in the model as they had loadings between 0.709 and 0.813. The following Table 4. and Figure 4.5 show the second order structural model for individual latent variable after the deletion of the four items.

Table 4. presents the loading values according to the indicators and construct of this study. As far as this study is concerned, the results show that all of the indicators were highly loaded to their own construct and they ranged from 0.521 to 0.929. These results confirmed the construct validity of the measurement model.

Table 4.4

Factor Loading and Cross Loading

	CJS	EE	ENI	IA	IC	IPC	KS	MATC	OC	SE	SL	SRC	TDP	TR
CJS1	**0.704**	0.812	0.764	0.141	0.653	0.386	0.423	0.647	0.543	0.529	0.774	0.704	0.405	0.627
CJS2	**0.817**	0.498	0.672	0.111	0.391	0.304	0.407	0.499	0.351	0.518	0.551	0.385	0.528	0.608
CJS3	**0.916**	0.453	0.527	0.293	0.398	0.448	0.381	0.311	0.444	0.439	0.597	0.388	0.590	0.493
CJS4	**0.911**	0.501	0.506	0.352	0.430	0.470	0.403	0.418	0.482	0.518	0.674	0.497	0.661	0.518
CJS5	**0.721**	0.419	0.395	0.095	0.444	0.592	0.525	0.318	0.479	0.457	0.505	0.297	0.582	0.372
EE1	0.571	**0.806**	0.527	0.228	0.404	0.608	0.337	0.335	0.425	0.410	0.697	0.562	0.458	0.479
EE2	0.561	**0.800**	0.579	0.145	0.494	0.426	0.519	0.538	0.426	0.235	0.710	0.416	0.391	0.545
EE3	0.557	**0.871**	0.620	0.276	0.440	0.551	0.322	0.519	0.454	0.493	0.802	0.612	0.456	0.546
EE4	0.615	**0.858**	0.695	0.080	0.575	0.356	0.413	0.603	0.487	0.453	0.694	0.672	0.442	0.599
EE5	0.387	**0.670**	0.582	0.072	0.529	0.181	0.429	0.544	0.475	0.318	0.467	0.405	0.284	0.343
ENI1	0.443	0.580	**0.758**	0.162	0.381	0.290	0.287	0.560	0.372	0.297	0.609	0.357	0.376	0.509
ENI2	0.474	0.572	**0.809**	-0.019	0.675	0.217	0.508	0.699	0.509	0.391	0.555	0.392	0.381	0.416
ENI3	0.652	0.697	**0.810**	0.218	0.651	0.432	0.505	0.638	0.450	0.584	0.727	0.581	0.491	0.547
ENI4	0.666	0.674	**0.814**	0.291	0.558	0.336	0.192	0.500	0.365	0.384	0.713	0.418	0.410	0.518
ENI5	0.539	0.316	**0.708**	0.243	0.351	0.180	0.352	0.379	0.257	0.399	0.494	0.248	0.283	0.470
IA1	0.180	0.284	0.161	**0.565**	0.187	0.307	0.171	0.180	0.050	0.322	0.239	0.238	0.139	0.241
IA2	0.242	0.057	0.081	**0.720**	0.084	0.209	-0.056	0.096	-0.104	0.266	0.151	-0.106	0.085	0.082
IA4	0.120	0.005	0.060	**0.681**	0.108	-0.155	-0.103	0.157	0.010	-0.036	0.107	-0.074	-0.137	0.027
IA5	0.157	0.081	0.134	**0.814**	-0.114	0.032	-0.254	0.172	-0.079	0.187	0.216	0.138	-0.095	0.133
IA6	0.217	0.115	0.135	**0.850**	-0.072	0.127	-0.083	0.060	-0.030	0.255	0.192	0.124	0.038	0.027
IA7	0.000	-0.043	0.015	**0.771**	-0.098	-0.072	-0.232	-0.034	-0.077	0.000	0.138	-0.065	-0.170	0.035
IA8	0.247	0.329	0.374	**0.740**	0.028	0.000	-0.091	0.200	0.009	0.318	0.278	0.219	-0.038	0.328
IC1	0.563	0.625	0.625	-0.146	**0.884**	0.470	0.600	0.589	0.704	0.269	0.664	0.508	0.489	0.376

Table 4.4 (Continued)

	CJS	EE	ENI	IA	IC	IPC	KS	MATC	OC	SE	SL	SRC	TDP	TR
IC2	0.399	0.386	0.511	0.114	**0.871**	0.315	0.443	0.428	0.392	0.306	0.502	0.254	0.338	0.201
IC3	0.361	0.424	0.424	0.059	**0.834**	0.165	0.354	0.370	0.391	0.166	0.450	0.252	0.189	0.063
IC4	0.609	0.578	0.720	0.013	**0.843**	0.369	0.509	0.739	0.602	0.496	0.623	0.505	0.382	0.445
IPC2	0.432	0.411	0.271	0.234	0.201	**0.898**	0.347	0.373	0.302	0.529	0.514	0.346	0.606	0.592
IPC3	0.179	0.404	0.165	-0.018	0.214	**0.765**	0.313	0.365	0.362	0.185	0.345	0.191	0.374	0.380
IPC4	0.503	0.496	0.390	-0.027	0.256	**0.866**	0.366	0.304	0.451	0.479	0.514	0.407	0.639	0.545
IPC5	0.555	0.448	0.386	0.130	0.615	**0.720**	0.589	0.393	0.487	0.550	0.441	0.365	0.467	0.341
KS1	0.509	0.458	0.445	-0.267	0.570	0.431	**0.906**	0.432	0.388	0.438	0.429	0.490	0.653	0.384
KS2	0.517	0.416	0.322	0.056	0.361	0.579	**0.838**	0.205	0.231	0.511	0.444	0.353	0.638	0.292
KS3	0.431	0.354	0.459	-0.143	0.462	0.140	**0.776**	0.376	0.334	0.381	0.347	0.396	0.445	0.327
KS4	0.281	0.420	0.351	-0.090	0.503	0.483	**0.816**	0.350	0.247	0.448	0.333	0.423	0.545	0.267
MATC1	0.516	0.495	0.645	0.202	0.536	0.320	0.363	**0.860**	0.504	0.422	0.649	0.359	0.430	0.499
MATC2	0.387	0.583	0.582	0.034	0.590	0.500	0.343	**0.799**	0.520	0.563	0.587	0.626	0.494	0.639
MATC3	0.430	0.522	0.528	0.129	0.444	0.527	0.321	**0.845**	0.542	0.437	0.627	0.411	0.497	0.694
MATC4	0.484	0.459	0.595	0.191	0.533	0.094	0.310	**0.786**	0.601	0.426	0.496	0.496	0.343	0.434
OC3	0.431	0.685	0.511	0.034	0.427	0.420	0.310	0.472	**0.519**	0.442	0.656	0.580	0.375	0.380
OC4	0.552	0.418	0.444	-0.149	0.665	0.377	0.331	0.556	**0.875**	0.251	0.450	0.388	0.264	0.297
OC5	0.338	0.361	0.319	0.039	0.447	0.324	0.173	0.464	**0.806**	0.153	0.369	0.302	0.241	0.455
OC6	0.412	0.310	0.294	-0.025	0.355	0.414	0.291	0.531	**0.833**	0.207	0.313	0.348	0.280	0.470
SE1	0.552	0.302	0.399	0.159	0.261	0.389	0.501	0.418	0.249	**0.874**	0.265	0.648	0.579	0.510
SE1	0.552	0.302	0.399	0.159	0.261	0.389	0.501	0.418	0.249	**0.874**	0.265	0.648	0.579	0.510
SE2	0.576	0.359	0.483	0.198	0.283	0.456	0.443	0.459	0.381	**0.899**	0.351	0.629	0.591	0.570
SE3	0.565	0.600	0.527	0.388	0.385	0.646	0.412	0.541	0.269	**0.783**	0.619	0.570	0.548	0.596
SE4	0.356	0.376	0.394	0.306	0.339	0.403	0.440	0.491	0.210	**0.813**	0.406	0.617	0.529	0.362

Table 4. (Continued)

	CJS	EE	ENI	IA	IC	IPC	KS	MATC	OC	SE	SL	SRC	TDP	TR
SL1	0.717	0.705	0.824	0.326	0.599	0.516	0.472	0.608	0.347	0.591	**0.855**	0.522	0.590	0.657
SL2	0.720	0.700	0.584	0.206	0.519	0.545	0.421	0.519	0.511	0.353	**0.875**	0.539	0.609	0.506
SL3	0.655	0.715	0.669	0.109	0.653	0.490	0.453	0.674	0.627	0.277	**0.850**	0.396	0.475	0.540
SL4	0.628	0.856	0.740	0.327	0.564	0.442	0.298	0.711	0.517	0.447	**0.929**	0.642	0.505	0.636
SRC1	0.471	0.393	0.342	0.100	0.282	0.410	0.278	0.373	0.488	0.710	0.352	**0.800**	0.470	0.397
SRC2	0.349	0.507	0.227	0.179	0.215	0.509	0.415	0.377	0.356	0.636	0.426	**0.832**	0.603	0.505
SRC3	0.582	0.715	0.655	0.075	0.589	0.230	0.471	0.613	0.453	0.578	0.657	**0.869**	0.479	0.550
SRC4	0.571	0.671	0.572	0.123	0.493	0.275	0.527	0.604	0.463	0.586	0.611	**0.918**	0.554	0.534
TDP1	0.667	0.575	0.447	0.140	0.473	0.734	0.606	0.324	0.301	0.643	0.657	0.569	**0.794**	0.443
TDP2	0.553	0.341	0.371	-0.003	0.261	0.535	0.558	0.465	0.211	0.528	0.519	0.449	**0.915**	0.622
TDP3	0.466	0.466	0.376	-0.049	0.157	0.542	0.421	0.359	0.225	0.577	0.466	0.558	**0.746**	0.463
TDP4	0.511	0.482	0.520	0.126	0.321	0.413	0.433	0.516	0.335	0.493	0.573	0.613	**0.777**	0.534
TDP5	0.521	0.184	0.206	-0.244	0.375	0.241	0.519	0.339	0.354	0.382	0.241	0.361	**0.613**	0.330
TDP6	0.425	0.291	0.413	-0.144	0.388	0.533	0.688	0.506	0.321	0.462	0.386	0.313	**0.808**	0.498
TR1	0.605	0.568	0.511	0.122	0.181	0.514	0.244	0.510	0.370	0.451	0.583	0.474	0.467	**0.874**
TR2	0.480	0.360	0.523	0.257	0.173	0.409	0.192	0.498	0.365	0.524	0.474	0.407	0.557	**0.742**
TR3	0.489	0.585	0.503	0.143	0.462	0.472	0.476	0.655	0.500	0.498	0.553	0.522	0.496	**0.796**

Note: OC=Organizational Complexity, IC=Internal Communication, MATC=Managerial Attitude Toward Change, TDP=Training and development of practices, KS=Knowledge Sharing, SRC=Selection and Recruiting of Creative People, SE=Support for Experimentation, ENI=Encouragement of New Ideas and Provide Feedback, SL=Supportive Leadership, EE=Employee Empowerment, TR=Tolerance of Risks, CJS=Criteria for Judging Success, IPC=Involved in Planning Changes, and IA=Innovation activity.

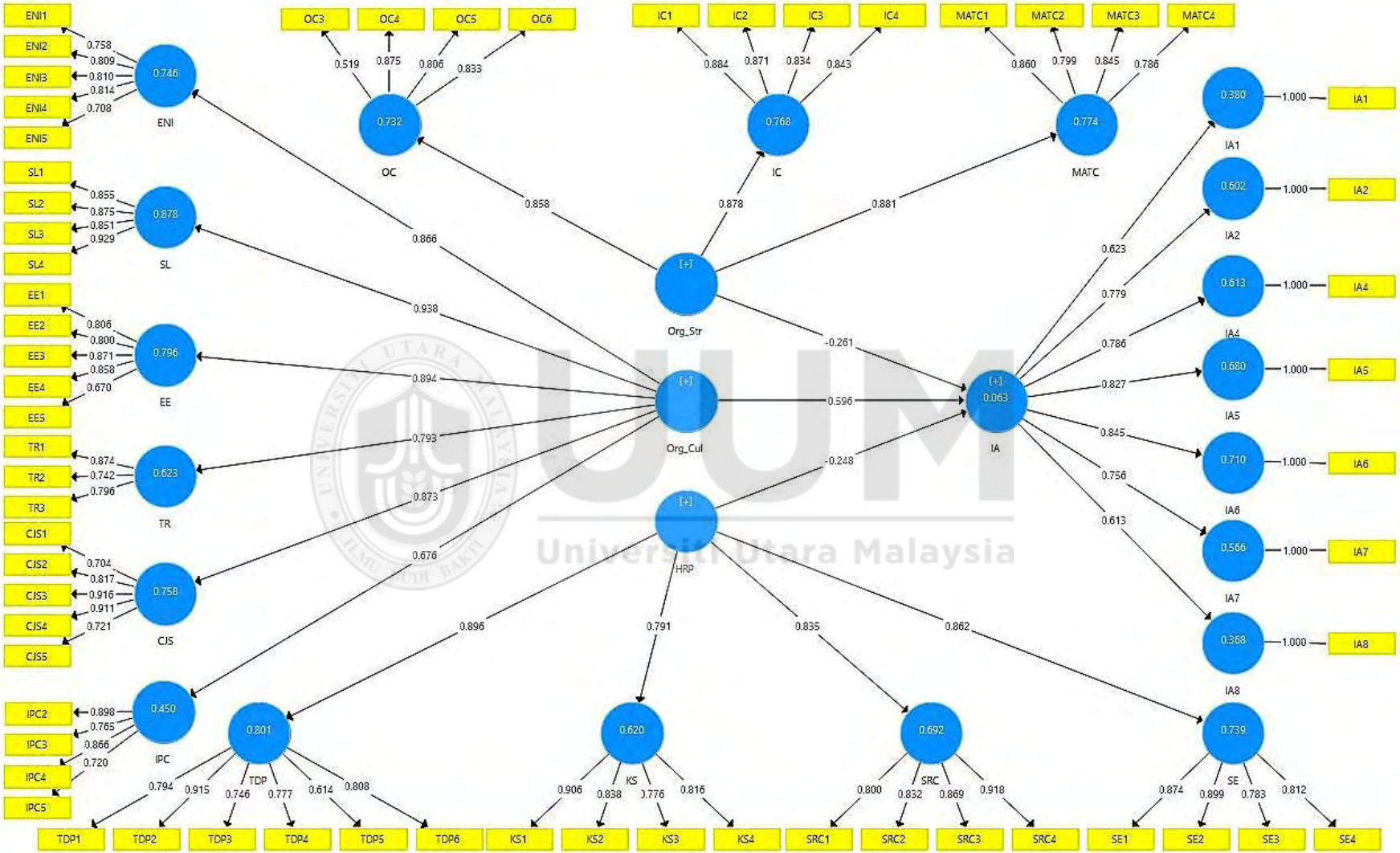


Figure 4.5

The Second Order Structural Model for Individual Latent Variable after Deletion

Note. Items OC1, OC2,IPC1, and IA3 have been deleted

4.5.1.2 Convergent Validity

As for the determining the convergent validity of the model, the study adopted the recommendation by Joe F. Hair, Ringle and Sarstedt (2011). These authors suggested the convergent validity can be tested by assessing the Composite Reliability (CR), factor loadings and Average Variance Extracted (AVE) with a standard value of CR greater than 0.70, factor loadings greater than 0.70, and AVE greater than 0.50. However, the AVE value of 0.50 can be interpreted as the fact that half of the variance of the manifest variable is described by the underlying variable on average (Henseler et al., 2009).

The results of the convergent validity are presented in the Table 4.5. As shown in Table 4.3, the loading of all items is greater than 0.70 and the composite reliability value (CRV) of all constructs is greater than 0.70. The Average Variance Extracted (AVE) values of all constructs are also greater than 0.50, ranging from 0.547 to 0.771. The Composite Reliability (CR) values ranged from 0.847 to 0.936. Taken together, these results statistically fulfilled the convergent validity criteria recommended by Hair et al. (2011). In addition, Table 4. shows that the Cronbach's Alpha scores of all the items are higher than 0.70. The scores ranged from 0.728 to 0.900. These results also suggest the reliability of the measures used in the study.

Table 4.5

The Convergent Validity

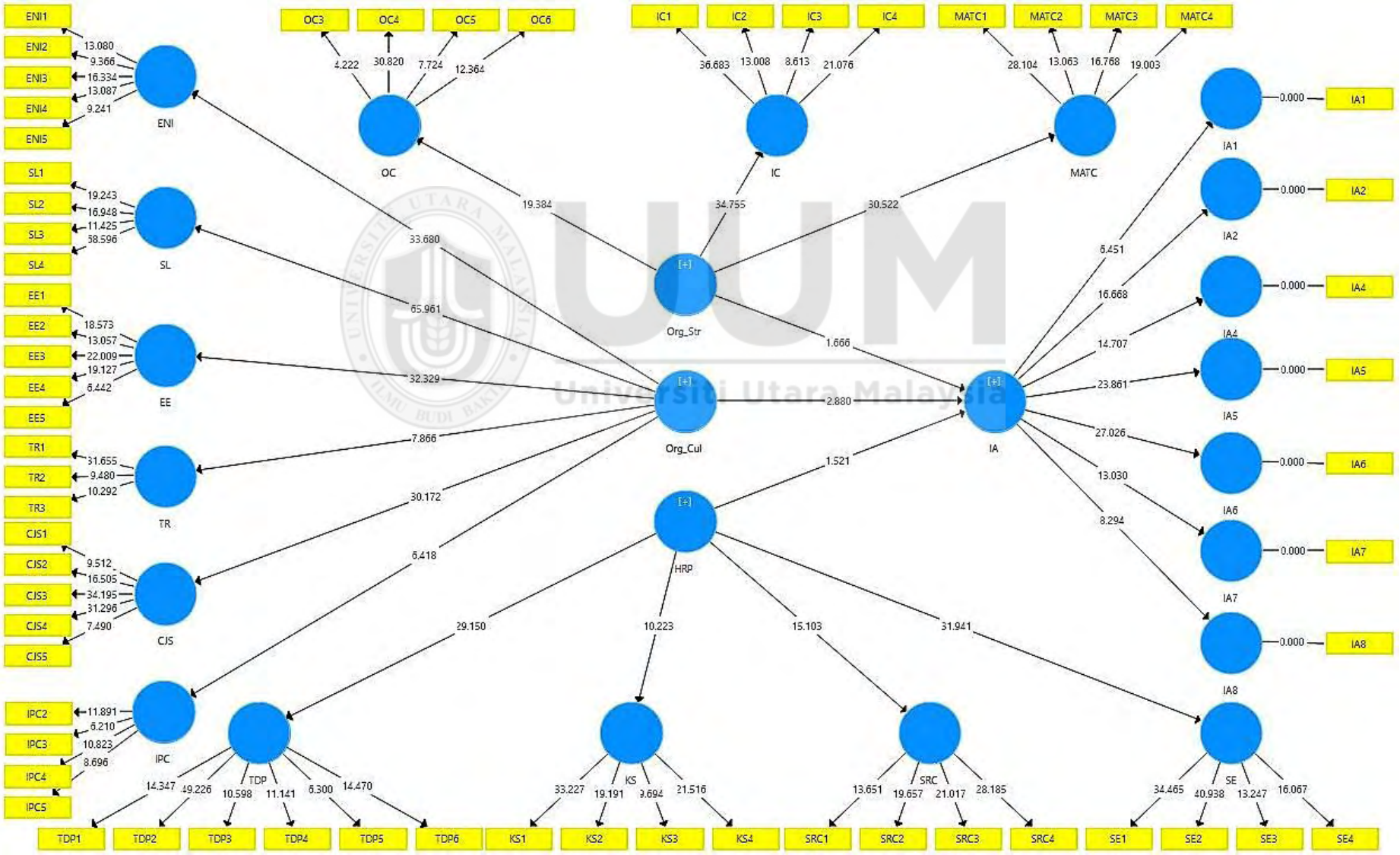
Construct	Second Order	Items	Loading	Cronbach's Alpha	CR	AVE
Organizational Complexity		OC3	0.519	0.756	0.850	0.595
		OC4	0.875			
		OC5	0.806			
		OC6	0.833			
Internal Communication		IC1	0.884	0.882	0.918	0.736
		IC2	0.871			
		IC3	0.834			
		IC4	0.843			
Managerial Attitude Toward Change		MATC1	0.860	0.841	0.893	0.677
		MATC2	0.799			
		MATC3	0.845			
		MATC4	0.786			
	Organizational Structure	OC	0.858			
		IC	0.878			
		MATC	0.881		0.905	0.761
Training and development of practices		TDP1	0.794	0.868	0.902	0.609
		TDP2	0.915			
		TDP3	0.746			
		TDP4	0.777			
		TDP5	0.613			
		TDP6	0.808			
Knowledge Sharing		KS1	0.906	0.855	0.902	0.698
		KS2	0.838			
		KS3	0.776			
		KS4	0.816			
Selection and Recruiting of Creative People		SRC1	0.800	0.877	0.916	0.733
		SRC2	0.832			
		SRC3	0.869			
		SRC4	0.918			
Support for Experimentation		SE1	0.874	0.864	0.908	0.712
		SE2	0.899			
		SE3	0.783			
		SE4	0.813			
	Human Resource Practices	TDP	0.896			
		KS	0.79			
		SRC	0.835			
		SE	0.862		0.910	0.717

Table 4. (Continued)

Encouragement of New Ideas and Provide Feedback		ENI1	0.758	0.840	0.886	0.610
		ENI2	0.809			
		ENI3	0.810			
		ENI4	0.814			
		ENI5	0.708			
Supportive Leadership		SL1	0.855	0.900	0.931	0.771
		SL2	0.875			
		SL3	0.850			
		SL4	0.929			
Employee Empowerment		EE1	0.806	0.861	0.901	0.646
		EE2	0.800			
		EE3	0.871			
		EE4	0.858			
		EE5	0.670			
Tolerance of risks		TR1	0.874	0.728	0.847	0.649
		TR2	0.742			
		TR3	0.796			
Criteria for Judging Success		CJS1	0.704	0.873	0.910	0.670
		CJS2	0.817			
		CJS3	0.916			
		CJS4	0.911			
		CJS5	0.721			
Involved in Planning Changes		IPC2	0.898	0.830	0.887	0.665
		IPC3	0.765			
		IPC4	0.866			
		IPC5	0.720			
	Organizational Culture	ENI	0.866			
		SL	0.938			
		EE	0.894			
		TR	0.793			
		CJS	0.873			
		IPC	0.676		0.936	0.713
Innovation Activity		IA1	0.623	0.869	0.893	0.547
		IA2	0.779			
		IA4	0.786			
		IA5	0.827			
		IA6	0.845			
		IA7	0.756			
		IA8	0.613			

Figure 4.6

Path Model Significance Results



4.6 Hypotheses Testing

The hypotheses of the study involved testing the relationships between organizational structure, human resource practices, organizational culture and innovation activity in the SMEs. The hypotheses were tested by using the bootstrapping method in the SmartPLS 3. The path coefficients derived from the bootstrapping method were used to determine the statistical significance of the relationships between organizational structure, human resource practices, organizational culture and innovation activity. The statistical significance of the relationships between these variables were based on the T-values and P-values of the path coefficients. In the study, the two-tailed test was used and based on the following T-values and P-values; T-value (±2.57) and P-value (0.01), T-value (±1.96) and P-value (0.05), and T-value (±1.65) and P-value (0.10).

4.6.1 Relationship Between Organizational Structure and Innovation Activity

Table 4.6 below present the correlations results between the organizational structure and the innovation activity of the 77 firms that participated in the study. The results in Table 4.6 indicate that there were negatively significant relationships between organizational and innovation activity (β=-0.262, t=1.666, p<0.1). Specifically, the correlations between the organizational structure and improve services, improved products, new services, new methods of production, open new markets were negatively significant. However, the correlations between the organizational structure and new sources of supply and the new way of organizing were not significant.

Table 4.6

Correlations Between Organizational Structure and Innovation Activity

Independent	Dependent	Std Bet	Std error	T-value	P-value	Decision
Organizational structure	**Innovation activity**	**-0.262**	**0.156**	**1.666***	**0.097**	**Supported**
	Improve services	-0.158	0.096	1.689*	0.092	Supported
	Improved products	-0.203	0.122	1.664*	0.097	Supported
	New services	-0.202	0.120	1.710*	0.088	Supported
	New methods of production	-0.217	0.131	1.652*	0.100	Supported
	Open new markets	-0.221	0.133	1.659*	0.098	Supported
	New sources of supply	-0.198	0.120	1.637	0.103	Not Supported
	New way of organizing	-0.165	0.106	1.506	0.133	Not Supported

Note. ***p<0.01, **p<0.05, *p<0.1

Source: SmartPLS

4.6.2 Relationship Between Human Resource Practices and Innovation Activity

The following Tables 4.7 provides the results of the correlations between the human resource practices and the innovation activity of the 77 firms in the study.

Table 4.7

Correlations Between Human Recourse Practices and Innovation Activity

Independent	Dependent	Std Bet	Std error	T-value	P-value	Decision
Human resource practices	**Innovation activity**	**-0.231**	**0.163**	**1.521**	**0.129**	**Not Supported**
	Improve services	-0.138	0.097	1.590	0.113	Not Supported
	Improved products	-0.181	0.129	1.494	0.136	Not Supported
	New services	-0.182	0.129	1.513	0.131	Not Supported
	New methods of production	-0.192	0.136	1.508	0.133	Not Supported
	Open new markets	-0.195	0.138	1.518	0.130	Not Supported
	New sources of supply	-0.176	0.125	1.493	0.136	Not Supported
	New way of organizing	-0.144	0.104	1.466	0.144	Not Supported

Note. ***p<0.01, **p<0.05, *p<0.1

Source: SmartPLS

As shown in Table 4.7 above, the results indicated that there was not significant relationship between human resource practices and innovation activity (β=-0.231, t=1.521, p>0.1). However, the results of the correlations between the human resource practices and the seven dimensions of innovation activity (improve services, improved products, new services, new methods of production, open new markets, new sources of supply and the new way of organizing) were not significant.

4.6.3 Relationships Between organizational culture and Innovation Activity

The results of the correlations between organizational culture and the innovation activity with the seven dimensions provided in the following Table 4.8.

As presented in Table 4.8, the results indicate that there were significant positive relationships between of organizational culture and innovation activity was significant positive (β=0.585, t=2.888, p<0.01). Specifically, the results of the correlations between the organizational culture and innovation activity dimensioned (improve services, improved products, new services, new methods of production, open new markets, new sources of supply and the new way of organizing) were statistically significant positive.

Table 4.8

Correlations Between Organizational Culture and Innovation Activity

Independent	Dependent	Std Bet	Std error	T-value	P-value	Decision
Organizational culture	**Innovation activity**	**0.585**	**0.207**	**2.880*** **	**0.004**	**Supported**
	Improve services	0.357	0.139	2.669***	0.008	Supported
	Improved products	0.456	0.169	2.741***	0.006	Supported
	New services	0.455	0.164	2.866***	0.004	Supported
	New methods of production	0.485	0.174	2.834***	0.005	Supported
	Open new markets	0.493	0.174	2.895***	0.004	Supported
	New sources of supply	0.441	0.159	2.830***	0.005	Supported
	New way of organizing	0.365	0.149	2.461**	0.014	Supported

Note. ***p<0.01, **p<0.05, *p<0.1

Source: SmartPLS

The result of correlations shows only two of the three hypotheses were found to be statistically significant and supported. Table 4.9 presents the results of the hypotheses testing. As shown in Table 4.9, organizational structure (Org Str) and organizational culture (Org Cul) were found to be significantly related to innovation activity in the SMEs involved in this study.

Table 4.9

Results of the Hypotheses Testing

Hypotheses	Relationship	Std Bet	Std error	T-value	P-value	Decision
H1	Org_Str -> IA	-0.262	0.156	1.666*	0.097	Supported
H2	HRP -> IA	-0.231	0.163	1.521	0.129	Not supported
H3	Org_Cul -> IA	0.585	0.207	2.880***	0.004	Supported

Note. ***p<0.01, **p<0.05, *p<0.1

Source: SmartPLS

More specifically, the results in Table 4. show that organizational structure is negatively related to innovation activity (β=-0.262, t=1.666, p<0.1). In addition, the results also indicate that organizational culture is positively related to innovation activity with (β=0.585, t=2.880, p<0.01). However, the relationship between human resource practices and innovation activity was found to be statistically insignificant. Table 4. summarizes the results of the study.

Table 4.10

Summary of Research Results

Hypotheses	Hypotheses Statements	Results
H1	There is significant relationship between organizational structure and innovation activity in SMEs in Algeria.	Supported
H2	There is significant relationship between human recourse practices and innovation activity in SMEs in Algeria.	Not Supported
H3	There is significant relationship between Organizational culture and innovation activity in SMEs in Algeria.	Supported

4.7 Summary

In brief, this chapter presented the results of the study. The results indicated that of the three hypotheses developed and tested in the study, only two hypotheses (hypothesis 1 and hypothesis) were found to be statistically significant. Accordingly, the following chapter 5 will present the conclusion of the study.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1. Introduction

This final chapter focuses on the discussions and conclusions of the major findings of the study in three sections. The first section begins by presenting a brief overview of the study. Following this, the second section discusses the results as well as the conclusions of the study. Lastly, the third section offers the implications and limitations of the study as well as suggestions for possible future areas of research in innovation, particularly in small and medium-sized enterprises (SMEs).

5.2. Overview of the Study

The literature suggests not only limited research but also there is not much information on innovation among SMEs in Algeria. Given the research gap and limited information, this study investigated the Algerian SMEs from the innovation perspective. More precisely, the study attempted to examine the linkage between organizational factors and the innovation activity of SMEs in Algeria. The primary objective of the study was to examine empirically the relationships between organizational structure, human resource practices, organizational culture and innovation activity in Algerian manufacturing SMEs.

This study represented a cross-sectional sample survey of SMEs operating in several industries in the manufacturing sector in southern Algeria. The primary data for the study

were collected from the owners and managers of 77 SMEs in the manufacturing sector by using structured questionnaire. The questionnaire used in the study was designed to measure items of interest to this study. The items were adapted from several previous studies and instruments.

5.3. Discussions of the Results

In the study, the data on organizational structure, human resource practices, organizational culture and innovation activity were collected from the SMEs and analyzed to determine their relationships. The empirical results from the study indicated that most of the SMEs in Algeria achieved some level of innovation activity. The empirical information resulted from this study also suggest the link between organizational structure, organizational culture and the level of innovation activity in the SMEs investigated.

More specifically, findings of the study seem to indicate some significant relationships existed between organizational structure, organization culture and innovation activity of the 77 SMEs that participated in the study. These findings add support to previous studies that also suggested organizational factors such as organizational structure and organizational culture SMEs do relate to the innovation activity in business organizations such as SMEs. These findings are also consistent with the discoveries made by more recent as well as earlier studies by Ikeda and Marshall (2016), Dobni, Klassen and Nelson (2015), Mark, David, Nelson, Keld and Nicolai, (2013), Damanpour and Aravind, 2012, Martins and Terblanche (2003), Mavondo and Farrell (2003), Robbins and Coulter (1999), Roffe (1999), Michie and

Sheehan (1999), Ahmed (1998), Ozsomer et. al (1997), Utterback (1979), and Pierce and Delbecq (1977).

Several findings can be summarized from the study. First, the empirical evidence from this study suggests that organizational structure and organization culture are related to the level of innovation in SMEs. Second, in terms of the organizational structure and organizational culture, the results of the study appear to indicate that the 77 SMEs adopted the best practices of innovative firms as highlighted in the literature. Third, the findings of the study seem to show that organizational structure that emphasized on clarity in job responsibility, work specialization and clear span of control foster innovation. Forth, the findings also suggest that organizational culture that focused on encouraging new ideas, provide feedback, supportive leadership, employee empowerment and tolerance of risks promote innovation in organizations. Taken together, these findings reinforce the views presented in the other studies (Ikeda & Marshall, 2016; Dobni, Klassen & Nelson, 2015; Mark, David, Nelson, Keld & Nicolai, 2013; Damanpour & Aravind, 2012; Mavondo & Farrel, 2003); Martins & Terblanche, 2003; Holbrook & Hughes, 2003; Galia & Legros, 2003; Solomon et. al, 2002; Stringer, 2000; Roffe, 1999; Michie & Sheehan, 1999 and Ahmed,1998).

5.4. Implications of the Study

At the general level, the findings of this study provide the following managerial implications for SMEs in Algeria. The findings of this study indicate the linkage between organizational structure, organizational culture and innovation activity in SMEs. The significant

relationships between organizational structure, organizational culture and innovation activity suggest that in order to make their firms more innovative, the owners and managers of the SMEs should manage effectively and efficiently the organizational factors that are found to be associated with innovation activity. In this case, factors such as clarity in job responsibility, work specialization, clear span of control encouraging new ideas, provide feedback, supportive leadership, employee empowerment, tolerance of risks

5.5. Limitation of the study

Answering the research questions and the nature of this study requires not only extensive contact but also active participation from as many owners and managers of SMEs in a limited business environmental setting. For instance, getting the owners as well as managers of the SMEs to cooperate in the research was the major problem that this study encountered, particular among the family owned firms. When approached, many of these firms were reluctant to participate in the study. The other limitation was that the sample was selected from SMEs located only in the southern region of Algeria. More SMEs should have been selected from the manufacturing sector in the other regions in the country. The number of firms that participated in the study may be considered small. For instance, even though the final sample size was 125 firms, only 77 SMEs completed the questionnaires distributed to them.

5.6. Suggestions for Future Research

As mentioned earlier, although the literature emphasizes on the importance of organizational factors to innovation in organizations, empirical research in this area remains not only limited but also neglected, particularly in developing countries such as Algeria. This study suggests opportunities for researchers interested to further explore the impact of organizational factors such as organizational structure, human resource practices and organizational culture on innovation in SMEs.

Findings of this study indicate the existence of the relationships between organizational structure and organizational culture and innovation activity in SMEs. Since this conclusion is based on one study, from the research perspective the findings should be viewed as only suggestive. Therefore, more empirical studies are needed and they will be particularly useful in providing more empirical evidence to further support the view that organizational factors can improve innovation in organizations, particularly among manufacturing SMEs in Algeria.

Further exploring and investigating several extensions of the present work provide a good starting point for future research in this area of study. For instance, the other relevant aspects of the organizational factors such as creativity, knowledge, leadership and management styles, sources and types of innovation, new technology and role of life cycle in innovation which this study did not address, would present as research opportunities to be investigated further.

In addition, it is also important to note that the organizational factors investigated in this study may not necessarily be relevant and applicable to SMEs operating in the other economic sectors. Given this limitation, there is also a need then to conduct studies on SMEs in the other different sectors such as business services, wholesaling, retailing, and construction in order to develop a more comprehensive theory and understanding of innovation in SMEs. In particular, this is important in the Algerian context, where not many studies have attempted to examine SMEs in industries other than the manufacturing. It may also be worthwhile for future research on innovation to investigate the impact of industrial as well as entrepreneurial types on innovativeness of SMEs.

In terms of research methodology, it would be more reliable and valid to adopt actual measurement of innovation than using perceived measures. This would ensure the accuracy of responses from the owner and managers since the perceived measures are based on perceptions at different points of time as well as they are subjected to the respondents' interpretations and selective memory.

Lastly, this research represents an attempt to empirically examine the relationships between organizational structure, human resource practices, organizational culture and innovation activity in SMEs. The significant findings among these variables provide not only the insights into some of the organizational factors that impact innovation in SMEs but may also be used as the starting pointing for understanding the level of innovation among SMEs in Algeria as well as leading the right direction for future research in this important area of study.

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APPENDICES 1

Othman Yeop Abdullah Graduate School of Business

Universiti Utara Malaysia

Sir/Madam

I am a student enrolled in the Master of Science (Management) program at the Universiti Utara Malaysia (UUM), Kedah, Malaysia. In fulfilling the requirement of the Master of Science research project, I am conducting a study that investigates the Organizational Structure, Human Resource Practices, Organizational Culture and Innovation Activity Among Small and Medium-Sized Enterprises in Algeria.

Attached is the questionnaire for collecting the data for the study. I would be grateful if you could complete the questionnaire and return it to me.

Please be ensured that the information gathered from this study will be kept confidential and used for academic purposes only.

If you are interested in this study, please contact me through my email at ayoubtg@hotmail.fr or call me at 0668180352 or +60184690478.

Thank you for your cooperation.

Sincerely,

Gougui Ayoub

Student

Master of Science (Management)

Universiti Utara Malaysia (UUM)

Section One: Background of Owner/Managers

Please circle the number that represents your response for each of the following items.

1. My gender is: 1. Male 2. Female

2. My age is _____ years old.

3. My marital status is:

   1. Married 3. Single 4. Widowed 5. Divorced

4. My highest completed level of education is:

   1. Primary school 3- Secondary school
   2. College or institute 4- University

5. How did you become the owner/principle manager of this firm?

   1. Founder
   2. Cofounder
   3. Inherited or purchased from family
   4. Purchased business (not from family)
   5. Hired or promoted by the company

6. How many businesses have you started?

   0 1 2 4 more than 5 businesses

7. My primary reason for starting this business is:

   1.Unemployed due to being laid off or dismissed
   2.Did not like work situation
   3.Wanted to be own boss
   4.Opportunity arose to develop own or someone's idea
   5.Wanted to make more money
   6.Requested by family

8. How many years of experience in this field or industry did you have?

   _____ years.

9. My position in the business is
   1. Owner and CEO (Manager Director)
   2. Owner and a manager
   3. Manager but not an owner
   4. Owner but not a manager
   5. Other (specify) ----------

Section Two: Background of Company

10. Which of the following best describes the breadth of your company's operations?
    1. International
    2. National
    3. Regional
    4. Local

11. In which year did your firm begin its operations? _____

12. What is the operation type of your company?
    1. Mechanical and Electrical (ISMME)
    2. Building Materials
    3. Chemicals or/and Plastics
    4. Food Industry
    5. Textile, Leather Industry
    6. Manufacture of Wood and Paper
    7. Other Industry

13. What is the legal form of your company?
    1. Single Member Limited Liability Company
    2. Partnerships
    3. Limited Commercial Companies
    4. Stock Companies
    5. Companies Limited by Shares
    6. Limited Company

14. How many products does your company make and sell? -------- products

15. What is the number of full time employees in your organization?
    ---------- employees.

16. What was your source of capital when you first started your business?

    1. Own money
    2. My family
    3. My friends
    4. Borrow from the bank
    5. Financial support from the government

17. If you obtained the financial support from the government, which of the following agencies provided the fund?

    1. The National Agency of Investment Development (NAID)
    2. The National Investment Fund (NIF)
    3. The Guarantee Fund for Credits to SMEs (GFC)
    4. Guarantee Fund of Investment Loans for SMEs (GFIL)
    5. National Agency for Support of Youth Employment (NASYE)
    6. National Endowment for Unemployment Insurance (NEUI)
    7. National Agency for Management of Microcredit (ANGEM)
    8. Rental loan
    9. Zakat Fund (loan-Hasan)

Section Three: Organizational Structure

The statements in this section are related to the organizational structure in your organization. Please provide the answer to each statement by using the following numerical scale 1 (Strongly disagree) to 5 (Strongly agree).

	Strongly Disagree				Strongly Agree
	1	2	3	4	5
Organizational Complexity					
18. The structure of my organization is complex (has many levels, department, sections)					
19. The structure of my organization is formalized (e.g., written procedures)					
20. The structure of my organization is centralized (e.g., decision making at the top level)					
21. There is clarity in job responsibility in my organization					
22. Work specialization is emphasizing in the company					
23. The is a clear span of control in the company					
Internal Communication					
24. The company encourages open internal communication					
25. Improve employee commitment and morale as part of our organizational innovation monitoring					
26. The employer encourages employees to work in teams in order to improve performance					
27. Our organization cares about employees' opinions					
Managerial Attitude Toward Change					
28. Employees have access to resources that they need to be innovative					
29. Skilled employees help to formulate innovation strategy					
30. Our competencies (knowledge, skills and ability) help to improve innovation activities throughout the organization					
31. Our organization used cross-functional or interdisciplinary teams to create new products or services					

Section Five: Human Resource Practices

The following statements describe human resource practices. Please indicate the degree of your agreement to each statement by using the following scale: 1: Strongly Disagree; 2: Disagree; 3: Neutral; 4: Agree; 5: Strongly Agree.

	Strongly Disagree				Strongly Agree
	1	2	3	4	5
Training and development of practices					
32. We are trained in creativity and innovation techniques					
33. Our company emphasize on continuous training to improve the skills and knowledge of our employees					
34. We see people not as cogs in the machine					
35. Employees are encouraged to develop their innovation capabilities					
36. We meet with our customers at least once a year to find out what products or services they will need in the future					
37. Our company offers its employees high job security to reduce fear of getting fired for making mistake					
Knowledge Sharing					
38. Our company encourages the sharing of skills					
39. Our employer encourages employees to collaborate with people in other organizations					
40. Individuals from the research group interact directly with us to learn how to serve our customers better					
41. Our organization has assisted its employees to use lessons learned from previous projects and experiences					
Selection and Recruiting of Creative People					
42. Our company use plan recruitment program to recruit competent employees					
43. Our company use various hiring procedures to hire capable employees					
44. Our company has used recruitment techniques focusing on the search for professionals with an innovative profile (e.g., focus on teamwork, communication skills, and creativity)					
45. Our company attract innovative people and ensure that they are able to continue with their works					
Support for Experimentation					
46. We are rewarded for being innovative in our company					
47. We use numerous sources to secure good application					
48. Our employees search for information, new ideas and technologies					
49. Our research group is always moving toward improved ways of doing things					

Section Four: Organizational Culture

Listed below are statements describing organizational culture. Please indicate the degree of your agreement to each statement by using the following scale: 1: Strongly Disagree; 2: Disagree; 3: Neutral; 4: Agree; 5: Strongly Agree.

	Strongly Disagree				Strongly Agree
	1	2	3	4	5
Encouragement of New Ideas and Provide Feedback					
50. We have a "no blame" culture					
51. Ideas offered by employees are readily considered					
52. Honest and original mistakes are recognized as an indication of initiate and courage					
53. Employees are encouraged to try new ways of doing things					
54. The organization emphasized on research and development (R&D) by interacting with universities and other organizations.					
Supportive Leadership					
55. Our leadership support innovation					
56. Managers provide systems to facilitate formal communication					
57. The senior manager encourages all employees to challenge the status quo					
58. Managers allocate resources to encourage innovation					
Employee Empowerment					
59. Our organization has a specific process for managing innovation					
60. The company has fast track decision making to take innovative ideas forward					
61. We have specific targets that require us to be innovative					
62. Our culture encourages employees to monitor their own performance.					
63. Customer needs are considered top priority in my organization					
Tolerance of risks					
64. Good management of projects involving risks and unpredictability are highly valued, even when things don't turn out according to plan					
65. Employees take risks by continuously experimenting with new ways of doing things					
66. This organization is prepared to take risks in order to be innovative					

Criteria for Judging Success					
67. We have clear criteria of judging the success of an innovation					
68. The innovation activities of employees are monitored					
69. The company encourages competition in the workplace and rewards the innovators.					
70. Our culture rewards behaviors that relate to creativity and innovation					
71. There is a constant and free flow of ideas within our company					
Involved in Planning Changes					
72. Employees are involved in planning changes					
73. Everyone in the company recognize the importance of innovation					
74. Employees have readiness to change					
75. This organization is quick to respond when changes need to be made					
76. Our organization continually looking for new opportunities in a changing environment					

Section Six: Innovation Activity

Indicate to what extent that your company is able to achieve the following activities in the past five years by using the following scale: 1 (A little) to 5 (A Lot).

		A Little				A Lot
		1	2	3	4	5
76.	Improved product					
77.	Improved services					
78.	New product					
79.	New services					
80.	New methods of production					
81.	Open new market					
82.	New sources of supply					
83.	New way of organizing					

84. Does your organization face any pressing problems? If so, please list them below:

……
……
……

APPENDICES 2

Othman Yeop Abdullah
Graduate School of Business

Universiti Utara Malaysia

سيدي/ سيدتي

أنا طالب ادرس ماســـتر إدارة اعمال في جامعة اوتارا ماليزيا (UUM)، قدح، ماليزيا. وفي إطار متطلبات البحث العلمي للماســتر، أقوم بإجراء دراســة تحليلية في الهيكل التنظيمي، تطبيقات الموارد البشــرية، الثقافة التنظيمية وأنشطة الابتكار نحو المؤسسات الصغيرة والمتوسطة (PME) في الجزائر.

ويتعلق هذا الاستبيان في جمع بيانات الدراسة، وسأكون ممتنا لو تفضلتم بإكمال ملئ الاستبيان واعادته الي.

واحيطكم علما أن المعطيات المستسقاة من هذه الدراسة سوف تبقى سرية وتستخدم فقط لأغراض أكاديمية، وشكرا لتعاونكم.

إذا كنتم مهتمين بهذه الدراسة، فيمكنكم الاتصال بي عن طريق البريد الاليكتروني: ayoubtg@hotmail.fr
او الاتصال بي 0664180352 او 060184690478+

وشكرا جزيلا

قوقي أيوب

طالب ماستر إدارة اعمال

جامعة اوتارا ماليزيا

القسم الأول: معلومات شخصية

الرجاء ضع علامة (×) في الإطار الذي يمثل الإجابة الخاصة بك لكل بند من البنود التالية:

1- جنسي هو:
1. ذكر □ 2. انثى □

2- عمري هو _____ سنة

3- حالتي العائلية:
1. متزوج □ 2. أعزب □ 3. ارملة □ 4. مطلقة □

4- المستوى الدراسي:
1. ابتدئي □ 3. ثانوي □
2. متوسط □ 4. جامعي □

5- كيف أصبحت مسؤول في هذه المؤسسة؟
1. مؤسس الشركة □
2. عضو من المؤسسين □
3. وراثة من قبل العائلة □
4. اشتريت الشركة (ليست من العائلة) □
5. عن طريق التوظيف او الترقية داخل الشركة □

6- كم عدد الشركات التي قمت بإنشائها؟
0 □ 1 □ 2 □ 4 □ أكثر من 5 □

7- السبب الرئيسي لبدء هذه الاعمال:
1. لتجاوز حالة البطالة والفقر □
2. لا أحب ارتباطات العمل □
3. اردت ان أكون رب اعمال □
4. فرصة لتطوير نفسي او افكاري □
5. اريد الحصول على الكثير من المال□
6. اقتراح من العائلة □

8- كم عدد سنوات الخبرة في مجال الاعمال _____ سنة

9- وضعيتي في هده الشركة هي
1. مالك والرئيس التنفيذي للشركة □ 3. مدير وليس مالكا □
2. مالك ومسؤول □ 4. مالك وليست مدير او مسؤولا □
3. امر آخر (حدده) _____

القسم الثاني: خلفية الشركة

10- ما هو اتساع نطاق اعمال الشركة

1.دولي □ 3. جهوي □

2.وطني □ 4. محلي □

11- في أي سنة انطلقت اعمال هذه الشركة؟ _____

12- ما هو نوع نشاط الشركة؟

1. صناعة الأجهزة الإليكترونية والميكانيكية
2. صناعة مواد البناء
3. صناعة المواد الكيميائية والبلاستيكية
4. الصناعة الغذائية
5. صناعة النسيج والجلود
6. صناعة الورق والخشب
7. صناعات أخرى _____

13- ما هو الشكل القانونية لهذه الشركة؟

1.الشركة ذات الشخص الوحيد وذات المسؤولية المحدودة (L'EURL) □

2.شركة تضامن (SNC) □

3.الشركة ذات التوصية البسيطة (SCS) □

4.شركة ذات مسؤولية محدودة (SARL) □

5.شركة توصية بالأسهم (SCA) □

14- كم عدد المنتجات التي تصنع وتباع؟ _____ منتج

15- ما هو عدد العمال الدائمين لهذه الشركة؟ _____ عامل

16- ماهي مصادر راس مال الابتدائي لهذه الشركة؟

1.مالي الخاص □

2.العائلة □

3.مالي الخاص والأصدقاء □

4.قرض من البنك □

5.دعم مالي من طرف الدولة □

17- إذا حصلت على دعم مالي من الدولة، فأي نوع من صناديق الدعم استفدت؟

1.الوكالة الوطنية لتطوير الاستثمار(ANDI)

2. الصندوق الوطني للاستثمار

3.صندوق ضمان القروض(FGAR)

4. صندوق ضمان القروض الاستثمار(CGCI)

5. الوكالة الوطنية لدعم تشغيل الشباب(ANSEJ)

6. الصندوق الوطني للتأمين على البطالة(CNAC)

7. الوكالة الوطنية لتسيير القرض المصغر(ANGEM)

8. القرض الإيجاري(Crédit Bail)

9.صندوق الزكاة (القرض الحسن)

القسم الثالث: الهيكل التنظيمي

ترتبط البيانات في هذا القسم بالهيكل التنظيمي في المؤسسة الخاصة بك. يرجى تقديم الجواب على كل سؤال باستخدام المقياس العددي التالي: 1 (لا أوافق بشدة) ==========> 5 (أوافق بشدة).

	لا أوافق بشدة				أوافق بشدة
	1	2	3	4	5
تخصص العمل					
17. الهيكل التنظيمي معقد (لديها العديد من المستويات، والمديريات والأقسام)					
18. صياغة الهيكل التنظيمي (على سبيل المثال، إجراءات مكتوبة)					
19. الهيكل التنظيمي مركزي (على سبيل المثال، صناعة القرارات فقط على مستوى المستويات العليا)					
20. هناك وضوح في مسؤولية كل وظيفة في مؤسستنا					
21. التركيز على تخصص العمل في شركتنا					
22. هناك وضوح في لوحة المراقبة في شركتنا					
الاتصالات الداخلية					
23. الشركة تشجع الاتصال الداخلي					
24. تحسين الانضباط الموظف ومعنوياته كجزء من الابتكار التنظيمي لدينا					
25. رب العمل يشجع الموظفين للعمل كفريق واحد لتحسين الاداء					
26. شركتنا تهتم بآراء موظفيها					
الموارد المتوفرة					
27. الموظفون يملكون التصريح للحصول على الموارد التي يحتاجونها للإبداع					
28. مهارات العاملين تساعد في صياغة استراتيجية الإبداع					
29. لدينا الكفاءات (المعارف، المهارات والقدرات) التي تساعد على تحسين أنشطة الابتكار في جميع انحاء الشركة					
30. شركتنا تستخدم فرق متعددة الوظائف والتخصصات لإنشاء منتجات وخدمات جديدة					

القسم الرابع: الثقافة التنظيمية

في الجدول أدناه البيانات التي تصـــف الثقافة التنظيمية، يرجى الإشـــارة إلى درجة موافقتك على كل عبارة باســـتخدام المقياس التالي: 1 (لا أوافق بشدة) ==========> 5 (أوافق بشدة)..

	لا أوافق بشدة				أوافق بشدة
	1	2	3	4	5
تشجيع الأفكار الجديدة وتوفير التغذية العكسية					
31. ليس لدينا ثقافة "اللوم" في شركتنا					
32. الأفكار المقدمة من قبل الموظفين تناقش بكل سهولة					
33. يتم التعرف على الأخطاء ومناقشتها بكل عفوية وطلاقة كمؤشر على الشجاعة والابتكار					
34. تشجيع العمال في تجربة طرق جديدة في العمل					
35. الشركة تحرص على البحث العلمي والتطوير (R&D) من خلال التفاعل مع الجامعات والمنظمات الاخرى					
مساندة القيادة					
36. ان قيادتنا تدعم الابتكار					
37. يوفر المديرون نظم وتسهيلات للاتصالات الرسمية					
38. يشجع المديرون العاملين على تحدي الوضع الراهن					
39. المديرون يخصصون المورد لتشجيع العاملين على الابتكار					
لدينا أهدف محددة					
40.شركتنا لديها إجراءات محددة فيما يخص إدارة الابتكار					
41. تمتلك الشركة مسار قصير وسريع في عملية صنع القرار فيما يخص الأفكار الابتكارية					
42. لدينا اهداف محددة حول متطلبات الابداع					
43. لدينا ثقافة تشجيع الموظفين لرصد ومتابعة الأداء الخاص بهم					
44. تعتبر احتياجات الزبائن أولوية عليا في شركتنا					
تحمل المخاطر					
45. الإدارة الجيدة للمشـــاريع التي تحتوي على المخاطر وعدم القدرة على التنبؤ تعتبر ذات قيمة عالية حتى عندما تكون الأمور لا تسري وفق المخطط لها					
46. الموظفون يتحملون المخاطر عن طريق التجارب المستمرة مع طرق جديدة للقيام بأعمالهم					
47. الشركة مستعدة لتحمل المخاطر من أجل ان تكون شركة مبدعة					
معايير للحكم على النجاح					

48. لدينا معايير واضحة للحكم على نجاح الابتكار					
49. يتم رصد الأنشطة الابتكارية للموظفين					
50. المؤسسة تشجع المنافسة في مكان العمل وتمنح جوائز للمبتكرين					
51. ثقافتنا تكافئ السلوكيات التي تتعلق بالإبداع والابتكار					
52. هناك تدفق مستمر ومجاني للأفكار داخل الشركة					
المشاركة في التخطيط للتغييرات					
53. الموظفون يشاركون في التخطيط للتغييرات					
54. أي شخص في الشركة يعترف بأهمية الابتكار					
55. الموظفون لديهم الاستعداد للتغيير					
56. هذه المنظمة لديها استجابة سريعة عندما تتطلب الحاجة للتغيير					
57. منظمتنا تبحث باستمرار عن فرص جديدة في تغيرات المحيط					

القسم الخامس: تطبيقات الموارد البشرية

العبارات التالية تصف ممارسات الموارد البشرية. يرجى الإشارة إلى درجة موافقتك على كل عبارة باستخدام المقياس التالي: 1:لا أوافق بشدة. 2: لا أوافق. 3: محايد. 4: أوافق. 5: أوافق بشدة.

	لا أوافق بشدة				أوافق بشدة
	1	2	3	4	5
الالتزام بالتدريب والتطوير					
58. يتم تدريب العاملين على أساليب الإبداع والابتكار					
59. الشركة تحرص على التدريب المستمر لتحسين مهارات ومعارف موظفيها					
60. نحن لا نرى في العمال انهم مستعملو الأجهزة فقط					
61. يتم تشجيع الموظفين لتطوير قدراتهم الابتكارية					
62. إننا نجتمع مع عملائنا مرة واحدة على الأقل في السنة لمعرفة ما هي المنتجات أو الخدمات التي يحتاجونها في المستقبل					
63. تمنح الشركة امنا عاليا لموظفيها للتقليل من الخوف من حصول الاخطاء					
تبادل المهارات					
64.تشجع شركتنا تبادل المهارات					
65. يشجع المسؤولون الموظفين للتعاون مع غيرهم في المنظمات الأخرى					
66. الأفراد في مجموعة الأبحاث تفاعل معنا مباشرة لمعرفة كيفية خدمة عملائنا بشكل أفضل					

67. تساعد شركتنا موظفيها لاستغلال الدروس المستفادة من المشاريع والتجارب السابقة					
اختيار وتوظيف المبدعين					
68. شركتنا لديها خطة لتوظيف الأكفاء					
69. شركتنا تستخدم مختلف الإجراءات لتوظيف الاكفاء					
70.تستخدم شركتنا تقنيات التوظيف مع التركيز على البحث عن المهنيين المبتكرين (على سبيل المثال، التركيز على العمل الجماعي، ومهارات الاتصال، والإبداع)					
71. شركتنا تهتم بجذب الناس مبتكرين وضمان أنهم قادرون على مواصلة أعمالهم					
دعم التجارب					
72. لدينا نظام مكافآت للمبتكرين في شركتنا					
73. نحن نستخدم مصادر عديدة لضمان التطبيق الجيد للأعمال					
74. موظفونا دائما يبحثون عن المعلومات والأفكار الجديدة وتقنيات الاستعمال					
75. مجموعتنا البحثية تتحرك دائما نحو تحسين طرق الاستغلال					

القسم السادس: نشاطات الابتكار

تشير إلى أي مدى أن الشركة قادرة على تحقيق الأنشطة التالية في السنوات الخمس الماضية باستخدام المقياس التالي:
1 (قليلا) ========>5 (الكثير).

	قليل				كثير
	1	2	3	4	5
76. تحسين المنتجات					
77.تحسين الخدمات					
78. منتجات جديدة					
79.خدمات جديدة					
80.طرق جديدة في الإنتاج					
81. فتح أسواق جديدة					
82. مصادر جديدة للإمدادات					
83.طرق جديدة للتنظيم					

84. هل مؤسستك تواجه أي مشاكل ملحة؟ إذا كان كذلك، رجاء اذكرها ادناه:

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.....

.....

شكرا جزيلا لتعاونكم