ENTREPRENEURIAL COMPETENCIES, ORGANIZATIONAL STRUCTURE AND SMEs PERFORMANCE IN MALAYSIA: THE ROLE OF INNOVATION AS A MODERATOR

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Abstract

Small and Medium Enterprises (SMEs) receive great attention on its contributions in the policies of economic and social development either in the developed or in developing countries like Malaysia. However, there has not been much research focuses on performance of SMEs in Malaysia especially in manufacturing sector. This study investigates the factors that affect performance of manufacturing SMEs in the Malaysian economy. Specifically, the purpose of this study is to examine moderating effect of innovation on SMEs performance and its relationship with traits competencies, skills competencies and organization structure in Northern Malaysia. A survey methodology has been employed to collect the data. SMEs owners and managers throughout the northern states of Malaysia are chosen as the samples for this study. A disproportionate simple stratified random sampling method was used to select respondents from the respective owners and managers. Seven hypotheses were proposed regarding SMEs performance. Structured questionnaires were used to measure five variables; SMEs performance, traits competencies, skills competencies, organization structure and innovation are adopted in this study. Out of 800 questionnaires that were filled by respondents on the "drop and collect" basis, only 314 were usable, yielding a response rate of 39.25%. The findings revealed that significant relationships exist among variables (traits competencies, skills competencies, organization structure and innovation with SME performance. The findings also revealed that innovation moderates the relationships between traits competencies, skills competencies and organization structure on SME performance. The study concludes with a discussion on theoretical and practical implications and suggestions for future research.

Keywords: SMEs performance, innovation, entrepreneurial competencies, organization structure

Abstrak

Perniagaan Kecil dan Sederhana (PKS) mendapat perhatian utama dari segi sumbangannya dalam dasar-dasar pembangunan ekonomi dan sosial sama ada di negara yang telah maju mahupun di negara membangun seperti Malaysia. Walau bagaimanapun, tidak banyak kajian yang menumpukan kepada prestasi PKS di Malaysia terutamanya dalam sektor pembuatan. Kajian ini menyiasat faktor-faktor yang mempengaruhi prestasi sektor pembuatan PKS dalam ekonomi Malaysia. Khususnya, tujuan kajian ini adalah untuk menyelidik kesan penyederhanaan inovasi ke atas prestasi PKS dan hubungannya dengan kompetensi trait, kompetensi kemahiran dan struktur organisasi di negeri-negeri utara Malaysia. Satu metodologi kaji selidik telah digunakan untuk mengumpulkan data. Pemilik dan pengurus PKS di negeri-negeri utara Semenanjung Malaysia telah dipilih sebagai sampel kajian. Selain itu, satu prosedur persampelan rawak mudah berstrata tidak berkadaran telah digunakan untuk memilih responden yang terdiri daripada pemilik dan pengurus. Sebanyak tujuh hipotesis mengenai penentu prestasi PKS dicadangkan. Sementara itu, kaji selidik berstruktur telah digunakan untuk mengukur lima pemboleh ubah iaitu prestasi PKS, kompetensi trait, kompetensi kemahiran, struktur organisasi dan inovasi. Sebanyak 800 soal selidik telah diedarkan secara "hantar dan kutip". Namun, hanya 314 boleh digunakan yang menghasilkan kadar maklum balas sebanyak 39.25 peratus. Hasil kajian menunjukkan bahawa wujud hubungan yang signifikan di antara pemboleh ubah-pemboleh ubah (kompetensi trait, kompetensi kemahiran, struktur organisasi dan inovasi) dengan prestasi PKS. Di samping itu, hasil kajian juga menunjukkan bahawa inovasi adalah penyederhana yang signifikan bagi hubungan antara kompetensi trait, kompetensi kemahiran dan struktur organisasi terhadap prestasi PKS. Kajian ini diakhiri dengan perbincangan mengenai implikasi teori dan praktikal serta cadangan untuk kajian pada masa hadapan.

Kata kunci: Prestasi PKS, inovasi, kompetensi keusahawanan, struktur organisasi

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Table of Contents

Permission to Use ii
Abstract iii
Abstrak iv
Acknowledgement v
Table of Contents vii
List of Tables xii
List of Figures xiii
List of Appendices xiv
List of Abbreviations xv

CHAPTER ONE INTRODUCTION 1

1.1 Background of the Study 1
1.2 Problem Statement 10
1.3 Research Questions 18
1.4 Research Objectives 19
1.5 Research Significant 20
1.6 Scope and Limitations of the Study 21
1.7 Definition of Key Terms 22
1.7.1 Entrepreneur 22
1.7.2 Small and Medium Enterprises (SMEs) 23
1.7.3 SMEs Performance 25
1.7.4 Entrepreneurial Competencies 27
1.7.5 Organization Structure 28
1.7.6 Innovation 29
1.8 Organization of the Study 29
1.9 Conclusion 31

CHAPTER TWO LITERATURE REVIEW 32

2.1 Introduction 32
2.2 Small Medium Enterprises (SMEs) 33

2.3 SMEs in Malaysia 35
2.4 Malaysian SMEs in Manufacturing Sector 37
2.5 Entrereneur and Entrepreneurship.....38
2.6 Theoretical Basis.....40
2.6.1 A resource – based view of firm's capacity to innovate.....44
2.7 SMEs Performance.....48
2.8 Issues of SMEs Performance in Malaysian Manufacturing Sector.....54
2.9 Entrepreneurial Competencies 55
2.10 Traits Competencies and SMEs Performance.....60
2.11 Skills Competencies and SMEs Performance 66
2.12 Organization Structure 69
2.13 Innovation 72
2.14 Innovation and SMEs Performance 81
2.15 Moderating Effect of Innovation on The Relationship between Entrepreneurial Competencies and SMEs Performance.....93
2.16 Moderating Effect of Innovation on The Relationship between Organization Structure and SMEs Performance.....97
2.17 Moderating Effect of Innovation on The Relationship between Traits Competencies, Skills Competencies, Organization Structure and SMEs Performance.....99
2.18 Chapter Summary.....103
CHAPTER THREE METHODOLOGY 105
3.1 Introduction.....105
3.2 Theoretical Framework.....105
3.3 Hypotheses Development.....108
3.4 Research Design.....109
3.4.1 Time Dimension 111
3.4.2 Research Design Strategies.....112
3.4.3 Unit of Analysis.....113
3.5 Measurement of Variables 113
3.5.1 SMEs Performance 114

3.5.2 Entrepreneurial competencies 116
3.5.3 Organization structure 116
3.5.4 Innovation 116
3.6 Selection of respondents 119
3.6.1 Population 119
3.6.1 Sample 120
3.7 Data collection procedures 123
3.8 Techniques of Data Analysis 124
3.9 Pilot Study 125
3.10 Chapter Summary 127
CHAPTER FOUR DATA ANALYSIS AND FINDINGS 129
4.1 Introduction 129
4.2 Profile of Respondents 129
4.3 Data Cleaning Procedures 130
4.3.1 Missing Data 131
4.3.2 Response Bias 131
4.3.3 Outliers Identification 133
4.4 Tests on Multivariate Assumptions 134
4.4.1 Normality test 134
4.4.1.1 Statistical Approach 134
4.4.1.2 Visual Approach 135
4.4.2 Linearity Test 139
4.4.3 Homoscedasticity 140
4.4.4 Multicollinearity 141
4.5 Factor Analysis 142
4.5.1 Entrepreneurial Competencies 143
4.5.2 Organizational Structure 147
4.5.3 Innovation Approach 148
4.5.4 Business Performance 150
4.6 Reliability Analysis 151
4.7 Descriptive Analysis 153

4.8 Correlation Analysis.....155
4.8.1 Competency and Performance.....156
4.8.2 Organizational Structure and Business Performance.....158
4.8.3 Innovation approach and Business Performance.....158
4.9 Regression Analysis.....159
4.9.1 Effect of Traits Competency, Skills Competency, Organizational Structure and Innovation approach on Business Performance.....159
4.9.2 Effect of Personal Competency on Business Performance.....160
4.9.3 Effect of Organizational Structure on Business Performance.....161
4.9.4 Effect of Innovation approach on Business Performance.....162
4.9.5 Moderating Role of Innovation approach on the Relationship between Entrepreneurial Competency, Organizational Structure and Business Performance.....163
4.10 Chapter Summary.....167
CHAPTER FIVE DISCUSSION AND CONCLUSION 168
5.1 Introduction.....168
5.2 A brief overview of the study.....169
5.3 Study findings.....173
5.3.1 Relationship between Traits Competencies and Performance of SMEs..173
5.3.2 Relationship between Skills Competencies and Performance of SMEs..174
5.3.3 Relationship between Organizational Structure and Performance of SMEs 175
5.3.5 Moderating Effect of Innovation on the Relationship between Skills Competencies and Performance of SMEs.....178
5.3.6 Moderating Effect of Innovation on the Relationship between Organization Structure and Performance of SMEs.....179
5.3.7 Moderating Effect of Innovation on the Relationship between Traits Competencies, Skills Competencies, Organization Structure and Performance of SMEs.....179
5.4 Research Implication.....180

5.4.1 Practical implications in the study of entrepreneurial competencies and innovation 181
5.4.1.1 Implications for Training and Development 182
5.4.1.2 Entrepreneurial Competencies - Sources of Competitive Advantage 183
5.4.1.3 Formal Organization Structure – A Significant Variable to Performance 184
5.4.1.4 Innovation – A Significant Moderating Role to Performance ... 184
5.4.2 Theoretical Implication 185
5.5 Limitations of the Study 188
5.6 Direction of Future Research 189
5.7 Conclusion 191
REFERENCES 192
LIST OF APPENDICES
Appendix A: Research Questionnaire
Appendix B: Pilot Test
Appendix C: SMEs Background
Appendix D: Bias-test
Appendix E: Tests on Multivariate Assumptions
Appendix F: Factor Analysis
Appendix G: Reliability Analysis
Appendix H: Correlation Analysis
Appendix I: Regression Analysis
Appendix J: Hierarchical Regression Analysis

List of Tables

Table 1.1: Definition of SMEs by Size of Operation 24
Table 3.1: References of Research Questions 117
Table 3.2: Questionnaire Format 118
Table 3.3: Calculation methods of sample from the population 122
Table 3.4: Reliability Coefficients for Variables (N=30) 127
Table 4.1: Background of the Respondents 130
Table 4.2: Independence Sample t-test for non-response bias test 133
Table 4.3: Skewness and Kurtosis for the Variables 135
Table 4.4: Test of Multicollinearity 142
Table 4.5: Factor Loading of Entrepreneurship Competency Scale 144
Table 4.6: Factor Loading of Organizational Structure 148
Table 4.7: Factor Loading of Innovation approach 149
Table 4.8: Factor Loading of Business Performance 151
Table 4.9: Reliability Coefficients for Variables 152
Table 4.10: Descriptive Analysis of the Variables 154
Table 4.11: Relationship between Personal Competencies and Business Performance 157
Table 4.12: Relationship between Organizational Structure and Business Performance 158
Table 4.13: Relationship between Innovation approach and Business Performance 159
Table 4.13: Effect of Personal Competency, Organizational Structure and Innovation approach on Business Performance 160
Table 4.14: Effect of Personal Competency on Business Performance 161
Table 4.15: Effect of Organizational Structure on Business Performance 162
Table 4.16: Effect of Innovation approach on Business Performance 163
Table 4.17: Effect of Innovation in the Relationship between Entrepreneurial Competency, Organizational Structure and Business Performance 164
Table 5.1: Hypotheses Testing Conclusion 173

List of Figures

Figure 2.1: Sustainable Advantage and RBV 44
Figure 2.2: Determinants Factors of open Innovation 77
Figure 2.3: The model of innovation-decision process 87
Figure 3.1: Proposed Research Model (Theoretical Framework) 107
Figure 4.1: Histogram of Business Performance 136
Figure 4.2: Histogram of Traits Competency 137
Figure 4.3: Histogram of Skills Competency 137
Figure 4.4: Histogram of Organizational Structure 138
Figure 4.5: Histogram of Innovation Approach 138
Figure 4.6: Scatterplots of Standardized Residuals against the Predicted Values 140
Figure 4.7: Scatterplots of Studentized Residuals against the Predicted Values 141
Figure 4.8: Moderating effect of Innovation on the Relationship between Traits Competency and Business Performance 166
Figure 4.9: Moderating effect of Innovation on the Relationship between Organizational Structure and Business Performance 167

List of Appendices

Appendix A: Research Questionnaire

Appendix B: Pilot Test

Appendix C: SMEs Background

Appendix D: Bias-test

Appendix E: Tests on Multivariate Assumptions

Appendix F: Factor Analysis

Appendix G: Reliability Analysis

Appendix H: Correlation Analysis

Appendix I: Regression Analysis

Appendix J: Hierarchical Regression Analysis

List of Abbreviations

AJDF	Asean Japan Development Fund
APEC	Asia Pacicfic Economic Corporation
BNM	Bank Negara Malaysia
EU	European Union
FDI	Foreign Direct Investment
GDP	gross domestic product
MIDA	Malaysian Industrial Development Authority
MNCs	multinational companies
MPC	Malaysia Productivity Corporation
NSDC	National SME Development Council
OECD	Organization for Economic Cooperation and Development
RBV	Resource Based View
SHTFs	Small Firms Based on High Technology
SMB	Small and Medium Business
SMEs	Small and Medium Enterprises
UK	United Kingdom
USA	United States of America
WEF	World Economic Forum
WTO	World Trade Organization

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

The importance and contributions of Small and Medium Enterprises (SMEs) to the world's economy has been proven in several researches. Berthon, Ewing, and Napoli (2008) noted that just in the United Stated alone about 5.7 million businesses exist of which only 14,000 large organizations employing more than 500 employees. Looking at the European industrial system, SMEs are supplying labour to about 100 million citizens, this makes reason of the importance of SMEs, the real backbone of the European economy (Villa & Bruno, 2013).

Matt and Ohlhausen (2011) found that SMEs are the engine of the European economy, being the 99% of all European businesses, and have been the target of several policies implemented by European Union (E.U) institutions, which indicates the significance of SMEs to the European economy. SMEs are important in most countries' national employment, domestic services and products, and overall economic performance (Gilmore, Galbraith, & Mulvenna, 2013; Zhu, Wittmann & Peng, 2012; Berthon, Ewing & Napoli, 2008).

In the policies of economic and social development, Small and Medium Enterprises (SMEs) received great attention neither in the developed countries nor in the developing countries. Many researchers have acknowledged the important role played by the SMEs (Love & Roper, 2015; Brambilla, Lederman, & Porto, 2012; Berthon et al., 2008; Nijhawan & Dubas, 2007; Robson & Bennett, 2000; Rasiah,

2002 and Smallbone, 2004). The contribution of SMEs in the United Kingdom, United States and Australia as the success in generating jobs, innovation and growth (European Commission, 2010; Carter & Van Auken, 2006 and Ehrich & Billett, 2004).

SMEs are considered as the engine of economic growth around the world. One of the most important roles of SMEs in this context is the eradication of poverty through job creations. Developed and developing countries benefited so much from SMEs and able to accelerate the economy of any country. It plays a huge responsibility in providing sustainable job opportunities and economic changes in the country.

In addition, the sectors covered by the SMEs are able to develop a dynamic economy and large-scale of production. The role of SMEs in the creation of productive employment and generate many sources of strength in the growing economy. Economic planners have begun to focus on the significant role played by SMEs in economic development (Maad, 2008).

Among the role of small firms are SMEs have been used as a strategy to create full employment, raising the performance of technology and generating income (Samuel & Susan, 2008; Olson & Bakor, 1995).

Based on Annual Report on European SMEs 2014 / 2015, SMEs are ubiquitous, and in 2014 accounted for 99.8% of all enterprises in the non-financial business sector in the EU28. For every km squares of land surface the EU has an average of five SMEs.

In 2014, SMEs employed almost 90 million people or 67% of total employment, and generated 58% of the sector's value added.

Almost all SMEs (93%) are micro SMEs employing less than 10 people. Matt and Ohlhausen (2011) reported that SMEs perform an important role to the economy of the European Union Countries. This sector is seen as represented by 99% of all businesses in the continent. SMEs are also seen as a major source of generating employment opportunities, entrepreneurial skills, innovation and economic and social development of these countries.

According to Jones-Evans and Westhead (1996), technological innovation by SMEs is an important component in the form of economic development and prosperity of society. This is due to the invention which being produced by these firms successfully commercialized. This will not only provide wealth to the investors and their partners, but generate employment to the community as well. Tether (2000) reported small firms based on high technology (SHTFs) created aims to generate innovation.

In Malaysia, National SME Development Council (NSDC) reported that in 2011 there were approximately 662,939 of total establishments registered enterprise organizations in the country which includes manufacturing, services, agriculture, construction, mining and quarrying. Of 5.9% of them are enterprises in the manufacturing sector, 90.1% in the services sector, 1 per cent in the agricultural sector, 3% in the construction sector and 0.05% are in the mining and quarrying sector. Overall, SMEs comprise of 97.3% or a total establishments of 645,136 of the

total enterprise in Malaysia. In the service sector, SMEs across by 90.1% or 580,985 of all enterprises, while in the manufacturing sector, they cover a total of 5.9% or a total of 37.861 organizations. SMEs is seen covering a total of only 1% or a total of 6,708 from a number of enterprises involved in activities related to agriculture. In the construction sector, SMEs comprise by 3% or 19,283 of all enterprises, while in the manufacturing sector, they cover only a total of 0.05% or a total of 299 organizations. Nearly 77%, or about 496,458 of the SMEs are micro enterprises (BNM Business Report, 2013).

Based on Department of Statistics, Malaysia (2013), since SMEs contribute to one third of gross domestic product (GDP) and providing job opportunities to large amount of workers which is more than four million workers (60% of total employments) and therefore, it becomes an important element for Malaysian economy. The number of SMEs grew by 20% to over 662,939 based on the most recent census data of the year 2011 compared to the year 2005. Out of the total business establishments, SMEs accounted for 97.3% as compared to 99.2% in 2005.

To ensure balanced growth and shared prosperity as the country transitions into a high-income economy and high value-added, the growth of the SME sector is vital. Due to the micro enterprises, this sector contributes pointedly to poverty improvement that consists more than three quarters of total SMEs. For low-income households, this sector become a significant source of income and self-employment, especially in rural and sub-urban areas.

According to Malaysian Prime Minister, Dato' Sri Mohd Najib Tun Haji Abdul Razak (2014), SMEs not only an enabler of growth as previously, but will be a significant contributor in achieving growth and more importantly will be a key indicator of economic growth. There would be more value-added contribution from SMEs to income, economic growth and overall prosperity of the country by 2020. SMEs target is to achieve 62% of employment, more than 40% of the contribution to GDP and 25% of total exports in 2013. Productivity gains and innovation-led growth would be the main channels.

Based on Malaysia Productivity Corporation Report (2013), the World Economic Forum (WEF) has upgraded Malaysia into Innovation-Driven Development from Efficiency-Driven Stage. Economies at the innovation-driven stage referred to the development of new local technologies and have ceased upon relying on foreign technologies solely. These economies expected to create high rates of innovation since they have skillful human resource, in addition to having strong research institutions, availability of venture capital and the flexible organizations. These characteristics can rapidly respond to the vagaries of a continually changing global environment.

Developed countries which are innovation-driven include Switzerland, Germany, Finland, Sweden, the United States (USA), the United Kingdom (UK) and Japan. Another characteristic of innovation-driven economies is their resilience to external shocks and the ability of their businesses to produce new and unique products and services. Such economies can produce innovative products and services at the cutting-edge technology that represents the dominant source of their competitive

advantage. Within the Asian region, Korea, Taiwan, and Singapore are countries recognized as being at the innovation-driven stage at par with advanced industrialized countries.

Focus will be on creating a new breed of innovative SMEs that will sustain its competitiveness globally which are flexible to adopt challenges arising from liberalisation and changing global environment. The Government will also endeavor on catalysing growth of potential SMEs to become homegrown champions that can compete in the regional and global markets. SMEs have witnessed a marked development in their performance since five years ago. By increasing an average annual growth rate of 6.8% versus 4.9% for the overall economic growth in the period 2004 – 2010, real Gross Domestic Product (GDP) of SMEs has constantly outperformed compare to the overall economy. (SME Masterplan, 2012-2020).

Economic aspect of SMEs is not only a vital link in the supply chain and a complementary business to multinational companies (MNCs), but they also have the potential to grow and become global companies (SME Report, 2013). SME sector is also an important component in economic and social development (SMIDEC, 2008; SMEs, 2008).

The significant resources in SMEs are likely to be held by the individual entrepreneurs that are reflected by their knowledge, abilities, skills, education and experience (Edelman, Brush, & Manolova, 2002). The entrepreneurs have high influence on the formation of business strategy as they become the key decision

makers, and they are responsible to fix the roadmap for their firms to move towards the goals that had been set (Masurel, Montfort, & Lentink, 2003).

However, small and medium entrepreneurs research shown mixed results on the study to explore the entrepreneur competencies and company's performance, and the findings are still lacking (Chandler & Hanks, 1994 ; Cooper, 1993; Lohpenvik & Strombom 1998; Reuber & Fischer, 1994). The results of those researches due to some factors like the importance to an entrepreneur of non-economic goals, our ability to predict a firm's success using entrepreneurial characteristics which is limited by the instability of firm performance and the stochastic nature of the process (Cooper, 1993). Comprehensive theory of SME development (Gibbs & Davies, 1991) and the lack of formal structural frameworks are also problems (Roper, 1998).

According to Chaston et al. (1999), "Further work is clearly needed since research to identify whether particular relationships exist between the performance of the firm, the learning mode of the organization and organizational competence does not provide clear statistically significant relationships". Churchill & Lewis (1983) suggested that the different phases of development of a business through changing role of the entrepreneur and the understanding of the competencies is necessary to support the growth of competence, and to have consequences for successful business development.

Therefore, further study of entrepreneurial competencies and the business performance should be taken into account. First, the need to create an updated theoretical framework. Second, different communication standards need to come up

with contingency relations. Thirdly, even if they are very difficult to be operationalized, and the need for identification of the properties that need attention. Finally is to choose the use of performance indicators and operational activities (Murphy, Trailer & Hill, 1996, Cooper & Gascon, 1992).

Therefore, Man, Lau Chan (2002) had organized that the competitiveness of small and medium entrepreneurs in the response characteristics of this study shows that it is necessary to pass a theoretical framework approach to the concept. The main objective of this framework is to focus on the central role of the entrepreneur in the company's operations. It's useful for small companies to match the dominant entrepreneur.

Due to various problems faced by SMEs as above then almost all governments in industrialized countries and developing countries has provided a variety of programs to help develop SMEs (Hallberg, 1999 & Smallbone, 2004). Clapham (1985) stated that the efforts required to develop these industries are significantly higher in developing countries, especially in poor countries.

The scenario in Malaysia also showed that SMEs were given encouragement and support was very high by the government through various forms of assistance both in terms of financial (Moha Asri, 1999; Rasiah, 2002; Mahathir, 2002; SMIDEC, 2004; Shukor, 2006 and SME,2008). According to Shukor (2006) New Economic Policy since 1970 has promoted the establishment of more than 1,137 companies financed by the government with capital exceeding RM28 billion. Comprehensive government machinery had been mobilized by various instruments of

implementation. A total of 15 ministries and more than 60 different government agencies and companies that were funded by the government (SME, 2008) has been involved directly and indirectly in the promotion of SME participation in the business sector. The above companies have moved with capital in excess of RM70 billion (including loans) in the period between 1970 to 1990 for that purpose. Omar (2006) found that the performance of SMEs through the implementation of policies and programs designed is seen still less effective.

Lately, SMEs in emerging economies are facing problems due to economic uncertainty. Debate occurs among scholars, practitioners, and policy makers to identify the model to help SMEs. According to Gibbs (2005), 0ne of the important role of SMEs is to manage their businesses and in related to that some further observation need to do in order to increase the likelihood of survival and success among SMEs. Further discussion on the competencies needed to mitigate the adverse effects of economic cooperation among SMEs being opened in essence of a call to refocus on their primary role of entrepreneurs.

Azizi (2010) found that the role of entrepreneurial competencies on the performance of SMEs is very significant. However, the organizational structure in the form of formal competence also moderated the relationship between entrepreneurship and enterprise performance in a positive form. Hence, the efforts to focus on improving the quality of entrepreneurial competencies are critical. This is because these competencies can be developed and deployed. Similarly, the efforts of SMEs formal organization structure should be considered as the findings of this study have shown that the shape of this structure can also affect the performance of SMEs.

Competency model can present the overall structure of the business based on the theory of Entrepreneurial Competency proposed by Bird (1995) and this paper increases the likelihood of survival and success, particularly in the context of developing country like Malaysia. Various forms of support has been provided by Malaysia Government in terms of funding, training and grants to improve and upgrade SMEs, but still many fail. This encourages delving into possible solutions to address this problem. The focus now should be on the leading role played by SMEs, especially linking key entrepreneurial competencies and their role as the aim of this research is similar to Gibbs (2005) and Azizi (2010).

1.2 Problem Statement

Small and medium-sized enterprises (SMEs) play an important role in national economy and contribute significantly to income, output, employment and GDP. (SME Corp Annual Report, 2015/2016). SME development has been earmarked as the new engine of country development for Malaysia.

Despite the significant contribution to the national development, SMEs in Malaysia only contribute 31% to GDP as compared to our neighbouring countries like Singapore which contributes 49% and Thailand 38% contribution to GDP, and this is far lower compared to SME's in developed economies country such as Germany and Japan which contributes 53% (SME Annual Report, 2012). Furthermore, the issues of the weak performance of SMEs in Malaysia have long argued and it is still continues until now.

The factor of innovation contributes to the increase in market share, production efficiency, productivity growth and revenue of the organizations. There are many organizations find that innovation is the key to increasing profits and market share (Shefer & Frenkel, 2005). Innovation enables firms to offer various products that can advance their financial performance, as mentioned by Zahra, Ireland and Hitt (2000).

On the other hands, Census of Establishments and Enterprises (2011) showed that in 2010, only 0.5 per cent of the overall organization stated that they invested in innovation as well as research and development (R&D). This figure accounts for only 1.3 per cent of total value added and very weak in marketing aspects. Census shows that there is less than 10 percent of SMEs who undertake some efforts of marketing and promotional activities (BNM Business Report, 2013).

Based on SME Masterplan, (2012), lack of innovation is the main weakness or barrier faced by SMEs. Besides, some factors as access to technology; access to finance; management ability and skilled workforce; inability to exploit economies of scale and bargaining power are the important constraints faced by SMEs.

Many academicians and policy makers have raised a variety of national opinion and projections to overcome the issues in order to ensure that its contribution would become a reality in the context of economic and social development of this country. This issue was reported by electronic media, newspapers, periodical reports by the ministries and government departments, agencies and through researchers by academicians (SMECorp, 2013, 2015; SME Masterplan 2012-2020; Census of

Establishments and Enterprises and Bank, 2011; Rasiah, 2002; Mohd Khairuddin, 2002).

Survey of SMEs by Bank Negara Malaysia on the status and performance of SMEs revealed the major problems faced by these SMEs (Bank Negara Malaysia, 2006).

The weaknesses as reported by the Central Bank of Malaysia are the capacity and capabilities of SMEs entrepreneurs are still low, namely in the context of:

i) create added value and total production. The survey found that value added from SMEs manufacturing sector currently only accounts at 47.3 percent in 2003 as compared to the value added in Korea by 50 percent,

ii) the difficulty in obtaining access to financing due to the failure of SMEs entrepreneurs to provide collateral, lack of financial records, the lack of supporting documents, business plans and records are potentially poor,

iii) the production and productivity of the SMEs sector is too low. Malaysian SMEs are only able to generate a total of RM0.3 million and RM0.8 million in value added output per establishment compared to large enterprises that generate more than RM41 million and RM127 million in value added output per establishment;

iv) the level of export capacity is small . This can be seen through the number of SMEs companies involved in export activities is only about 4,255 of companies involved as compared to the total business establishments of 523,132 companies. SME export value of only 16.6 percent of total exports valued at RM229 billion by the Enterprises 5.221,

v) a very small investment in research work and development.

Nevertheless, based on SMEs Masterplan 2012-2020, SMEs in Malaysia still underperformed as compared to its peers in the region and against more developed nations revealed four key problems, namely:

• Productivity of Malaysian SMEs was relatively low;

• Business formation in Malaysia was lower as compared to high income nations;

• In Malaysian the increment of GDP and employment only being genierated by big firms; and

• Sharing limited resources among SMEs companies.

There are some researchers who have highlighted their study on the influence of entrepreneurial competencies which factors related to personal qualities and the performance of SMEs (Mitchelmore & Rowley, 2013; Man, 2001; Man, Lau & Chan, 2002; Priyanto, 2005; Nathaka, 2007 and Man, Lau & Snape, 2008, Azizi, 2010).

Their studies have raised questions about how an entrepreneur who is also the owner or manager of a firm's leverage their entrepreneurial competencies in the context of opportunities, relationship building, analytical, innovative, committed, knowledgeable, personal strength, intelligent operate, manage human resources , and develop strategies to influence their performance of SMEs.

The weak performance of the SMEs has been discussed among many researchers. Many researchers see that one of the most important factor is due to the

characteristics of entrepreneurship itself (Mitchelmore & Rowley, 2013; Man, 2001; Man, Lau & Chan, 2002; Man, Lau & Snape, 2008, Azizi, 2010),

SMEs have important contributions to innovation and development of the local and global economies (Gilmore et al., 2013; Zhu et al., 2012). Previous research has studied innovation within large firms in developed markets; however, only a limited number of empirical studies have focused on SMEs in emerging markets (Hossain, 2013).

Study on the factors related to the success of SMEs has shown that action and "inactions" of entrepreneurs are very important (Masurel et al., 2003). Approach to understand how an individual's behavior may have an impact on business performance focus primarily on the competencies (Man & Lau, 2005). Sadler-Smith et al. (2003) stressed that small business persons need to have multiple skill competencies across domains, performing "generalist roles", instead of "expert role" that is more favoured by managers at larger firms.

In addition, there is still a scope that requires theoretical and empirical studies although the concept has been widely used in practice and some discussions about entrepreneurial competencies have been investigated by some researchers (Brinckmann, 2008).

Although most of smaller countries structure is dominated by SMEs, there is still limited literature to address specifically the determinants of innovation (Souitaris, 2001). Therefore, it is clear that there is a necessity for empirical research in smaller

countries which will be directed in determining the factors affecting SMEs' performance in developing country like Malaysia.

The identity of the firm's owners and their structures of a firm are the two main important factors. In addition, it also comprises implications for performance and corporate strategy: the personality of the shareholders influences the definition of strategic objective and the manner on how these are achieved; the degree of ownership controlling is a measurement of the influence of shareholders over managerial activities (Thomsen & Pedersen, 2003).

Nevertheless, in the study of relationship between structure of the organization and performance among small firms by Meijaard, Brand & Mosselman (2005) found that in the past several decades, attention to this topic is relatively quite limited.

Lack of appropriate skilled or skilled personnel is a major business barrier to SME innovation in the manufacturing sector based on some report of studies (Scott, 1996; Laforet & Tann, 2006).

However, innovation research in SMEs has a huge multiplicity of focuses despite widespread innovation studies. Mostly, ingredients for successful innovation, and its inputs and outputs remains unknown (Brown, 1998). Innovation and its effects on the business financial performance also examined by few studies and the outcome of innovation are fewer. It is now recognized among academicians that innovation can have negative and positive impacts based on Economics and Social Research Council's 2009 (Simpson et al., 2006).

Even though several researches has been done in linking between innovation and small firm performance (Verhees & Meulenberg 2004, Qian & Li 2003), but still more and more information is required (Siqueira & Cosh 2008).

Innovation activities that internally-focused facilitated by vertically integrated organizational company structures, while there are more fluid and open newer forms of organizational structures. As such, internal and external sources of innovation allowed by newer structures for integration (Allarakhia 2009).

When discussing the topic of innovation, study on SMEs' performance in various contexts becomes main issue (Mazzarol & Reboud 2008, Vermeulen et al. 2005, Wolff & Pett 2006). SMEs need to evaluate their competitive strategies and incorporate innovation into their activities in order to achieve long-term success (Madrid-Guijarro et al., 2013; Vossen, 1998).

Yang (2012) examines the moderating effect of innovation on the relationship between logistics service capability and firm performance for ocean freight forwarders. Results showed that innovation, logistics service reliability capability, and flexibility capability had significant positive effects on firm performance. The results indicated that innovation capability positively moderates the effect of logistics service reliability capability on financial performance as well as the effect of flexibility capability on financial performance.

In Malaysia, SMEs in manufacturing sectot are facing various issues and challenges and such as lack of management skills and expertise, insufficient skilled labour that resulted low productivity and low quality output, competition from global market especially from producers of China and India, low capability to meet the requirements of globalization standards.

The rationale behind the conduct of this study is based on some practical and theoretical issues related to SMEs' performance in Malaysia. Specifically, the focal focus are on the innovation and poor performance of Malaysian manufacturing SMEs.

Although extant empirical studies have investigated various factors determining SMEs performance, yet, most of the studies centred on such variables as entrepreneurial orientation, market orientation, dynamic capabilities, absorptive capacity and total quality management. This implies that other strategic resources factors have been given less attention.

Hence, this study fills the gap by incorporating other strategic resources determinants of SMEs performance (i.e. innovation, entrepreneurial competencies and organizational structure).

The researcher intends to investigate the moderating role of innovation on the relationship between some of determinants (entrepreneurial competencies and organizational structure) of SMEs performance that has not been given extensive consideration by previous researches.

Thus, in order to solve various issues and problems faced by the Malaysian manufacturing sector, this paper argues that the entrepreneurial competencies leads towards the success of SMEs business in the Malaysian manufacturing sector. And the external integration (customer relationship and supplierrelationship) moderates the influence of the entrepreneurial competencies on success of SMEs businesses. The detail of the competencies and external integration are discussed next.

Nevertheless, to reach a decision in a more holistic way as was done in the studies by Man (2001), Man, Lau & Chan (2002, Man, Lau & Snape (2008) and Azizi (2010), Yahya, Pervan & Jun Xu (2013) on entrepreneurial competencies. this study also linked on the influence of innovation as a moderating factor which is expected to affect the performance of SMEs in Malaysia, particularly in manufacturing sector.

1.3 Research Questions

Based on the gaps in the literature, the following research questions are addressed:

1. Is there a significant relationship between traits competencies and the performance of SMEs?

2. Is there a significant relationship between skills competencies and the performance of SMEs?

3. Is there a significant relationship between organizational structure and the performance of SMEs?

4. Does innovation moderates the relationship between traits competencies and the performance of SMEs?

5. Does innovation moderates the relationship between skills competencies and the performance of SMEs?

6. Does innovation moderates the relationship between organizational structure and the performance of SMEs?

7. Does innovation moderates the relationship between traits competencies, skills competencies, organizational structure and the performance of SMEs?

1.4 Research Objectives

1. To determine the existence of a significant relationship between traits competencies and the performance of SMEs.

2. To determine the existence of a significant relationship between skills competencies and the performance of SMEs.

3. To determine the existence of a significant relationship between organizational structure and the performance of SMEs.

4. To determine the moderating influence of innovation on the relationship between traits competencies and the performance of SMEs.

5. To determine the moderating influence of innovation on the relationship between skills competencies and the performance of SMEs.

6. To determine the moderating influence of innovation on the relationship between organizational structure and the performance of SMEs.

7. To determine the moderating influence of innovation on the relationship between traits competencies, skills competencies, organizational structure and the performance of SMEs.

1.5 Research Significant

This study is expected to provide benefits to its academics, entrepreneurs and SME support agencies and expansions in some circumstances. Among the benefits to be derived from this study are:

1. Uncertainty in decision making and efforts to improve the performance of an SME is caused by various factors. Among them is the absence of basic or comprehensive guide to identify the factors associated with the performance. For example, information on the level of entrepreneurial competencies that SMEs should have the appropriate steps can be taken if the level is still low. In theory, the performance of an enterprise is at high level if entrepreneurial competencies of the owner or manager are high qualities.

2. The study will be able to add more of the existing literature in the field of entrepreneurship and SMEs. Specifically, this study expected to contribute to the understanding of theoretical relationship between entrepreneurial competencies innovation, organizational structure, and SMEs performance in the manufacturing sector of Malaysia.

3. The empirical results from this study could assist government and related agencies to realign and set up current policies on the growth and development of SMEs in manufacturing sector of Malaysia. Through further enhancement on SMEs capabilities and resources especially in entrepreneurial competencies, organization structure and innovation will help the government to reconstruct proper policies and programs to improve Malaysian SME growth that ultimately contributes to the growth of Malaysian economy.

4. In general, this study will provide important information on the management practices of entrepreneurship among SMEs in Malaysia.

1.6 Scope and Limitations of the Study

The main scope of this study is to examine the relationship between entrepreneurial competencies, organizational structure and innovation that affect the performance of SMEs in the manufacturing sector in northern peninsular Malaysia. This study involves the SME population throughout three main northern states of Malaysia. Respondents will apply to all types of race and gender.

This study is based on several assumptions as follows:

a) The sample is assumed to be sufficient to represent the population.

b) Population assumed uniform within an SME with other regional areas.

c) Reliability and validity of the instrument is assumed equal to the output obtained from a survey of pilot (pilot study)

d) All of the questions in the questionnaire respondents to answer freely and distinctive without being influenced by any party or make any fakes.

e) The respondents are assumed to understand the questions given.

f) All respondents are assumed to understand the function of entrepreneurs and entrepreneurship.

In addition, this study conducted surveys on owners/managers' perspectives on all the variables because they are the most relevant and appropriate persons that could furnish information required for the study (Heide & Weiss, 1995; O'Cass & Ngo, 2007).

1.7 Definition of Key Terms

This section will explain some of the concepts or key terms that will be used throughout this study. Those key terms consist of entrepreneur, SMEs, business performance, entrepreneurial competencies, organizational structure and innovation.

1.7.1 Entrepreneur

One of the significant segments of the economy, mainly in terms of economic improvement is entrepreneurs (Baumol, et al. 2007). Entrepreneur's study and how they create and operate firms still an open question (Venkataraman 1998). Partially, because of the academic argument about the different definitions of an entrepreneur and the recognition of these individuals under each definition this question remains open.

"Entrepreneur" is a term that has a lot of operational and definitional ambiguity (Gibb, 1990). Entrepreneur defined as a self-employed person in previous studies (Aldrich 1990). Surdez, Aguilar, Sandoval & Lamoyi (2012) found that SME entrepreneurs are usually a young adult who have acquired some experience in the course of business because of the distinctive features of the SME entrepreneur and just started his business after completing his professional training.

Entrepreneurs referred to in this study consists of all those who are involved as owner or manager or decision maker in the manufacturing companies in the small and medium enterprise category. Entrepreneur in this study is seen as an owner or manager of an enterprise. These are people who think independently, make judgments and decisions in their own way. They are not bound by the other parties in terms of management and decision making (Drafke & Kossem 1998; Man, 2001).

Besides, the entrepreneurs in this study could be seen in the concept of autonomy, ready to take risks, innovate and quickly respond to any form of opportunities as a result of changes in the market.

1.7.2 Small and Medium Enterprises (SMEs)

The importance of small and medium-sized in terms of supplies of Malaysian economic conditions, small and medium terms have been changed regularly. Annual sales revenue and the size of the full-time employees represented in the story based on the definition of SMEs. The criteria are very similar, USA, Japan, the United Kingdom, Korea, China and other countries such as the comparison.

A business which is not more than 150 full-time employees and an annual sales turnover not exceeding RM25 million is defined as a business with small and medium category in Malaysia. (SMIDEC, 2007).The definitions of SME can be summarized under two categories as follow:

- **Manufacturing:** Sales turnover not exceeding **RM50 million** OR full-time employees not exceeding **200 workers**; and
- **Services and other sectors**: Sales turnover not exceeding **RM20 million** OR full-time employees not exceeding **75 workers**.

Detailed definition based on category namely Micro, Small and Medium is accordingly:

Table 1.1: Definition of SMEs by Size of Operation

Category	**Micro**	**Small**	**Medium**
Manufacturing	Sales turnover of **less than RM300,000** OR full-time employees **less than 5**	Sales turnover from **RM300,000 to less than RM15 million** OR full-time employees from **5 to less than 75**	Sales turnover from **RM15 million to not exceeding RM50 million** OR full-time employees from **75** to **not exceeding 200**
Services & Other Sectors		Sales turnover from **RM300,000 to less than RM3 million** OR full-time employees from **5 to less than 30**	Sales turnover from **RM3 million to not exceeding RM20 million** OR full-time employees from **30** to **not exceed 75**

Source: National SME Development Council (NSDC), 2013

In this study, a business with small and medium category in manufacturing and services related to manufacturing industry Malaysia is chosen.

1.7.3 SMEs Performance

Performance is a multidimensional aspect of business. Departmental category, manufacturing and marketing are the main classification of business performance (Sohn et al, 2007) or as growth and profit (Wolff & Pett, 2006). Therefore, it is widely used by multiple techniques in many studies. Overall, sales, profitability and market share are the basic terms of business performance (Carayannis & Gonzalez, 2003; Weber & Weber, 2007).

In terms of SME performance measurement methods, there are several methods to measure that found in previous studies. Miles, Covin & Heeley (2000) for example has chosen to use the method of measurement with subjective perception in the form of financial returns. Sales level, cash flow, return on shareholders' equity, sales growth rate, gross profit margin, profit on sales ratio, net profit from operations and return on investment are the criteria of financial performance.

According to Murphy et al., (1996) and Williams (2002), the dimensions of the financial terms included in their study, including efficiency, growth, profitability, size, liquidity, failure or success, part of the market, the ability of the plant , assets, sales and some number or other form of innovation. Pleshko (2006) measure performance using the perception of position in market share from weaker conditions (1) to excellent (7) and accounting profit indicators of return on assets (ROA) and return on investment (ROI).

Moreover, based on past studies, owners/managers from emerging market like Malaysia are more focus to market expansion and the long term growth strategies (Hitt et al., 1995). Innovative firms have greater flexibility since they have better ability to adapt market changes, and have quicker decision chains (Garcia-Morales et al., 2007).

The capability of innovation is a crucial aspect of business performance based on Moe et al. (1998). Additionally, according to Cozzarin (2004), non-innovative firms have less consecutive performance as compared to innovative firms.

In addition, a few researches have been done to study the interactions between innovation and business performance. There is an important impact of innovation on business performance that was conducted on Canadians firms based on Baldwin & Johnson (1996). Similarly, based on Gules & Bulbul (2003) studies on Turkish 500 manufacturing firms, the result had shown that higher performance owned by innovative firm as compared to lower innovative firms. Abu Kassim, Nor Aziah, Minai, Badriyah and Chun, Sin Loo (1989) felt that manufacturing firms in Malaysia prefer financial measurements such as sales, gr

Performance used in this study is in the form of sales and profits. Man (2001) and Azizi (2010) have also used this method to identify significant impact of entrepreneurial competencies to the performance of SMEs. Cash flow, net profit from operations, sales growth, return on sales, gross profit margin, the ability to fund business growth from profits and return on investment are the main criteria of performance.owth in sales, net profit and gross profit to view the performance of their business.

1.7.4 Entrepreneurial Competencies

Entrepreneurial competencies considered as a high level character, which shows ability of the entrepreneurs in execution of the work with excellence (Boyatzis, 1982; Lau, Chan & Man, 1999; Lau & Snape, 2008). It includes comprehensive or specific personalities, knowledge and skills that have been influenced by training, experience, education and other demographic variables, which includes family background (Herron & Robinson, 1993; Bird, 1995; Lau, Chan & Man, 1999 and Patzelt, Knyphausen-Aufse & Fischer 2008).

However, in this study the process and context approach was selected and has been used by some researchers. Through this approach can be studied entrepreneurial competencies through activities or their entrepreneurial behaviors based on traits competencies and skills competencies which comprise opportunities, networking, analytical, innovative, commitment, learning, personal strength, operational, human and strategy in the context of the organizational structure and innovation to SMEs performance. This approach has been used by the Man (2001), Man & Lau (2002), Natakha (2007),

Hence, for the purpose of this study, two independent variables are used in studying the relationship between entrepreneurial traits competencies (opportunities, networking, analytical, innovative, commitment, learning and personal strength) and skills competencies (operational, human and strategy) as proposed by Man, Lau & Snape (2008) and Azizi (2010) in influence of the innovation as moderator and organization structure on the performance of SMEs.

1.7.5 Organization Structure

Decisions relating to division of task, authority, and a set of coordination mechanisms" involves organizational structure. Organizational structures are coherent systems for performing work in the most proficient manner (Parthasarthy & Sethi, 1992).

Organizational structure plays a significant role to assist management team to accomplish its objectives and pursue the firm's strategy, (Robbin & De Cenzo, 2005). Based on the recent study, mechanistic and organic are the basic two structures of an organization. Mechanistic defined as hierarchical systems dominated by high formalisation and top-down management. On the other hand, organic organisations defined as a low formalisation, network structure of control and authority, and fluid job descriptions (Burns & Stalker, 1994; Reigle, 2001).

An important relationship between organic structures and enhanced performance had been found by many studies (Burns & Stalker, 1961; Enz, 2008; Tarigan, 2005). Covin and Slevin (1990) and Burns and Stalker (1961) reported mechanistic such a structure to be more appropriate in an environment characterized by high rates of technological and market change. Maffei and Meredith (1995) suggested that organizations adopt a non-stiff structure, which, can improve performance and quality and advance resolution by identifying problems as well as encourage greater staff participation.

In contrast, Jogaratnam and Tse (2006) found that positive effect given by mechanistic organizational structure and negative effect given by an organic structure on the performance of hotel. Their outcome may be attributable to

employee work expectations and management styles in Asian sub-cultures in a part whereby organic such structures less prevalent and effective than mechanistic organizational structures.

Therefore, this study comprises organizational structure as mechanistic structure and organic structure as discussed in literature review.

1.7.6 Innovation

OECD (2005) defines “An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organisation or external relations.”

Mazzarol & Reboud (2008) defined a process of innovation as the realization of new products or services, new management and new marketing strategies or organizational structures. Intellectual property, innovation, new technology and the business and the body parts that have changed. Latin words "innovatio" or "innovo" (Norrman 2008) "to renew or to do something new," which means that the word "innovation" has the look.

Hence, this study comprises innovation as open innovation, radical innovation and incremental innovation as discussed in literature review.

1.8 Organization of the Study

The study is divided into five main chapters. The first chapter in the background of the study specifically describes the issues that led to this study. This is described

under the headings of the statement of the problem, research questions, the objectives, the significant of the study, the scope of the study, the definition of the concept, preparation and formulation of thesis.

The second chapter contains a literature review focused on five main areas, namely as scenario of SMEs in Malaysia which includes the definition of SMEs, an explanation of the basic theory used in this study, the argument linking the relationship between entrepreneurs and the performance of SMEs, the definition of entrepreneurial competencies and its relationship with the performance of SMEs, the relationship between the organizational structure and performance of SMEs, the moderating role of innovation on the relationship between independents variables and performance of SMEs and the establishment of model studies.

The third chapter under the heading of research methodology discusses the methods used to achieve the purpose of this investigation. Among the topics touched on in the discussion in this chapter is about a study, the study design, selection of respondents, survey procedures, instrument, measurement variables, a pilot study, and the actual study in the field.

In the fourth chapter of the study describes the results and analysis of the study data, in line with the objectives of this research. This chapter explains the analysis of data and findings of the research. It presents complete results, analyses and discussion of the study in the forms of figures, tables, or text such that the key information is highlighted. Results and discussions consist of more than one chapter depending on nature of issues. This chapter also discusses the hypotheses testing and analysis procedures including, reliability and validity analysis, normality testing,

multicollinearity testing, factor analysis, regression analysis and also reporting the results of analysis.

The fifth chapter as the last chapter, discuss and conclude the findings and provide recommendations and suggestions related to the attention of the parties concerned. Through this chapter researchers also suggest the study to understand the future that will be able to complement these studies in various aspects.

1.9 Conclusion

This chapter has discussed on the issue of the performance of SMEs and also its relation to the role of entrepreneurial competencies. These discussions have led to the onset of the study. Specifically, this chapter has explained the problem statement, objectives, significant research, the scope of the study, the definition of the concept as well as the preparation of this thesis as a whole. In the next chapter the researcher will reveal a scenario of small and medium enterprises (SMEs) in Malaysia in order to facilitate further understanding about this research in the subsequent discussions.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

SME performance and its relationship with traits competencies, skills competencies, organization structure and innovation have motivated this study. Specifically, the previous chapter states the problems, research questions, research objectives, significant of the study, scope and limitation of the study, conceptual definition and the organization of the whole thesis.

This chapter explains about SMEs and scholarly literatures with regard to SMEs typology, roles of SMEs and its contribution to national economy. This is important before researcher continue to discuss the effect traits competencies, skills competencies, organization structure and innovation on SME performance in Malaysia.

This chapter also evaluates relevant theory and model to reinforce the relationship among variables of the study. The Resource Based View Theory (RBV) is used to support the proposed framework. This chapter also looks into the insight of traits competencies, skills competencies, organization structure, innovation and their relationship with performance. The primary focus is on a concept and a complex phenomenon of performance before examining all relevant contexts and variables.

2.2 Small Medium Enterprises (SMEs)

According to Asia-Pacific Co-operation (APEC), 2010, in every country in the Asia-Pacific Co-operation, SMEs account for over 90% of all enterprises (Mohammad, 2012). For economies of most nations of the world, the demand of the SMEs is increasing and has become their recognized feature (Omar, Arokiasamy & Ismail, 2009). For example, in the United States, SMEs represent an overwhelming majority of all businesses and account for almost one-half of the gross national product. SMEs in Thailand represent over 90 percent of the total number of entrepreneurs in nearly all business sectors, and employ over 60 percent of the labour force (Veskaisri & Pollard, 2007).

The abbreviation SME is commonly used in international organizations and in European Union countries, such as the United Nations (UN), the World Bank and the World Trade Organization (WTO). The term small and medium business (SMB) is also prevailing in a few other countries of the world (Syed, Ahmadani & Shaikh, 2012).

The classification and definition of businesses are generally based on quantifiable characteristics such as number of employees, sales volume or worth of assets (Rahman, 2001). The specific definition for SMEs, used by each country in the world, is usually based on several different criteria which include sales or assets, number of employees and levels of capital, (Mohammad, 2012). No uniform definition of SMEs is available in literature. In USA, businesses having employees fewer than Five hundreds (500) are considered as SMEs.

In case of European Union, businesses having less than 250 employees are considered as small and medium sized businesses (Khalique, Isa, & Shaari, 2011).

Throughout the world the role of small and medium sized enterprises (SMEs) is becoming increasingly prominent (Veskaisri et al., 2007). SMEs can be established in any locality for any kind of business activity in urban or rural area (Khalique et al., 2011).

According to Reider (2008), the two main primary reasons for the existence of small firms are: (1) to provide goods and services to satisfy customers' needs in a manner that they will continue to use and recommend the firms' goods and services, i.e. "customer service business" and (2) to create desired goods and services so that the investment in the firm is converted to cash as quickly as possible, i.e. "cash conversion business" (Armstrong & Drnevich, 2009).

Small businesses are very important to the world economies (Wiklund & Shepherd, 2005). The most important and the large part of world economies are the small firms. That is why, more and more researchers are seeking and trying to understand about these firms. Even the governments of the all the economies of the globe and particularly those agencies which are responsible for the development of these firms, take deep interest in understanding about these firms (Hill & McGowan, 1999).

Small business firms play an important role in the economy of any country (Wong & Aspinwall, 2004). In many jurisdictions, the small and medium sized enterprises (SMEs) sector has attracted increasing and significant attention from policy makers.

This attention has focused on SMEs development, business birth rates and entrepreneurship in the developed economies. These economies look to the SMEs sector for provision of increased employment, economic development and innovation (Daple, 2004).

2.3 SMEs in Malaysia

According to the Census 2011, total 645,136 SMEs businesses were operating in Malaysia which represents 97.3% of total business establishments. Among them, service sector represented 90%, manufacturing sector constituted 5.9% and construction sector indicated 3.0% of the total establishments. On the other hand, only 1.0% was in agriculture sector and 0.1% in mining & quarrying. There were more than 580,000 establishments of SMEs in sector of services which revealed 98.2% of the total establishments in this sector.

While manufacturing sector and construction sector represented 95.4% and 87.1% respectively of the total establishments in these sectors. The census 2011 revealed same percentage of micro businesses as compared to the census of 2005. This depicted that the major SMEs were of micro-sized businesses that represented 77.0%, on the other hand, the small businesses and medium-sized establishments represented 20% and 3.0% respectively of total establishments of SMEs. The services sector recorded 79.6%, the manufacturing and agriculture sectors represented 57.1% and 56.3% respectively of micro-sized establishments. On the other hand, the quarrying and mining sector represented 42.1% of SMEs that were of small size.

According to the findings of the Census 2011, most of the SMEs representing more than 50% were situated in WP Kuala Lumpur, Selangor, Johor and Perak Meanwhile, SMEs in Sarawak and Sabah represented only 13.1% of total Malaysian SMEs. The women owned 19.7% out of 645,136 operating SMEs in Malaysia. The women owned establishments were highest in the services sector that represented 91.7%, followed by in manufacturing sector with 6.9% but other sectors represented even less than 1.0%. On the other hand, 88% women were in micro businesses, small businesses represented about 11.3% and medium size businesses indicated less than1.0% women respectively.

The SMEs contribution to GDP in Malaysia has increased from 29.4% in 2005 to 32.7%. During the period between2006 and 2011, SMEs growth was surpassed the overall economic growth. For instance, in the year 2011, SMEs represented the growth of 6.8% relative to 5.1% of overall economic growth. In 2012, service sector contributed 61.7% and manufacturing sector contributed 24.1% to GDP, on the other hand, the contributions of construction and mining and quarrying sectors to GDP were 2.8% and 0.2% respectively. It is evident that SMEs are pivotal for the economic development for all countries. In Malaysia, the development of the SME sector is an extraordinary due to its significant contribution to the growth process of economy over the years (BNM, 2010).

Department of Statistics showed in economic census report (2012) that 645,136 Malaysian SMEs were accountable for 97.3% of total business establishments; whereas, large establishments contributed only 2.7 % (17,803).

The government of Malaysia is focusing more towards the development and growth of SMEs to achieve the vision 2020 of becoming high income nation. The Malaysian government has set targets for SMEs in its master plan for 2020 according to which SMEs are given target to contribute in 41% in GDP, 62% in employment and 25% in exports up to 2020 (Ahmad &Seet, 2009; Central Bank of Malaysia, 2006).

2.4 Malaysian SMEs in Manufacturing Sector

Small and medium enterprises are the most wide-ranging form of business establishment in Malaysia, and they mainly operate in general business, raw material, agriculture and manufacturing sector. However, the role of SMEs operating in the manufacturing sector is relatively more important in the Malaysian economy (Kassim and Sulaiman, 2011).

Malaysian manufacturing sector is ranked in the 23rd position among the world countries. According to Wikipedia report, Malaysia is considered as one of the largest exporters of semiconductor devices and components, solar panels, electrical goods and ICT products in the world. The Malaysian electrical and electronics (E&E) industry is accountable for 26% of manufacturing output and is considered as the largest single contributor to the manufacturing sector.

These manufacturing industries highly contribute in Malaysian economy. The major Malaysian manufacturing industries are related with food processing, furniture and electronics. The Malaysian manufacturing sector creates demand for fast productivity growth service sub-sectors which include finance, transportation and telecommunications.

Apart from this, the manufacturing sector also provides a platform for spins-offs in production services such as design consultancies and engineering with its production and processes. The comparative advantage in Malaysian manufacturing sector results into situation of healthy balance of payments and leads towards standards of living as well.

According to Malaysian Industrial Development Authority (MIDA), the data revealed that the manufacturing sector is attracting more foreign direct investment (FDI) in this sector as compared to service sector. In 2011, FDI increased by 12.3 % to around RM33.7 billion, and this sector's total share was around RM16.85 billion in FDI.

Also in the year 2011, the total investments in the Malaysian sector also increased, 846 manufacturing projects of total value RM56.9 billion started in the year 2011 were approved which was 19 % more than the RM47.8 billion recorded in 2010. This indicates the importance of the manufacturing sector in the growth of Malaysian economy. This is the major sector in Malaysian economy that generates employment opportunities. Manufacturing sector contributes 80% of overall country's export. Malaysia is ranked 17th as the largest exporting country in the world.

2.5 Entrereneur and Entrepreneurship

Based on psychological literature on entrepreneurship and some economist theories (Covin & Slevin, 1991), individuals with enduring characteristics or features and certain kinds of stable often defined as entrepreneurs. Personality traits are the main emphasis (Brockhaus & Horwitz, 1986; Cromi, 2000). Step-wise process is one of

the characteristics of entrepreneurship, which influenced by exogenous and endogenous factors as well, for instance the continuation of an environment that is business friendly, the accessibility of the required factor endowments, the capability to obtain preferred resources, and the ability to apply and run the business concept (Morris et al., 2001).

Morris's conceptual framework is based on the assumption that entrepreneurial skills are widely offered. On the other hand, based on the arguments of some lecturers to teach entrepreneurship or entrepreneurship education are encouraging (Drucker, 1985, Gorman et al., 1997).

Malaysian franchising receives continuous attention among the entrepreneurs. One of the success factor is a better image of the franchise due to training offered by the government as well as the full support of the government (Abu Bakar, 2003).

Students' skill expectations and skill acquisition is not being matched in Malaysia entrepreneurship education based on view of Cheng et al. (2009) which conducted by Abu Bakar et al. (2003). Based on their findings the level of understandings about entrepreneurship is still weak among the trainers who came from entrepreneurship courses. Through profile traits and multiple factors, entrepreneurs are being developed. To produce an entrepreneur, however, not all of the factors and traits and are compulsory. Exogenous factors such as demographic traits, skills, culture and social and financial support contribute to the attitudes towards entrepreneurship which explained by Shapero (1975), Shapero & Sokol (1982).

In addition, in creating entrepreneurial skills, studies demonstrate that educational background plays a fundamental role (Murphy, 2005; Vojak et al. 2006). It shows those with the technical background can take advantage of a mere idea which is a potential successful process (Murphy, 2005) as Vojak et al. (2006), called this group "technical visionaries".

2.6 Theoretical Basis

Based on theoretical part, the basic question of how firms achieve and sustain competitive advantage and why firms are different by deploying their resources are being addresses by the central premise of RBV. Our focus has turned on the black box of the firm because of the popularity of the resource-based view (RBV) of the firm. It is clear that these ideas are quite familiar.

Due to the development of this topic, there are many other educators have been contributed for 50 years ago. For example, a firm's distinctive competence 'and Selznick's (1957) will be paid by the RBV. Related Chandler's (1962) Andrews, an internal assessment of the strengths and weaknesses of the program (1971) with unique skills which leads to the classification of' structure follows strategy.

However, as a bundle of resources that a company screening, the Penrose idea is not homogeneity, it will give the unique character of each company, its resources and services available in production was pioneered by Penrose in 1959, said the heterogeneity. RBV based on the idea of heterogeneity in the company's resources.

Wernerfelt (1984) path-breaking article in the broader field of strategic management perspective on the importance of resource are recognized as a new direction. Wernerfelt (1984) recommended by evaluating companies based on their resources and traditional perspectives will lead to insights can vary.

The company wanted to build a solid and comprehensive framework and resources for sustainable competitive advantage given by Barney in 1991 to identify desirable characteristics. These properties; Valuable (they are likely to use and neutralize the threat, its competitors comparison rare hard to imitate and non-substitutable (Barney, 1991), many authors (Amit & Schoemaker, 1993; Mahoney & Pandian, 1992; Peteraf, 1993; Rumelt, 1984; Dierickx & Cool, 1989) non-tradeability, the nature of the resource life and resources are abnormally prolonged Barney display. In previous decades, because of its strategic interests in the strategy literature and company profits as much as the original driver has been urging the company's internal resources. This shift towards a resource-based view and management of the education system at an industrial scale (IO) was for many reasons, from the economic point of view.

Firstly, there is a dramatic increase in new technology, new products based on the conversion rate, and changes in customer preferences. Clearly, in an increasingly dynamic environment, a static snapshot of a moving sector development strategy (Bettis & Hitch, 1995) is not enough. The more overlap in many areas, especially in the information technology of the traditional professional boundaries, and vanished (Bettis & Hitch, 1995; Hamel & Prahalad, 1994). However, the standard industry strategic groups, competitor analysis, including classification and diversification,

strategic and analytic tools that contain traditional IO strategic thinking is the main concern.

Finally, to increase the exchange rate at the time of the first companies to react immediately by increasing pressure, often competitive advantage (Stem & Hout, 1990), referred to the source. All in all manner of reasons, they must think of reconceptualize how competitors definition, strategic opportunities to see personally, but may not.

Are owned by companies that are strategic in terms of resources and planning, there are various components to the central theme of their resource-based research. Heterogeneity is a resource immobility (Barney, 1991) in the manner suggested, the effect of market imperfections resources (Barney, 1991), and from time to time to change the company's share of the accumulated reserves robbery incapability (Carroll, 1993). This layer of each company (Wernerfelt, 1984) conceptualized tangible and intangible resources and capabilities to follow a bundle. Resources such as (organizational practices, that the company's reputation, ie, experience, knowledge and skills of employees, brand name) known as tangible and (financial or physical) classified as intangible.

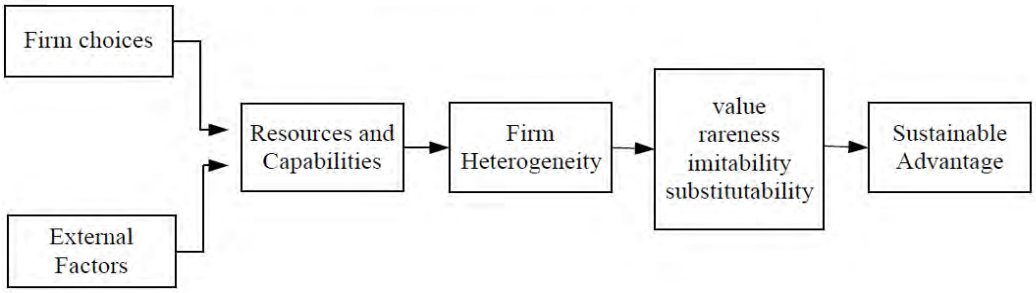
Generally organized in conjunction with the organizational processes and integrate a company's ability to use the different resources, skills known to affect a desired end (Amit & Shoemaker, 1993; Grant, 1996; Prahalad & Hamel, 1990). They perceive processes in enterprises and specific, information-based and multifaceted interactions (Amit & Shoemaker, 1993, the company's resources in the midst of

being developed; Conner & Prahalad, 1996; Kogut & Zander, 1996; Leodard-Burton, 1992; Winter, 1987). Believe their product or service and its strategic flexibility through improved organization, its resources, productivity, as well as created to provide security, 'intermediate goods' can assume that.

Amit & Shoemaker (1993) on the basis of a performance from a resource which characterized by two main features. A formal proof (Makadok, 2001) is, it is, first, to the ability of a system entrenched in the process, is specific to an organization. If a system is fully dissolved, there were also contrary to the company-specific character of its capabilities at the same time, indicates that a new owner will be able to survive in the hands of its resources. For example, if a complete meltdown of Intel Corporation, its microprocessor patent in the hands of a new owner will be able to continue to live, but probably at designing new generations of microprocessors and its ability to be dimmed. The main reason is the ability of a company to an 'intermediate goods' (Amit & Shoemaker, 1993) operation, possesses the resources in order to achieve its goals is to improve efficiency and productivity.

Overall, resource assortment of sustainable competitive advantage, (through institutional capacity) as a result of the use and accumulation, and a resource-based view of the heterogeneity of the institutions of the resource (Figure 2.1) is based on the premise.

Figure 2.1*: Sustainable Advantage and RBV*



2.6.1 A resource – based view of firm's capacity to innovate

Institute of structural characteristics (eg, regulation, centralization, and special), enterprise or agency relationship between the level of innovation and industrial environment management literature is an important research question. Supposedly, the company's innovative activities on the basis of differences in terms of the traditional perspective, organizational characteristics and explained by industry (Damanpour, 1991; Wolfe, 1994; Duncan, 1976; Daft, 1992).

In contrast, innovation performance and activities not only in terms of industry characteristics or organizational structure but also in terms of capabilities and resources have studied (Dosi, 1988), as it focus more behaviorally oriented research streams, and especially evolutionary economics (Nelson & Winter, 1982).

Similarly, resource-based view of the firm that embraces through an emergent literatures (Brown & Eisenhardt, 1995; Henderson & Cockburn, 1994; Iansiti &

Clark, 1994; Leonard-Barton, 1995) offer new explorations to management of innovation.

Based on this influential perspective, the existence of diverse organizational capabilities and resources directly affects the result of the process of innovation; therefore, it can be used to expand the findings (gained) by past researches on the firm's capability to innovate.

A firm with valuable and scarce resources and capabilities (and strategic assets) as described in resource-based view of the firm which can have a competitive advantage and differentiate it from other firms in the marketplace (Hsu & Ziedonic, 2013). These resources and capabilities can be valuable if they "enable a firm to develop and implement strategies that have the effect of lowering a firm's net cost and/or increase a firm's net revenues" (Barney & Arikan, 2001).

The outcomes that these resources and capabilities can extract such as innovative products and services are considered to be important to a firm's success (Penrose, 1959). Further, previous studies have identified several factors contributing to successful innovation in SMEs, including management strategic orientation, internal culture, process innovation, networking, and customer demand (Laforet & Tann, 2006). Adams and Comber (2013) argue that much of the government and industry supports to date have focused on large firms and are aimed at helping them to improve their resources efficiency; however, there is a need to address the capabilities and characteristics of SMEs.

The extension of the resource-based view has led to the concept of "dynamic capabilities", which refers to the ability of the firm to develop and use resources and competencies to adapt to changing business and market environments (Eisenhardt & Martin, 2000). This view explains how a firm can channel its resources into capabilities (including innovative capabilities) to create products and services and to add value for customers and secure a sustainable competitive advantage for the firm (Hult et al., 2004). It is important that firms are able to "respond quickly with innovations that meet specific market needs, while simultaneously exploring basic research areas for potentially major innovations that more significantly alter the market landscape" (Chidamber & Kon, 1994). This is why the innovation efforts of the firm should be focused on nurturing and enhancing these capabilities and competences with the result of improving business performance.

Innovation is described as "an integral activity that involves the whole organization and conditions the organizational behavior" (Martinez-Roman et al., 2011). Innovative capability, as a special asset, is related to the firm's internal processes and its ability to respond appropriately to environmental changes (Akman & Yilmaz, 2008). Firms must adopt and/or generate innovations over time to adjust to and survive environmental changes (Hult et al., 2004).

In this context, innovation is linked to the ability of the firm to seek new and better ways to identify, acquire and implement tasks (for example, processes, products, services, management and administrative systems, organizational structures and marketing methods) in the organization (Brem & Voigt, 2009; Calantone et al., 2002), whereas innovativeness is a degree of openness to adopt new ideas and a

measurement of a firm's culture toward innovation (Hurley & Hult, 1998). Innovation is "concerned with the creation of new businesses within the existing business or the renewal of ongoing businesses that have become stagnant or in need of transformation" (Slater, 1995), and can be envisaged as an incremental innovation (for example, exploit existing technology, low uncertainty and improve competitive advantage within current industry and market) or radical innovation (for example, explore new technology, high uncertainty and dramatic change within current industry, market or new ones), (Dorf & Byers, 2008).

Innovation adoption and/or generation can contribute to the firm's willingness to adapt to internal and external environmental changes (Hult et al., 2004). Innovation is economically profitable and creates competitive advantage and can have a positive impact on business performance (Fallah & Lechler, 2008; Talke et al., 2011).

SMEs should actively incorporate innovation into their business strategies and activities (Gilmore et al., 2013; Hadjimanolis, 2000), although, compared to large firms, they are faced with greater challenges such as a lack of economies of scale, limited resources, smaller market size, greater vulnerability to market shifts and environmental shocks (Cagliano & Spina, 2000).

However, SMEs have advantages due to their entrepreneurial characteristics and their flexible structures which can make it easier for them to adopt and/or generate innovations through strategic networks or value-chain activities (Mahemba & De Bruijn, 2003). SMEs innovation research covers a number of issues that contribute to their innovative characteristics such as environment and culture, market, strategies,

process and product types, drivers and platforms, ideas sourcing, research and development and barriers (Blumentritt & Danis, 2006; Hadjimanolis, 1999; Laforet & Tann, 2006). From the above discussion, small and medium firms' characteristics are different from those of large firms in relation to innovation.

2.7 SMEs Performance

Different schools of thought through consultations, scholarly studies, and business practices have depicted the classification of performance for SMEs. The different stages of development in researching and planning the small business management distinguished the difference between paradigmatic definitions of performance. It involves the interaction between conceptualization and experience all along this learning threshold, which drives the term performance through progression of a management, assessment, or measurement (Folan, Browne & Jagdev, 2007).

All together, based on Lee Thean Chye et al.; (2010), there were many empirical studies on the measurement of organizational accomplishment based on the performance. The research activities range has been confidential into many theoretical streams showing individual performance measures proposition. Some researchers advocate campaign for a long-term measure of performance, several dimensional or objective while others advocate it to be either subjective, single dimensional or short-term.

Based on Hazlina et. al (2010), SMEs can usually be categorized into two broad groups according to the studies of business performance. Firstly is the role of

external factors on success identification, while the second role is emphasizing SMEs internal aspects, especially, the entrepreneur's characteristics and the organizational variables. Studies that concentrate on external factors typically observe government role in developing an environment that is contributing to the success of smaller business. The major conclusion of those studies is that the main obstruction to success among SMEs is the limitation of various forms of support, for example training and financial support.

Funding policy of government and the basic infrastructure provision and protection against big business competition (Yusuf, 1995); training and education programs (Robertson et al., 2003); and soft loans provision and assistance of government export (Mahajar & Mohd Yunus, 2006) are the areas that have been researched. Measurement of business performance consists of multi-dimensional structure and only one single indicator cannot illustrate the overall operation of an enterprise. are the two best indicators for business performance which claimed by Ding (2006).

Growth performance of operations and innovations comprises eight indicators that is the new business area development (new productions, new markets, etc.), sales revenue ratio from new business area over total sales revenue, new business area proportion over the whole business area of the enterprise, enterprise market share, enterprise total sales revenue, enterprise profit, change of employee numbers, and enterprise overall competitiveness.

In 1996, Murphy wrote a dissertation about entrepreneurial performance. He hypothesized and found that entrepreneurial performance is a multidimensional

construct, consisting of five dimensions: profitability, growth, survival, productivity, and satisfaction. Then, more recent review of the literature identifies the most utilized measures of venture performance as those based on firm survival (He, 2007; Watson, 2007), financial performance, and growth. Some of these measures are collected objectively while others are reported by the entrepreneur or small business owner (Keh et al., 2007; Lumpkin & Dess, 2001; Zahra, Neubaum & El-Hagrassey, 2002).

Common survival measures include a firm's presence on the public market as well as its bankruptcy filing status or its listing status (He, 2007). Common financial performance measures include ratios such as ROA (He, 2007; Robinson, 1999), ROE (Robinson, 1999; Watson, 2007; Zahra, Neubaum & El-Hagrassey, 2002), ROI (Aragon-Sanchez et al., 2005; Robinson, 1999), ROS (Edelman et al.,2005; Robinson, 1999), and EBIT (Robinson, 1999); while growth measures include growth in total income (Watson, 2007), sales growth (Ensley et al., 2006; Gilbert, McDougall, & Audretsch, 2007; Hmieleski & Corbett, 2007; Robinson, 1999), and revenue growth (Thornhill, 2006).

Business performance determines how well a firm manages its internal resources and adapts to its external environments (Knights & McCabe, 1997), which reflects the accomplishment of its strategic objectives and growth goals (Hult et al., 2004). Business performance is the result of the interplay among actions taken in relation to competitive forces that allow a firm to manage its internal resources and adapt to its external environments, thereby integrating the concepts of efficiency and effectiveness (Keizer et al., 2002).

In addition, business performance is related to the overall firm achievements as a result of new and/or better efforts made to gain profit and growth (Gunday et al., 2011; Hult et al., 2004). Both financial and non-financial measures could be used to enable a firm to make efficient strategic decisions and to measure long-term success (Avci et al., 2011).

In conclusion, many methods have been used to measure business performance in the entrepreneurship literature to date, including both subjective and objective measures. Overall, it is difficult to compare and making contrast results from different studies as the choice of methods has been very eclectic.

Based on Markman (2007) argument, entrepreneurs are someone who possesses skills, and abilities as well as knowledge in order to become a strategic leader for their ventures by influencing to the success of the ventures through their actions. They recognize opportunities, formulate strategy, and transform these opportunities into activities of the business (Beaver & Jennings, 2005).

Entrepreneurial competencies are diverse among the cultures for successful entrepreneur. To decide the content of training needed for managers and employees in new business ventures of a specific country, this factor can be helpful. Learning would need to concentrate on the merger of behaviors, characteristics and knowledge of the entrepreneur in order to equivalent to the entrepreneurial prototype of that specific culture (Elizabeth J. Rozell, 2011).

Those who identify a positive view about the experience of their family, they are encouraged to begin a business as both feasible and desirable based on Drennan et al. (2005). Childhood experience of repeatedly relocating are also had a positive effect on attitude towards self-employment and on perceived autonomy.

It can be categorized into three types of entrepreneur's experiences to be considered: industrial experiences, career experiences, and venture experiences. The rate of business profit and survival chances mostly being promoted by industrial experiences (Bosma et al., 2004). Career experiences, mostly experiences of being a higher-hierarchy manager, boost business livability. The possibility of obtaining venture investments were enhanced by venture experiences (Westhead & Wright, 1998; Westhead et al., 2005), which again boost livability of newly formed business.

Many new entrepreneurs have their own family business experience as their family members and relatives who have been involved in a business. Such experiences would assist the new entrepreneurs in thinking more creatively and in financing help. Such experiences would also generate an atmosphere which will impact the new entrepreneur's business growth performances. Entrepreneur's knowledge influences business growth performances (Hatch & Dyer, 2004).

There is widespread acknowledgement that the success, performance, and growth of an SME is heavily dependent on the competencies of the entrepreneur. The management structure and independence of a small enterprise places the entrepreneur in a critical position in the business operation (Bird, 1995; Capaldo et al., 2004; Chandler & Jansen, 1992).

Further, some researchers have suggested that an understanding of competencies that are exercised by the entrepreneurs leading successful small businesses can be used to support the development of those competencies, and in turn, has the potential to drive business growth (Low & Macmillan, 1988; Churchill & Lewis, 1983). For any business to survive, the owners need a broad set of the abilities, competences, and skills that are crucial to the prosperity and continued existence of their business.

Whilst entrepreneurial competencies are important for all SME's, the imperative to develop the understanding of such competencies in the context of female-led businesses is particularly strong. There are growing numbers of self-employed women in developed economies such as the UK and the USA (Carter & Shaw, 2006), and many of these businesses are highly dependent on the owner and her skills (Lerner et al., 1997).

In addition, there is a widespread assumption that many of these businesses are life-style businesses and as such their commitment to growth may be relatively low (Wiklund et al., 2003). Nevertheless, governments and other agencies, in pursuit of economic growth (or in these times avoidance of recession) are looking to SME's to play a significant role (ACCA, 2010).

Although entrepreneurial competencies are seen as important to business growth and success, according to Brinckmann (2008) the discussion of competencies in the entrepreneurial literature is in its early stages. Indeed, whilst over the years there have been some notable studies that have sought to examine the skills and

competences of entrepreneurs (Chandler & Jansen, 1992; Markman et al., 2002), they are few in number, and each is to some extent context dependent.

In particular, few studies in specific areas, such as financial management and management competency (Carter et al., 2006; Lerner et al., 1997; Walker & Webster, 2006). Various abilities of an entrepreneur affect business growth performances directly (He, 2006; Man et al., 2002; Zhang, 2004; Alvarez & Busenitz, 2001).

2.8 Issues of SMEs Performance in Malaysian Manufacturing Sector

Manufacturing sector produces wealth for any country and impacts a lot on the country's economy. Malaysia is middle income country and its economy largely depends on service and manufacturing sectors. Thus, there is a big challenge to be a leader in high value added sector of manufacturing in order to achieve vision 2020 of becoming a high income nation. In order to achieve the status of a high-income and of an advanced economy, Malaysia has to grow at 6% per annum according to the Tenth Plan period.

The manufacturing sector contributes 20.6% to its GDP. This sector will be a major economic growth driver during the Tenth Malaysia Plan period (2011 to 2015). According to Tenth Malaysia Plan, this sector is expected to grow at 5.7% annually until completion of this plan period by contributing 26.3% to GDP. This growth will largely depend on improving the productivity of sector.

Some of the issues and challenges faced by the Malaysian SMEs are insufficient skilled labour force that resulted low productivity and low quality output,

competition from global market especially from producers of China and India, low capability to meet the requirements of globalization standards and lack of management skills and expertise. In Malaysia, the manufacturing sector has a problem in maintaining its quality, competitiveness, and Just-In-Time delivery of the products. These three requirements are crucial to gain market share.

The manufacturing sector is an industry that is driven by knowledge and technology. Also Malaysia produces and promotes high-tech products and services. Thus, it is not easy to remain competitive with current market conditions where the technology is rapidly changing and developing. Besides the rapidly changing technological products, manufacturing sector is lacking of technical and marketing skills as well.

Moreover, the manufacturing sector in Malaysia also lacks of the utilization of ICT in production processes that impact a lot on its productivity as ICT is a vital tool that closes the gap between the existing and latest technology such as grid computing, nano-technology, RFID and WIFI. Their utilization is very crucial to gain competitiveness and high productivity. Thus, in order to solve various issues and problems faced by the Malaysian manufacturing sector, this paper argues that the entrepreneurial competencies leads towards the success of SMEs business in the Malaysian manufacturing sector.

2.9 Entrepreneurial Competencies

The competency concept is not something new in the management field. Mintzberg (1973) has identified ten key roles of managers and management scholars have conducted research competencies related to roles that can lead to a better

performance of an organization. Some studies have identified the importance of understanding the role of work in exploring the efficiency associated with the role of each individual (Spencer & Spencer, 1993).

At this point, by understanding entrepreneur's role it is believed that a good exploration towards competencies needed to generate success in the SMEs business. Researchers have compromise that the entrepreneurs of SME are operating in challenging and complex also assumes tasks that need them to connect in different roles. Role of entrepreneurship is one of the important roles played by entrepreneurs (Beaver & Jennings, 2005; Chandler & Jansen, 1992), and also role of functioning (Chandler & Jansen, 1992).

Several literature reviews showed that the dimensions of the common knowledge of entrepreneurs, their personal abilities, personality characteristics and psychological factors would reflect on the generality of entrepreneurs' human capital (Schultz, 1990; Cheng & Wei, 2002; Lan & Chen, 2003; Qin, 2003). Based on the analysis of entrepreneurial competencies, it is identified that entrepreneurs competencies having double origins which consists of the components that could be acquired at work or through theoretical or practical learning such as personality, traits, attitudes, social roles and self image and second is components that are more deeply rooted in the background of entrepreneurs such as experience, knowledge, and skills (Man & Lau, 2005).

"Internalised elements" referred to the first components, which include individual's character and personality, while "externalised elements" often referred to learning

and training which could be acquired (Muzychenko & Saee, 2004). The internalized competencies aspects are hard to alter, but can still refined and need longer time to become effectual, whereas the externalised easily could effective through continuous practice and education programs and could be through proper training (Garavan & McGuire, 2001; Man & Lau, 2005).

Entrepreneurial competencies are diverse among the cultures for successful entrepreneur. To decide the content of training needed for managers and employees in new business ventures of a specific country, this factor can be helpful. Learning would need to concentrate on the merger of behaviors, characteristics and knowledge of the entrepreneur in order to equivalent to the entrepreneurial prototype of that specific culture (Elizabeth J. Rozell, 2011). Those who have a positive outlook about the identity of their family experience, in terms of making them viable and desirable Drennan (2005) encouraged to start a business to change back to a childhood experience again, perceived autonomy positive effect on self-employment approach.

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Several authors (Black et al., 1999; Amagoh, 2009) emphasized the meaning and role of the commonly known global competencies that contemporary managers should have. Global competencies are comprised of three groups of abilities and skills of an individual manager. The first group of competencies arises from self-awareness, commitment, personal transformation, and inquisitiveness (Jokinen, 2005). In continuation, Jokinen (2005) emphasized that it is most important how individuals react in a concrete situation. This depends on the second group of competencies that consist of optimism, social intelligence, empathy, motivation, cognitive skills, and acceptance of complexity and on the third group of competencies that include managerial knowledge, social skills, networking skills, and acquaintances.

Alldredge & Nilan (2000) separated fundamental, essential, and visionary competencies. Fundamental competencies refer to ethics and integrity, intellectual capacity, maturity and judgement. Essential competencies include customer orientation, developing and motivating employees plus taking care of business results. Under visionary competencies the authors include global perspective,

visionary and strategic thinking, nurturing innovation, business alliances and assuring organizational agility.

Entrepreneurial competencies classified as “underlying characteristics (motives, generic specific knowledge, self-images, traits, social roles, and skills) which result in venture birth, survival, and growth as according to Bird (1995). Based on Baum et al. (2001), entrepreneurial competencies defined as “characteristics of individual such as skills, knowledge or abilities to achieve a specific job”. Entrepreneurial competencies also defined as “entrepreneurs’ overall sum of attributes such as beliefs, attitudes, skills, knowledge, personality, abilities behavioural tendencies and expertise needed for sustaining and successful entrepreneurship” by Kiggundu (2002).

According to the resource-based theory of the firm, the value creation process of firms is strongly related to the capability of managers in acquiring and developing resources (Barney, 1991; Grant, 1991). There is a consensus that entrepreneurial competencies are carried by those individuals who begin and transform their own businesses, and a widespread recognition that the range of skills and competencies required to run a small firm are qualitatively as well as quantitatively different from those needed in larger organizations (Fuller-Love, 2006; Walker & Webster, 2006).

One of the main drivers for research and practice relating to entrepreneurial competencies is their supposed association with business performance and growth, and thereby with economic development. Policy makers, in particular, have been concerned about both avoiding small business failure and promoting business growth

(ACCA, 2010). Venture growth has been identified in the literature as a crucial indicator of venture success (Low & MacMillan 1988).

Previous researches have found that an entrepreneur's skills contribute to venture performance and growth (Bird, 1995; Lerner & Almor, 2002). Further, there is evidence that developing entrepreneurial skills among entrepreneurs contributes to profitability and growth (Lerner & Almor, 2002; Roomi et al., 2009).

Consequently, entrepreneurs involved each role that demands possession of skills and abilities (competencies) and certain applications from entrepreneurs. Logically, the entrepreneur must equip themselves with skills to enable them to carry out their business efficiently and thus can lead to success in business.

2.10 Traits Competencies and SMEs Performance

Entrepreneurial traits represent one of the most empirically researched topics in the field of entrepreneurship (Vecchio, 2003). Recent researches by Korunka, Franck, Lueger, & Mugler (2003) and Shook, Priem, & McGee (2003) suggest that the main entrepreneurial traits that affect venture performance are need for locus of control, risk taking propensity, and achievement.

One aspect of entrepreneurship role is the capability to recognize advantage and ability to identify the opportunity. Competence is also connected with the entrepreneur's capability to gain, evaluate and develop availability of high quality opportunities in the market (Man & Lau, 2001). Entrepreneurs require engaging to a stable explore of products and services that can add value to purchaser since the

decision of opportunity exploitation fully depends on customer demand knowledge (Choi & Shepherd, 2004).

An entrepreneur can be considered as a detector of potential opportunities because of their ability to detect opportunity affects business growth performances directly and remarkably (Zhang & Yang, 2009; Ardichvili et al., 2003). However, it is undeniable that not everyone is gifted with this ability. Very few people are able to accurately foresee the difference between investment costs and investment gains (de Carolis & Saparito, 2006). An entrepreneur's ability to detect opportunity will have a direct impact on gains from investments (Kor et al., 2007).

In daily business activities, entrepreneurs have to manage various stakeholders, including customers, suppliers, authorities, employees, competitors, local governments, and many more. In order to gain access to information and other resources, it is important for entrepreneurs to have good relationships with a diverse set of individuals related to them (Jenssen & Greve, 2002).Small firms are concerned in the network in terms of support and advice from professionals such as accountants, consultants, and lawyers based on (Ramsden & Bennett, 2005) evidence as well as training institutions, research, government bodies, and customers and suppliers (Ritter & Gemunden, 2004).

An entrepreneur's social networks directly affect the enterprise as well. Through the relationships to governance sector, one enterprise is not only accessible to relatively preferential governance policies, but also to obtaining valuable information on resources and on potential purchasers (Smith et al., 2007; Bian & Qiu, 2000).

Enterprise is able to reduce the uncertainty within business development through information advantages from social networks (Collins & Clark, 2003; Elfring & Hulsink, 2003). Consequently, business growth performances in both short- and long-term periods will be affected directly by social networks of an entrepreneur. Usually, it is recognized that an increase in labour productivity may result from merger of applicable skills. Similarly, for a given amount of effort and time when people obtain skills they enable to generate more productivity. Education and training benefits that result in individual gaining skills also have the increasing adaptability effect.

"Better-educated workers give the flexibility required to restore external balance through innovation, retraining and relocation and change production between branches and sectors" in an age where tastes and technology change rapidly based on (Godfrey, 1997). This adaptability is important to maintain competitiveness and keep capital, and labour employed, (Booth & Snower, 1996).

Fu and Fu (2007) found that there are several fields of entrepreneur's studies include passively learning, training on incumbency, learning from provider, learning from client, learning from competitor. Knowledge resource is a mediating factor of organizational learning capability and performance. In fact, an entrepreneur's study ability has important effect on the learning capacity of an enterprise. Future studies will be testing the relationship between an entrepreneur's study ability and the learning capacity of an enterprise.

Individual competencies known as fundamental characteristics that are correlated to job effectiveness or better performance of a job (Boyatzis, 1982). It includes different components such as inputs, process, outputs, and contexts which known as a multi-dimensional construct constituted (Cheng et al., 2003; Erondu & Sharland, 2002; Mole et al., 1993). On identifying the main factors affecting the development of reading skills, each dimension represents a different key. Psychological characteristics, qualities, passion, mental knowledge, skill, experience, skills, including the unique characteristics of the different types, for example, the skills of the inputs (Bartlett & Ghoshal, 1997, Man et al, 2002 ;. Stuart and Lindsay, 1997), the dimensions of the focal point of the process, as individuals (Bird, 1995), when the behaviors or tasks (McClelland, 1987).

Talents of the environment dimension situations or managerial hierarchy with different levels varied (Cheng et al, 2003; Caird, 1992; Bird, 1995) while that may be, thus capable of different levels of existence outcomes as it main focus is that of skills development that can affect equally the environment and corporate environments verdict significant (Stewart et al., 1995).

Therefore, it is more significant to think whether the abilities, knowledge, or skills can be incorporated with convinced attitudes and values towards competence when applying the competency approach in performing job roles, rather than the mere possession characteristics of these components. Additionally, through one's actions or activities conducted, behavioural patterns, and diverse levels of competence direct to different levels of results, competencies are observed and verified.

It is essential to recognize the competencies needed in entrepreneurial learning perspective as different competencies are verified under diverse contents. In detail, learning can be measured as entrepreneurial competencies area which leading towards the merger of other competencies by allowing the competency approach to find out about entrepreneurial learning. Similarly, it also conceptualized as consisting the dimension of inputs, process, outputs, and contexts.

Entrepreneurial learning competencies of the above four-fold conceptualization provide a structure for accepting the affecting factors of entrepreneurial learning. Particularly, it provides a starting point for researching the patterns exhibited in learning or learning behaviours of the entrepreneurs. This is because the identified behaviours are connected to pertinent competencies as the results influenced by learning-related attributes and exhibited in real contexts. As a result, this is the topic of the consequent analysis, and they comprise "learning competencies" core part.

According to Teece (2007), an entrepreneur's management capability embodies through a formal system, reasonable configuration of human power, fiscal, fabrics and information resources. Such configuration would allow a maximization of combinatorial resources. Furthermore, management capability also embodies reduction of costs that happened from various production processes and communications within the business operation but through an informal system of business culture and trust mechanism.

Entrepreneurial management activities affect directly on the enterprise's growth performance. Research from Chandler & Hanks (1994) on entrepreneurship shows that an entrepreneur's management capability brings economic benefits to the

enterprise directly.A company and its ability to be endlessly innovative and effective use of intellectual capital and knowledge of economy in the new battleground for the creation of enterprises seems to be the biggest challenge of all. In addition, the task of determining that Schumpeter (1942), based on practical and economic growth and development of entrepreneurship, the theory is considered to be an important thing (Lee et al., 2004).

Since entrepreneurial business as stated by Sternberg & Lubart (1999), the new industries linked to entrepreneurial creativity, effective and original is therefore defined entrepreneurial creativity that describes a type of creativity. Some studies shows that entrepreneurship and innovation are related to each other, referred to the communication and resource of a system (Zhao, 2005; Flynn et al, 2003).

Furthermore, an important line of research argues that regions and cities function as creativity and innovation incubators (Lee et al., 2002, 2004; Thomson, 1965; Park et al., 1925). Even though the creativity and innovation of entrepreneurship referred as a “creation of the future” (Nystro¨m, 1993), some studies have been done to educate, train and prepare entrepreneurs to creatively participate in the economy of innovation, however training institutions offered courses that not focus on training the entrepreneur but only the traditional manager (Sawyer, 2006; Antonites, 2003).

An entrepreneur acts to generate an organization to follow it and exact human creative action as well as an individual with the capability to understand a detailed vision from anything that is virtual (Antonites, 2003; Bygrave, 1994). Creating an idea and turning it into a viable growth-oriented business based on the ability of

entrepreneurs, training programs (Antonites, 2003) is based on the need to prepare an unconditional and integrated business. And advanced and innovative enterprise system functionality (Bharadwai & Menon, 2000) that can be acquired for personal efforts to facilitate creative thinking process is like an asset.

A development of putting these ideas into broadly used practice and converting opportunity into ideas is known as innovation (Flynn et al., 2003). Furthermore, Tidd et al. (1997) mention innovation as a core process that reviews what the organization optimising and offers in the way it delivers and produce its result".

In conclusion, it is generally accepted that the entrepreneurial skills: creativity and innovation are the differentiating factor that defining the true entrepreneur.

A description on the dimensions of entrepreneurial competencies which represent traits competencies (opportunities, networking, learning, analytical, personnel strength, commitment and innovative) has enabled hypotheses developed as follows:

H1: Traits competencies have a significant relationship with the performance of SMEs.

2.11 Skills Competencies and SMEs Performance

Based on Stonehouse & Pemberton (2002), a strategic thinking, which reflects the capability of entrepreneurs to expand a strategic action and prospect vision that requires them to think further than the day-to-day operations, is known as strategic competency. Entrepreneurs are allowed to focus on their decisions with strategic, actions, and when achieved through this insight will edge to compete. They also

have a set of clear objectives and an overview of where and how the company will compete. Therefore, entrepreneurs are talented to implement an appropriate strategy by formulating it to accomplish the goals set.

This strategy connects entrepreneur's capability to increase competitive advantage and the resources and defeat the risks (Parnell, Lester, & Menefee, 2000). An entrepreneur's strategic positioning and planning capability allows avoidance of conflicts, whenever is possible (Ireland et al., 2003). More than that, it allows utilization of resources and capacity strengths in a full and reasonable way (Drucker, 1985; Marvel & Lumpkin, 2007).

Strategic positioning and planning capacity enable limited resources to create the greatest outputs. In the intensively competitive market, an entrepreneur's innovative capability helps an enterprise achieve differentiation among many others, which in turn generates economic benefits (Schumpeter, 1934). Studies that focus on the effects of entrepreneurs' education, their past experience and family and professional background of entrepreneurs are related to the concept of human capital of entrepreneurs (Bruderl et al., 1992; Preisendo¨rfer and Voss, 1990; Cooper et al., 1994).

Based on Bruderl et al. (1992), a good education of entrepreneur has a good effect on output, which consequently leads to better productivity. In order to help entrepreneurs to differentiate themselves from the means and their competitors, knowledge is the best factor with which the inadequately organised business environment can become well adequate. When the level of education of an

entrepreneurs increase then the level of effectiveness will increase as well and they will be able to notice and learn earlier changes on the market. In-depth research on different dimensions of the knowledge of entrepreneurs in companies and analyses of the influence of individual dimensions on business success of companies is difficult to find.

Based on entrepreneurs' knowledge, company success is frequently provisional, which mostly depends on their experience and education (Barker & Mueller, 2002; Hadjimanolis, 2000). Veblen (1904) stressed the significance of information in companies. Drucker (1959) definite knowledge as a company's significance source. In the theory of organizations knowledge-based Nonaka & Takeuchi (1995) more emphasized the significance of knowledge.

Knowledge is the foundation for economic performance sustainable competitive advantages sources and that represents knowledge based on their theory. For improving an enterprise's competitive advantage, research has shown that knowledge has become a significant tool (Hsu et al., 2007). Novak & Bojnec (2005) emphasised the significance of knowledge for economic growth of the Slovenian economy. The description of the three dimensions of entrepreneurial competence representing skills competencies (human operational, and strategy) has enabled hypotheses developed as follows:

H2: Skills competencies have a significant relationship with the performance of SMEs.

2.12 Organization Structure

An organizational structure divides a whole organization into distinct parts and defines the relationships among them. This shows who has responsibility for what, who has authority over whom and who reports to whom (Waters, 2006). The organizational structure defines the chain of command and accountability (Mansoor, Aslam, Barbu, Capusneanu & Lodhi, 2012). Chandler (1994) discusses organizational structure as a tool for the integrated use of existing resources within the organization. Designing the structure of the organization goes beyond the definition of the relationships among parts, but also shows the resources, systems, culture, and other features needed to support the structure (Waters, 2006).

An appropriate organizational structure that facilitates and eases coordination of organizational processes is the fundamental factor for achieving set goals of the organization (Mansoor et al., 2012).

Because organizations have to be ever more flexible, innovative, and adaptable, in addition to linked to their environment (i.e. suppliers and customers), organizational structures also are gradually transforming from vertical, hierarchical, functional structures that were suitable for stable and predictable environments, into increasingly more horizontal, team-oriented, adaptable forms (Owen, 2009; Mansoor et al., 2012).

There are clear trends in organizations, towards decentralized structures with devolved authority and self-managed groups. These groups are becoming smaller

and leaner, with fewer managers, more technology, and increased use of open communications. Probably the largest move is the reduction of boundaries between functions and operations, emphasizing that all parts of the organization should be working towards common goals (Volberda, 1999).

Considering this context, the inter-connectedness of individual organizational units is becoming increasingly important. Numerous studies have shown that this allows for greater performance of organizations. Organic, flexible organizational structures enable greater employee satisfaction due to increased flow of information, decentralized decision making, decrease in formalization, which together allow for greater innovation and creativity of employees, along with quick responses to changes in the environment (Mansoor et al., 2012).

Vermeulen, Phanish, and Ranjay (2010) warn that organizations must not change their structure only when changes within the environment demand it, but they should continuously reorganize even when the environment does not change.

By examining the fundamental characteristics of an organization, it is possible to divide the organizational structure into vertical or horizontal (Cole, 2004; Hatch, 2006). A vertical organizational structure is appropriate for managing an organization's operations, more specifically, when it is based on vertical hierarchy and when efficiency is especially significant to achieve the scope and objectives of its operation.

However, its usage is limited in terms of increasing flexibility and innovation activities. Such a mechanistic organizational structure is most appropriate for large

organizations that operate in a stable environment so that it can maximize organizational efficiency and minimize the cost through formalization and central decision making. A mechanistic vertical structure type may result in low level employee motivation and satisfaction, namely because it limits individual autonomy (Mansoor et al., 2012).

Horizontal organizational structure are appropriate whenever there is a need for coordination among core business functions. This type of organizational structure allows for internal differentiation of operations, improved responsiveness to changes in the social environment, and innovation (Yang and Hsu, 2010). An organic horizontal structure results in open communication, increased empowerment, and delegation of authority, which consequently leads to higher performance of an organization and creates a path for innovation (Cole, 2004; Hatch, 2006).

Modern organizational structures have to constantly change to market demands and as a result an increasing number of companies have turned to what are commonly known as “soft” competencies (Goleman, 2006; Wilson, 2010). In modern, flexible, horizontal organizational structures, the role of a leader changes into a role of an administrator who resembles a mentor, a staff coach, guiding and consulting employees at work, one that does not only control and delegate tasks. Satisfaction, loyalty, and staff motivation depends strongly on their superiors that subsequently have an influence on employee innovation and commitment.

2.13 Innovation

Schumpeter (1934) divided innovation into five types: 1) innovation in organization, 2) production process innovation, 3) product innovation, 4) new raw material, and new market behavior while Chesbrough (2003) defined innovation as an invention implemented and taken to market.

Sun and Wu (2009) posited that innovation is the resources of the core competitiveness of the business. Nonaka (1994) described innovation as a process of creating organization and defining problems and then developing new knowledge in order to solve those problems. Apart from this, innovation is sourced by half part of the organization that generates a flow of knowledge systems and related information. Many researches stated that innovation is a significant phenomena to drive enterprise towards competing in the market and economic growth (Benedetto *et al*., 2008), innovation utilized technological knowledge to create new product and value (Afuah, 1998)

Based on Hulta et al., (2004) two types of innovation, which are new production and new structure, or administrative system, which develops interior operation that influences the market. Schumpeter (1930) defined innovations as changing the value into which the system in based. Researchers stated that capability of innovation is crucial to for enterprise's survival in market (Zhou & Wu, 2010) and new external knowledge is the main factor to promote innovation (Chesbrough, 2003; Spithoven et al., 2010). New product development is enterprise's capability to compete in the market and illustrates the advantages gained from external knowledge.

Drucker (1985) called this perspective of entrepreneurship to create new value as knowledge base innovation. It is know as “the super star” which generates money for enterprise. Dewer & Dutton (1986); Popadiuka & Choo (2006) posited that three factors are prerequisites of technological knowledge : 1) deal with knowledge, 2) organization attitudes, 3) organization structure.

Zahra et al. (2009) claimed that new enterprise establish and stay alive by innovating. In 1985, Porter posited that enterprise sustain and promote competitive advantages should plan according to technological strategy, which it is critical in business environment by:

1) Recognizing all technological areas and value series
2) Recognized ways to alter technological base
3) Deciding to alter technological base
4) Deciding which alternative technology will be suitable and more important by sustaining competitive advantages, reducing cost, enhancing organization industry, and directing to advantages
5) Evaluating enterprise’s abilities in other technologies and estimating the cost
6) Choosing the enterprise’s technological strategy
7) Promoting at all enterprise level

Schumpeter (1944) defined innovation as a process of consequential which is impossible to reverse. The researcher also mentioned that innovation includes technology, new material, new enterprise and provided new market. Many historians have stated that on-going innovation enables enterprise to continue to exist and succeed in economic environment (Xiao and Qin, 2010).

UNCTAD (2005) mentioned the link between innovation and knowledge generation to create value in enterprise especially in high-technology industry such as information communication technology (ICT) and aviation. UNCTAD also defined innovation as the knowledge transformation within technological ability to generate new high quality product. Innovation is composites process that uses new scientific knowledge in enterprise. Escribano et al. (2009); Schmidt (2010) said that enterprises can be innovation that gain new external knowledge that can be the fundamental of their activities. The new knowledge can also be applied in term of entrepreneurial competencies. Notably knowledge is prerequisite of innovation (Liao, Wu, Hu, & Tsuei, 2009).

Klein and Knight (2005) defined innovation through research language, innovation as "a new product or practice to entrepreneurs and / or potential users (human element). Absorption of Innovation is the decision to use the innovation". Diffusion of innovation (DOI) perspective (Rogers, 1995) has been widely used an innovation in research and in the use of outside origin academic discipline.

Based on Wu and Wang (2005), it is indicated that professed compatibility persuade favorable behavior to mobile commerce and relative advantage. Likewise, based on an experiential study by Tanakinjal (2010) suggested that trial ability of innovation, compatibility, relative advantage and complexity decide user's intentions to accept mobile marketing in Malaysia.

Firms' absorptive capabilities, capacity, training, and education, patterns of skills, growth and performance are comprising innovation concentration of other topics of research (Freel & Robson, 2004; McDonald et al., 2007).

Open innovation model can be generated through valuable ideas and knowledge which can be internal or external or combination of both. Therefore, both aspects of internal and external knowledge for new product are important (Chesbrough, 2003; Chesbrough et al., 2010; Gassmann et al., 2010) and they rely on R&D activity (Marcet, 2008). In addition, Lee et al.(2010) mentioned that enterprise creates and open innovation and promote both internal and external research projects as well as the external partnership networking in same area to share their technological competence. This partnership can be between the enterprise with another large firm or market, or with a SME, or university research centre, or a non-profit research centre.

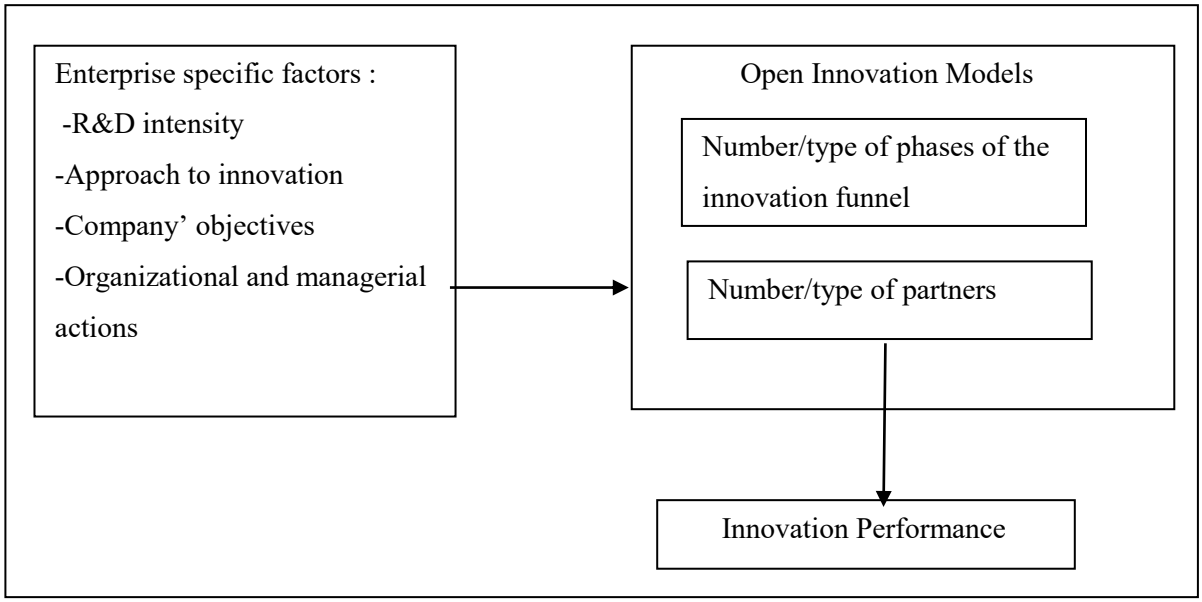
Some researchers mentioned that the open innovation can be measured with the number the type of phases of the innovation funnel, the number of the type of partners, the collaboration with university and research centre and collaboration with R&D (Chessbrough et al.,2006; Lee et al.,2010). Lee *et al*.(2010) stated that open innovation always happen between two enterprises or markets which collaborate and contribute to gather in innovation in absorb,and apply knowledge. They mentioned that in open innovation sometime enterprise has crucial information and knowledge which need to other market or enterprises to promote and commercial that. Researchers divided process of innovation in two types: 1) technology exploitation which use for market opportunity,and 2) technology exploration which for technology opportunities (Lee *et al*.,2010).

Open innovation promotes that not necessarily enterprises perform new internal or external projects by their own technology, it can accomplish through other technologies available in the market. Chesbrough described open innovation as the innovation that takes place within boundary of enterprise and environment that has porous whereby ideas or projects can trigger and absorbed by other market or enterprise. Innovation may occur through the means such as an investment or the technology in licensing, commercializing or through spin off venture (Chesbrough, 2003; Chesbrough *et al*., 2006).

In addition,Lee *et al*. (2010) mentioned that enterprises create open innovation and promote internal and external research projects and establish partnership networking in the same area to share their technological competency; it can be 1) another large firm or market, 2) SME 3) university research centre ,or 4) non-profit research centre.

Researchers explained to measure open innovation with 1) Number/type of phases of the innovation funnel, 2)Number/type of partners, 3) Collaboration with university and research centre, 4) Collaboration with R&D (Chesbrough et al., 2006; Lee *et al*., 2010). Lazzarotti *et al*., (2010) analyzed the relationships between enterprise's specific factors and open innovation. *Figure 2.2* shows which factors determinant open innovation.

Figure 2.2: *Determinants Factors of open Innovation*



Source: Lazzarotti et al. (2010)

Radical innovations could be the key to firms' new market opening as stated by many scholars (Henderson and Clark, 1990; Green, *et al.,* 1995; Liefer*et al*., 2000). Basically, managers know the importance of fundamental innovation for long-term purposes (Liefer*et al.,* 2000; Benedetto *et al*., 2008; Xin*et al*., 2008). Revolution in market caused by innovations of radical with technology (Popadiuka & Choo, 2006).

Based on Leifer (2000) radical innovation described according to four main features, such as sustained for a long time, restructured market, current product and sale are moved and shifting relationship between customer and suppliers. Additionally, radical innovation also described by Leifer (2000) as new knowledge of technological, which reinforce the position of current competitors of new market and dissimilar from present knowledge. Heiskanen*et al*. 2007; Xin*et al.,* 2008; Varadarajan (2009) stated that radical innovation has advanced customers and benefits when compare with existing product.

Radical innovation was the leading type of innovation in Dubai SMEs in the past three years (Yahya , Pervan & Jun Xu , 2013). This is in disagreement with Storey (1994) who finds that compared to larger firms, SMEs are more able to make incremental innovations due to their limited resources and niche roles in the market but that some firms have no ambitions to grow and take risks through developing new products and services and are often content with existing products and services regardless of changes to their external environments.

Heiskanen (2007) mentioned that radical innovation could be recognized through three features mainly complex and systematic effect in enterprise, its instrumentalism and its self-sufficiency. On the other hand, based on Xin*et al*. (2008) radical innovation has the following characteristics such as sustain for longer time, higher risk, big opportunity, develop and extend market, management challenge, foothold in market and competitively advantage in market. Nijssena (2005) briefed radical innovation by these features; 1) Radical innovations destroy existing market and create new market. 2) Although radical innovation is very important, it is highly risky. Enterprise may fail in market with type of innovation. Hence, many refuse to take it up. 3) Radical innovations have great rewards in term and sales.

Briefly, radical innovation considers extending new business dramatically and it relies on new idea and knowledge in the changing current market. Besides that, it also reduces considerable cost (Leifer*et al*., 2000). Based on scholar's description, radical innovation worries the growth of new product lines or business based on new technologies, idea, or extensive reductions of cost that convert business economics

and then, required competencies of exploration. They also stated that a radical innovation is a process, product, or services with either familiar features or features of unprecedented performance that offer possibilities for important development in performance. Based on our view, radical innovations generate such a theatrical transform in process, product, or services that they convert existing industries or markets, or generate new ones.

Researchers suggested measuring radical innovation with; 1) comparing between old and new product, 2) regular launching of radical innovations in the market place, 3) competing with rivals in terms of the number of radical innovation in product portfolio, 4) having the optimum number of innovation in the stipulated period and 5) comparing the income that is brought in by innovation to the overall enterprise's earning's.

Xin *at al*. (2008); Danneels (2002) mentioned that innovations that are meant to meet rising markets or customers known as radical innovations. Radical innovation important for firms to generate new markets and distributions of new channels. New standard of information is necessary for the entire process in improving radical innovations (Xin*et al*., 2008)

Herrmann (1999) described incremental innovation as some changes in new product which have some features: 1) promote capability in the product, 2) small change in a product, 3) promote quality in a product, and 4) change design of product. Leifer*et al.* (2000) mentioned that incremental innovations emphasize cost improve features in current product and depends on competency of exploitation. Varadarajan (2009) briefed incremental innovation as process which required knowledge to build and

improve existing product for customer's satisfaction. His also stated that incremental innovation appear when enterprise want to add benefits through enhance, adapt, refine, expand line, or incorporate existing product.

Varadarajan (2009) defined influence of incremental innovation on competitive advantages as:

1) Entering new market in product categories in which the firm currently has presence; a) new type of market, b) new market segments, and c) new geographic markets

2) Extending the time horizon of the revenue stream from radical innovations

3) Commanding a higher price relative to the product being supplanted by the incremental innovation, or a price premium relative to competitor's offerings, to achieve higher margins

4) Achieving and defending product category leadership; a) preempting shelf space by preempting potential entry point of competitor, b) responding to price sensitivity and variety-seeking behavior driven brand switching, and c) protecting flagship brands with flanker brands

5) Entering new product-market in product category in which the firm currently does not have a presence; a) new product-markets that currently are fragment industry, b) new product-market that emerge or become attractive as a consequence of change in the legal and regulatory environment, and c) related new product-markets with entrenched competitors.

6) Adapting to the structural constraints of the industry ecosystem.

Torsten, Thomas, Tomas and Erk (2012), mentioned that the integrating elements from the resource-based and knowledge-based views and the absorptive capacity literature, researcher proposed that specific innovation management activities can play an important moderating role to enhance firms' performance. Longitudinal data from 1,170 German manufacturing and service firms, econometric analyses revealed that returns from open innovation are greatest when firms maintain their internal research capacity, employ a dedicated incentive system for innovation and advocate strong cross-

Hence, in this study it is included innovation as moderating effect to entrepreneurial competencies, organization structure and SMEs performance that will be discussed in the proceeding sections.

2.14 Innovation and SMEs Performance

Scholars have been used range of definitions regards to innovation, focusing on different types of innovation such as technological innovations and non-technological innovations such as organizational and institutional (Dosi, 1988; Lundvall, 1992; Edquist, 2005). It's ultra-high-tech innovations and mostly incremental innovations involve larger companies that have some degree just that connect most of the entrepreneurs activities innovativeness which mortified to have the vision of an entrepreneurial point from the discovery of such a broad definition and focus appropriate (Smallbone et al., 2003).

In addition, the ability of a system which can create new ideas to make the system to be used effectively for long-term benefit that is believed to be supported by a modern creative company (Thompson, 2004). Creativity, innovation and entrepreneurship is always contact between research basis, entrepreneurial creativity and the new business, original, often to be useful, and a potential growth-oriented business as the creation of ideas about the chances of the first entrepreneurs or business as an activity (Sternberg & Lubart,1999; Nystrom, 1993).

In various sectors, for example studying corporate innovation management, marketing, entrepreneurship and strategy. When looking for institutional innovation, the literature contains both aspects. Innovation is something new (Gopalakrishnan & Damanpour, 1997) or a learning form (Ries & Trout, 1981) based on the argument of first perspective. Innovation is a means through which organizations respond to a variety of environmental changes based on Peters and Waterman (1982) suggestion while Rogers (2003) and Tushman & Nadler (1986) argue that innovation refers to adoption of a product, new idea, service or method in a organizations.

Current literature provides organizational innovativeness different classifications. Many researchers propose an innovation dichotomy. For example, based on Subramaniam and Nilakanta (1996), organizational innovation can be classified into two categories namely (i) administrative innovation, including organizational administrative process, structure, and programs; and (ii) technological innovation, including processes, product, and services. Lately, learning and market orientation have attracted substantial awareness among the strategy-driven characteristics within innovation research, (Hurley & Hult, 1998; Jaworski & Kohli, 1993; Kitchell, 1995;

Menon & Varadarajan, 1992; Sinkula, 1994; Slater & Narver, 1995), while technology policy of innovation determinant has been widely followed (Wilson *et. al*., 1999).

However, it is unexpected that the significant area of SMEs remains weak on these issues in empirical evidence. Similarly, since the decisive input of Schumpeter (1942), competition-related variables, whose effects on innovation have been addressed. In general, organizational innovation known as unidimensional phenomenon (Wilson et al., 1999). Firms' proclivity articulates towards the initiation or implementation of diverse innovations, for example administrative, technological, product and process.

One simplified innovation as radical or incremental (Cooper, 1998; Damanpour, 1991, 1996; Camison-Zornoza et al. 2003). Cabrales et al. (2008) is considered communication between team diversity and radical innovations. Radical innovation is generally more risky (Green et al., 1995; Rice et al., 2001; O'Conner & McDermott, 2004). In a company, it would be difficult to assess the risks of the creation of new knowledge involves (Howells & Michie, 1997; Lei, 1997). Regardless of wide studies of innovation, in SMEs, innovation research has a big range of focal points. Regarding the ingredients and its inputs and outputs for successful innovation many remains unknown (Brown, 1998). The effects of innovation on the financial performance of business and even on the results of innovation have been done by few studies.

A call for research on extreme innovation based on the Economics and Social Research Council's (2009) calls, recently it is recognized that innovation can have both negative and positive impacts among academics (Simpson et al., 2006). Therefore, the innovation's relative cost is not much important to a large firm than a small firm since the availability of former's resources are limited such as finance, labour, and material.

As a result, the innovation impact on financial performance of SME relatively must higher. Thus, it is crucial that small firms avoid unplanned or destructive results of innovation. Nurturing improved understanding of SMEs innovation is also most significant in order to overcome obstacles of SMEs innovation. More insights requires at the firm level to identify the relationship between productivity, innovation, and operational efficiency. Different types of innovations have different significant impact on business performance, mainly incremental innovation (Oke et al, 2004). Deshpande et al. (1993) initiated even after culture had been controlled, to determine organizational performance innovativeness is very significant.

Particularly, innovation management studies regularly focused on small firms with hi-tech (Oakey et al., 1988; Boag & Rinholm, 1989; Storey, 1994; Raffa & Zollo, 1994; Reid & Garnsey, 1996; Birchall et al., 1996; Motwani et al., 1999) and observed in terms of innovation process (Birchall et al., 1996; Barnett & Storey, 2000) and development of new product (Mosey, 2005).

The few studies that shotgun growth ambitions, focusing on new product development and innovation activities, especially when it appeared that the product

is a demand based organizations (Mosey, 2005). Mosey (2005) mentioned that with innovative new products and the introduction of more small and medium businesses to continue their important position in the new market.

Brown (1998) distinguished three streams of research in innovation research of SME, which include streams of organisation-oriented, economic-oriented, and the project-oriented. Economics-oriented stream studies showed that for innovation small businesses are a significant driving force and can perform highly innovative as large enterprises.

Project-based stream of customers on the basis of the findings of the small and medium were significant sources. Brown (1998) on the basis of studies that advance the concept of innovation, small and medium businesses the most successful small business in the field of innovation and attention to the element of the unknown, a great variety and went away. Hisrich and Drnovšek (2002), based on the innovation activities of small and medium level of regional differences, such as innovation studies, innovation barriers, categories and enclosed a lot of issues, for example the kind of innovative SMEs does not tell the story. He allowed these studies primarily for practitioners or policy makers and those predicted to drift.

The innovative activities of small firms and large firms always compare the differences (Rothwell & Dodgson 1994, Vossen 1998, Hadjimanolis 2000). R&D, generation of competitive edge, and technology are the three input parameters that generate the growth of potential effect related to innovation in SMEs (Romano 1999).

However, comparing innovation studies focusing on larger firms and in SMEs, studies toward SMEs are still limited (Vermeulen et al. 2005). At disposal, SMEs have limited resources, however through flexibility, agility, and innovativeness the need of resources in SMEs can be compensated (Qian & Li 2003).

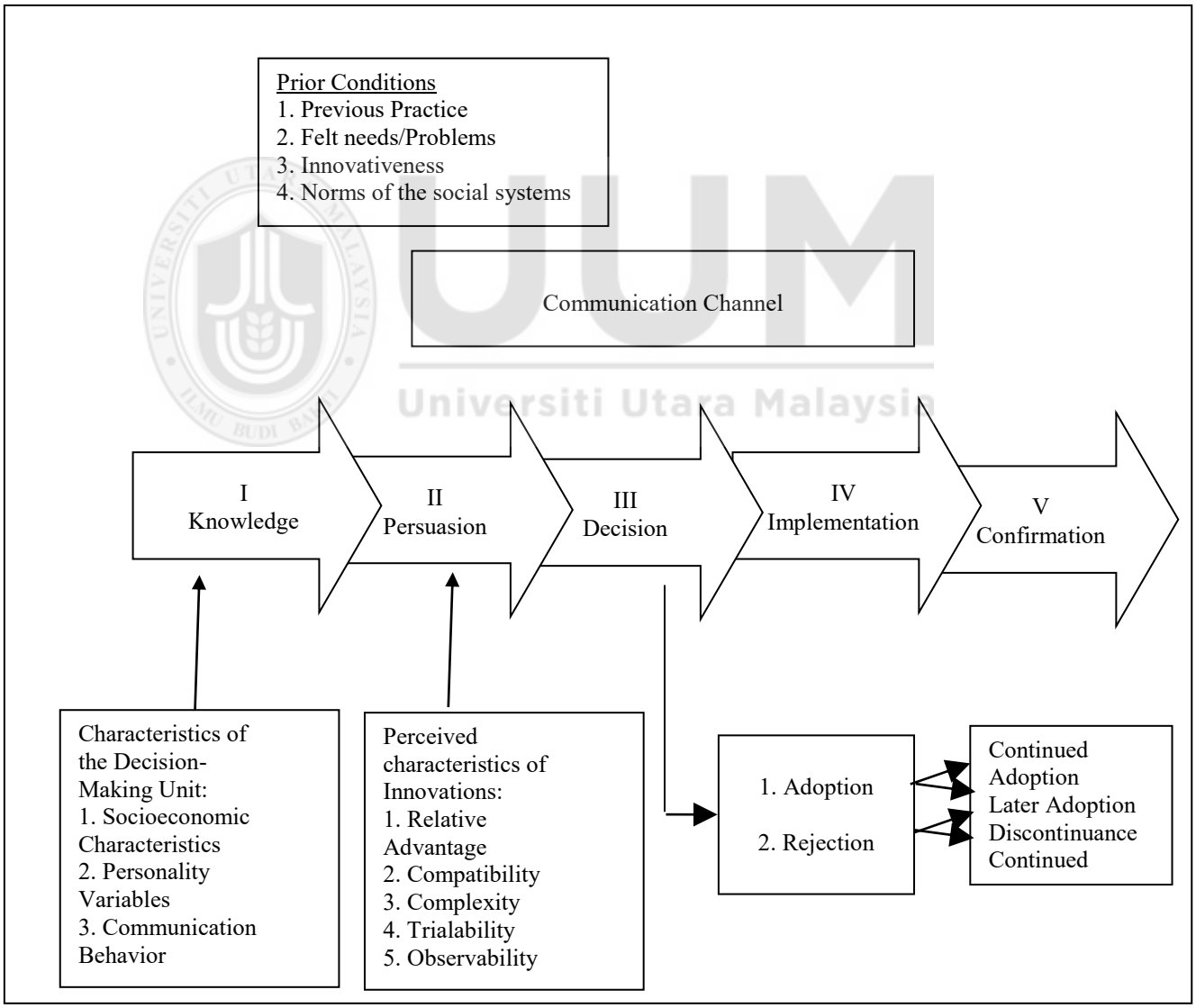
Ramachandran Ramnarayan (1993) and Lipparini & Sobrero (1994) literature reviews, across the literature and their research for small and medium-sized in the innovation research round where innovation and entrepreneurship (Goldsmith and Kerr, 1991) were centered exposed (Georgellis et al., 2000; Beaver & Prince, 2002; Gray, 2002; Mambula & Sawyer, 2004), innovation and diffusion (Rothwell & Zegveld, 1986; Nooteboom, 1994), regional differences (White et al, 1988), of the market. (Sebora et al., 1994), as described above, as well as for medium-sized companies (Webb, 1992) is mistaken for innovation and innovation management.

DOI model introduced by Rogers (1983), which still stay as a well-liked model in accepting innovation of new technological in the study of the behavior of users. The DOI is a broad sociological and psychological theory used to explain the mechanism, outlines of adoption and assist in predicting how and whether a new creation will be successful or not.

Particularly, diffusion is definite as a process in which an innovation is conversed through certain channels over a period among the social system members. On the other hand, innovation is definite as a practice, object and an idea that is professed new by other unit of adoption or an individual.

Creating participants and sharing information with one another to reach a mutual understanding known as a process of communication (Rogers, 1995). To sum up, the DOI is alarmed in order in which ideas of new technological migrate from formation to use and the innovation of that technological is conversed over time through particular channels amongst the social system members. Figure 2.3 in the next page depicts the DOI process channel.

Figure 2.3: *The model of innovation-decision process*



Source: Rogers (1995)

Based on DOI model, five important perceived characteristics of innovation proposed by Rogers (1995) which includes:

(1) Relative advantage – the degree to which the innovation is perceived to be better than what it supercedes.

(2) Compatibility – the degree to which the innovation is consistent with existing values, past experiences and needs.

(3) Complexity – the degree to which the innovation is difficult to understand and use.

(4) Trialability – the degree to which the innovation can be experimented on a limited basis.

(5) Observability – the degree of visibility of the new innovation results.

This model have adopted by a lot of researchers along with its characteristics to learn about innovation (Benham & Raymond, 1996; Hussin & Noor, 2005; Kendall et al., 2001; Lim Thong Chai & Speece, 2003; Slyke et al., 2004a,; Syed et al., 2005; Tan & Teo, 2000; Teo & Pok, 2003) through three different studies which adopted creation of different models such as reasoned action theory, planned behavior theory and the acceptance of technology model (Benham & Raymond, 1996; Limthongchai & Speece, 2003; Tan & Teo, 2000). Tan et al. (2009) have attempted to compile and summarize the studies and their findings in chronological order.

From the Figure 2.3, it is obvious that the DOI leftovers as popular model in examining DOI in dissimilar economy sectors, including the SMEs. Since the DOI model is inclined towards investigating new technological adoption and diffusion

(Rogers, 1983), it is therefore this study aligned to the main target where it attempts to detect the diffusion effect of innovation rather than the whole innovation process.

Similarly, Mahajan et al. (1990) agree that *innovation diffusion theory* has sparked considerable research among marketing and management practitioners and scholars. Rogers (2003) clearly spells out that diffusion is communications, and defines the innovation's diffusion as a process of having four elements that are (a) innovation, (b) conversed through convinced channels, (c) within a social system, and (d) over time.

In spite of the constructive relationship between previous studies performance report and innovation, the connection between performance and firm's innovation has no decisive result. Kemp et al. (2003) established that innovation was connected with income and growth of employment, but not productivity and profit among Dutch firms for example. Likewise, Zhou, Tan & Uhlaner (2007) identified that there is no positive innovation effect towards new products and new service on Dutch firms.

Based on Islam Mohamed Salim (2011), understanding the relationship between innovation and performance may help growth of firms for better competitive strategies as performance is a focal point to all firms. The result of the findings may also be of attention to support agencies and consultants that assist to SMEs. The better would be the approaching into how firms can attain improved performance and competitive strategies as the understanding of the innovation's importance become greater. The outcome of the study has proven that the significance of

innovation was not limited to large and well-established firms which enjoy large economies of scale.

In addition, experiential evidence in accessible studies mostly comes from large firm's samples in superior countries, such as Japan, USA, UK, Germany and many more. In spite of rising other's economies relevance and increasing globalisation, a small number of studies have come into view in utilization of literature data which came from minor countries in different growth stages.

Throughout the national associations, the results until now raise significant questions. Many analysts basis (Calvert et al, 1996 ;. Hofstede, 1991 ;. Janssens et al, 1995; Nejad 1997; Porter, 1990; White, 1988), suggesting less developed innovative behavior clarify inappropriate is likely to be in the advanced countries of discovery research findings. This line of thought and behavior that affect the performance of the new company is carried out by the dissimilarity of national conditions.

Although there are many studies to make unbroken development in SMEs (Gunasekaran et al., 1996; Bessant & Caffyn, 1997; Bessant & Francis, 1999), to implement innovation in SMEs there is a relative scarcity of in-depth studies (McAdam, 2000). It is hard to assume that implementation of innovation principles in big organisations can transfer directly to SMEs, while SME is treated as a scalar version of the big organisation (Teece, 1996).

SMEs are important engines for innovation and technological advancement. SMEs often possess the flexibility to adjust their inputs, processes, products and prices

quickly in response to environmental changes, and this is a crucial business survival tool (Reid, 2007). Compared to large firms, SMEs might be more willing to undertake risky investments and innovative behaviors to improve their business performances (Latham, 2009; Salavou et al., 2004).

This means that the generalizability and transferability of findings from such studies across boundaries needs further investigation (Salavou et al., 2004). Further, what are considered to be critical success factors for innovations in one market may not be applicable in other markets due to the different values and practices which prevail in different cultures (Laforet & Tann, 2006). The emergence of new markets, particularly in non-developed countries, provides firms with great opportunities for rapid expansion and industrialization (Arnold & Quelch, 1998).

The innovation capability of a firm can impact on its business performance (Talke et al., 2011). Zahra et al. (1999) argue that successful innovation is increasingly seen as a contributory factor to higher business performance in a number of industries and sectors, and can strengthen the competitive advantage of a firm and help a firm survive in the marketplace (Gunasekaran et al., 2000; Sanz-Valle & Jimenez-Jimenez, 2011).

SMEs sometimes do not recognize the opportunities and advantages that are available to themin the marketplace, including their flexibility of customizing products and services to the needs of customers (O'Regan et al., 2006). Previous studies on SMEs have produced mixed results. Some scholars have found a positive link between innovation and business performance while others have found a

negative link or no relationship at all (Geroski & Machin, 1992; Freel, 2000; Heunks, 1998). Keskin (2006) argues that SMEs with innovative capabilities can improve their business performance whereas Freel (2000) does not find such a link.

According to Otero-Neira et al. (2009), innovation positively influences business performance and the different performance levels of firms are linked to the types of innovation they develop (Forsman & Temel, 2011). An SME can serve a narrowly defined market by establishing close contact with its customers and it can achieve a high level of business performance by focusing on particular product groups (Adams & Hall, 1993; Rothwell & Zegveld, 1982). There is an interdependent and a mutually reinforcing relationship between innovation and business performance rather than a simple one (North & Smallbone, 2000). It can be seen that in the innovation literature, investigations of the link between innovation and business performance have produced inconsistent results. From the above discussion, the link between innovation and business performance within small and medium firms is examined.

As a result, this study plans to observe innovation as moderating effect, end results, its impacts and occurrence on the performance of business by generating a complete theoretical model. Therefore, in this study it is included the respective innovation to build a better understanding of the dynamics of the concept and the interrelatedness relationship between innovation as moderating effect to entrepreneurial competencies, organization structure and SMEs performance that will be discussed in the proceeding sections.

2.15 Moderating Effect of Innovation on The Relationship between Entrepreneurial Competencies and SMEs Performance

In facing the turbulent business environment and in ensuring the survival, enterprise must rely on innovation, which is core of competitive advantage. Therefore, orientation to innovation is the best way to promote and strengthen their innovation. Researches already thought that in the short-term product quality and performance are basic of competency. However, creating and enhancing are the basics of competency in the long-term. Nevertheless, the key of competency is the integration of experience and knowledge. (Liao *et al.,* 2009)

In order to direct an increase in company innovative performance such as benchmarking and networking, past studies also came across at organizational learning and many other contributing factors (Mitra, 2000; Terziovski, 2003; Massa & Testa, 2004), R&D (Raymond & St-Pierre, 2004). Similarly, behavior-related, technology-related and product-related (Foxall, 1984, Hurley and Hult 1998; Kitchell, 1995; Lumpkin and Dess, 1996; Rogers, 1983) the company set up to capture the different aspects in its opinion. SMEs of North East England followed fundamental innovations as a firm growth strategy though he did not openly search the relationship between growth and innovation based on Bala Subrahmanya (2001) observation.

Another researcher stream perceives the innovativeness multi-dimensional understanding of corporate quality. For example, Vigoda-Gadot based on Ed. (2005) point of view, there are dimensions for the risk-taking and innovation, creativity, future orientation, openness to change, and is pro-activeness. Likewise, Dundon

(2005) suggests that the discovery of the four elements; this is what distinguishes it as strategy, creativity, profitability and utility.

Corporate entrepreneurship (Zhara et al., 2000) exemplifying a company's innovation and venturing to persuade the performance of company at corporate level. Similarly, competitive structure and strategic orientation (Salavou et al., 2004) that a company manages was found to have effects on performance of innovative company.

Likewise, on promoting innovative culture, Heunks (1998) also create successful associated of SMEs with committed leaders with enthusiasm, vision, information gathering and inward investment in terms of future-oriented exploit external opportunities.

Other studies based on small businesses, successful innovation degree strategically manage to learn as well as to innovate and take risks and market presence represents is ready to predict, with a clear strategy and have according to their ability to be based (Georgellis et al, 2000; Beaver & Prince, 2002; Salavou et al, 2004). In a study conducted among American SMEs are the most innovative companies from aggressive and degrees of risk were ready to take the view that, taking the risk (Blumentritt, 2004) confirmed the release.

Literature of innovation also places greater importance on company benchmarking, learning, networking and training. For example, greatly innovative firms were initiate to place great importance through industrial education of young people in the locality through student placement, modern apprenticeships and school visits on

employee training improvement, which demonstrated an obvious contrast with SMEs in all-purpose (Barnett & Storey, 2000).

In a lot of researches the relationship between organizational performance and innovation has been established (Hurley & Hult, 1998; Kohli & Jaworski, 1993; Keskin, 2006; Atuahene-Gima, 2001; Damanpour; 1991, 1996). Through innovation, an influential and strong relationship with SMEs performance has established (Wolff & Pett, 2006; Montequin, 2006).

Previous studies indicated mixed results on relationship between innovations and organizational performance, some negative, some showed no relationship at all and some positive (Capon et al., 1990; Atuahene-Gima, 2001). Damanpour (1991, 1996) argued that the relationship between firm performance and innovation depends on the characteristics of a given organization and measurement of performance. In addition, dissimilar combinations or diverse types of innovation may also result in different performance of an organizational (Lee & Chen, 2007).

Yang (2012) examines the moderating effect of innovation on the relationship between logistics service capability and firm performance for ocean freight forwarders. The results indicated that innovation positively moderates the effect of logistics service reliability capability on financial performance as well as the effect of flexibility capability on financial performance.

Yahya Al-Ansari Simon Pervan Jun Xu , (2013) aims to explore the innovative characteristics of 200 data for small- and medium-sized enterprises (SMEs) and the link between their innovation and business performance in the emerging
Dubai market in the United Arab Emirates. The findings described the innovative characteristics of SMEs and suggested that there is a significant positive link between innovation and business performance.

In addition, various research studies show a significant influence of entrepreneurial competency on a company's performance, which is seen in increased employee morale, greater responsibility and flexibility of management, quality improvement, greater loyalty towards customers, and readiness for new business opportunities (Hau and Thum, 2010; Nienaber, 2010).

Furthermore, the research study revealed a statistically significant direct impact of action competencies of top managers with regard to performance on the market. This was measured through customer satisfaction and a statistically significant indirect impact of action competencies of top managers on sales and revenues growth through the factor of performance on the market.

Hence, there is a need for studies on implementation of innovation within the characteristics and constraints of SMEs. Teece (1996) and Klein & Sorra (1996) bring to a close that on the accomplishment of innovation in organizations there is a scarcity of studies, which is mainly visible in longitudinal studies and in the area of SMEs. To cover a wide approach to innovation, the researchers stressed out the requirement for additional innovation research in these areas.

From discussions in the literature through the above descriptions, it can be developed following hypotheses:

H4: Innovation is a moderator of the relationship between traits competencies and performance of SMEs.

H5: Innovation is a moderator of the relationship between skills competencies and performance of SMEs.

2.16 Moderating Effect of Innovation on The Relationship between Organization Structure and SMEs Performance

It is identified that flatter hierarchies, size and age directly effects towards innovativeness of company. For example, White et al. (1988) recommended that larger firms with more than 50 employees had the benefit of greater resources and systems while smaller firms with less than 20 employees had their own benefits in terms of individualism. Similarly, moderate firms with employees from 20 to 49 do not exactly have benefits of other two types of firms. According to Ettlie and Rubenstein (1987), it is recommended that size of relationship controlled by categories of innovation. For deep insight, they also mentioned that fundamental innovations might necessitate extra means (funds) for capital investment for place, equipment, promotions and marketing, and technical work as well. Overall, bigger firms would be the best enabling condition since its lead to right key resources and occupying these key problems or issues.

On the other hand, according to Rothwell & Zegveld (1986) firm size is not related to the matter of "big" or "small" the firms since they differentiated innovation and size of firms for some industries and thence accomplished innovation's issues.

Therefore, they related with other issues such as diverse stages in the cycle of industry that would differ with markets, government policy, and technology. Small and medium-sized organization success suggested normal procedure (Heunks 1998; Motwani et al, 1999; Chandler et al, 2000 ;. Georgellis et al, 2000; Beaver and Prince, 2002).

According to Brown (1998) research, the organization-oriented flow set few factors which could used by the owners of small factors in order to expand the company's productivity in terms of networking, planning, developing appropriate strategies and making use centers of regional to the purpose of their businesses. In the same way, these studies also arranged an effective and efficient way to SMEs to manage innovation through optimization of organizations.

Previous studies had defined certain aspects to identified factors of critical success of SMEs innovative strategy (Dogson & Rothwell, 1991; Bowen & Ricketts, 1992) and effectual formulation of strategic in successful small firms which using high technology (Oakey & Cooper, 1991). Some of successful causes that focused in these studies were generating reflection of structure in effectual systems usage, investors in people (IIP) and technology that lately referred to innovation of process, evaluation of competitors, and building partnerships and culture of co-operations, which is alike to the idea of networking and promoting a culture of corporate.

Karmen *et al.* (2014) found: important impact of entrepreneurial competencies on Organizational structures; the effect of a modern, horizontal organizational structures on a company's performance and growth on the market that enables the achievement

of a higher value added, as well as a direct impact of entrepreneurial competencies on a company's performance. entrepreneurial competencies have been studied by several authors who noted a lack of skills and competencies of contemporary owner-managers (Porter and Ketels, 2003; Charlesworth et al., 2003).

The study in Slovenia also showed traditional (hierarchical) forms of planning, organizing, managing, and supervising prevail, even though research studies by McCormack & Johnson (2001) along with Benner & Tushman (2003) show a pronounced connection between process (horizontal) organizational structures and performance of an organization. Findings by Coy (2007) discuss that the majority of organizations are still organized on the principles of "scientific management" that was founded by Taylor and popularized by Ford more than 100 years ago.

From discussions in the literature through the above descriptions, it can be developed following hypothesis:

H6: Innovation is a moderator of the relationship between organization structure and performance of SMEs.

2.17 Moderating Effect of Innovation on The Relationship between Traits Competencies, Skills Competencies, Organization Structure and SMEs Performance

Man et al (2002) the main factors affecting the competitiveness of small and medium-sized internal factors, external environment and that will depend on the influence of a point. Internal factors are financial; human and technical resources; organizational structures and systems; manufacturing; innovation; quality;

reputation; culture; product / service variety and flexibility; and when the external environment refers to the customer service competitors.

According to Storey (1992), in these issues related to Total Quality Management (TQM) uptake and its involved involvement of upper management and scarification. Therefore, through this managers would produce the systems itself who were running out of time. These restrictions will be the main contributions of this study since managements' essential role as system designers involves managers as they spend quite longer time to design an effective system, hence they would do better in other businesses. In addition, every study of large organizations authorized managements' commitment as an important characteristic, which is fundamental to upper level of performance.

On the inside, their strategy, structure, organization and people (Afuah, 2003) must be supported. Competences and technical and market knowledge of the operation of such assets to customers. Based on (Afuah, 2003), Innovation that will offer a new product or service is the use of new technology in the market have the knowledge. Motwani et al. (1999), both product and process innovation, which supports small and medium-sized innovation in a company's organization found that innovation is important. The adoption of new ways of getting products or services process innovation (Maravekalis et al., 2006) when a new or improved product introduced on the market occurs when product innovation.

"Innovation process" should pay attention to small and medium-sized research helps enable innovation. Raymond et al. (1998) approaches to the implementation of the

process shows that SMEs and large companies can be used with equal validity. Leonard-Barton (1995), the ability to innovate, because it is very easy to get lost than the discovery process indicates that the maintenance and renewal needs.

Furthermore, the implementation of a process of innovation requires a supportive organizational structure. According to Mayer (1996) and Tidd et al. (2001), a system designed to support system innovation. The problem in the construction of small and medium enterprises to penetrate sensitive areas of influence (Choueke Armstrong, 1998), the owner / manager.

Tidd et al. (2001), the most unexpected and innovative companies operating flexibility, the system suggests that those that create the most suitable fit. Technological innovation in the field of research and development or can be considered a single brief. As a remark of conclusion, Leseure (2000) experienced that, the works done in an organization not necessarily need to apply to other organization as the practices of managerial differ in terms of socio-economic culture. Lacking of contextual sensitivity is proved as widespread of research were conducted in SMEs innovation.

Up until now, there is no proper definition for innovation or even do not have a particular guidelines on what comprises excellent achievement or innovativeness of company. None of the literature provided particular measurement for company innovativeness or performance of company. Moreover, there are no specific guidelines to attribute the factors that contributing to the management of innovation

and successful innovation, especially for the industries under SMEs based on Tidd et al. (2001)

The top drivers of innovation in Dubai SMEs were management, customers, technology and employees. Competition, the market and growth were pointed out to a lesser extent to drive innovation (Yahya et al., 2013) . This is in line with Read (2000) who finds that management support, customers, the market and employees are the main foundations of innovation. Other drivers included external environmental changes (for example, political, economic or social), knowledge transfers (for example, tacit or implicit), emerging technologies, changing markets, customers, the actions of competitors and strategic partners, organizational cultures, organizational structures and employees (Brockman et al., 2012; O'Sullivan & Dooley, 2009; Peebles, 2003).

A survey was conducted by Sylvie Laforet (2006) on 1000 West-Midlands-based manufacturing SMEs (SMMEs) to measure company innovation and performance. The results showed SMEs in the manufacturing industry are similar to SMEs in other industries. The drivers of SMME innovativeness were: market anticipation, customer focus and commitment of CEO/owners. The main constraints of SMMEs were customer dependency, skills and knowledge acquisition through training, poor learning attitude and networking because of their tradition of being insular and autonomous.

From discussions in the literature through the above descriptions, it can be developed following hypothesis:

H7: Innovation is a moderator of the relationship between traits competencies, skills competencies, organization structure and the performance of SMEs.

Consequently, many studies done through questionnaire surveys, field studies and case studies which focused only on small sample (particular number) of company, however there is only a few studies which really focused on SMEs.

In this study, there are three dimensions of innovations: open innovation, radical innovation and incremental innovation are used to investigate its role in the form of direct influence and as a moderator of the relationship between entrepreneurial competencies, organization structure and performance of SMEs in Malaysia.

2.18 Chapter Summary

This chapter discusses the SMEs and its contribution to Malaysian economy, and the importance of manufacturing sector in Malaysian economy. This chapter also discusses the variables used in the research framework and theoretical underpins the proposed theory. The literature reviews covers the areas in the framework such as SMEs, traits competencies, skills competencies, organization structure, innovation and performance study.

Innovation is the resources of the core competitiveness of the business as posited by Sun and Wu (2008). Han et al. (1998) finds that innovations lead into superior business performance.

Traits competencies, skills competencies and organization structure (Independent variables) are used as predictors to performance and innovation is introduced as a moderating variable to moderate the independent variables towards performance.

According to Resource Based Theory, innovation provides uniqueness assets that imitable and can achieve sustainable competitive advantages. However, it needs to be developed over the long period as it provides the companies with vast of advantages as it is key strategist assets. A better understanding of the linkages between SME performance with traits competencies, skills competencies, organization structure and moderates by innovation is important element motivated to this study.

The purpose of this study is to bridge this research gap. Specifically, by extending traits competencies, skills competencies, organization structure and innovation whether the degree to which it correlates with SME performance.

CHAPTER THREE
METHODOLOGY

3.1 Introduction

This study specifically aims on identifying SMEs productivity or performance and relationship with entrepreneurial competencies and organization structure. It also tries to identify the factors of innovation that may be a moderator on identifying the relationship between organization structure, competencies of entrepreneurial and SMEs performance in Malaysia.

Therefore, methods used to achieve the purpose of this research will be explained here. Among the topics that will be covered in this section is the location of the study, research design, and selection of respondents, the research procedures, instruments, pilot study, measurement and analysis of the study variables.

3.2 Theoretical Framework

A research framework is defined as a collection of theories and models which underpins a positivistic research (Hussey, 1997). In other words, it is a conceptual model of how researchers theorised or made logical sense of the relationship among the several factors identified as important to the problem. Developing such a conceptual framework helps to postulate or hypothesize and test certain relationships and thus, to improve the understanding of the dynamics of the situation. In total, the theoretical framework discusses the interrelationship among the variables that are considered important to the study. It is essential to understand what a variable means and what the different types of variables are. After the theoretical framework has

been formulated, then testable hypotheses are developed to examine whether the theory formulated is valid or not (Sekaran, 2003).

After careful consideration based on the literature and problem statements, the following research framework as shown in Figure 3.1 is proposed.

The theoretical framework examines the level of performance among SMEs owners and managers with regards to the relationship of traits competencies, skills competencies, organization structure and also the moderating effect of innovation between the constructs understudy.

The theoretical framework is an interpretive summarization of the element of traits competencies, skills competencies, organization structure and innovation that have a relationship with performance. The dependent variable is SME's performance and there are three independent variables which comprised of traits competencies, skills competencies and organization structure while moderating variable is innovation.

These variables can have significant impact on SMEs owners and managers and therefore, this research intends to examine the role of innovation as a moderator and the relationship between independent variables and dependent variable.

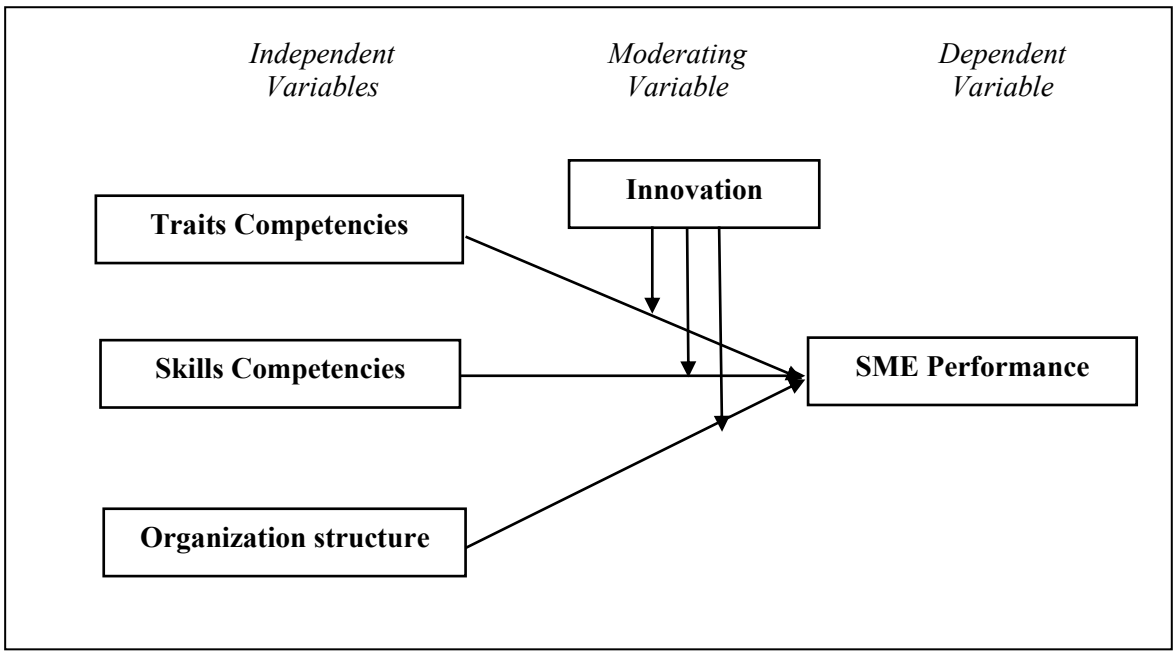


Figure 3.1: *Proposed Research Model (Theoretical Framework)*

This framework also contends that traits competencies, skills competencies, organization structure and innovation influence performance. In addition, it is also proposed that traits competencies, skills competencies and organization structure influence performance and innovation moderates the relationship between traits competencies, skills competencies and organization structure and performance. This relationship demonstrates the direct and indirect effect of independent variables on performance. Since the research objective is not only to make clear the direct effect between traits competencies, skills competencies, organization structure, innovation and performance, it is also to explore the complexity of such relationship by examining the moderating effect of innovation.

3.3 Hypotheses Development

Before conducting a hypothesis testing, there are two categories of statistical that need to be considered, parametric or non-parametric group (Hair et al., 2006). Parametric statistics is appropriate when data is interval with bigger sample size (Hair et al., 2006). Non-parametric statistical is used when data is not distributed normally, and tested using Chi square (Hair et al., 2006).

However, for this study, parametric statistical method is more appropriate, due to the large sample size, and the interval scale. The hypothesis tries to deal with the uncertainty caused by the sample estimate. The hypotheses test, tries to counter certain claims regarding to the population parameter grounded on the sample data (E-handbook, 2011).

The following hypotheses are developed in this research:

H1: Traits competencies have a significant relationship with the performance of SMEs.

H2: Skills competencies have a significant relationship with the performance of SMEs.

H3: Organizational Structure have a significant relationship with the performance of SMEs.

H4: Innovation is a moderator of the relationship between traits competencies and performance of SMEs.

H5: Innovation is a moderator of the relationship between skills competencies and performance of SMEs.

H6: Innovation is a moderator of the relationship between organization structure and performance of SMEs.

H7: Innovation is a moderator of the relationship between traits competencies, skills competencies, organization structure and the performance of SMEs.

3.4 Research Design

Survey method therefore being used in this study as a research design. Through this study, the researchers expect to be able to know the real situation in a more realistic (Kerlinger, 1973). To perform this data collection for the study, techniques for filling the questionnaire by respondents had managed on the "drop and collect" basis (Mc Carthy, O'Really & Cromin,2001)

This study focuses on the relationship between variables that affect the entrepreneurial process. According to Brehm, Kassin, and Fein (1999), a study to determine the relationship between variables can be done by means of a correlation study. A correlational study can be conducted using observation, archival or survey. In order to collect primary data, survey method had been used (Zikmund, 2000). Thus, the subject or respondent in a study is not restricted to certain restrictions to the questionnaire.

The purpose of this study is to examine the relationship among traits competencies, skills competencies, organization structure, performance and moderating role of innovation. This section briefly discusses the framework for collecting and gathering of the relevant data for hypotheses testing. The method chosen in this study is generally a quantitative approach.

The quantitative studies form one of the main types of social science research beside qualitative (Colton & Covert, 2007; Creswell, 2008). Quantitative research relates ideas, compares groups, and examines relationships between multiple variants in social science (Colton & Covert, 2007). Surveys are widely used in quantitative studies to gather and analyse social behaviour data in an unbiased manner (Colton & Covert, 2007; Neuman, 2006).

According to Gelo, Braakmann and Benetka (2008), psychological research depends on correlational and experimental techniques for theoretical testing using quantitative data. This is due to the psychological disciplines which like other personal value studies are dominated by positivist and postpositivist paradigm, but in short a great deal of quantitative research is concerned with counting occurrences, volumes, or the size of the associations between entities and some of the advantages of quantitative approaches are extensive, and the generalization of results, is explanatory, deductive or guided by theory and hypotheses testing as compared to qualitative research. The advantages of this approach have strengthened the researcher to adopt this method.

A cross-sectional survey design is appropriate for the following reasons. First, the variables are known and measurable (Hair, Money, Samouel & Page, 2007). Second,

the quantitative research questions and hypotheses are focused to collect distinct and quantifiable data (Creswell, 2008). Third, this research design is used because the independent variable and mediating variable are not manipulated to test the predicted outcome (Christensen, Johnson & Turner, 2011; Johnson, 2001). Fourth, cross-sectional research offer an advantage where respondent attrition becomes a non-issue as the data are collected at snapshot (Gall, Borg & Gall, 1996) and is less costly due to short time span of the study (Hair et al., 2007). Lastly, this design is simple yet able to extract suitable data and information for policy formulation and direction of future studies (Gall, et al., 1996; Johnson, 2001) which matches the exploratory purpose and scope of this study.

3.4.1 Time Dimension

There are two options of time frame in conducting a research; firstly, the longitudinal study where the data collection is within a certain time frame (Cooper & Schindler, 2006). Secondly, the cross-sectional research where data is collected once to examine issues at a specified point. This is the most popular method used in the area of SMEs performance studies such as studies by Azizi (2009) and Baldauf et al.,(2003). Sefindi (2007) suggests that cross sectional research is deemed to be a more appropriate research design in meeting the research objective and understanding the relationship between its variables. Kumar (1996) concurs and suggests that cross-sectional studies are suitable to analyze certain phenomena, situations, problems, attitudes or issues with the population. According to Graziano and Ravlin (2000), a cross-sectional survey is the best option to obtain information in their natural environments.

The researcher adopts cross-sectional reseach as Man, Lau & Snape (2008) and Azizi (2010), since this research is an extension study of the organizational level of research using cross sectional study on entrepreneurial competencies and innovation.

3.4.2 Research Design Strategies

This study utilizes the survey method whereby it describes issues and examines the relationship of all variables under study (Zikmund, 2000). It is assumed that survey method explains or at least describes statistically the relationship of the independent variables consisting of marketing mix and innovation towards the dependent variables namely SME performance and also the mediating role of brand equity on independent and dependent variable of this research.

Babbie (1990) suggests that survey methods provide generalizability results of the entire population. Survey methods permit researchers to collect big volumes of data within a limited time frame (Yalcinkaya, 2007). He further argues the survey method is most appropriately conducted using a quantitative method. On top of this, the survey method provides researchers the choice to collect data from multiple respondents to assist in the examination and the testing of hypotheses of many variables (Neuman, 1997). From the above discussion, it is concluded that although a range of research approaches are available to researchers, a survey approach is widely employed for examining performance and related issues.

The choice of this approach seems appropriate due to several reasons such as being less expensive, easier to access and the degree to which a researcher could be part of the context being studied (Dwivedi, 2007). Furthermore, the aim of this research is to

study the SME performance within the owners/managers point of view. Further details on data collection would be discussed in a later part of this chapter.

3.4.3 Unit of Analysis

Unit of analysis is defined as the type of unit uses by a researcher to measure variables under study (Neuman, 1997). It is used to explain the units themselves that refers to what is being analyzed in the study. In this research, the unit of analysis is an organizational level where SMEs owners/managers are chosen as respondents since they are key informants and know about the business and they are in an appropriate position responding to this study (Azizi, 2010; O'Cass & Ngo, 2007), they are also actively empowers to make decisions for the company and furthermore, the behavior of the owners or managers are known to have a major influence on the SME firm performance (Julien & Ramangalahy, 2003).

3.5 Measurement of Variables

This section will describe how the variables involved in this study measured and tracked. The variables involved are the performance of SMEs , which represent the dependent variable and entrepreneurial competencies and organization structure which represent variables or independent variables studies. Apart from that the moderator variable, innovation is also involved in the study.

Research instrument or questionnaire in this research was prepared in bilingual that are Bahasa Melayu and English. Based on Sabitha (2005), the usage of Bahasa Melayu and English in questionnaire to give a choice to the respondents to choose which ever language that they can easily understand.

The measurement variable is the provision in the figures to objects or events according to a rule of thumbs (Kerlinger, 1966 and Black & Champion, 1992). In fact, measurement is a systematic step to measure variables or constructs that include activities to determine the dimensions of the research concept, formulate measurement for each dimension, specify the level of measurement that will be used, determines the validity and reliability measurement tools (Coakes & Steeds, 2001 and Sekaran, 2000).

According to Singarimbun & Sofyan (1995), what should be noted in a measurement is that there is almost parity between social reality with the "value" derived from the measurements, so the measuring instrument looked good when the results can accurately reflect the reality of the phenomenon to be measured.

3.5.1 SMEs Performance

SME's performance is measured in terms of subjective perception, using a modified version of the instrument that was developed by Gupta and Govindarajan (1984). This measurement is used by some previous investigators (Man, Nathaka 2001 and 2007) as well. Subjective performance measures have been used in this study compared to electoral performance measure objectively. Justification for the choice of this measure is subjective because of the following reasons:

i) small firms were reluctant to supply "hard financial" data (Fiorito and LaForge, 1986). Small firms are often unable to provide such data. The only owners of SMEs will consider it as confidential.

ii) financial data of the sample firms are not available publicly, and it is difficult to check the correctness of any figure reported in the financial performance (Dess and Robinson, 1984).

iii) even though the assumed data-accurate financial data can be obtained, but the data on small firms is difficult to interpret (Cooper, 1993).

iv) total score against the criteria of financial performance is influenced by factors related to the industry (Sapeinza, Smith and Gannon, 1988). With the atmosphere or the state of the industry in the different samples, comparative financial data derived directly may lead to error or misinterpretation or confusing.

Respondents were asked to indicate the answer to the above question based on the seven Likert of scale, of the "very low" to "very high", ie the level of performance of SME respondents since the last three years (or since he became the owner or manager of the firm less than three years). The questions are related to:

i) cash flow,

ii) gross profit margin,

iii) net profit from operations,

iv) sales growth rate

v) return on sales,

vi) return on investment

vii) profit on sales ratio

viii) return on shareholders' equity

ix) the ability to finance the business expansion from firm profits

3.5.2 Entrepreneurial competencies

In this study, the measurements statements on the competencies of SME entrepreneurs has been prepared using instruments that have been modified from the instrument built by Man (2001). In this study researcher has also used the 7 Likert scale.A total of ten variables of entrepreneurial competencies of entrepreneurs have been selected for testing. The number of questions involved in this test is 68. These questions are divided into two sections, namely for traits competencies consist of 46 questions (questions no. 1 to 46) and the rest is for skills competencies (questions no. 47 to 68).

3.5.3 Organization structure

The organizational structure is measured to seven Likert scale that measures the position of the level of division of powers - namely to what extent an organization structure in an organic versus mechanistic conditions. This scale was developed by Khandawala (1976, 1977) and widely used by many researchers previously (Chi, 2006; Miles, Covin and Neely, 2000). Respondents were asked to indicate the scale of Likert seven-point scale the extent to which each item measures the structural characteristics of their firms. Each of the seven of this item was used as an index of organicity if minimum index achieved. The higher the index is scored, the higher the firm's structure in the form of a mechanistic.

3.5.4 Innovation

The measurements statements on the innovation has been prepared based on the three dimensions of innovation that are: open innovation, radical innovation and

incremental innovation. All the instruments that have been modified from the researchers that stated in *Table 3.0*. Researcher has also used measurements based on the seven Likert of scale, of the "very low" to "very high" in this study.A total of three dimensions of innovation have been selected for testing. The total number of questions involved in this part is 21. These questions are divided into three sections, namely for open innovation consist of 11 questions and for radical innovation as well as incremental innovation consist of five question each respectively.

Table 3.1: *References of Research Questions*

Variables	Researcher(s)
Entrepreneurial competencies: 1. Traits competencies 2. Skills competency	Azizi (2010)
Open Innovation	Gassmann,et al.(2010) Lazzarotti,et al.(2010)
Radical Innovation	Green,et al.(1995) Tellis,et al.(2009)
Incremental Innovation	Uddin (2006) Herrmann (1999)
The organizational structure	(Chi, 2006; Miles, Covin dan Heely, 2000)
Performance of SMEs	Gupta & Govindarajan (1984) (Man, 2001 dan Nathaka, 2007) Azizi (2010)

The summary regarding research questions instruments is provided in the Table 3.2 below.

The questionnaire format is structured based on all variables and dimensions which representing each variable that to be analyzed in this study. Based on information

provided in Table 3.2 below, total number of questions is 120 which has been divided based on parts A to F. Parts A, B, C and D representing all variables involved in this study. Whereas, parts E and F representing general information about entrepreneur that are Personal Background and Company Background respectively.

Table 3.2: *Questionnaire Format*

Part	Variables and dimensions	No. of questions
A	Entrepreneurial Competencies: - Traits competencie - Skills competencies	 46 22
B	Innovation: - Open Innovation - Radical Innovation - Incremental innovation	 11 5 5
C	Organizational Structures	7
D	Firm Performance	9
E	Personal Background Information	7
F	Company Background Information	8
	Total Questions	120

The questionnaires format and organization of instruments as shown in the Table 3.2.

3.6 Selection of respondents

Respondents identified the need for an investigation of two processes, namely the selection of the population in an area or region of interest and selection of the sample as well. The work should be done in accordance with certain procedures. Here is an overview of the population and sample selection in this study.

3.6.1 Population

This research study focuses on the SMEs manufacturing sector in northen states of Malaysia. The manufacturing sector category of the enterprises are as defined and described in the definition of SMEs in the first chapter.

Population refers to the entire group of people, event, or things that researcher wishes to investigate (Sekaran, 2003). The population of interest for this study are from SME Info Sdn. Bhd. as listed in Malaysia SME Business Directory (2011), Malaysia SME Business Directory has been considered as one of the most established publication for business guide of Malaysian SMEs with more than 130,000 copies circulation (Malaysian SME Business Directory, 2011). The underlying reason why Malaysia SME Directory has been chosen as sampling frame because it has been recognized by SME Corp (Malaysia's government agency which governs SME) and it is widely used for research.

SME Corp is Malaysia's specialized agency to further promote the development of Small and Medium Industries (SMIs) in all the sectors through the provision of advisory services, fiscal and financial assistance, infrastructural facilities, market access and other support programmes. These sources of data represent the accurate

representative of SME sample to show true view of the study been conducted (Murjan, 2012).

The sampling frame is derived from the list of population provided by the SME Directory 2011. The total number of personally administered questionnaires is 800 with a required minimum sample of 357 (Krejcie & Morgan, 1970). Krejcie and Morgan (1970) sample determination are used because its greatly simplified size, precision and confidence decision by providing a table that ensures a good decision model, and well recommended (Sekaran, 2003). During the selection of the population, the following criteria are used to select SMEs firms involved in the study:

i) The contact person on the list given the booklet is the manager or owner of the firm, those holding the Managing Director, Executive Director, or a business partner,

ii) firms employ 50 employees and below,

iii) firms have been operating for at least three years.

Based on the above criteria the researchers examined data on SME companies acquired which will be eligible to be listed as a population that can be used in this study.

3.6.1 Sample

In this sample, the unit of analysis represents individuals such as owners or managers of SMEs in Perlis, Kedah and Penang, northern Malaysia. Managers or owners of SMEs are chosen to answer this questionnaire because their perception of

their firm is more accurate and more consistent with the objectives of the study as compared with employees and other parties in their firm. Lohr (2010) defined sample as a subset of a population. Creswell (2009) model described as in one test, researchers also identified a sample alone to generalize it to the people (population). However, the basic purpose of a test design that will be controlling all other factors, the impact of a treatment or intervention effect will be a test.

Based on Proctor (2005), the technique to define sample comprises probability and non-probability sampling. Each element of the selected probability sample of the population is well-known, non-zero chance. In such cases, it is the sample variance can be calculated and the results of the entire population. On the other hand, in non-probability model a chance to select certain people because of known and cannot be generalized to the entire population. While technology can be tough to sort, we need to be depends on the particular application. Proctor (2005) also described that the group to be studied is known as population, or target population which is referred as universe. The biggest of what is measured. It is possible to study the people, stores, or anything in the house.

A disproportionate stratified simple random sampling (Sekaran, 2000) has been used by researchers in the selection of samples from the study population obtained. The method of calculating stratified simple random sampling and systematic sampling from a population of based on manufacturing industry in Kedah, Perlis and Penang in in the study.Initially, a disproportionate stratified simple random sampling process conducted by dividing the total population in all states which are Kedah, Perlis and Penang of manufacturing industry that have been set. From the breakdown of the

population, to select the number of samples needed for this study simple sampling method being used. Determination of total sample is made by picking randomly from each population in each state. With this simple sampling will get the total number of samples that are available for the purpose of distribution of the questionnaire made by using personally administered questionnaires which managed on the "drop and collect" basis (Mc Carthy, O'Really & Cromin,2001).The disproportionate simple stratified random sampling method (Sekaran, 2000) has been used by researchers in the process of selecting a sample of the study population was obtained. The calculation of simple stratified random sampling method and systematic sampling from a population of 4895 is shown in Table 3.3.

Table 3.3: *Calculation methods of sample from the population*

State	Total population	% shares	Total sample	Total distributed
Penang	2409	49,2	176	394
Kedah	2188	44.5	159	356
Perlis	298	6.3	22	50
Total	4895	100.0	357	800

The sample size of 800 was more than the size specified in the table Krejcie and Morgan (Sekaran, 2000), totaling 357. The table produced by Krejcie and Morgan and was said to be made public in accordance with the scientific guidelines (Sekaran, 2000).The sample size must be equivalent or more than the size specified in the Krejcie and Morgan table (Sekaran , 2000) , ie a total of 357 . Schedule produced by Krejcie and Morgan and it is said to be made by the general scientific guidance

(Sekaran, 2000). The larger size is needed to overcome the possibility of respondents could not answer or answered with a nonchalant and even caught up with the questions that are negative and positive. Size also meets the recommendations rule of thumb by Roscoe (Sekaran, 2000) which set the following characteristics to identify the size of sample.

1. The sample size is more than 30 but less than 500 are appropriate for most research,
2. If the sample is broken down into several sub-samples (eg male / female, old / new) then a minimum size of 30 for each category of samples is required,
3. In multivariate research (including multiple regression analysis), sample size should be several times (preferably 10 or more) than the number of variables involved.
4. For a brief experiment research, with strict control (matching pair, and so on) of a study can be successful with a small sample size, between 10 and 20.

Therefore, 800 set of questionnaires has been distributed as the sample size for the purpose of this study as shown in Table 3.3 above.

3.7 Data collection procedures

A questionnaire was prepared to collect survey data from SME owners who have been picked randomly based on the disproportionate simple stratified random sampling method. The survey questionnaire was managed on the “drop and collect” basis (Mc Carthy, O’Really & Cromin, 2001) throughout SMEs manufacturing

sector in northern states of Malaysia. Respondents involved owners or managers of SMEs for all gender and races. Before answering the question, the researcher gave a brief explanation on the research objectives. Each respondent was advised that the answering process will take no longer than 60 to 90 minutes to complete and the questionnaire will be collected within one hour to two weeks later based on negotiation with the respective respondent. It needed to be answered by the selected respondent with a pen or pencil. Mode of data collection considered as personally administered questionnaires which is answered by the respective respondent and to be collected back by researcher after one hour to two weeks based on negotiation with the respective respondent.

3.8 Techniques of Data Analysis

Creswell (2009) stated that by investigating the connection among variables, quantitative research is a tool to test objective theories. By examining numbered data by using statistical procedures, these variables can be calculated.

Creswell (2009) described size of the strategies that will be useful to determine the number of variables and treatments. By studying a sample of the survey design, trends, attitudes or people, an amount or a number of options provides descriptions.

Muijs (2004) explained the quantitative studies should be conducted when quantitative answers are required, the state of someone or something is also required, a phenomena needs to be explained and related changing factors or when the hypotheses tested require quantitative analysis.The method chosen in this study is generally a quantitative approach as it relates ideas, compares groups, and examines

relationships between multiple variants in social science (Colton & Covert, 2007). Surveys are widely used in quantitative studies to gather and analyse social behaviour data in an unbiased manner (Colton & Covert, 2007; Neuman, 2006).

Different statistical methods, techniques and tools are used to perform the data analysis to achieve the objectives of the research and to test the respective hypotheses. SPSS version 18, a statistical software package, is used for the analysis to measure the descriptive and inferential data as to test the Pearson correlation, multiple regression and hierarchical multiple regression.

3.9 Pilot Study

This subsection discusses the empirical results and analysis process for the pilot study. The term pilot study is used in two different ways in social science research. It can refer to so-called feasibility studies, which are small scale version(s) or trial run(s), done in preparation for the major study (Polit, Beck, & Hungler, 2001).

However, a pilot study can also be the pre-trial or 'trying out' of a particular research instrument (Baker, 1994). One of the advantages of conducting a pilot study is that it might provides advance warning about where the main research project could fail, where research protocols may not be followed, or whether proposed methods or instruments are inappropriate or too complicated.

Pilot tests are conducted to detect weakness in design, instrumentation and to provide proxy data for selection of a probability sample before large scale or research process is been done (Sekaran, 2000). This pilot testing is intended to reveal errors in design and improper control of extraneous or environmental conditions and

permit refinement before final test. It is suggested that the pilot study is important as it helps to improve the questionnaire (Neuman, 1997). Through pilot study, the weakness in design and instruments can be detected and it also provides proxy data by selecting a probable sample (Cooper & Schindler, 2001).

A pilot study was conducted with 30 respondents in several companies located in Kedah. All questionnaires were returned and can be used for data analysis. It is clear that the pilot survey is used to test out all aspects of the survey and not just question wording (Ticehurst & Veal, 2000; Wiersma, 1993). A reliability test is also conducted to examine the internal consistency of the instruments employs in this study. This test helps to detect respondents' consistency in answering all questions, the degree of independence and their correlation of similar concepts with one another (Sekaran, 2000).

Table 3.4 illustrates the Cronbach's alpha values that were calculated to examine the internal consistency of the survey instrument. In overall, the Cronbach's alpha values for all variables of this research pilot study varied between 0.705 for incremental approach and 0.17 for commitment competency. None of the variables of this research pilot study demonstrated below the minimum reliability level (<0.60) (Hair et al., 2006). The good Cronbach's alpha values for all variables imply that they are internally consistent and measuring the same content universe (Churchill, 1979; Sekaran, 2003).

Table 3.4: *Reliability Coefficients for Variables (N=30)*

Variable	N of Item	Cronbach Alpha
Competencies:		
Opportunity	5	0.807
Relationship	10	0.771
Operational	7	0.819
Strategic	10	0.842
Commitment	5	0.917
Learning	6	0.767
Personal Strength	10	0.819
Innovative	3	0.724
Human	5	0.750
Analytical	7	0.798
Organizational Structure	7	0.790
Innovation Approach		
Incremental	5	0.705
Radical	5	0.754
Open	11	0.741
Business Performance	9	0.728

3.10 Chapter Summary

This chapter discusses and explains the research methodology employed in this study. This is an empirial research using survey method. Respondents are from SME owner/manager and the selection made by using the disproportionate simple stratified random sampling method. Before data collection is conducted the measuring instruments undergo validity and reliability tests so that the measuring instruments are suitable for this research. In ensuring the suitability of measuring instruments, a pre-test is carried out, followed by a pilot study. After the data collection for the pilot study is completed, the data is analyzed using SPSS version

18 to test its reliability. The details of explanations of the data analysis and findings would be aloborated further in the chapter 4 together with results.

CHAPTER FOUR
DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter discusses the findings of this research. The discussion starts with the background of the respondents, followed by data cleaning procedures, multivariate assumptions and reliability analysis. Next, descriptive analysis and hypotheses testing are presented.

4.2 Profile of Respondents

328 sets of questionnaires were returned out of 400 questionnaires distributed. However, 14 of them deleted during the data cleaning process (refer Section 4.3), making the total of 314 usable questionnaires. This section discusses the respondent's and organization general information and provides detailed updates on information about the respondents. Table 4.1 exhibits the demographic background of the respondents. 53.5 percent of the respondents were the company directors and 46.5 percent were the managers. Majority of the respondents were aged 41 to 50 years old (38.9%) at with 6 to 10 years of working experience (39.8%). In term of gender, 61.1 percent of the respondents were male compared to 38.9 female. More than half of the respondents have finished their bachelor degree (73.9%). It can also be found in table 4.1 that majority of respondents were from manufacturing sector (36.9%), followed by enterprise and production/manufacturing with 22.3 percent for each sector.

Table 4.1: *Background of the Respondents*

	Frequency	Percentage
Position		
Director	168	53.5
Manager	146	46.5
Age		
20 - 30 years	10	3.2
31 - 40 years	119	37.9
41 - 50 years	122	38.9
51 - 60 years	54	17.2
61 years and above	9	2.9
Gender		
Male	192	61.1
Female	122	38.9
Experience		
1-5 years	118	37.6
6-10 years	125	39.8
11-15 years	55	17.5
16-20 years	10	3.2
21-25 years	6	1.9
Level of Education		
SPM/Diploma	43	13.7
Bachelor Degree	232	73.9
Masters Degree	27	8.6
Doctorate Degree	12	3.8
Sector		
Production/Manufacturing	262	83.4
Service related to Manufacturing Sector	52	16.6

4.3 Data Cleaning Procedures

Data cleaning and data examination in this study involved data screening and data testing, which aim to meet the multivariate assumptions (Hair et al., 2006). Data screening or cleaning is essentially important before further analysis of the data collection is carried out (Tabachnick & Fidell, 2001). Data was screened and cleaned to ensure the accuracy of the data collected. This was done by analyzing the original

data collected against the source data file. Following Tabachnick and Fidell (2001), data cleaning in this study involved checking the accuracy of the data input, dealing with missing values, detecting and treating the outliers and assessing the response bias.

4.3.1 Missing Data

Hair et al. (2006) describe missing data as "*information not available for a case about whom other information is available*". Missing data for this study was reduced by checking for errors in all the variables at the point of time they were collected. Any unanswered questions were referred back to the respondents. To ensure that all the data were cleaned, frequency distribution and missing value analysis for each variable were conducted. No missing data was found.

4.3.2 Response Bias

The issue of non-response bias occurs in statistical surveys if the answers of respondents differ from the potential answers of those who did not answer. For purposes of this research, non-response bias is defined as a bias that exists in survey results when respondents to a survey are different from those who did not respond in terms of demographic or attitudinal variables, or other variables relevant to the survey topic (Coakes & Steed, 2003; Pallant, 2005). It is a function of: (1) the proportion of non-respondents in the total sample; and (2) the extent to which there is a systematic discrepancy between respondents and non-respondents on variables relevant to the inquiry. The presence of non-response bias is a threat to the external validity or generalizability of research findings to the target population of a study (Coakes & Steed, 2003; Pallant, 2005). A well-designed survey and a research-based

administration method, following generally acceptable protocols and procedures as well as reporting them in the research analysis, are the first-steps in the attempt to increase response rates and also control for non-response bias (Coakes & Steed, 2003; Pallant, 2005).

Response bias test was performed to examine whether there is a significant difference between early and late response groups. For this purpose, the early response group was coded as '1' and the late response group was coded as '2'. Independent sample t-tests were conducted on the continuous variables. Significant values ($p<0.05$) for both tests indicate the existence of response bias while non-significant values ($p>0.05$) indicate the reverse (Coakes & Steed, 2003; Pallant, 2005).

For the purpose of this study, 176 respondents were treated as the 1st group respondents and the other 138 respondents were treated as the second group (late reply). Mean score for all variables were then computed for both groups. The mean scores were compared to examine the differences between the groups of responses. The results are shown in Table 4.2. It is found that there are no differences between the two groups of responses for all variables. Hence, the data used in this study is free from response bias.

Table 4.2: *Independence Sample t-test for non-response bias test*

	Mean		F	Sig.
	1st wave	2nd wave		
Business Performance	5.8062	5.7818	.142	.707
Traits Competency	5.8541	5.8211	.783	.377
Skills Competency	5.8992	5.9332	1.224	.269
Organizational Structure	5.7622	5.8302	0.174	.747
Innovation Approach	5.9012	5.9434	1.104	.294

4.3.3 Outliers Identification

The third test of data screening is the identification of outliers. To assist in detecting outliers, this study employed the Mahalanobis D^2. Mahalanobis D^2 is a multidimensional version of a z-score. It measures the distance of a case from the centroid (multidimensional mean) of a distribution, given the covariance (multidimensional variance) of the distribution. A case is considered as a multivariate outlier if the probability associated with its D^2 is 0.001 or less. D^2 follows a chi-square distribution with degrees of freedom equal to the number of variables included in the calculation. From the analysis, the data of this study showed 14 cases of D^2 probability score (p) less than 0.001. Thus, the 14 cases were treated with outliers issue and were deleted from the data.

4.4 Tests on Multivariate Assumptions

After screening the data, tests to meet four assumptions of multivariate analyses were conducted: normality, linearity, homoscedasticity and multicollinearity (Hair et al., 2006). The results of the tests are discussed in the following subsections.

4.4.1 Normality test

Normality for all of the data was examined for each item based on the statistical and visual approach. The descriptions of the findings are offered in subsections 4.4.1.1 and 4.4.1.2.

4.4.1.1 Statistical Approach

The data normality distribution was evaluated by the skewness and kurtosis values for each variable. Skewness values illustrate the symmetry of the allocation score and a skewed variable mean the score is not be at the center of the distribution, whereas kurtosis is about the peakedness of distribution which can be either too peaked for instance with short and thick tail or too flat with long and thin tail (Tabachnick & Fidell, 2001). Normal distribution is considered when value of skewness and kurtosis is at zero (0). Positive skewness value will have a cluster of cases to the left at a low value and negative skewness will have the score cluster or pile at the right side with a long left tail (Tabachnick & Fidell, 2001). Kurtosis with values of below zero (0) indicate a relatively flat distribution known as “playkurtic” and the kurtosis values above zero (0) indicate a peaked distribution or “leptokurtic” as recommended by researchers that samples be large enough to prevent under-estimation of variance. Seldom will perfect normality assumption be achieved. The test was conducted using skewness and kurtosis measurement. It is thus concluded

that the data is symmetric because the skewness and kurtosis values are both less than +-2.00 for all the dimensional constructs of the study. According to George and Mallery (2010), a skewness or kurtosis value between +-2.00 is regarded as an excellent value and hence, the data for this study is normally distributed Table 4.3 summarizes the kurtosis and skewness for all the variables. The data shows the variables are normally distributed. Therefore, in conclusion, all the variables do not deviate from the normality test requirement.

Table 4.3: *Skewness and Kurtosis for the Variables*

	Skewness		**Kortosis**	
	Statistic	*SE*	*Statistic*	*SE*
Business Performance	-.489	.138	.473	.274
Traits Competency	-.953	.138	1.466	.274
Skills Competency	-.254	.138	-.558	.274
Organizational Structure	-.272	.138	-.466	.274
Innovation Approach	-.480	.138	.069	.274

4.4.1.2 Visual Approach

The other step in analyzing the data for this study is to examine the normality of the data by assessing the shape of distribution. A test was conducted to determine normality using visual inspections. An informal approach to test normality is to compare a histogram of the sample data to a normal probability curve. The empirical distribution of the data (the histogram) should be bell-shaped and resemble the normal distribution. Figure 4.1 to Figure 4.5 illustrate that the data for all variables

studied. It was found that the shapes are within the normality line; hence, the data for the variables are within the normal curve distribution.

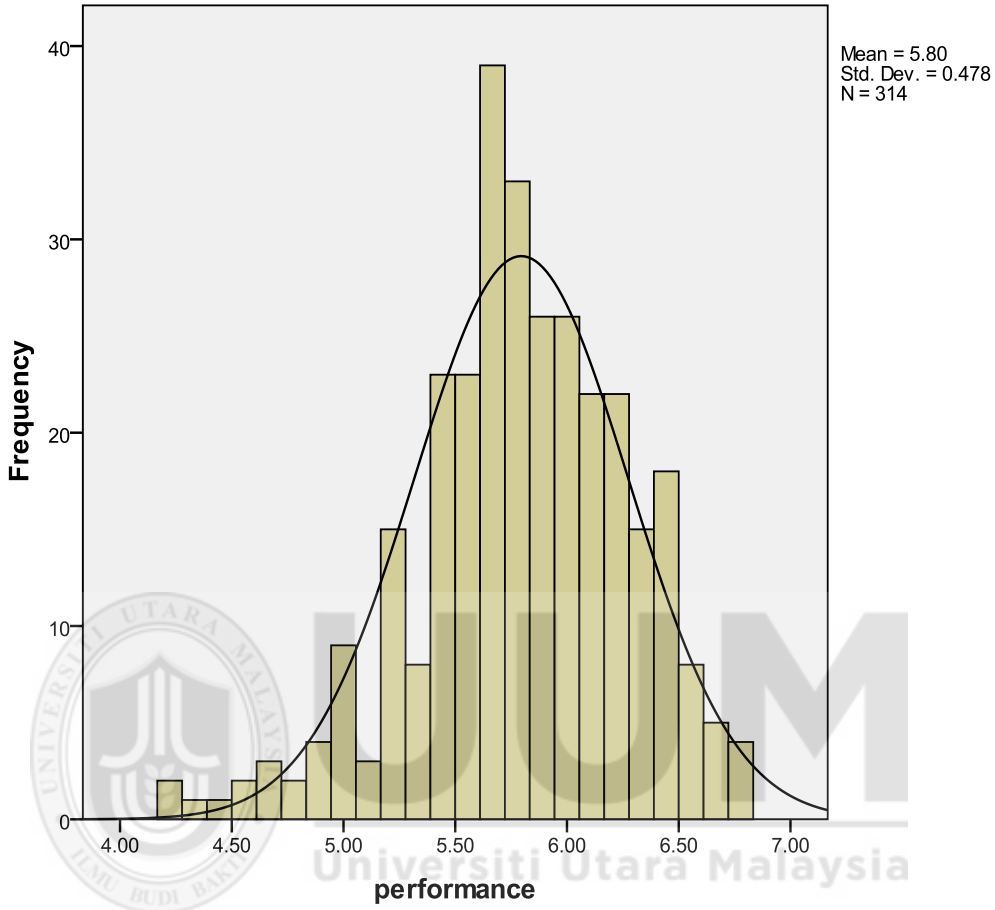


Figure 4.1: *Histogram of Business Performance*

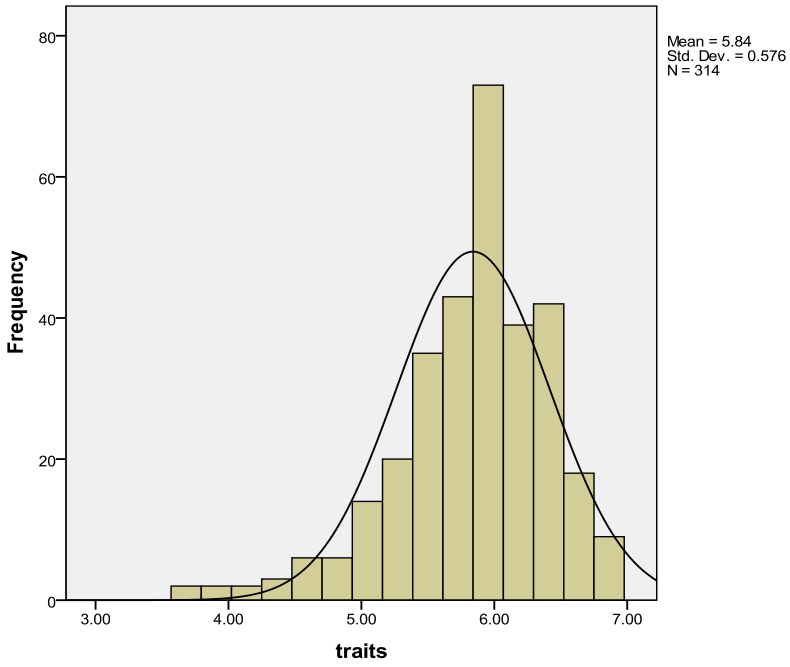


Figure 4.2: *Histogram of Traits Competency*

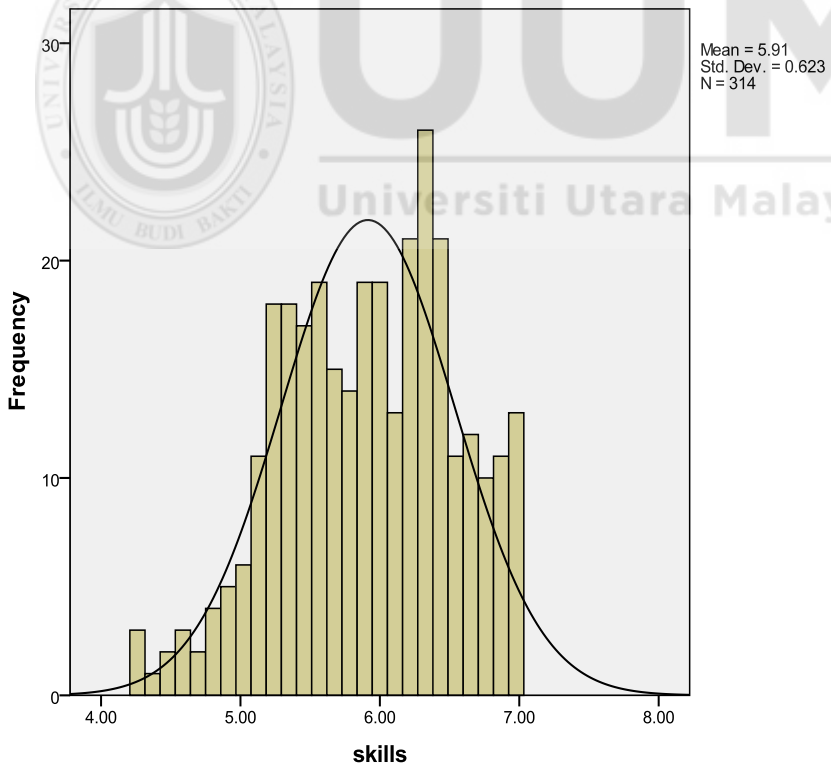


Figure 4.3: *Histogram of Skills Competency*

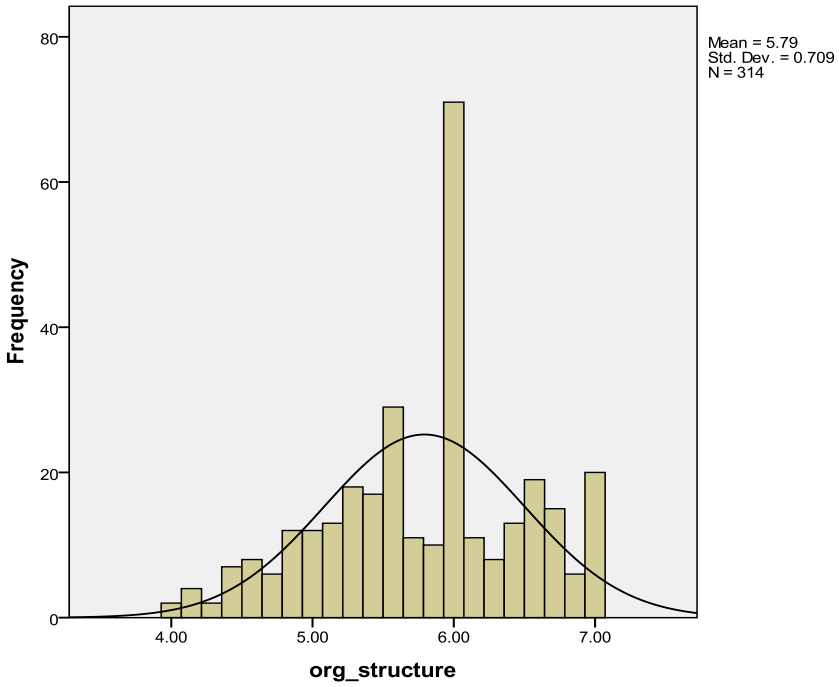


Figure 4.4: *Histogram of Organizational Structure*

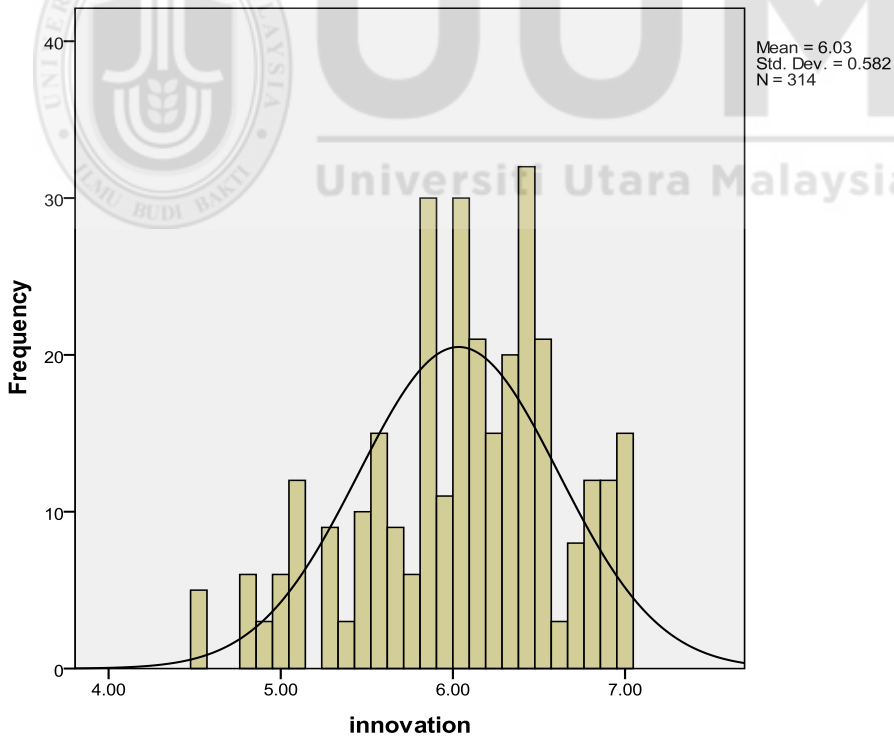


Figure 4.5: *Histogram of Innovation Approach*

4.4.2 Linearity Test

Another multivariate assumption is linearity of data which is the relationship between the residuals against the predicted values. Linearity refers to the error term of distribution. Linearity is important for regression analysis because correlation can capture only the linear association between variables and if there is a substantial non-linear relationship, it will be ignored in the analysis because it will underestimate the actual strength of the relationship (Tabachnick & Fidell, 2001).

Linearity can be observed by examining the scatterplots (Hair et al., 2006). The results of linearity through scatterplot diagrams for various variables indicate no clear relationship between the residuals and the predicted values. Assessment of all scatterplots of the standardized residual versus standardized predicted values reveal that in all the plots, the residuals are scattered with no systematic or curvilinear pattern (U-shape distribution); or clustering of residuals as indicated by Tabachnick and Fidell (2007) (refer Figure 4.6). The randomized patterns of the scatterplots indicate that the assumption of linearity is met. Therefore, linearity could be assumed.

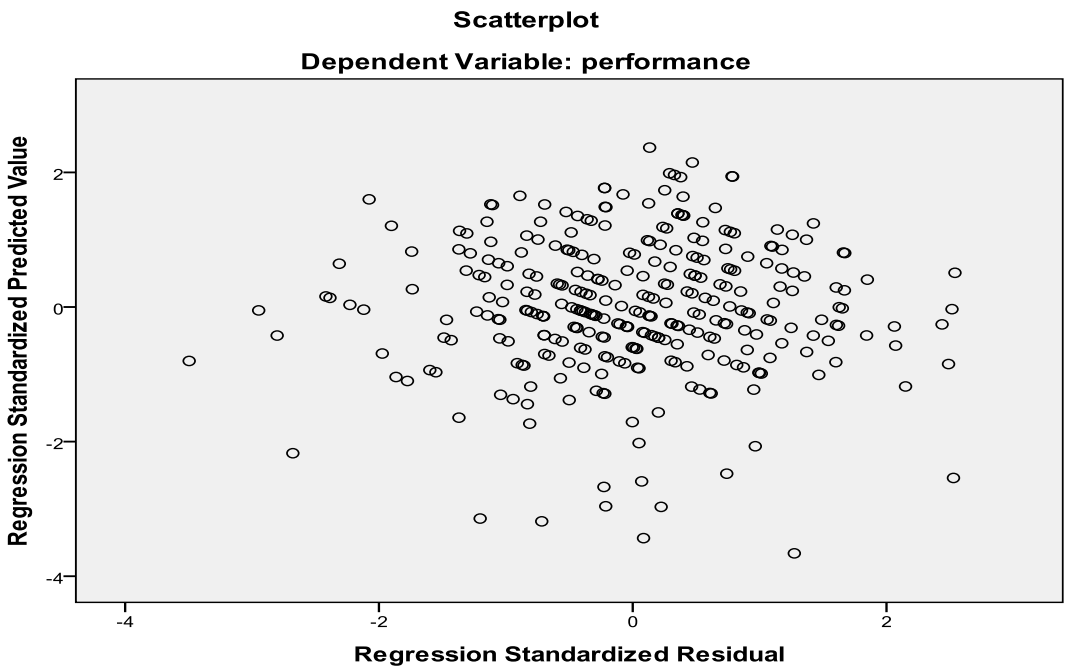


Figure 4.6: *Scatterplots of Standardized Residuals against the Predicted Values*

4.4.3 Homoscedasticity

Homoscedasticity refers to constant variance of the error term and the variance of the dependent variables is approximately the same for different levels of the explanatory variable (Hair et al., 2006). Homoscedasticity is indicated when the width of the band of the residuals is approximately at a different level from the dependent variables and the scatterplot shows a pattern of residual normally distributed around the mean. To check for homoscedasticity, the scatterplots of studentized residuals against the predicted values were used as in Figure 4.7 (Hair et al., 2006). There is a need to inspect the plots of residuals against the predicted values to reveal that the residuals are scattered randomly with no obvious systematic pattern. If there is no systematic pattern of decreasing of increasing residuals, it can be assumed that the assumption of homoscedasticity is not violated.

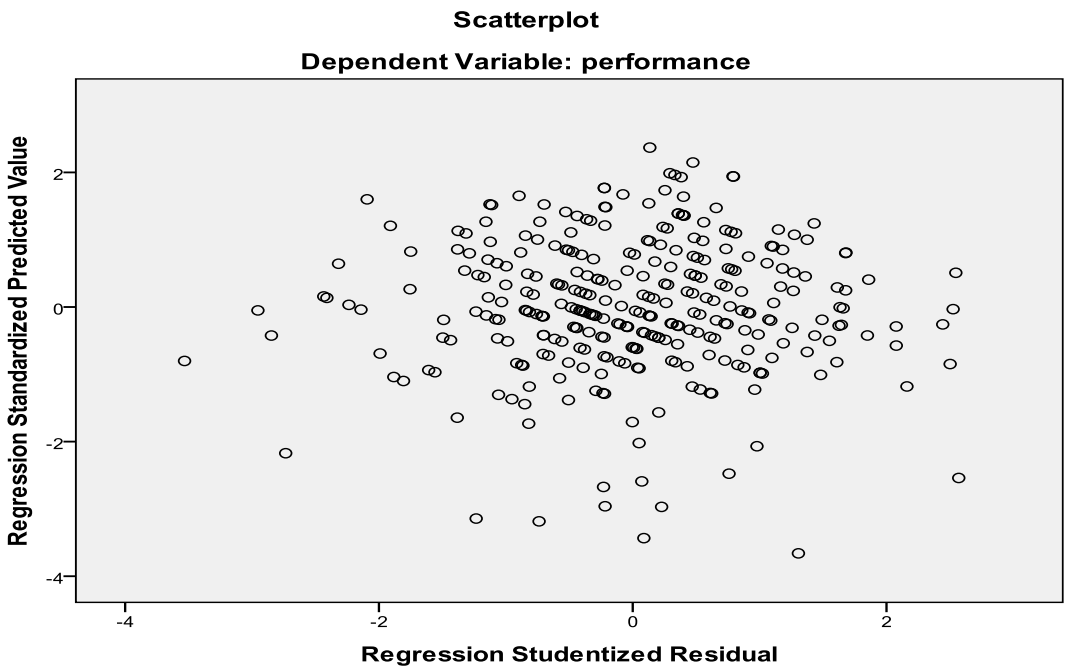


Figure 4.7: *Scatterplots of Studentized Residuals against the Predicted Values*

4.4.4 Multicollinearity

The fourth assumption pertains to multicollinearity and singularity which are related to the correlations between the predicting variables. Singularity occurs when one of the independent variables is merged with other independent variables (Tabachnick & Fidell, 2001). Multicollinearity poses a problem for multiple regression when the independent variables are highly correlated (r = 0.8 and above). When such a case happens, the regression coefficients would not be significant due to high standard error. According to Tabachnick and Fidell (2001), tolerance values approaching zero (0) specify the presence of high multicollinearity. The cut-off value for VIF is less than 10 and tolerance value of more than 0.1. Hence, as deliberated in the statistical analysis, there is no violation of the assumption for this study. All the independent variables have tolerance value of less than 0.1 and VIF value of less than 10 (refer Table 4.4).

Table 4.4: *Test of Multicollinearity*

	Tolerance	**VIF**
Traits Competency	.853	1.172
Skills Competency	.834	1.198
Organizational Structure	.982	1.019
Innovation Approach	.978	1.022

4.5 Factor Analysis

Construct validity which is achieved through factor analysis. Factor analysis has been extensively used to review the construct validity of a scale or a test. Zikmund et al. (2003) and Pallant (2005) described factor analysis as a kind of data reduction approach used to classify the fundamental variables from the original factors. In summary, factor analysis is used to reduce and reclassify a large number of items into smaller items in new variables. Construct validity engages with the level to which the scale or construct signifies and performs like the concept being measured (Davis & Consenza, 1988). Construct validity is reviewed from both the statistical and theoretical perspectives. The mechanisms for the variables in this study were developed from past researchers that agreed with the theoretical construct validity. The principal technique that was performed on all the constructs to support the statistical construct validity was to evaluate or test the Varimax rotation principal components analysis (PCA). Tabachnick and Fidell (2001) agree on the PCA for factor extraction over explanatory factor analysis (EFA), specifically for empirical summary of data-set. All the factors for variables in this study were segmented as multi-dimensional. The purpose is to corroborate the scales and to agree on the factor loading.

As a rule of thumb, Tabachnick and Fidell, (2001) proposed that only a variable with a loading of 0.32 and above should be considered. Comrey and Lee (1992) illustrated that any loading that exceeds 0.71 is considered excellent; 0.63 rated as very good; 0.55 rated as good; 0.45 rated as fair; and 0.32 rated as poor. Tabachnick and Fidell (2001) pointed out that the cut-off point for size of loading is a matter of researcher's predilection. For this study, based on the size of loadings which were influenced by homogeneity of scores in the samples, a factor loading higher than 0.40 was selected.

Another consideration for factor analysis as suggested by Tabachnick and Fidell (2001), is Kaiser-Meyer-Olkin (KMO) statistics categorized as a minimum of 0.6 (Kaiser, 1970, 1974). If this value plunges below the minimum value, it is then proposed that either more data be collected or that other variables should be considered (Field, 2009). Hutchson and Sofroniou (1999) analyzed that the KMO values between 0.5 and 0.7 as mediocre; 0.7 and 0.8 good; values between 0.8 and 0.9 as great; and value above 0.9 as superb. Tables 5.5 - 5.8 exhibit the summary of KMO and total variance values for independent and dependent variables.

4.5.1 Entrepreneurial Competencies

The measurement scales for entrepreneur competency consists of 68 items. The Varimax rotated PCA was conducted. Prior to performing the PCA, the suitability of the data for factor analysis was assessed. Correlation matrix indicated item coefficients are 0.4 and above. Table 4.5 exhibits the results for competency scale factor loading. The KMO value is 0.892, exceeding the recommended value of 0.6 (Kaiser, 1970, 1974) and Barlett's test of Sphericity (Barlett, 1954) is significant at

p<0.001. Since the KMO value is 0.892, it is interpreted as being in the range of "great" (Hutcheson & Sofroniou, 1999). Table 4.5 also shows that the factor analysis contributed ten factors from the 68 original items. Five items were deleted due to low factor loading. The items were B1, B9, B23, B57 and B68. The total variance explained is 70.34 percent. Only factors with a loading value of 0.40 and above were considered.

Table 4.5: *Factor Loading of Entrepreneurship Competency Scale*

	Factor Loading									
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Factor 1:Commitment										
b33	.834									
b34	.846									
b35	.847									
b36	.877									
b37	.868									
Factor 2: Strategic										
b24		.532								
b25		.503								
b26		.520								
b27		.531								
b28		.428								
b29		.847								
b30		.836								
b31		.872								
b32		.871								

Factor 3: Learning					
b38	.893				
b39	.831				
b40	.752				
b41	.682				
b42	.727				
b43	.604				
Factor 4: Operational					
b16		.656			
b17		.774			
b18		.743			
b19		.624			
b20		.725			
b21		.513			
b22		.690			
Factor 5: Human					
b58			.567		
b59			.690		
b60			.697		
b61			.694		
Factor 6: Personal Strength					
b44				.648	
b45				.705	
b46				.622	
b47				.705	
b48				.539	

b49	.670			
b50	.681			
b51	.486			
b52	.864			
b53	.870			
Factor 7: Opportunity				
b1		.798		
b2		.828		
b3		.782		
b4		.566		
Factor 8: Relationship				
b6			.866	
b7			.837	
b8			.807	
b10			.613	
b11			.698	
b12			.469	
b13			.598	
b14			.639	
b15			.620	
Factor 9: Innovative				
b54				.776
b55				.422
b56				.569
Factor 10: Analytical				
b62				.831

b63										.781
b64										.883
b65										.778
b66										.784
b67										.728
Eigenvalue	*19.12*	*8.17*	*3.94*	*3.02*	*2.27*	*1.93*	*1.77*	*1.44*	*1.37*	*1.29*
% of Variance	*30.34*	*12.97*	*6.26*	*4.79*	*3.60*	*3.07*	*2.80*	*2.29*	*2.18*	*2.04*
KMO	*0.892*									
BTOS	*19309.73*									
Sig.	*0.000*									

4.5.2 Organizational Structure

The measurement scales for entrepreneur organizational structure consists of seven items. The Varimax rotated PCA was conducted. Prior to performing the PCA, the suitability of the data for factor analysis was assessed. Correlation matrix indicated item coefficients are 0.4 and above. Table 4.6 exhibits the results for organizational structure scale factor loading. The KMO value is 0.875, exceeding the recommended value of 0.6 (Kaiser, 1970, 1974) and Barlett's test of Sphericity (Barlett, 1954) is significant at $p<0.001$. Since the KMO value is 0.875, it is interpreted as being in the range of "great" (Hutcheson & Sofroniou, 1999). Table 4.6 also shows that the factor analysis contributed one factor from the seven items. The total variance explained is 62.64 percent. Only factors with a loading value of 0.40 and above were considered.

Table 4.6: *Factor Loading of Organizational Structure*

	Factor Loading
	1
c1	.715
c2	.766
c3	.772
c4	.847
c5	.821
c6	.814
c7	.798
Eigenvalue	*4.39*
% of Variance	*62.64*
KMO	*0.875*
BTOS	*1301.30*
Sig.	*0.000*

4.5.3 Innovation Approach

The measurement scales for entrepreneur Innovation Approach consists of 21 items. The Varimax rotated PCA was conducted. Prior to performing the PCA, the suitability of the data for factor analysis was assessed. Correlation matrix indicated item coefficients are 0.4 and above. Table 4.7 exhibits the results for Innovation approach factor loading. The KMO value is 0.886, exceeding the recommended value of 0.6 (Kaiser, 1970, 1974) and Barlett's test of Sphericity (Barlett, 1954) is significant at $p<0.001$. Since the KMO value is 0.886, it is interpreted as being in the range of "great" (Hutcheson & Sofroniou, 1999). Table 4.8 also shows that the factor

analysis contributed three factors from the 21 items. The total variance explained is 66.32 percent. Only factors with a loading value of 0.40 and above were considered.

Table 4.7: *Factor Loading of Innovation approach*

	Factor Loading		
	1	*2*	*3*
Factor 1: Incremental			
d1	.703		
d2	.648		
d3	.671		
d4	.836		
d5	.769		
Factor 2: Radical			
d6		.563	
d7		.595	
d8		.494	
d9		.720	
d10		.794	
Factor 3: Open			
d11			.797
d12			.778
d13			.657
d14			.590
d15			.617
d16			.655
d17			.694

d18			.732
d19			.657
d20			.586
d21			.587
Eigenvalue	*11.12*	*1.53*	*1.27*
% of Variance	*52.97*	*7.29*	*6.07*
KMO	*0.886*		
BTOS	*6042.96*		
Sig.	*0.000*		

4.5.4 Business Performance

The measurement scales for entrepreneur business performance consists of nine items. The Varimax rotated PCA was conducted. Prior to performing the PCA, the suitability of the data for factor analysis was assessed. Correlation matrix indicated item coefficients are 0.4 and above. Table 4.8 exhibits the results for business performance scale factor loading. The KMO value is 0.825, exceeding the recommended value of 0.6 (Kaiser, 1970, 1974) and Barlett's test of Sphericity (Barlett, 1954) is significant at $p<0.001$. Since the KMO value is 0.825, it is interpreted as being in the range of "great" (Hutcheson & Sofroniou, 1999). Table 4.8 also shows that the factor analysis contributed only one factor from the nine items. The total variance explained is 57.96 percent. One item was deleted due to the low factor loading (E9). Only factors with a loading value of 0.40 and above were considered.

Table 4.8: *Factor Loading of Business Performance*

	Loading
Factor 1	
e1	.718
e2	.774
e3	.815
e4	.663
e5	.761
e6	.818
e7	.804
e8	.724
Eigenvalue	*4.64*
% of Variance	*57.96*
KMO	*0.825*
BTOS	*1522.54*
Sig.	*0.000*

4.6 Reliability Analysis

An internal consistency confirmation of the scales was performed to ensure the reliability of the scales. This can be done by checking the Cronbach's alpha coefficient. The cut-off point for measuring the reliability for this study is coefficient alpha of above 0.65 as recommended by Nunnally and Berntein (1994) and Nunnally (1978). Table 4.9 exhibits the Cronbach coefficient alpha of all variables. In short, all the variables in this study have values more than 0.65.

Table 4.9: *Reliability Coefficients for Variables*

Variable	**N of Item**	**Cronbach Alpha**
Competencies:		
Opportunity	*4*	*0.785*
Relationship	*10*	*0.691*
Operational	*7*	*0.825*
Strategic	*9*	*0.835*
Commitment	*5*	*0.944*
Learning	*6*	*0.773*
Personal Strength	*10*	*0.873*
Innovative	*3*	*0.709*
Human	*4*	*0.858*
Analytical	*6*	*0.880*
Organizational Structure	7	0.897
Innovation Approach		
Incremental	*5*	*0.791*
Radical	*5*	*0.769*
Open	*11*	*0.740*
Business Performance	8	0.796

Bowling (2009) defines reliability as the extent to which the items relating to a particular dimension in an instrument tap only this dimension and no other. Bowling (2009) views reliability in quantitative research as synonymous to dependability, consistency, reproducibility or replicability over time, over instruments and over groups of respondents. Whereas Norland (1990) argues that reliability shows the exactness or correctness of the instrument for measuring a particular construct.

There are four methods for evaluating reliability analysis: split half, test-retest, internal consistency, and inter rater reliability. In this study, the widely used reliability method of Cronbach's coefficient Alpha is used to determine internal consistency of items in each survey instrument and assumes that items measuring the same thing will be highly correlated (Cortina, 1993; Welch & Comer, 1988). As argued by Spector (1992, p. 6), "Internal consistency reliability means that multiple items, designed to measure the same construct, are inter-correlated with one another".

Likert scale has been employed on instruments as this is appropriate and an alpha value of 0.60 is considered reliable (Sekaran, 2005). In case of the alpha value being closer to 1, it is an indication that the instrument used is very reliable with high internal consistency.

In order to validate the findings of a study, validity tests are conducted. As questions are adapted from prior studies and due to insufficient measuring scale, the measuring instruments are re-defined to suit this study. The face validity is an issue because the measuring instruments are adapted from prior studies and therefore the face validity is already available. A face-validity is seen as the measuring instrument that is used to measure the overview concept of the research (Sekaran, 2005). Another important element is the content validity and it refers to whether the measuring instrument is suitable for the concept of the study (Babbie, 1990; Sekaran, 2005).

4.7 Descriptive Analysis

A total of 314 questionnaires were usable from the survey. All the variables were measured based on a seven-point scale. As reflected in Table 4.10, all the means are

higher than five (5), ranging from 5.52 to 6.16. According to Hair et al. (2006), mean values can be categorized into three levels: low, moderate and high. For this study, the categories are divided as follows:

Low: *1.00 to 3.00*

Moderate: *3.01 to 5.00*

High: *5.01 to 7.00*

This suggests respondents highly agreed to all variables and dimensions examined in this study. Table 4.10 shows that all competency variables were rated as high. As for organizational structure, annotation approach and performance are also rated as high impact. All the standard deviations are low, suggesting the variability on the data (Sekaran, 2005). This is clearly specified in Table 4.10, where standard deviations for all variables are low.

Table 4.10: *Descriptive Analysis of the Variables*

	Mean	**Standard Deviation**	**Level**
Competencies:			
Opportunity	5.52	1.11	*High*
Relationship	5.93	0.60	*High*
Operational	5.94	0.73	*High*
Strategic	5.84	0.73	*High*
Commitment	5.56	1.15	*High*
Learning	5.82	0.72	*High*
Personal Strength	6.03	0.69	*High*
Innovative	5.94	0.85	*High*
Human	6.16	0.74	*High*

Analytical	6.01	0.69	*High*
Organizational Structure	5.79	0.71	*High*
Innovation Approach			
Incremental	6.03	0.70	*High*
Radical	6.07	0.64	*High*
Open	6.02	0.60	*High*
Business Performance	5.80	0.48	*High*

4.8 Correlation Analysis

In order to identify the factors that have an association among variables, correlation analysis was conducted where the correlation coefficient illustrates the relationship between the independent and dependent variables. According Hair et al. (2006), the number representing the Pearson correlation is referred to as a correlation coefficient. It ranges from – 1.00 to + 1.00, with zero representing absolutely no association between the two metric variables. The larger the correlation coefficient the stronger the linkage or level of association. A strong correlation is represented by a coefficient exceeding the value of 0.5 whereas a medium or modest correlation is when the coefficient has a value of between 0.5 and 0.2. Any coefficient possessing a value less than 0.2 will be deemed as showing a weak correlation. Benny and Feldman (1985) suggested a rule of thumb, that the correlation coefficients that exceed 0.8 (very strong correlation) will likely to result in multicollinearity. Cohen (1988) has put forward a guideline on the effect sizes of the correlation coefficients in social science studies as: small effect size, $r = 0.1 – 0.29$, medium: $r = 0.30 – 0.49$, and large: $r = 0.50$.

4.8.1 Competency and Performance

Table 4.11 summarised the results of correlation analysis to examine the relationship between the competencies dimensions and business performance. It can be found in Table 4.11 all of the dimensions were significantly associated with business performance. Relationship competency showed the highest relationship to business performance ($r=0.656$, $p<0.01$), followed by strategic competency ($r=0.642$, $p<0.01$), learning competency ($r=0.502$, $p<0.01$), operational competency ($r=0.539$, $p<0.01$) and commitment competency ($r=0.500$, $p<0.01$). Other dimensions were also showed the significant relationship with business performance as follows: opportunity ($r=0.353$, $p<0.01$), personal ($r=0.486$, $p<0.01$), human ($r=0.36$, $p<0.01$), innovative ($r=0.406$, $p<0.01$) and analytical ($r=0.391$, $p<0.01$).

Table 4.11: *Relationship between Personal Competencies and Business Performance*

	Performance	**Opportunity**	**Relationship**	**Operational**	**Strategic**	**Commitment**	**Learning**	**Personal**	**Innovative**	**Human**	**Analytical**
Performance	1										
Opportunity	.353**	1									
Relationship	.656**	.404**	1								
Operational	.539**	.147**	.534**	1							
Strategic	.642**	-.071	.442**	.620**	1						
Commitment	.500**	-.204**	.228**	.328**	.795**	1					
Learning	.602**	.008	.420**	.639**	.793**	.678**	1				
Personal Strength	.486**	-.123*	.346**	.473**	.762**	.780**	.745**	1			
Innovative	.406**	-.140*	.278**	.474**	.627**	.616**	.654**	.735**	1		
Human	.436**	.032	.318**	.460**	.595**	.453**	.541**	.621**	.639**	1	
Analytical	.391**	-.022	.186**	.282**	.355**	.260**	.291**	.351**	.319**	.475**	1

*Notes: **p<0.01; *p<0.05*

4.8.2 Organizational Structure and Business Performance

Result of correlation analysis to examine the relationship between organizational structure and business performance is exhibits in Table 4.12. It is revealed in Table 4.12 that organizational structure showed the significant relationship with business performance (r=0.359, p<0.01). Positive correlation coefficient indicated the direct relationship occurred between the variables.

Table 4.12: *Relationship between Organizational Structure and Business Performance*

	Performance	**Organizational Structure**
Performance	1	
Organizational Structure	.359**	1

*Note: **p<0.01*

4.8.3 Innovation approach and Business Performance

Innovation approach is measured using three dimensions that were incremental, radical and open innovation. Table 4.13 exhibits the results of correlation analysis to examine the relationship between the dimensions and business performance. It was found that all three dimensions were significantly associated to business performance as follows: incremental (r=0.1936, p<0.01), radical (r=0.224, p<0.01) and open (r=0.179, p<0.01).

Table 4.13: *Relationship between Innovation approach and Business Performance*

	Performance	**Incremental**	**Radical**	**Open**
Performance	1			
Incremental	.193**	1		
Radical	.224**	.668**	1	
Open	.179**	.753**	.799**	1

4.9 Regression Analysis

Multiple regressions were utilized to examine the personal competency on business performance, moderating effect in the relationship between personal competency, organizational structure and business performance. Multiple regression analysis using Enter Methods were applied with the confidence level of 90 percent ($p<0.10$) were adapted.

4.9.1 Effect of Traits Competency, Skills Competency, Organizational Structure and Innovation approach on Business Performance

Table 4.14 indicates the result of multiple regression analysis to examine the effect of personal competency, organizational structure and Innovation approach on Business Performance. This analysis also attempted to test hypothesis 1 (H1), H2, H3 and H4. Overall, personal competency, organizational structure and Innovation approach significantly explained 69.5 percent of variance in business performance (R^2=0.695, F=175.97, $p<0.01$). It was also found that all the independent variables entered have significantly predicted business performance. They are traits

competency (B=0.475, t=13.340, p<0.01), skills competency (B=0.386, t=11.148, p<0.01), organizational Structure (B=0.239, t=7.427, p<0.01) and Innovation approach (B=0.096, t=2.728, p<0.01). These findings have successfully supported the four hypotheses above. Hence, H1, H2, H3 and H4 are accepted.

Table 4.13: *Effect of Personal Competency, Organizational Structure and Innovation approach on Business Performance*

	B	**t**	**Sig.**
Traits Competency	.475	13.340	.000
Skills Competency	.386	11.148	.000
Organizational Structure	.239	7.427	.000
Innovation approach	.096	2.728	.007
R^2	0.695		
F	175.97		
Sig.	0.000		

4.9.2 Effect of Personal Competency on Business Performance

This study also attempted to examine the effect of each personal competency on business performance. Results of multiple regression to examine the effect are as Table 4.14. It was found that overall personal competency explained 69.1 percent of business performance (R^2=0.691, F=67.67, p<0.01). Out of ten personal dimensions, seven of them were successfully predicted business performance. The dimensions were opportunity (B=0.269, t=7.077, p<0.01), relationship (B=0.334, t=7.777,

p<0.01), strategic (B=0.227, t=3.019, p<0.01), commitment (B=0.271, t=4.078, p<0.01), learning (B=0.160, t=2.621, p<0.01), personal strength (B=0.167, t=2.530, p<0.05) and analytical competency (B=0.201, t=5.478, p<0.01).

Table 4.14: *Effect of Personal Competency on Business Performance*

	B	**t**	**Sig.**
Opportunity	.269	7.077	.000
Relationship	.334	7.777	.000
Operational	.023	.460	.646
Strategic	.227	3.019	.003
Commitment	.271	4.078	.000
Learning	.160	2.621	.009
Personal Strength	.167	2.530	.012
Innovative	.002	.030	.976
Human	-.026	-.534	.594
Analytical	.201	5.478	.000
R^2	0.691		
F	67.67		
Sig.	0.000		

4.9.3 Effect of Organizational Structure on Business Performance

Results of multiple regression to examine the effect of organizational structure on business performance are as Table 4.15. It was found that organizational structure

explained 12.9 percent of business performance (R^2=0.129, F=46.09, p<0.01). Organizational Structure also successfully predicted business performance (B=0.359, t=21.173, p<0.01).

Table 4.15: *Effect of Organizational Structure on Business Performance*

	B	**t**	**Sig.**
Organizational Structure	0.359	21.173	.000
R^2	0.129		
F	46.091		
Sig.	0.000		

4.9.4 Effect of Innovation approach on Business Performance

Results of multiple regression to examine the effect of Innovation approach on business performance are as Table 4.16. It was found that Innovation approach explained only 5.5 percent of business performance (R^2=0.055, F=5.954, p<0.01). Only one approach has successfully predicts business performance that is incremental approach (B=0.206, t=2.212, p<0.05).

Table 4.16: *Effect of Innovation approach on Business Performance*

	B	t	Sig.
Incremental	.102	1.200	.231
Radical	.206	2.212	.028
Open	-.062	-.591	.555
R^2	0.055		
F	5.984		
Sig.	0.001		

4.9.5 Moderating Role of Innovation approach on the Relationship between Entrepreneurial Competency, Organizational Structure and Business Performance

Hierarchical multiple regressions test were utilized to examine the effect of Innovation approach in the relationship between personal competency, organizational structure and Business performance. The analysis also attempted to test H_5 to H_7. The following section discusses the obtained findings in detail. Result is summarized in Table 4.17.

Table 4.17: *Effect of Innovation in the Relationship between Entrepreneurial Competency, Organizational Structure and Business Performance*

	Standardised Beta					
	Model 1		**Model 2**		**Model 3**	
	B	**Sig.**	**B**	**Sig.**	**B**	**Sig.**
Model 1: Independent Variable						
Traits Competency	.504	.000	.475	.000	.460	.000
Skills Competency	.402	.000	.386	.000	.390	.000
Organizational Structure	.254	.000	.239	.000	.242	.000
Model 2: Moderating Variable						
Innovation Approach			.096	.007	.089	.011
Model 3: Interaction Term						
traits_X_innovation					-.063	.083
skills_X_innovation					.024	.490
structure_X_innovation					-.057	.074
R^2	*0.688*		*0.695*		*0.701*	
F	*227.43*		*175.97*		*102.45*	
Sig.	*0.000*		*0.000*		*0.000*	
R^2 Change	*0.688*		*0.007*		*0.006*	
F Change	*227.43*		*7.44*		*2.04*	
Sig. F Change	*0.000*		*0.007*		*0.108*	

Model 1 represents the effect of entrepreneurial competency and organizational structure on business performance. The model contributes 68.8 percent of variance in business performance (R^2=0.688, F=227.43, p<0.01). Model 2 represents the effect of independent variables on business performance with the presence of innovation.

The results indicate that the presence of self-efficacy in Model 2 has significantly increased the variance to 69.5 percent (R^2=0.695, F=175.97, p<0.001). Innovation is also found to have no significant association with business performance in Model 2 (B=0.096, p>0.01).

The last model, Model 3, shows the effect of independent variables and moderating variable on business performance with the presence of interaction between independent variable and moderating variable. Model 3 also shows the significant effect in the variance (R^2=0.701, F=102.45, p<0.01). The summary of the model can be found in Table 4.17. It can also be found the model 3 that only two interaction terms have the significant effect on business performance, that are traits_X_innovation (B=-0.063, p<0.1) and structure_X_innovation (B=-0.057, p<0.1) . It can be concluded that innovation played the significant moderating role in the relationship between traits competency, organizational structure and business performance.

The results in Table 4.17 only supported H_6 and H_7. Hence, this study accepted H_6 and H_7, but rejected H_5.

The examination on the interaction plot showed an enhancing effect whereby when traits competency and organizational structure were larger, business performance increase (Figure 4.8 and Figure 4.9).

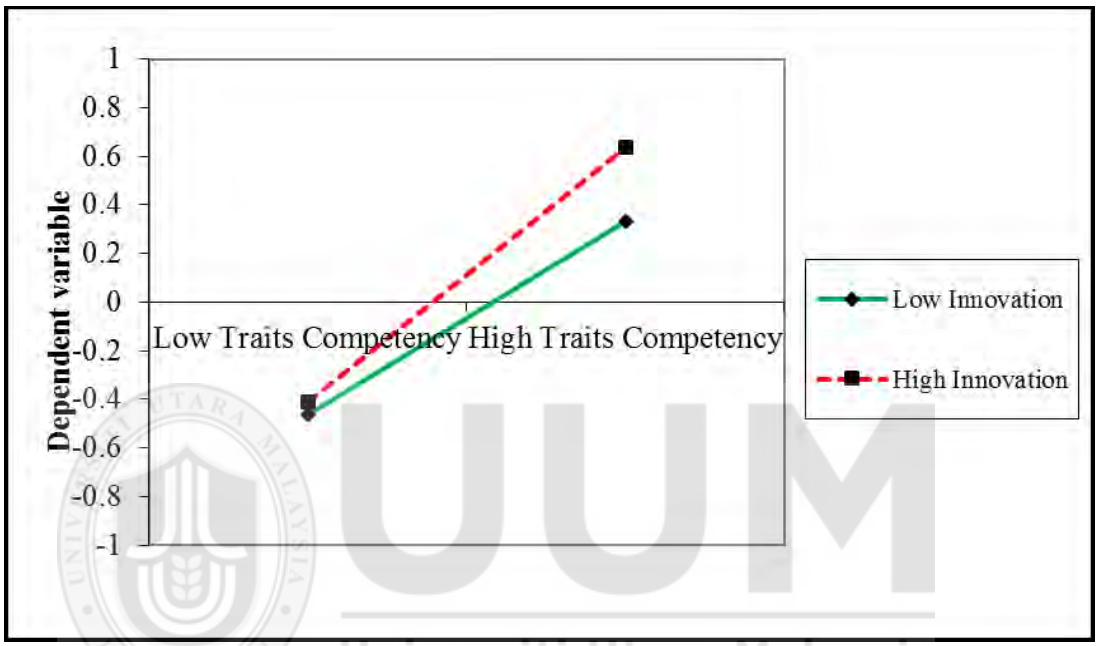


Figure 4.8: *Moderating effect of Innovation on the Relationship between Traits Competency and Business Performance*

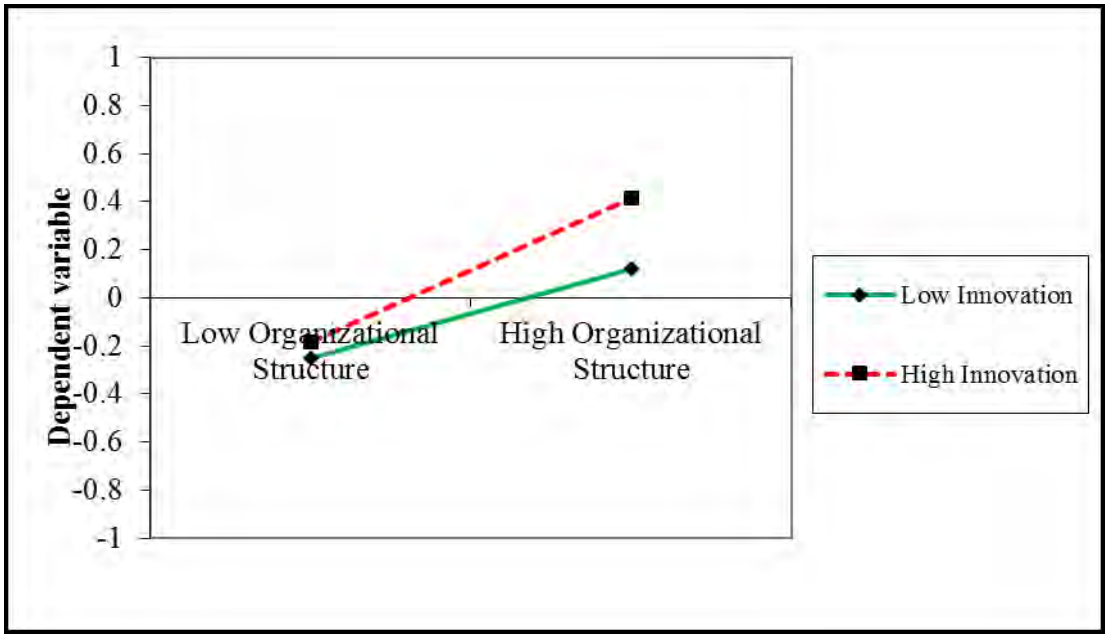


Figure 4.9: *Moderating effect of Innovation on the Relationship between Organizational Structure and Business Performance*

4.10 Chapter Summary

This chapter summarizes the findings obtained from the data analysis of the survey that was conducted to examine the core objectives of this research. The initial outcome basically describes the background of the respondents which is highlighted in the beginning of this chapter. The chapter ends with the hierarchical regression to examine the moderating effect of innovation approach on the relationship between personal competency, organizational structure and business performance. Out of seven hypotheses developed, the study was able to support six hypotheses.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 Introduction

In this section, a thorough overview briefly about the background, the process and the findings of this study were made, followed by a discussion of entrepreneurs, SMEs and the environment in the context of research. There is also a researcher has identified the competencies of entrepreneurship and ultimately the results about hypothesis testing were elaborated. There are three main important contributions of this study, namely the closing of gaps in knowledge, the implications for training and development to strengthen the entrepreneurial competencies among owners/managers of SMEs and utilizing open innovation as can be generated through valuable ideas and knowledge which can be internal or external or combination of both. This networking can be between the enterprise with another large firm or market, or with a SME, or university research centre, or government agencies.

Limitations to this study that relies on a questionnaire survey response rates and generalized theoretical framework will also be discussed. Finally, this study provides recommendations on the future direction of further study, including, 1) using multidimensionaliti in studying the relationships between all the variables of the study, 2) use the model structure in future studies and 3) develop a typology of entrepreneurs competences through entrepreneurship.

This chapter will be divided into smaller sections. The first section is a brief overview of the study. Second section is on key findings from the study. Thirdly, the implications of the study. The fourth is a limitation of the study. The fifth is the problem. Sixth is the direction of future research and ends up with the closing.

5.2 A brief overview of the study

This study empirically trying to find an answer that is more precise and concrete on the relationship between entrepreneurial competencies, organization structure, innovation and performance of SMEs in manufacturing sector, especially in Perlis, Kedah and Penang. This study stems from a problem that the performance of SMEs is still low despite the numerous efforts have been undertaken by the government to increase it. Power level of production and added value in this sector is still relatively small when compared with the productivity and the added value achieved by the newly industrialized countries (NICs) in Asia, such as Korea and Taiwan.

The issue of humility performance of SMEs are very important for the success of the SME sector is crucial to national development. This is because SMEs in any country have also been shown to contribute either in terms of economic development, social and political stability. Therefore, this study is conducted in an effort to investigate the relationships between entrepreneurial characteristics and performance of SMEs, which focuses particularly on the manufacturing sector of SMEs in Malaysia. In order to understand the significance of these relationships, this study has used an approach or concept of competencies to examine the characteristics of

entrepreneurship. In literature, entrepreneurial competencies are categorized in two forms, namely traits competencies and skills competencies. Both of these competencies have been found to have a major role in influencing the performance of SMEs. This relationship is also associated with the organizational structure and innovation as moderator to the performance of SMEs in Malaysia.

Therefore, this study has seven objectives. The first objective is to determine the existence of a relationship between traits competencies on the performance of SMEs. The second objective is to determine the existence of a relationship between skills competencies on the performance of SMEs. Thirdly is to determine the existence of the relationship between organizational structure and performance of SMEs. While, fourth objective is to determine to which extent the innovation as a factor that moderates the relationship between traits competencies and performance of SMEs.

The fifth objective is to determinen to which extent the innovation as a factor that moderates the relationship between skills competencies and performance of SMEs. The sixth objective is to determine to which extent the innovation as a factor that moderates the relationship between organizational structure and performance of SMEs.

The last objective is to determine to which extent the innovation as a factor that moderates the relationship between traits competencies, skills competencies,

organizational structure and performance of SMEs. Hence, seven hypotheses have been developed in relation to the objectives of the study.

Empirical research has been conducted using quantitative research methods. The questionnaire used was constructed by using a questionnaire that was used by previous researchers. However, this questionnaire was modified to suit the situation in the study. The initial steps to ensure the validity of the content of this questionnaire is through pilot testing methods. Data collected through the distribution of questionnaires by personally administered questionnaires or on the "drop and collect" basis method which the researcher passes directly to the respective respondent and collecting back after two hours.

The pilot study has produced instruments which contains 68 items to measure entrepreneurial competencies, 7 items to measure the organizational structure, 21 items to measure innovation, 9 items to measure the performance of SMEs and 14 more items to measure personal background and information firm respondents.

The target population of this study was the SMEs owners and managers throughout Malaysian SMEs in manufacturing sector. The unit of analysis is SME owners and managers as respondents to the survey. The survey questionnaire was managed on the "drop and collect" basis (Mc Carthy, O'Really & Cromin,2001) throughout SMEs manufacturing sector in northern states of Malaysia.

A total of 800 questionnaires were distributed with a required minimum sample of 357 (Krejcie & Morgan, 1970) and the selection is based on disproportionate simple stratified random sampling method. The questionnaires were distributed through the "drop and collect" basis and 314 questionnaires which were successfully received in full making the response rate 39.25%. Ranking of managers or owners of SMEs' entrepreneurial competencies, the organizational structure of their firms as well as their views on the innovation they have successfully obtained.

There were seven hypotheses were tested using multiple regression analysis. Each variables were measured for their internal consistency by using Crombach Alpha. The value of each were at acceptable level of above 0.70 (Hair et al., 2006).

Decisions have given an understanding of the position of entrepreneurs' entrepreneurial competencies, the position of the organizational structure, innovation and the characteristics of SMEs. Stage entrepreneurs view their business performance was obtained through both the competencies that have been investigated.

Results from the testing of hypotheses that have been developed are as in Table 5.1.

Table 5.1: *Hypotheses Testing Conclusion*

Hypothesis		Result
H1	*Traits competencies have a significant relationship with the performance of SMEs.*	Accepted
H2	*Skills competencies have a significant relationship with the performance of SMEs.*	Accepted
H3	*Organization structure has a significant relationship with the performance of SMEs.*	Accepted
H4	*Innovation is a moderator of the relationship between traits competencies and performance of SMEs.*	Accepted
H5	*Innovation is a moderator of the relationship between skills competencies and performance of SMEs.*	Rejected
H6	*Innovation is a moderator of the relationship between organization structure and performance of SMEs.*	Accepted
H7	*Innovation is a moderator of the relationship between traits competencies, skills competencies, organization structure and performance of SMEs.*	Accepted

5.3 Study findings

Based on the results of the analysis in the above study, the researchers conclude that the findings can be considered as important. Here are the findings that have been identified and descriptions of the findings.

5.3.1 Relationship between Traits Competencies and Performance of SMEs

The first objective of this study was to determine the influence of traits competence on the performance of SMEs. The analysis using regression methods have found that traits competencies (opportunities, communication, analytical, personal strengths,

learning, innovation and commitment) has a significant and positive correlation with the performance of SMEs ($p < .001$).

Results from this study are very similar to results from researchers such as Kirzner (1979). Thompson, Stuart and Lindsay (1996). Hellreigal and Jackson (2000) McGregor, Tweed, Kolb and Henley-King (2000). Gaudet et al., (2003). Zou and Gao (2007) and Goll, Johnson and Rasheed (2007).

Man (2001) and Man et al., (2008) for more detailed have shown that traits competencies in communication, innovation and opportunity have significant positive correlation with competitive scope. Competitive scope seen by the authors of this is in terms of what is offered by the environment in the form of opportunities to innovate, the expected growth of the industry, the importance of new product and market diversification. The scope of the competitive level as seen by Man (2001) is positively correlated with how competent the SMEs in the countries studied by them has helped them build relationships, innovative and identify opportunities in the external environment of their business.

5.3.2 Relationship between Skills Competencies and Performance of SMEs

The second objective of this study was to determine the influence of skills competencies on the performance of SMEs. The analysis using regression methods have found that skills competencies (management operations, strategy and human)

have been found to have a significant positive relationship (p <.001) with the performance of SMEs.

This finding is also consistent with the findings by Wong and Ye (1986). McClelland (1987). Boyatzis (1982, 2008). Bird (1989). Mitton (1989) Herron and Robinson (1990). Chandler and Jansen (1992). Man (2001). Baum, Locke and Smith (2001). Mohd Khairuddin (2002). Erikson (2002). Nathaka (2006) and Man, Lau and Snape (2008). Tuan et al, (1986) see that the properties that determine ultimate success of a business is a smart business operations. Mohd. Khairuddin (2002) also view among SMEs managers in his study failed to provide training, failing to improve skills as required and failed to handle the problem of high employee turnover. Man (2001) found that high competition strategy to set goals and move actions through the scope and use of competitive advantages and the ability of their organizations to put their businesses in highly competitive environments.

5.3.3 Relationship between Organizational Structure and Performance of SMEs

The third objective of this study was to identify the relationship between organizational structure and performance of SMEs. Regression analysis has found that the organizational structure in this study had a significant positive correlation with the performance of SMEs. To find out whether the current organizational structure of SMEs surveyed were in group structure, organic or otherwise, researchers have been referred back to the instrument used (Khandawala, 1976/1977) which states that the mean score as organicity index - the higher the index mean,

then the higher the firm's structure is in the form of a mechanistic. Because the mean score in this study was 5.79 (Table 4.10) then it can be said specifically here that in this study the mechanistic or formal structure has had a significant relationship to the performance of SMEs.

Findings from this study are consistent with the view by Mintzberg (1979), Hall (1991), Martin and Parker (1997), Lane, Cannella and Lubatkin (1998), Cuervo and Villalonga (2000), Martin and Parker (1997) and Lin and Germain (2003). Mintzberg (1979) and Hall (1991) view that the advantages of a centralized structure that can be obtained is the existence or consistency of standards as a guide to carry out a task, the union opinions or ideas and effective control. Similarly, the discovery by Lane, Cannella and Lubatkin (1998) who found that when the ownership structure is so centralized, the owner may be able to monitor and control the activities of management with ease, thereby facilitating the managers to implement strategies that will maximize shareholder value.

However, when the power granted to some entity ownership, control and monitoring will be less and this will provide an opportunity for managers to implement other strategies. Public ownership theory has also been used by researchers to explain the forces of ownership (Cuervo and Villalonga, 2000; Martin and Parker, 1997). Public ownership theory argues that firms owned by the government will implement the "vote-gaining goals" despite "efficiency goals".

The study by Lin and Germain (2003) have examined the use of contingency theory in a "non-western" in industrial enterprise owned (SOEs) in the People's Republic of China have found that official control is positively correlated with growth performance, empowerment (inorganic) related negatively with growth performance.

Findings from this study are consistent with findings by Brouthers, Gelderman and Arens (2007) has shown that government ownership of companies (GOEs) in Romania in the form of mechanistic structure has improved to high performance in financial terms.

5.3.4 Moderating Effect of Innovation on the Relationship between Traits Competencies and Performance of SMEs

The fourth objective of this study was to identify the moderating effect of innovation on the relationship between traits competencies and performance of SMEs.The results of the hierarchical regression analysis in this study specifically showed that innovation has significantly performed as moderating effects on the relationship between traits competencies and performance of SMEs in a positive form.

Findings from this study are consistent with findings by Loferet (2006), the drivers of SMMEs innovativeness were: market anticipation, customer focus and commitment of CEO/owners. The main constraints of SMMEs were customer

dependency, skills and knowledge acquisition through training, poor learning attitude and networking because of their tradition of being insular and autonomous.

Similarly, Liao *et al.* (2009) suggested in ensuring the survival, enterprise must rely on innovation, which is core of competitive advantage. Therefore, orientation to innovation is the best way to promote and strengthen their innovation. However, creating and enhancing are the basics of competency in the long-term. Nevertheless, the key of competency is the integration of experience and knowledge.

5.3.5 Moderating Effect of Innovation on the Relationship between Skills Competencies and Performance of SMEs

The sixth objective of this study was to identify the moderating effect of innovation on the relationship between skills competencies and performance of SMEs. The results of the hierarchical regression analysis in this study specifically showed that innovation has not significantly performed as moderating effects on the relationship between skills competencies and performance of SMEs.

Findings from this study are consistent with findings by Isogava (2013) argued that innovation does not necessarily improve firm performance because of so-called cannibalization effect. That is the situation when implementation of a new product reduces the sales of company's existing related products.

5.3.6 Moderating Effect of Innovation on the Relationship between Organization Structure and Performance of SMEs

The sixth objective of this study was to identify the moderating effect of innovation on the relationship between organizational structure and performance of SMEs.The results of the hierarchical regression analysis in this study specifically showed that innovation has significantly performed as moderating effects on the relationship between organizational structure and performance of SMEs in a positive form.

Findings from this study are consistent with findings by Loferet (2006), the drivers of SMMEs innovativeness were: market anticipation, customer focus and commitment of CEO/owners. The main constraints of SMMEs were customer dependency, skills and knowledge acquisition through training, poor learning attitude and networking because of their tradition of being insular and autonomous.

5.3.7 Moderating Effect of Innovation on the Relationship between Traits Competencies, Skills Competencies, Organization Structure and Performance of SMEs

The seventh objective of this study was to identify the moderating effect of innovation on the relationship between traits competencies, skills competencies, organizational structure and performance of SMEs.The results of the hierarchical regression analysis in this study specifically showed that innovation has significantly performed as moderating effects on the relationship between traits competencies,

skills competencies, organizational structure and performance of SMEs in a positive form.

Similarly, Liao *et al.* (2009) suggested in ensuring the survival, enterprise must rely on innovation, which is core of competitive advantage. Therefore, orientation to innovation is the best way to promote and strengthen their innovation. However, creating and enhancing are the basics of competency in the long-term. Nevertheless, the key of competency is the integration of experience and knowledge.

5.4 Research Implication

The findings of this study are related to the topic of entrepreneurship competencies and hypothesis testing has given us understanding in the context of entrepreneurship and SMEs in Malaysia in the manufacturing sector. The study also shed light theoretically about the relationship between the study of entrepreneurship through entrepreneurial competencies, organization structure and performance of SMEs and it is also associated with the moderating effect of innovation. This study sought to continue the research done previously in Hong Kong with the various types of enterprises, entrepreneurs and culture.

The results of this study are expected to provide benefits and improvements of at least two areas, namely in the academic view of management or in the field of practical implications. The studys' findings have found important aspects of management in the field of entrepreneurship, especially in the aspects of

entrepreneurial competencies and innovation should be given attention by the parties that responsible for developing or planning activities related to the development of SMEs. While in the academic field, this study at least can contribute to the dimensions of entrepreneurial competencies and innovation that are important as well as to other factors that affect the performance of SMEs.

5.4.1 Practical implications in the study of entrepreneurial competencies and innovation

This study proved that entrepreneurial chairacteristic and behavior, especially from the aspect of entrepreneurial competencies must be given particular attention by the management and owners of SMEs companies. Giving attention to this matter can help to resolve some issues with efficiently and in the long-term nature.

Aspects of innovation are also likely to have a significant impact on entrepreneurial competencies and organizational structure to drive the performance of SMEs in achieving a competitive advantage in the business.

Open innovation seem to be important element for SMEs performance as it can be generated through valuable ideas and knowledge which can be internal or external or combination of both. Therefore, both aspects of internal and external knowledge and networking for new product are important. In addition, SMEs can use it to create and promote both internal and external networking to gain their technological

competencies. This networking can be between the enterprise with another large firm or market, or with a SME, or university research centre, or government agencies.

5.4.1.1 Implications for Training and Development

Findings from this study show that traits competencies and skills in a particular form are very important. There were some opinions that entrepreneurial competencies can be learned and nurtured (Bird, 1995 and Boyatzis, 2008). Therefore, in this study the results of theoretical and empirical models have shown some further implications for training and development of entrepreneurial competencies. The theoretical model has been proposed as a entrepreneurial competencies of entrepreneurial characteristics that can lead to significant performance of SMEs through another moderator variable of innovation. These empirical studies provide evidence on the importance of innovation in a positive links with entrepreneurial competencies to improve the performance of the firm.

Therefore, the process of enhancing entrepreneurial competencies through training and development to entrepreneurs must be balanced or it may be more important than the other wasting channel of sources and provide a positive innovative environment. Lau et al., (2000) proposed competency-based skills are more easily trained and developed as compared to traits competencies that may be developed through their experience during their business development process. Due to entrepreneurs prefer to learn through experience and practical examples, developing

competency-based training based on real examples can be more effective than providing training based on theoretical knowledge alone. In the long run, this study that reflect the characteristics of competent or other resources can be developed for the purpose of training and teaching of entrepreneurship area.

5.4.1.2 Entrepreneurial Competencies - Sources of Competitive Advantage

Several studies have shown that competence is a source of intangible (intangibles) that have a competitive advantage resilient (Hall, 1992; Itami, 1981 and Dollinger, 2003). This is because it has elements such as rare, difficult to imitate, very valuable and non-substitute (Barney, 1991). Examples of elements that are superior to the entrepreneurial competencies in terms of their ability to seek for opportunities which are not able to be seen by their competitors. These elements have given advantage to the entrepreneurs who must to stay ahead as compared to their competitors (Boyatzis, 1984, 2008).

Findings from this study revealed that both the traits and skills competencies have a significant relationship with the performance of SMEs. Therefore, the SMEs should be given attention to the importance of entrepreneurial competencies by sharpening continuously to ensure that the competitiveness of the enterprise can be sustained. Apart from that, the government agencies and other parties involved in the development of entrepreneurship need to see the importance and contribution of the entrepreneurial competencies in their entrepreneurship development programs.

5.4.1.3 Formal Organization Structure – A Significant Variable to Performance

The findings of this study have shown that the structure of the organization in the form of formal or mechanistic have significant effects on the relationship between both traits and skills competencies as well as to the performance of SMEs. The findings of this study have been described as being in line with several similar findings from studies by the authors earlier (Lane, Cannella and Lubatkin, 1998 Zollo and Winter, 2002; Bai and Lee, 2003 and Brouthers, Gelderman and Arens, 2007) ,

These findings suggest that the entrepreneur still require a formal organizational structure to enable them to use both types of entrepreneurial competencies to further enhance the performance of their SMEs. Therefore, in cases where SMEs especially who are new in the business areas that still failed to achieve satisfactory performance, they should seek guidance from the institutions coaching and formal training or of officials developer (extension officers) qualified as proposed by Rogers (1995).

5.4.1.4 Innovation – A Significant Moderating Role to Performance

The contributions of innovation to increase in the market share, production efficiency, productivity growth and revenue of the organizations has been discussed in many researches.

Open innovation model can be generated through valuable ideas and knowledge which can be internal or external or combination of both. Therefore, both aspects of internal and external knowledge for new product are important (Chesbrough, 2003; Chesbrough *et al.*,2010; Gassmann *et al.,* 2010) and they rely on R&D activity (Marcet, 2008). In addition, Lee *et al*.(2010) mentioned that enterprise creates and open innovation and promote both internal and external research projects as well as the external partnership networking in same area to share their technological competence.

5.4.2 Theoretical Implication

This study contributes to the existing theoretical implications at least of four aspects. Firstly, the findings of this study have contributed to the empirical investigation of the relationship between entrepreneurial competence and performance of SMEs in Malaysia. Past literature indicated that there is a significant relationship between entrepreneurial competence and performance of SMEs. However, the finding is not necessarily true for the developing countries. Gynawali and Fogel (1994) stated that not all environmental factors are equally important in all countries or at the same time. There could be differences in terms of economic structure, legal aspects, the competitive environment and the elements of humanity that is unique in certain countries.

The results of this study have shown that there is a significant relationship between entrepreneurial competencies and performance of SMEs in Malaysia. This finding is

consistent with findings from studies in other countries before. This research also has supported the role of entrepreneurial competencies to the performance of SMEs.

Secondly, the findings of this study have contributed to the empirical research on the relationship between the role of independent variable, organizational structure and performance of SMEs in Malaysia. The existing literatures to date are still not consistent about the relationship between the role of organization structure and the SMEs performance. These uncertainties also exist in the context of whether a formal structure or informal structure that significantly affects the performance of SMEs. Mintzberg (1979) and Hall (1991) for example supported the virtues of formal structure while Sinetar (1985). Morris & Trotter (1990) and Morris, Avila & Allen (1993) was more in favor to a form of informal structure. Therefore, this study has been supporting the notion that formal or mechanistic structure that has a significant relationship to the performance of SMEs in Malaysia as compared to informal or organic structure.

Thirdly, based on knowledge and research by the researchers, this study is the only empirical study that has examined the effect of innovation variable as moderator of the relationship between entrepreneurial competencies, organizational structure and performance of SMEs in Malaysia. The findings of this study has contributed to empirical research of current knowledge about the effects of the combination between entrepreneurial competencies, organization structure and innovation on the performance of SMEs. This study further contributes to the existing body of

knowledge by investigating the effects of entrepreneurial competencies separately and associate them with moderating variable of innovation and performance of SMEs.

The findings of this study, however, only shown supporting roles of innovation as moderator that has significant relationship between traits competencies and organization structure to the performance of SMEs. While, innovation has no significant role as moderator in the relationship between skills competence and performance of SMEs. Nevertheless, innovation has played a significant role as moderator for combined effects in the relationship between traits competencies, skills competencies, organization structure and performance of SMEs

Finally, the current study has also brought together a wide range of measurement instruments to measure variables such as entrepreneurial competencies, organization structure, innovation and SME performance. Factor analysis has managed to improve the number of items in innovation and organization structure. This also contributed to the new position of the dimensions in the context of a study in which the study was conducted. With this measurement it has also been added to the current body of knowledge in the context of current research on the variables of entrepreneurial competencies, organization structure, innovation as moderator and the performance of SMEs in Malaysia.

5.5 Limitations of the Study

This study dealing with some weaknesses that have limited the interpretation of the findings. Among the limitations in this study is the use of cross-sectional design of the research surveys, involving the perception of respondents at a time. Therefore this study can not prove that casual relationships based on the time frame.

The second limitation of this study is the use of measures of self-reported subjective perception to evaluate the study. Although efforts have been made to identify the best respondent or to reach the owner or manager who can provide the best information, the accuracy of self-perception may be heavily influenced by the respondents' experience in management the company and the prevailing circumstances at the time. For example, the perception of bias may occur if an owner or manager with a high reputation strongly believe that entrepreneurial competencies, structure and innovation they that have, are better than other organizations. Meanwhile, it leaves midpoints in this study which could lead to a biased perception as well.

This study uses a quantitative approach to design and analyze the data. Researcher awares that this approach has disadvantages, even though there is strength in terms of its methodology in this study. The weakness is mainly to translate feelings into numbers, although the respondent answered after briefly explained by the researcher.

After testing the validity and reliability to each measuring items, subjective variables have reached an acceptable level.

In addition to the above limitations, the findings of this study can not be generalized within the context of broader cross-cultural to other countries because the data gathered from this study is limited in Malaysia only. Cultural differences and the business environment may be different impact on entrepreneurial competencies, organizational structure, innovation and performance of SMEs in other location of study.

The last restriction is related to the sampling frame used to select the sample from population. The size of population was limited to organizations registered in the handbook supplied by departments, agencies and NGOs are valid only in connection with SMEs. Therefore any SMEs that are not listed in the SMECorp handbook can not be selected as the sample for this study.

5.6 Direction of Future Research

To overcome the limitations in this study, this research has drawn some other issues that needs to be investigated in the future. Due to a review of research in this study is based on cross-sectional design, subsequent research efforts should be undertaken to show the impact of changes in the longer-term aspects of entrepreneurial competencies, organizational structure and innovation. Thus, future research should give consideration to longitudinal studies to examine how entrepreneurs can increase

their competencies and how the impact of these competencies in influencing the performance of SMEs.

This research has used quantitative techniques in the design and analysis. Thus, the information collected is limited to responses from the questionnaire only. In the future the use of qualitative techniques need to be involved because this approach provides insight and understanding of the problems faced. The results of the study may be more valuable if both techniques are used because both can complement each other (Man, 2001 and Sani Sanuri 2007).

Unidimensional approach has been using to analyze the relationship between all the variables. To get a more holistic results, the proposed research could use the same variables or different dimensions of variables. In addition, a multidimensional approach is another altenative that can be studied in future research.

The study sample comprised only manufacturing industry of SMEs in three northern states as contained in the definition of SMEs by Bank Negara. Future research may consider replicating this study in all sectoors and should encompass the entire population in Malaysia. This proposed research will help to generalize these findings in a broader context.

5.7 Conclusion

This study seeks to understand how entrepreneurial competencies, organization structure and innovation as moderating factor can affect the performance of SMEs. This study found that the moderating effects of innovation very significant in the relationship between entrepreneurial competencies, organization structure and performance of SMEs in Malaysia. In addition, the form of a formal organizational structure also has a significantly positive relationship to the performance of SMEs.

Therefore, efforts focused on improving the quality of innovation and entrepreneurial competencies are vital. This is because these competencies can be formed and developed. Similarly, the efforts of SME to be innovative and formally structuring should be considered, as the findings of this study have shown that the this structure is also capable in affecting the sustainable development and performance of SMEs.

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APPENDIX A:

RESEARCH QUESTİONNAIRE

TINJAUAN TENTANG PRESTASI PERUSAHAAN KECIL DAN SEDERHANA DI MALAYSIA.

Tuan pengurus/pemilik perniagaan yang dihormati,

Dalam abad ke 21 ini, perusahaan kecil dan sederhana (PKS) masih kekal menjadi tunggak kepada ekonomi di Malaysia. Dalam usaha untuk memahami dengan lebih mendalam lagi situasi PKS ini, saya pelajar Program Doktor Falsafah dari Universiti Utara Malaysia ingin untuk menjalankan satu tinjauan tentang prestasi mereka. Terdapat empat bahagian utama didalam soalselidik ini iaitu: 1) kompetensi keusahawanan tuan sendiri,2) inovasi, 3) struktur organisasi tuan dan 4) prestasi perniagaan tuan.

Saya berharap agar pihak tuan dapat juga mengisi dibahagian maklumat peribadi dan syarikat pada penghujung soal selidik ini untuk membolehkan kerja-kerja analisis yang lebih tepat dapat dilakukan. Jika tuan merasakan terdapat item-item tertentu tidak berkaitan dengan tuan, saya juga berharap agar tuan dapat cuba memberi pilihan terbaik terhadap item-item tersebut.

Sungguhpun ia hanya mengambil beberapa minit sahaja dari masa tuan untuk melengkapkan soal selidik ini, pandangan tuan ini amatlah bernilai kepada saya untuk menilai kedudukan prestasi keseluruhan PKS di Utara Semenanjung Malaysia ini. Selepas sahaja tuan melengkapi soal selidik ini, diharapkan tuan dapat memulangkannya dengan menggunakan sampul surat yang disertakan (bersetem) atau fax kepada saya 04-7752377. Saya akan pastikan maklumat yang tuan berikan ini amatlah sulit dan akan digunakan untuk tujuan penyelidikan akademik sahaja.

Terima kasih kerana tuan sudi memberi kerjasama serta meluangkan masa. Saya berharap semoga perniagaan tuan mencapai kejayaan yang gemilang.

Ikhlas dari,

Mohd Sufli Bin Yusof
College of Business
Universiti Utara Malaysia
Tel: 04-9287518
019-5900052

A SURVEY ON THE PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES IN MALAYSIA

Dear business owner/manager,

In the 21 century, small and medium sized enterprises (SME) will still be the backbone of the Malaysian economy. In order to better understand their situation, we at University Utara Malaysia decided to carry out this survey on their performance. There are four main parts in this questionnaire: 1) your own competencies, 2) innovation, 3) your organization structure and 4) the performance of your firm. Please also fill in the personal and company information parts at the end of the questionnaire for more accurate analysis. Please try to answer every item in the questionnaire.

While it will only take you a few minutes to complete this questionnaire, your opinions will be highly valuable for us to evaluate the performance of this sector. Once you complete it, please return it with the envelope attached (postage paid). We assure you that your responses are completely confidential and will only be used for the purpose of academic research.

Thank you for your time and cooperation. We wish you every success in your business

Sincerely,

Mohd Sufli Bin Yusof
College of Business
Universiti Utara Malaysia
Tel: 04-9287518
019-5900052

BAHAGIAN A/*PART A*: KOMPETENSI DIRI/ *PERSONAL COMPETENCY*

Kenyataan-kenyataan di bawah menggambarkan tahap kompetensi tuan di dalam setiap aktiviti yang dihuraikan. Sila bulatkan satu angka yang menunjukkan persetujuan tuan terhadap setiap kenyataan mengikut skala berikut :

(1) Amat Tidak Bersetuju (2) Tidak Bersetuju (3) Agak Tidak Bersetuju (4) Berkecuali (5) Agak Bersetuju (6) Bersetuju (7) Amat Setuju

The following statements indicate how competent you are in the activities described. Please circle one number to indicate your agreement on each statement:

(1) Strongly disagree (2) Not agree (3) Not very agree (4) Neither disagree or agree (5) Quiet agree (6) Agree (7) Strongly agree

1) KOMPETENSI PELUANG

Sebagai pemilik/pengurus sebuah perniagaan, saya mampu untuk…

As the manager/owner of the firm, I am able to…

1	Mengenalpasti barangan dan perkhidmatan yang diperlukan oleh pengguna *(Identify goods or services customers want)*	1	2	3	4	5	6	7
2	Melihat kehendak pengguna yang masih belum dipenuhi *(Perceive unmet consumer needs)*	1	2	3	4	5	6	7
3	Mencari produk atau perkhidmatan yang dapat memberikan faedah sebenar kepada para pengguna secara aktif *(Actively look for products or services that provide a real benefit to customer)*	1	2	3	4	5	6	7
4	Merebut peluang perniagaan yang berkualiti tinggi *(Seize high-quality business opportunities)*	1	2	3	4	5	6	7
5	Menilai kelebihan dan kekurangan peluang-peluang perniagaan yang berpotensi *(Evaluate the advantages and*	1	2	3	4	5	6	7

	disadvantages of potential business opportunities)							

2) KOMPETENSI PERHUBUNGAN

Sebagai pemilik/pengurus sebuah perniagaan, saya mampu untuk…

As the manager/owner of the firm, I am able to…

6	Membina perhubungan kepercayaan jangka panjang dengan pihak-pihak lain *(Develop long-term trusting relationships with others)*	1	2	3	4	5	6	7
7	Berunding dengan pihak-pihak lain *(Negotiate with others)*	1	2	3	4	5	6	7
8	Berinteraksi dengan pihak-pihak lain *(Interact with others)*	1	2	3	4	5	6	7
9	Mengekalkan jaringan peribadi dalam perhubungan kerja *(Maintain a personal network of work contacts)*	1	2	3	4	5	6	7
10	Mampu memahami apa yang dimaksudkan oleh orang lain melalui perkataan dan perbuatan mereka *(Understand what others mean by their words and actions)*	1	2	3	4	5	6	7
11	Berkomunikasi dengan orang lain secara efektif *(Communicate with others effectively)*	1	2	3	4	5	6	7
12	Menyelesaikan perbalahan dengan pihak-pihak lain *(Resolve disputes among others)*	1	2	3	4	5	6	7
13	Berhadapan dengan aduan-aduan *(Deal with complaints)*	1	2	3	4	5	6	7
14	Membina dan menggunakan jaringan perhubungan tidak formal *(Build and use an informal relational network)*	1	2	3	4	5	6	7
15	Mencipta imej yang berbeza untuk firma *(Create a distinctive image for the firm)*	1	2	3	4	5	6	7

3) KOMPETENSI OPERASI

Sebagai pemilik/pengurus sebuah perniagaan, saya mampu untuk…

As the manager/owner of the firm, I am able to…

16	Merancang penggunaan sumber-sumber yang berbeza *(Plan the organization of different resources)*	1	2	3	4	5	6	7
17	Memastikan organisasi berjalan dengan lancar *(Keep organization running smoothly)*	1	2	3	4	5	6	7
18	Mengurus sumber-sumber *(Organize resources)*	1	2	3	4	5	6	7
19	Menyelaras tugas-tugas *(Coordinate tasks)*	1	2	3	4	5	6	7
20	Merancang operasi perniagaan *(Plan the operations of the business)*	1	2	3	4	5	6	7
21	Mendapatkan sumber-sumber dan kebolehan dari dalam dan luar firma *(Acquire resource and capabilities from inside and outside the firm)*	1	2	3	4	5	6	7
22	Mengambil langkah-langkah pemulihan untuk menyelesaikan masalah dan kesulitan dalam operasi *(Take remedial actions to solve operational problems and difficulties)*	1	2	3	4	5	6	7

\4) KOMPETENSI STRATEGIK

Sebagai pemilik/pengurus sebuah perniagaan, saya mampu untuk…

As the manager/owner of the firm, I am able to…

23	Menentukan isu-isu, masalah atau peluang berbentuk jangka panjang *(Determine long-term issues, problems, or opportunities)*	1	2	3	4	5	6	7
24	Peka terhadap halatuju industri yang ditetapkan dan bagaimana perubahan-perubahan itu mungkin memberi impak kepada firma *(Aware of the projected directions of the industry and how changes might impact the firm)*	1	2	3	4	5	6	7
25	Mengutamakan tugas yang selari dengan matlamat perniagaan *(priorities work in alignment with business goals)*	1	2	3	4	5	6	7

26	Membentuk semula jabatan dan/atau organisasi untuk lebih berupaya memenuhi objektif dan perubahan jangka panjang (*Redesign the department and/or organization to better meet long-term objectives and changes)*	1	2	3	4	5	6	7
27	Menjajarkan tindakan-tindakan semasa dengan matlamat-matlamat strategik *(Align current actions with strategic goals)*	1	2	3	4	5	6	7
28	Menaksir dan menghubungkan tugas-tugas jangka pendek , tugas-tugas seharian dalam konteks halatuju jangka panjang *(Assess and link short-term, day-to-day task in the context of long term direction)*	1	2	3	4	5	6	7
29	Memantau kemajuan agar menuju ke arah matlamat strategik *(Monitor progress toward strategic goals)*	1	2	3	4	5	6	7
30	Menilai semula penemuan-penemuan yang berlawanan dengan matlamat strategik *(Evaluate results against strategic goals)*	1	2	3	4	5	6	7
31	Memutuskan tindakan-tindakan strategik menerusi pertimbangan terhadap faedah dan kos. *(Determine strategic actions by weighing costs and benefits)*	1	2	3	4	5	6	7
32	Membangun dan membentuk hala tuju-hala tuju berjangka panjang untuk firma, sebagai contoh terhadap skala perniagaan, objektif-objektif, matlamat atau projek-projek *(Develop and established longer term directions for the firm, eg. On the business scale, objectives, goals or projects)*	1	2	3	4	5	6	7

5) KOMPETENSI KOMITMEN

Sebagai pemilik/pengurus sebuah perniagaan, saya mampu untuk…

As the manager/owner of the firm, I am able to…

33	Berdedikasi untuk memastikan projek perniagaan sentiasa berjalan lancar *(Dedicate to make the venture work whenever appropriate)*	1	2	3	4	5	6	7

34	Akan sentiasa memastikan perniagaan tidak akan gagal *(Refuse to let the venture fail whenever appropriate)*	1	2	3	4	5	6	7
35	Mempunyai dorongan yang begitu kuat dari dalam diri *(Possess an extremely strong internal drive)*	1	2	3	4	5	6	7
36	Komitmen/iltizam terhadap matlamat perniagaan berjangka panjang *(Commit to long-term business goals)*	1	2	3	4	5	6	7
37	Melakukan pengorbanan peribadi yang besar untuk memastikan perniagaan berjaya *(Make large personal sacrifices in order to ensure the venture to succeed)*	1	2	3	4	5	6	7

6) KOMPETENISI PEMBELAJARAN

Sebagai pemilik/pengurus sebuah perniagaan, saya mampu untuk…

As the manager/owner of the firm, I am able to…

38	Belajar daripada berbagai cara *(Learn from variety of means*)	1	2	3	4	5	6	7
39	Belajar secara proaktif *(Learn proactively)*	1	2	3	4	5	6	7
40	Belajar sebanyak yang boleh di dalam bidang saya *(Learn much as I can in my field)*	1	2	3	4	5	6	7
41	Memastikan pengetahuan dalam bidang saya sentiasa terkini *(Keep up to date in my field)*	1	2	3	4	5	6	7
42	Menggunakan kemahiran-kemahiran dan pengetahuan yang diperolehi di dalam amalan sebenar *(Apply learned skills and knowledge into actual practices)*	1	2	3	4	5	6	7
43	Belajar dengan mempunyai matlamt yang jelas *(Learn with clear purpose)*	1	2	3	4	5	6	7

7) KOMPETENSI KEKUATAN PERSONAL

Sebagai pemilik/pengurus sebuah perniagaan, saya mampu untuk…

As the manager/owner of the firm, I am able to…

44	Memastikan tenaga sentiasa berada di tahap yang tinggi *(Maintain a high energy level)*	1	2	3	4	5	6	7
45	Mendorong diri agar dapat berfungsi di tahap prestasi yang optimum *(Motivate self to function at optimum level of performance)*	1	2	3	4	5	6	7
46	Bertindak balas terhadap kritikan yang membina *(Respond to constructive criticism)*	1	2	3	4	5	6	7
47	Mengekalkan sikap positif *(Maintain a positive attitude)*	1	2	3	4	5	6	7
48	Mengutamakan tugas-tugas untuk mengurus masa saya *(Prioritize tasks to manage my time)*	1	2	3	4	5	6	7
49	Mengenal pasti kekuatan-kekuatan dan kelemahan-kelemahan diri dan memadankannya dengan peluang-peluang dan ancaman-ancaman *(Ideantify my own strengths and weakness and match them with opportunities and threats)*	1	2	3	4	5	6	7
50	Mengurus pembangunan kerjaya diri sendiri *(Manage my own career) development)*	1	2	3	4	5	6	7
51	Mengakui dan bertindak di atas kekurangan diri sendiri *(Recognize and work on my own shortcomings)*	1	2	3	4	5	6	7
52	Mampu bekerja didalam persekitaran yang penuh dengan tekanan *(Function in stressful environment)*	1	2	3	4	5	6	7
53	Mampu bekerja secara bebas *(Able to work independently)*	1	2	3	4	5	6	7

8) KOMPETENSI INOVATIF

Sebagai pemilik/pengurus sebuah perniagaan, saya mampu untuk…

As the manager/owner of the firm, I am able to…

54	Mendekati masalah-masalah yang berlarutan dengan pendekatan baru *(Look at old problems in new ways)*	1	2	3	4	5	6	7
55	Mencari idea-idea baru *(Explore new ideas)*	1	2	3	4	5	6	7
56	Melihat masalah-masalah baru sebagai suatu peluang *(Treat new problems as opportunities)*	1	2	3	4	5	6	7

9) KOMPETENSI MANUSIA

Sebagai pemilik/pengurus sebuah perniagaan, saya mampu untuk…

As the manager/owner of the firm, I am able to…

57	Menyelia orang bawahan *(Supervise subordinates)*	1	2	3	4	5	6	7
58	Membimbing orang bawahan *(Lead subordinates)*	1	2	3	4	5	6	7
59	Mengelola orang lain *(Organize people)*	1	2	3	4	5	6	7
60	Mendorong orang lain *(Motivate people)*	1	2	3	4	5	6	7
61	Mengamanahkan kerja dengan cara yang efektif *(Delegate effectively)*	1	2	3	4	5	6	7

10) KOMPETENSI ANALITIKAL

Sebagai pemilik/pengurus sebuah perniagaan, saya mampu untuk…

As the manager/owner of the firm, I am able to…

62	Menggunakn idea-idea, isu-isu dan ulasan-ulasan dalam konteks alternatif	1	2	3	4	5	6	7

	(Apply ideas, issues and observations to alternative contexts)							
63	Menggabungkan idea-idea, isu-isu dan ulasan-ulasan dalam konteks yang lebih umum *(Integrate ideas, issues and observations into more general contexts)*	1	2	3	4	5	6	7
64	Memilih kerja-kerja yang bersesuian dengan risiko *(Take reasonable job related risks)*	1	2	3	4	5	6	7
65	Memantau kemajuan kerja untuk mencapai objektif dalam tindakan -tindakan yang berisiko *(Monitor progress toward objectives in risky actions)*	1	2	3	4	5	6	7
66	Menggabungkan idea-idea, isu-isu dan ulasan-ulasan yang relevan dari berbagai sumber *(Combine relevant idea's, issues and observation from a variety of sources)*	1	2	3	4	5	6	7
67	Berusaha mencari kaedah atau alternatif untuk mencapai objektif *(Attempt alternative routes in meeting objectives)*	1	2	3	4	5	6	7
68	Membentuk inovasi-inovasi yang berguna (dari segi pasaran, teknologi, produk, servis atau proses) *(Provide a useful innovations (in term of market, technology, products, services or process)*	1	2	3	4	5	6	7

BAHAGIAN B: PENDEKATAN INOVASI

Soalan-soalan berikut bertujuan untuk menilai ciri-ciri inovasi yang firma anda hadapi. Untuk setiap ciri-ciri tersebut , sila bulatkan pada angka yang menunjukkan inovasi yang anda hadapi mengikut skala berikut:

1	**2**	**3**	**4**	**5**	**6**	**7**
Sangat Rendah	Agak Rendah	Rendah	Berkecuali	Agak tinggi	Tinggi	Sangat tinggi

The following questions to assess the characteristics of the firm's innovation you encounter. For each of these characteristics, please circle the number that indicates the innovation that you face the following scale:

1	***2***	***3***	***4***	***5***	***6***	***7***
Very Low	*Moderately Low*	*Low*	*Neutrality*	*Quite High*	*High*	*Very High*

INCREMENTAL INNOVATION								
1	Firma saya telah memperkenalkan inovasi tambahan dalam 5 tahun lepas dengan mempromosikan keupayaan dalam produk *(My firm has introduced incremental innovation in the last 5 years with promoting capability in a product)*	1	2	3	4	5	6	7
2	Firma saya telah memperkenalkan inovasi tambahan dalam 5 tahun lepas dengan mempromosikan kualiti dalam produk *(My firm has introduced incremental innovation in the last 5 years with promoting quality in a product)*	1	2	3	4	5	6	7
3	Firma saya telah memperkenalkan inovasi tambahan dalam 5 tahun lepas dengan perubahan yang kecil dalam produk *(My firm has introduced incremental innovation in the last 5 years with small changes in a product)*	1	2	3	4	5	6	7
4	Firma saya telah memperkenalkan inovasi tambahan dalam 5 tahun yang lalu dalam mengubah reka bentuk produk *(My firm has introduced incremental innovation in the last 5 years in changing the design of product)*	1	2	3	4	5	6	7
5	Dibandingkan dengan pesaing utama, firma saya telah memperkenalkan inovasi yang meningkat pesat dalam 5 tahun yang lalu. *(Compared with major competitors, my firm has introduced more incremental innovation in the last 5 years)*	1	2	3	4	5	6	7

RADICAL INNOVATION								
6	Firma saya jarang memperkenalkan produk yang berbeza daripada produk-produk sedia ada dalam industri *(My firm rarely introduces products that are different from existing products in the industry)*	1	2	3	4	5	6	7
7	Firma saya tidak mempunyai masalah untuk memperkenalkan produk-produk yang berbeza daripada produk sedia ada dalam industri *(My firm has no difficulty in introducing products that are radically different from existing product in the industry)*	1	2	3	4	5	6	7
8	Peratus ketara jualan kami dalam 5 tahun yang lalu adalah daripada inovasi radikal. *(A significant percent of our sale in the last 5 years is from radical innovation)*	1	2	3	4	5	6	7
9	Dibandingkan dengan pesaing lain dalam industri ini, kami memperkenalkan inovasi yang lebih radikal dalam 5 tahun lepas *(Compared with other competitors in this industry, we have introduces more radical innovation in the last 5 year)*	1	2	3	4	5	6	7
10	Pada masa akan datang, firma saya akan memperkenalkan secara radikal produk baru dalam pasaran. *(In future, my firm will introduce radically new product in market)*	1	2	3	4	5	6	7

OPEN INNOVATION								
11	Pada tahun-tahun lepas , firma saya telah bekerjasama dengan pelbagai rakan kongsi dalaman di dalam industri. *(In the last past years, my firm has collaborated with a wide variety of internal partners in our industry)*	1	2	3	4	5	6	7
12	Dalam beberapa tahun lepas , firma saya telah bekerjasama	1	2	3	4	5	6	7

	dengan kuat dengan universiti-universiti dan pusat penyelidikan *(In the last past years, my firm has collaborated very strongly with universities and research centers)*							
13	Dalam beberapa tahun lepas , firma saya telah bekerjasama dengan kukuh dengan syarikat-syarikat perkhidmatan teknikal dan saintifik. *(In the last past years, my firm has collaborated very strongly with technical and scientific service companies)*	1	2	3	4	5	6	7
14	*Dalam beberapa tahun lepas , firma saya telah bekerjasama yang kukuh dengan institusi-institusi kerajaan.* *(In the last past years, my firm has collaborated very strongly with governmental institutions)*	1	2	3	4	5	6	7
15	Dalam beberapa tahun lepas , firma saya telah bekerjasama yang kukuh dengan pelanggan *(In the last past years, my firm has collaborated very strongly with customers)*	1	2	3	4	5	6	7
16	Dalam beberapa tahun lepas , firma saya telah bekerjasama yang kukuh dengan firma yang beroperasi dalam pelbagai sektor. *(In the last past years, my firm has collaborated very strongly with firm operating in different sectors of activities)*	1	2	3	4	5	6	7
17	Dalam beberapa tahun lepas , firma saya telah bekerjasama dengan kukuh dengan pesaing lain. *(In the last past years, my firm has collaborated very strongly with other competitors)*	1	2	3	4	5	6	7
18	Dalam beberapa tahun lepas , firma saya telah bekerjasama yang kukuh dengan pembekal di dalam industri. *(In the last past years, my firm has collaborated very strongly with suppliers in our industry)*	1	2	3	4	5	6	7

19	Peratus yang ketara daripada jualan kami dalam tempoh 5 tahun dari inovasi terbuka. *(A significant percent of our sales in the 5 years in from open innovation)*	1	2	3	4	5	6	7
20	Berbanding dengan pesaing, firma saya telah memperkenalkan tawaran inovasi lebih terbuka dalam 5 tahun yang lalu *(Compared with our competitors, my firm introduced more open innovation offerings in the last 5 years)*	1	2	3	4	5	6	7
21	Walaupun tanpa menggunakan teknologi luar, firma saya boleh mencapai kejayaan dalam pasaran. *(Even without using external technology, my firm can achieve market success)*	1	2	3	4	5	6	7

BAHAGIAN C: STRUKTUR ORGANISASI

Untuk setiap ciri-ciri tersebut, sila bulatkan pada angka yang menunjukkan keadaan struktur organisasi yang anda hadapi mengikut skala berikut:

Untuk setiap ciri-ciri tersebut, sila bulatkan pada angka yang menunjukkan keadaan struktur organisasi yang anda hadapi mengikut skala berikut:

1	**2**	**3**	**4**	**5**	**6**	**7**
Sangat Rendah	Agak Rendah	Rendah	Berkecuali	Agak tinggi	Tinggi	Sangat tinggi

For each of these characteristics, please circle the number that shows the organizational structure of your face according to the following scale:

1	***2***	***3***	***4***	***5***	***6***	***7***
Very Low	*Moderately Low*	*Low*	*Neutrality*	*Quite High*	*High*	*Very High*

Secara umum, falsafah pengurusan operasi di dalam firma saya mengutamakan….

In general, the operating management philosophy in my firm favors….

1	Struktur saluran komunikasi yang tinggi dan laluan untuk mendapat maklumat yang penting tentang kewangan dan	1	2	3	4	5	6	7

	operasi yang begitu terhad *(Highly structured channels of communication and a highly restricted access to important financial and operating information)*							
2	Ketegasan yang tinggi terhadap penyeragaman gaya pengurusan di dalam keseluruhan firma *(A strong insistence on a uniform managerial style throughout the firm)*	1	2	3	4	5	6	7
3	Penekanan yang tinggi terhadap pemberian kuasa yang luas di dalam proses membuat keputusan kepada pengurus-pengurus lini yang formal. *(A strong emphasis on giving the most to say in decision-making to formal line managers)*	1	2	3	4	5	6	7
4	Penekanan yang tinggi terhadap pemegangan kepada ikatan dan prinsip-prinsip sebenar pengurusan walaupun berlaku perubahan din dalam suasana perniagaan *(A strong emphasis on holding past to tried and true management principles despite any)*	1	2	3	4	5	6	7

BAHAGIAN D: PRESTASI FIRMA

Dengan merujuk kepada prestasi perniagaan firma anda dalam masa 3 TAHUN YANG LEPAS (atau semenjak anda menjadi pemilik/pengurus firma ini jika anda telah terlibat dengannya untuk kurang daripada 3 tahun) sila tandakan prestasi firma anda mengikut skala berikut:

1	**2**	**3**	**4**	**5**	**6**	**7**
Sangat Rendah	Agak Rendah	Rendah	Berkecuali	Agak tinggi	Tinggi	Sangat tinggi

With reference to your firm's business performance in the last 3 years (or since you became the owner / manager of this firm if you have been involved with it for less than 3 years), please indicate your firm's performance according to the following scale:

1	***2***	***3***	***4***	***5***	***6***	***7***
Very Low	*Moderately Low*	*Low*	*Neutrality*	*Quite High*	*High*	*Very High*

FIRM PERFORMANCE								
1	Aliran tunai *(Cash flow)*	1	2	3	4	5	6	7
2	Margin untung kasar *(Gross profit margin)*	1	2	3	4	5	6	7
3	Untung bersih dari operasi *(Net profit from operation)*	1	2	3	4	5	6	7
4	Pertumbuhan jualan *(Growth of sales)*	1	2	3	4	5	6	7
5	Pulangan terhadap jualan *(Return on sales)*	1	2	3	4	5	6	7
6	Pulangan terhadap pelaburan *(Return on investment)*	1	2	3	4	5	6	7
7	Nisbah keuntungan kepada jualan *(Profit to sales ratio)*	1	2	3	4	5	6	7
8	Pulangan terhadap ekuiti pemegang saham *(Return on shareholder's equity)*	1	2	3	4	5	6	7
9	Keupayaan membiayai perniagaan dari keuntungan *(Ability to fund business growth from profit)*	1	2	3	4	5	6	7

BAHAGIAN E: MAKLUMAT LATARBELAKANG PERIBADI

1. Umur tuan sekarang
(Your current age)

☐ 25 atau ke bawah/*or under 25* ☐ 26 – 30 ☐ 31 - 35

☐ 36 – 40 ☐ 41– 45 ☐ 46 – 50 ☐ atas/or above 50

2. Umur tuan semasa mula memiliki/mengurus perniagaan ini
(Your age when you started owning/managing this business)

☐ 25 atau ke bawah/or under 25 ☐ 26 – 30 ☐ 31 - 35

☐ 36 – 40 ☐ 41– 45 ☐ 46 – 50 ☐ atas/or above 50

3. Jantina: ☐ Lelaki ☐ Perempuan
(Sex) *(Male)* *(Female)*

4. Bangsa: ☐ Melayu ☐ Cina ☐ India.
(Race) *(Malay)* *(Chinese)* *(Indian)*

Jika lain-lain, nyatakan …….....
(If others, please state……)

5. Tahap pendidikan
(Education level)

☐ Sek Rendah *(Primary)* ☐ Sek Men *(Secondary)* ☐ Diploma *(Diploma)*

☐ Ijazah Sarjana Muda *(Bachelor's degree)* ☐ Sarjana *(Master degree)*

☐ Doktor Falsafah *(Doctorate)* ☐ Jika lain-lain, nyatakan…… *(If others, please indicte…...*

6. Sebelum memulakan/memiliki perniagaan ini, adakah tuan memiliki apa-apa pengalaman kerja yang berkaitan dengannya?
(Before starting up/owning this business, did you have any relevan work experience?)

☐ Ya/*Yes* ☐ Tidak/*No*

7. Adakah tuan mempunyai pengalaman memulakan perniagaan sebelum menceburi di dalam perniagaan ini?
(Do you have business startup experience prior to this business?)

☐ Ya/*Yes* ☐ Tidak/*No*

BAHAGIAN F: MAKLUMAT SYARIKAT

1. Kaedah tuan memiliki syarikat ini:
(Ways of owning of this business)

☐ Membuka sendiri *(start-up)* ☐ Mewarisi *(succession)* ☐ Pengurusan beli alih (MBI) *(mgmt buy in)*

☐ Masuk sebagai rakan kongsi *(joined as a partner)* ☐ Ambil alih *(take-over)*

☐ Lain-lain ……
(others……..)

2. Berapa tahun tuan telah menjadi pemilik/pengurus perniagaan ini
(number of years for being the owner/manager of this business)

☐ Kurang dari 5 ☐ 5 – 10 ☐ 11 – 15

☐ 16 – 20 ☐ 21 – 25 ☐ Atas 25 *(above 25)*

3. Usia syarikat tuan (tahun)
(your firm age - years)

☐ Kurang dari 5 ☐ 5 – 10 ☐ 11 – 15

☐ 16 – 20 ☐ 21 – 25 ☐ Atas 25 *(above 25)*

4. Struktur pemilikan syarikat tuan:
(ownership structure)

☐ Pemilikan tunggal ☐ Perkongsian ☐ Sykt Sdn Bhd

5. Adakah tuan terlibat di dalam operasi perniagaan ini secara aktif?
(are you actively inVol.ved in the operations of this business ?)

☐ Ya ☐ Tidak

6. Bilangan pekerja di dalam organisasi perniagaan tuan ……
(How many employees in your business organization)……..

7. Sila nyatakan dalam sub-sektor industri manakah syarikat tuan terlibat?
(*please specify in what sub-sector industry your company involved?)*

☐ Sub-sektor pembuatan: nyatakan dalam industri: :…….....

……

(*contohya dalam pembuatan makanan, minuman, tekstil & pakaian, produk kayu, produk eletrik & komponen, jentera dan kelengkapan, kenderaan bermotor, alat ganti & eksesori dll)*

☐ Sub-sektor perkhidmatan: nyatakan dalam industri:…….....

……

(*contohya dalam perhotelan, pendidikan, kesihatan, profesional, pengangkutan dan komunikasi, perkhidmatan computer, telekomunikasi, aktiviti hartanah, perundingan, kewangan, borong, runcit, restoran, perkhidmatan lain dll)*

☐ Sub-sektor pertanian: nyatakan dalam industri:…….....

……

c*ontohnya penanaman tanaman, tanaman pasaran dan hortikultur, tanaman pasaran,penternakan haiwan, pertanian campuran, aktiviti pembalakan dan berkaitan, penangkapan ikan dan aktiviti perkhidmatan iringan kepada perikanan, dll)*

8. Pada tahap manakah perkembangan semasa perniagaan tuan di dalam industri tersebut?
(what is the current stage of business development of your industry?)

☐ ***Peringkat pengenalan*** (Produk masih belum dikenali oleh ramai pengguna yang berpotensi dan permintaan yang luas dari industri sedang meningkat)
introduction stage - products and services are unfamiliar to many potential users, and industry-widea demand is beginning to grow

☐ ***Peringkat pertumbuhan*** (Permintaan keseluruhan industri yang luas untuk produk meningkat pada kadar 10% atau lebih pada tiap-tiap tahun.
(growth stage - total industry-widea demand for products orservices is growing at a rate of 10% or more annually)

☐ ***Peringkat kematangan*** (Produk amat dikenali oleh majoriti pengguna dan permintaan keseluruhan industri yang luas adalah stabil secara relatif.
(maturity stage - products or services are familiar to the vast majority or prospective users and industry-widea demand is relatively stable)

☐ ***Peringkat kejatuhan*** (Permintaan keseluruhan industri yang luas untuk produk-produk sedang menurun lebih dari kadar biasa)
(decline stage - total industry widea demand for products or services is decreasing at a more or less steady rate)

APPENDIX B:

PILOT TEST

Reliability

[DataSet1] D:\sufli\pilot.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.807	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b1	20.9667	30.171	.620	.761
b2	20.3000	31.252	.723	.736
b3	20.7000	28.562	.731	.725
b4	21.5667	33.357	.509	.794
b5	20.4667	33.499	.422	.824

Reliability

[DataSet1] D:\sufli\pilot.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.771	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b6	53.9333	44.202	.568	.735
b7	53.5667	43.702	.602	.727
b8	53.6000	41.145	.688	.710
b9	52.5000	55.707	.467	.751
b10	52.6667	56.368	.433	.755
b11	52.5667	59.289	.296	.768
b12	52.3000	56.838	.453	.754
b13	52.4000	60.455	.182	.777
b14	52.8000	59.545	.245	.772
b15	52.5667	55.289	.507	.748

Reliability

```
[DataSet1] D:\sufli\pilot.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.819	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b16	35.5667	26.668	.419	.826
b17	35.6667	26.092	.584	.791
b18	35.3000	27.390	.681	.781
b19	35.7667	27.289	.666	.783
b20	35.6667	26.713	.606	.788
b21	36.3333	28.161	.332	.840
b22	35.7000	24.148	.800	.753

Reliability

```
[DataSet1] D:\sufli\pilot.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.842	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b23	52.7333	52.754	.343	.843
b24	52.7000	53.734	.189	.861
b25	52.3000	48.424	.523	.829
b26	52.2333	54.668	.263	.848
b27	52.5333	46.120	.734	.809
b28	52.6000	49.559	.662	.820
b29	52.9333	44.478	.702	.810
b30	52.9000	45.610	.649	.816
b31	52.8667	44.602	.715	.809
b32	52.7000	46.493	.630	.818

Reliability

```
[DataSet1] D:\sufli\pilot.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.917	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b33	22.1000	23.128	.942	.868
b34	22.2333	23.495	.817	.891
b35	22.3333	21.540	.752	.914
b36	22.0000	24.966	.775	.901
b37	22.1333	26.533	.705	.914

Reliability

[DataSet1] D:\sufli\pilot.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.767	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b38	28.9667	12.930	.519	.734
b39	29.0333	15.620	.273	.795
b40	28.8333	14.420	.495	.736
b41	28.8000	13.821	.720	.687
b42	28.2667	14.823	.520	.731
b43	28.7667	13.426	.626	.701

Reliability

[DataSet1] D:\sufli\pilot.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.819	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b44	55.8667	27.982	.479	.805
b45	55.6667	25.333	.436	.819
b46	55.2667	29.237	.484	.807
b47	55.3333	25.678	.755	.778
b48	55.0667	29.857	.356	.816
b49	55.4000	31.007	.271	.821
b50	55.4667	31.775	.105	.833
b51	55.3667	27.137	.711	.787
b52	55.8333	21.799	.793	.763
b53	56.0333	22.102	.709	.777

Reliability

```
[DataSet1] D:\sufli\pilot.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.724	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b54	12.2333	1.495	.675	.517
b55	11.9000	2.921	.504	.689
b56	11.9333	2.961	.569	.643

Reliability

```
[DataSet1] D:\sufli\pilot.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.750	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b57	25.4333	5.426	.240	.819
b58	25.1667	5.316	.522	.708
b59	25.0000	5.103	.543	.698
b60	25.0667	4.064	.716	.621
b61	24.9333	4.616	.658	.654

Reliability

```
[DataSet1] D:\sufli\pilot.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.798	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b62	36.9667	5.826	.517	.775
b63	36.9000	5.679	.714	.748
b64	36.7667	5.426	.568	.765
b65	36.8667	5.637	.567	.765
b66	36.9000	5.403	.615	.756
b67	36.8333	5.868	.327	.816
b68	36.5667	5.564	.499	.778

Reliability

```
[DataSet1] D:\sufli\pilot.sav
```


Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.790	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
c1	37.2667	8.409	.455	.775
c2	37.4000	7.490	.361	.815
c3	37.2333	9.495	.264	.800
c4	37.1667	7.799	.670	.740
c5	37.1000	7.334	.713	.726
c6	37.2000	7.545	.621	.743
c7	37.2333	6.875	.663	.732

Reliability

```
[DataSet1] D:\sufli\pilot.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.705	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
d1	22.0667	12.202	.394	.422
d2	21.9000	12.576	.313	.452
d3	22.4000	13.421	.142	.516
d4	23.7667	7.426	.483	.268
d5	22.6667	8.782	.224	.538

Reliability

```
[DataSet1] D:\sufli\pilot.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.754	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
d6	24.6000	6.731	.166	.566
d7	25.2333	5.495	.210	.563
d8	25.0667	4.823	.453	.416
d9	25.0000	4.276	.461	.396
d10	25.1667	4.902	.310	.505

Reliability

```
[DataSet1] D:\sufli\pilot.sav
```


Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.741	11

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
d11	60.7333	16.409	-.197	.616
d12	60.5333	14.395	-.038	.628
d13	60.3000	14.217	.181	.528
d14	60.4667	12.464	.510	.448
d15	60.3000	11.528	.633	.405
d16	60.3667	12.654	.513	.452
d17	60.6000	12.662	.507	.453
d18	60.6000	11.559	.647	.404
d19	60.8667	11.982	.411	.459
d20	60.5333	17.085	-.281	.650
d21	60.3667	14.999	.193	.530

Reliability

```
[DataSet1] D:\sufli\pilot.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.728	9

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
e1	47.1667	18.282	.105	.455
e2	47.3667	18.102	.070	.490
e3	46.1000	14.852	.582	.184
e4	46.4333	22.116	.043	.443
e5	46.6000	18.938	.263	.363
e6	46.0333	21.206	.377	.373
e7	46.2000	22.786	.110	.423
e8	45.5333	23.568	-.040	.445
e9	46.1667	20.075	.302	.363

APPENDIX C:

SMEs BACKGROUND

Frequencies

[DataSet1] D:\sufli\background.sav

Statistics

		operasi	negeri	sektor	pekerja	jualan
N	Valid	328	328	328	328	328
	Missing	0	0	0	0	0

Frequency Table

operasi

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<5	14	4.3	4.3	4.3
	5-10	120	36.6	36.6	40.9
	11-15	127	38.7	38.7	79.6
	16-20	67	20.4	20.4	100.0
	Total	328	100.0	100.0	

negeri

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	pulau pinang	155	47.3	47.3	47.3
	kedah	142	43.3	43.3	90.5
	perlis	31	9.5	9.5	100.0
	Total	328	100.0	100.0	

sektor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Pembuatan	270	82.3	82.3	82.3
	Pekhidmatan	58	17.7	17.7	100.0
	Total	328	100.0	100.0	

pekerja

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<50	146	44.5	44.5	44.5
	50-100	105	32.0	32.0	76.5
	101-150	63	19.2	19.2	95.7
	151-200	14	4.3	4.3	100.0
	Total	328	100.0	100.0	

jualan

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<500k	101	30.8	30.8	30.8
	500k - 1 juta	69	21.0	21.0	51.8
	1 juta - 1.5 juta	83	25.3	25.3	77.1
	1.5 juta - 2 juta	49	14.9	14.9	92.1
	2 juta - 2.5 juta	26	7.9	7.9	100.0
	Total	328	100.0	100.0	

APPENDIX D:

BIAS-TEST

APPENDIX D:

BIAS-TEST

T-Test

[DataSet0] D:\sufli\data play.sav

Group Statistics

	resp_Bias	N	Mean	Std. Deviation	Std. Error Mean
performance	1.00	176	5.8062	.47791	.03602
	2.00	138	5.7818	.47888	.04076
traits	1.00	176	5.8541	.54171	.04083
	2.00	138	5.8211	.61900	.05269
skills	1.00	176	5.8992	.60036	.04525
	2.00	138	5.9332	.65170	.05548
org_structure	1.00	176	5.7622	.70012	.05277
	2.00	138	5.8302	.72197	.06146
innovation	1.00	176	5.9012	.44905	.03385
	2.00	138	5.9434	.42853	.03648

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
performance	Equal variances assumed	.142	.707	.448	312
	Equal variances not assumed			.448	294.107
traits	Equal variances assumed	.783	.377	.502	312
	Equal variances not assumed			.494	273.682
skills	Equal variances assumed	1.224	.269	-.480	312
	Equal variances not assumed			-.475	282.174
org_structure	Equal variances assumed	.104	.747	-.843	312
	Equal variances not assumed			-.840	290.061
innovation	Equal variances assumed	1.104	.294	-.842	312
	Equal variances not assumed			-.847	300.232

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
performance	Equal variances assumed	.654	.02438	.05439
	Equal variances not assumed	.654	.02438	.05440
traits	Equal variances assumed	.616	.03293	.06560
	Equal variances not assumed	.622	.03293	.06666
skills	Equal variances assumed	.632	-.03400	.07088
	Equal variances not assumed	.635	-.03400	.07159
org_structure	Equal variances assumed	.400	-.06805	.08071
	Equal variances not assumed	.402	-.06805	.08101
innovation	Equal variances assumed	.400	-.04216	.05005
	Equal variances not assumed	.398	-.04216	.04976

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
performance	Equal variances assumed	-.08263	.13140
	Equal variances not assumed	-.08268	.13145
traits	Equal variances assumed	-.09614	.16200
	Equal variances not assumed	-.09830	.16417
skills	Equal variances assumed	-.17347	.10548
	Equal variances not assumed	-.17492	.10693
org_structure	Equal variances assumed	-.22685	.09074
	Equal variances not assumed	-.22749	.09138
innovation	Equal variances assumed	-.14064	.05631
	Equal variances not assumed	-.14010	.05577

APPENDIX E:

TEST ON MULTIVARIATE ASSUMPTIONS

Descriptives

[DataSet0] D:\sufli\data play.sav

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
performance	314	4.22	6.78	5.7955	.47772	-.489	.138
traits	314	3.68	6.86	5.8396	.57623	-.953	.138
opportunity	314	1.80	7.00	5.5178	1.11441	-1.525	.138
relationship	314	3.70	7.00	5.9312	.59919	-.659	.138
operational	314	3.14	7.00	5.9386	.72695	-.921	.138
skills	314	4.26	7.00	5.9142	.62266	-.254	.138
strategic	314	3.60	7.00	5.8376	.73175	-.328	.138
commitment	314	3.00	7.00	5.5631	1.15048	-.435	.138
learning	314	3.67	7.00	5.8169	.71608	-.281	.138
personal	314	4.00	7.00	6.0293	.68501	-.320	.138
innovative	314	3.33	7.00	5.9352	.84788	-.514	.138
human	314	2.80	7.00	6.1611	.74329	-1.100	.138
analytical	314	3.71	7.00	6.0077	.68555	-.709	.138
innovation	314	4.52	7.00	6.0337	.58180	-.486	.138
incremantal	314	4.00	7.00	6.0306	.69656	-.734	.138
radical	314	4.60	7.00	6.0732	.63958	-.422	.138
open	314	4.45	7.00	6.0171	.60065	-.255	.138
org_structure	314	4.00	7.00	5.7921	.70947	-.272	.138
Valid N (listwise)	314						

Descriptive Statistics

	Kurtosis	
	Statistic	Std. Error
performance	.473	.274
traits	1.466	.274
opportunity	2.093	.274
relationship	.659	.274
operational	1.202	.274
skills	-.558	.274
strategic	-.207	.274
commitment	-1.222	.274
learning	-.153	.274
personal	-.612	.274
innovative	-.463	.274
human	1.633	.274
analytical	.675	.274
innovation	-.225	.274
incremantal	.211	.274
radical	-.649	.274
open	-.630	.274
org_structure	-.466	.274
Valid N (listwise)		

Regression

```
[DataSet0] D:\sufli\data play.sav
```

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	org_structure, innovation, traits, skills[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: performance

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.837[a]	.701	.697	.26301

a. Predictors: (Constant), org_structure, innovation, traits, skills

b. Dependent Variable: performance

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.057	4	12.514	180.906	.000[a]
	Residual	21.375	309	.069		
	Total	71.433	313			

a. Predictors: (Constant), org_structure, innovation, traits, skills

b. Dependent Variable: performance

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.050	.242		.207	.836
	traits	.416	.028	.502	14.893	.000
	skills	.298	.026	.388	11.392	.000
	innovation	.095	.026	.116	3.688	.000
	org_structure	.169	.021	.252	7.999	.000

a. Dependent Variable: performance

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	traits	.853	1.172
	skills	.834	1.198
	innovation	.982	1.019
	org_structure	.978	1.022

a. Dependent Variable: performance

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	traits	skills
1	1	4.968	1.000	.00	.00	.00
	2	.013	19.639	.00	.05	.06
	3	.010	22.678	.01	.15	.18
	4	.006	27.804	.01	.60	.73
	5	.003	41.097	.99	.20	.03

a. Dependent Variable: performance

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		innovation	org_structure
1	1	.00	.00
	2	.04	.86
	3	.58	.01
	4	.00	.00
	5	.38	.13

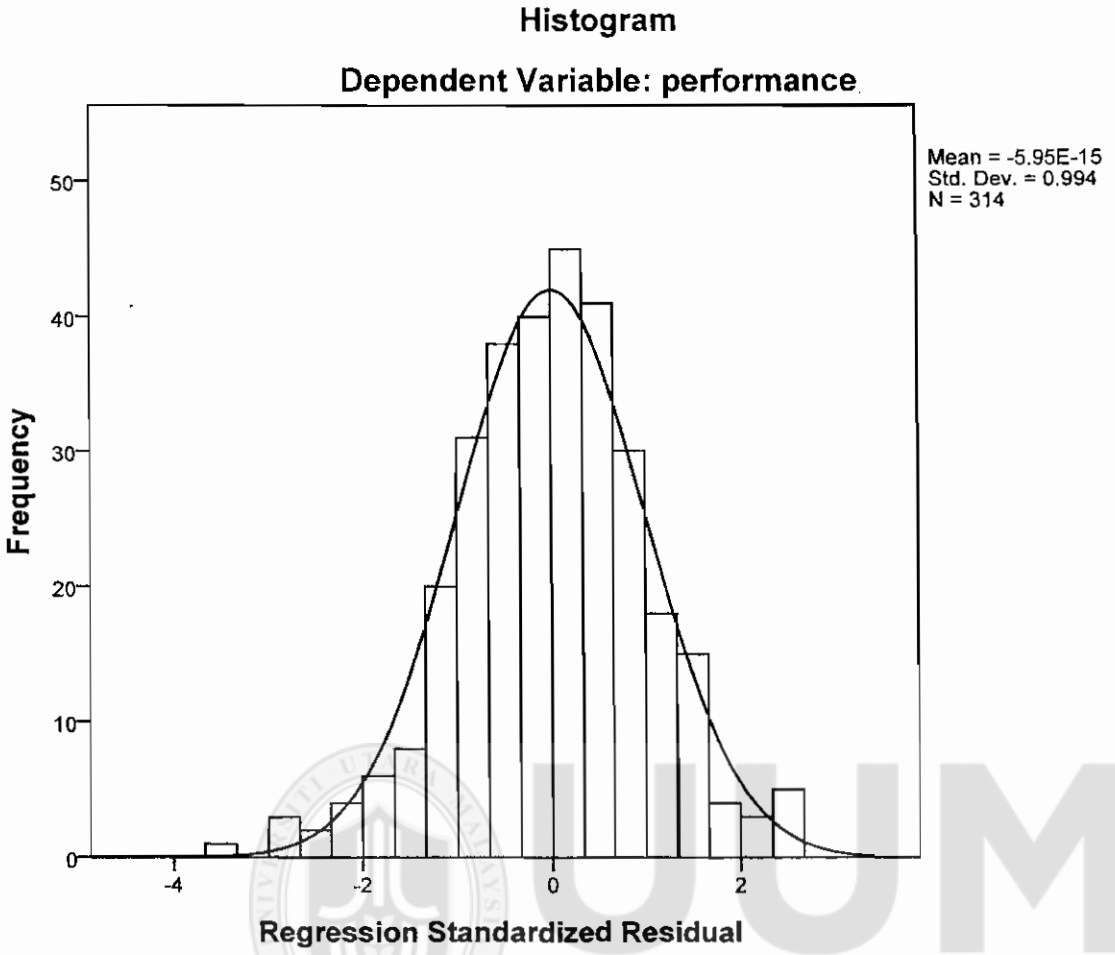
a. Dependent Variable: performance

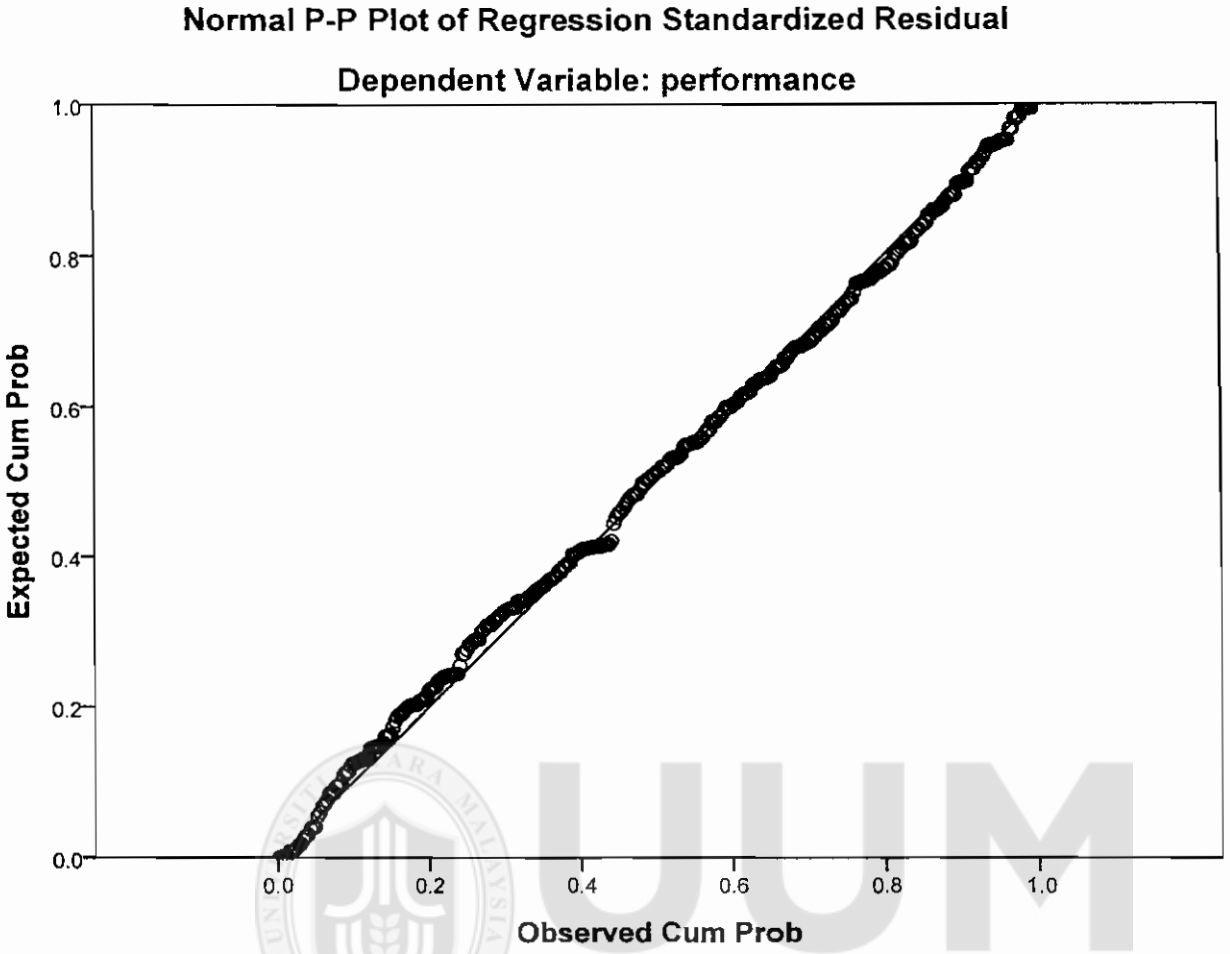
Residuals Statistics[a]

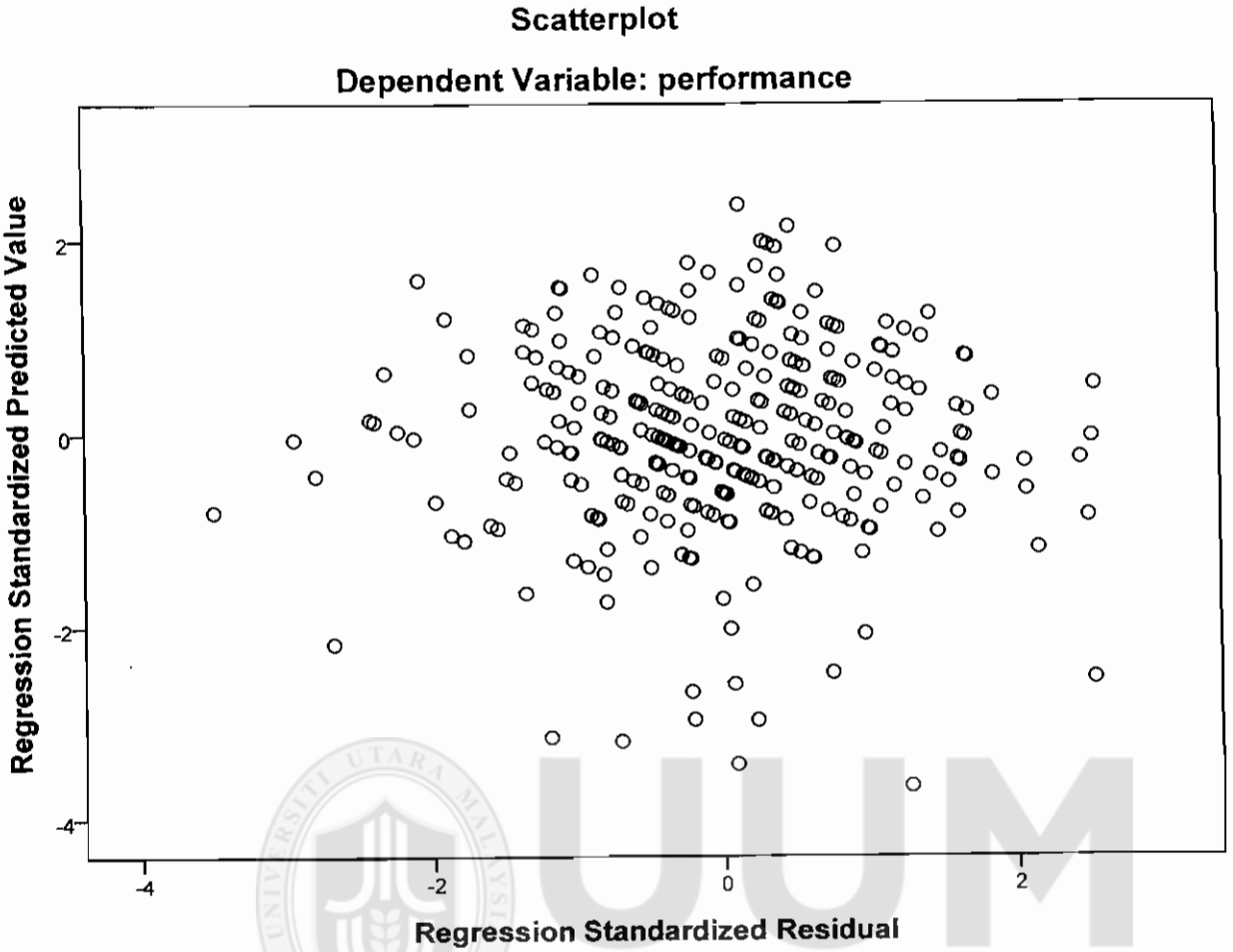
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.3317	6.7427	5.7955	.39991	314
Residual	-.91936	.66791	.00000	.26133	314
Std. Predicted Value	-3.660	2.369	.000	1.000	314
Std. Residual	-3.495	2.539	.000	.994	314

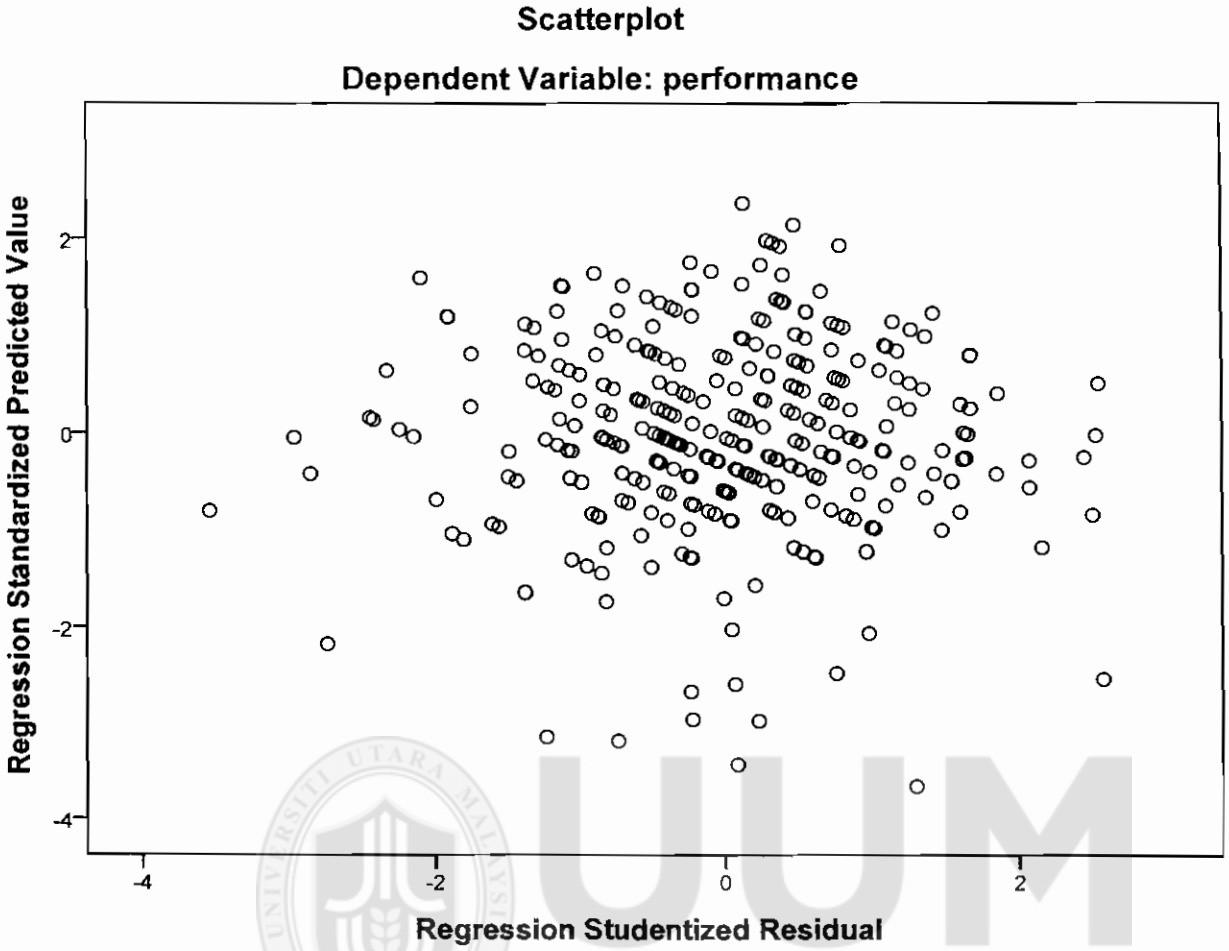
a. Dependent Variable: performance

Charts









Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.050	.219		-.228	.820
	opportunity	.118	.013	.274	8.726	.000
	relationship	.275	.028	.344	9.701	.000
	operational	-.023	.027	-.036	-.859	.391
	strategic	.140	.041	.214	3.433	.001
	commitment	.114	.023	.275	5.004	.000
	learning	.138	.034	.207	4.061	.000
	personal	-.129	.038	-.185	-3.394	.001
	innovative	-.009	.025	-.016	-.358	.720
	human	-.021	.026	-.032	-.806	.421
	analytical	.119	.021	.171	5.639	.000
	org_structure	.190	.018	.282	10.330	.000
	incremantal	-.022	.029	-.032	-.739	.461
	radical	.153	.033	.205	4.577	.000
	open	-.034	.041	-.042	-.828	.409

a. Dependent Variable: performance

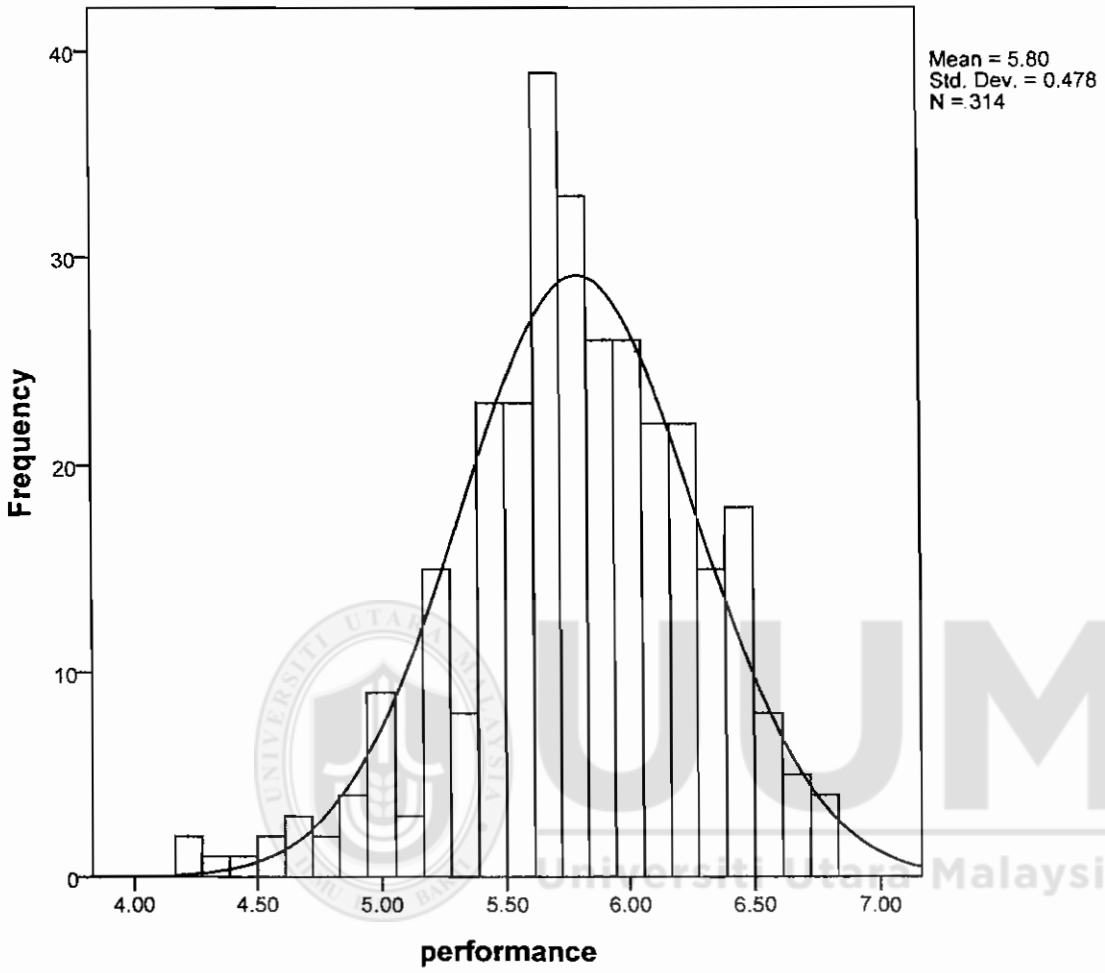
Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	opportunity	.701	1.426
	relationship	.550	1.817
	operational	.403	2.484
	strategic	.179	5.596
	commitment	.231	4.336
	learning	.268	3.736
	personal	.233	4.292
	innovative	.362	2.763
	human	.432	2.314
	analytical	.752	1.330
	org_structure	.932	1.072
	incremantal	.381	2.624
	radical	.346	2.890
	open	.266	3.755

a. Dependent Variable: performance

Graph

[DataSet0] D:\sufli\data play.sav



Graph

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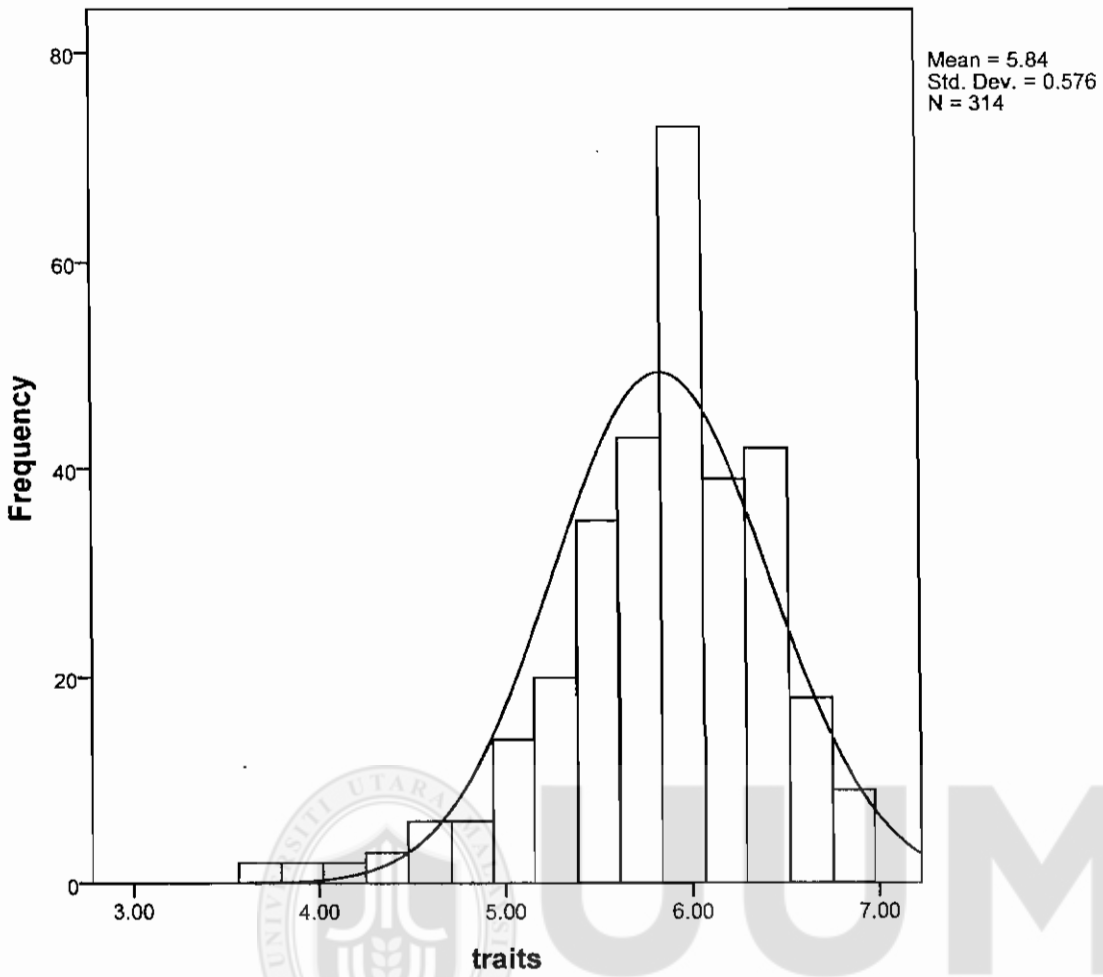

Graph

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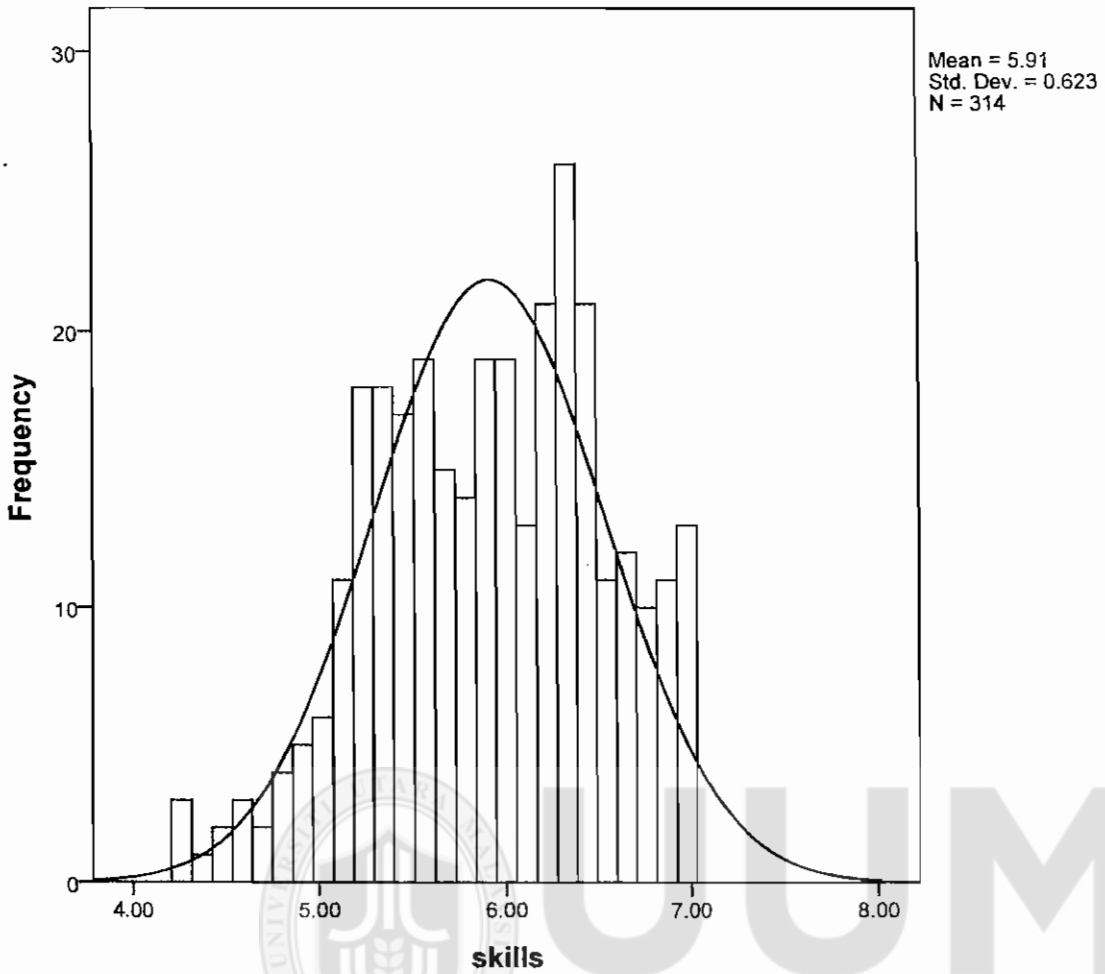

Graph

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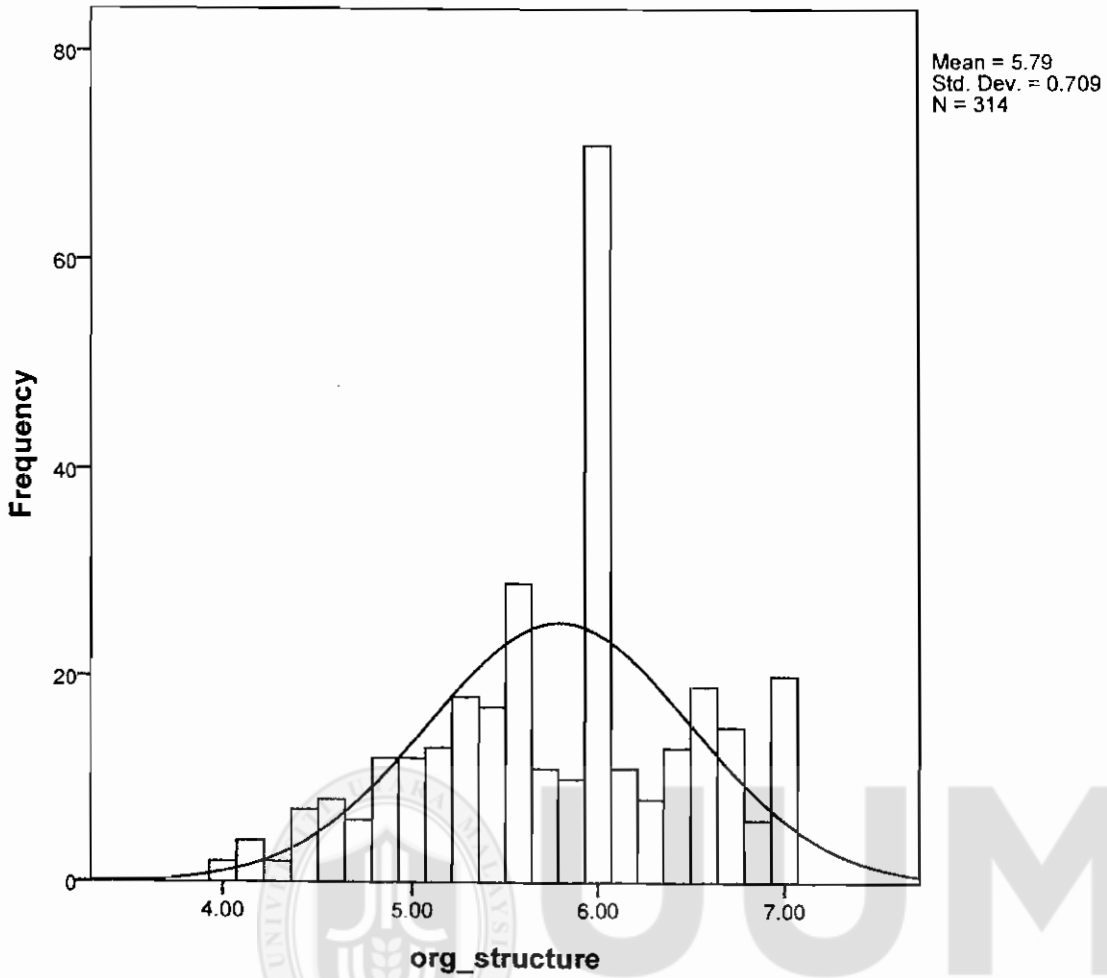

Graph

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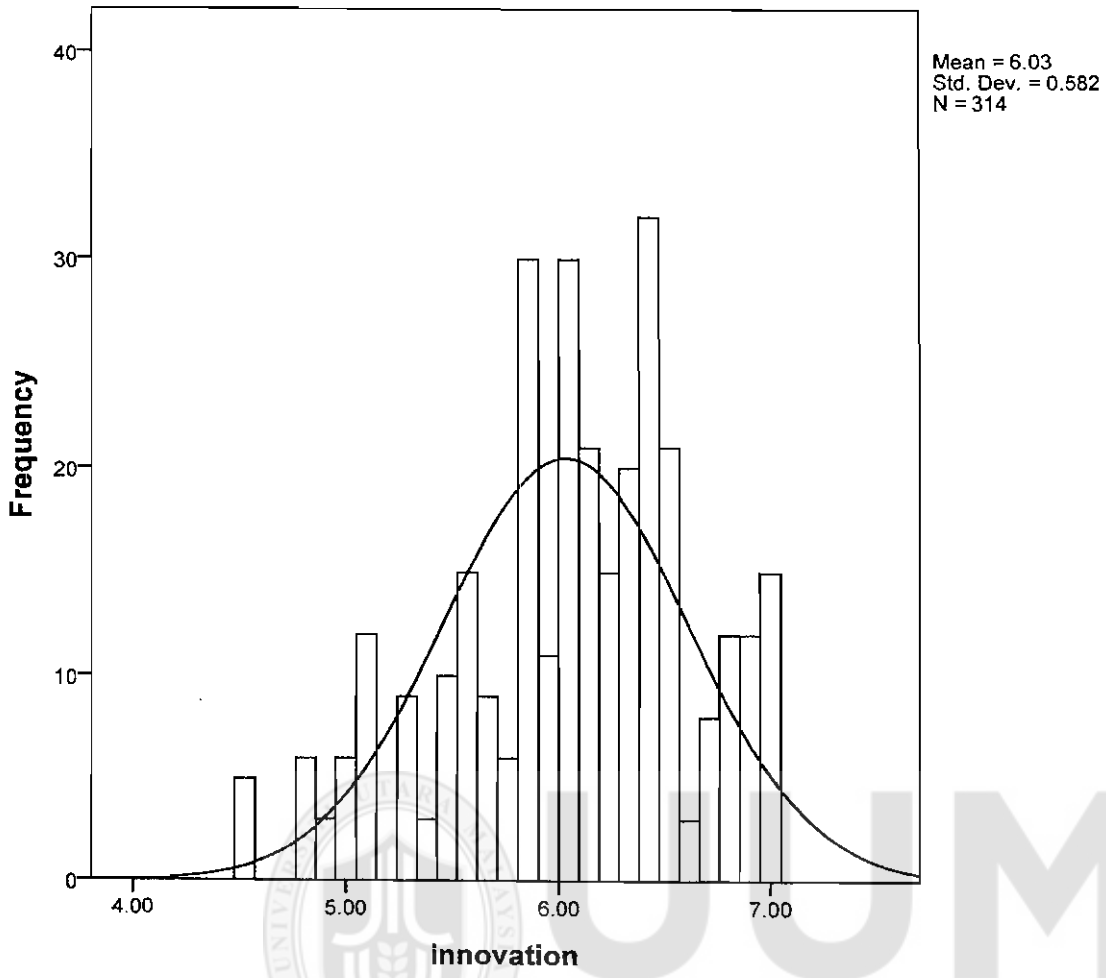


APPENDIX F:

FACTOR ANALYSIS

Factor Analysis

[DataSet0] D:\sufli\data.sav

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.892
Bartlett's Test of Sphericity	Approx. Chi-Square	19039.728
	df	1953
	Sig.	.000

Communalities

	Initial	Extraction
b1	1.000	.698
b2	1.000	.759
b3	1.000	.674
b4	1.000	.550
b6	1.000	.841
b7	1.000	.884
b8	1.000	.778
b10	1.000	.642
b11	1.000	.654
b12	1.000	.619
b13	1.000	.631
b14	1.000	.608
b15	1.000	.600
b16	1.000	.657
b17	1.000	.746
b18	1.000	.731
b19	1.000	.701
b20	1.000	.697
b21	1.000	.627
b22	1.000	.688
b24	1.000	.541
b25	1.000	.635
b26	1.000	.541
b27	1.000	.602
b28	1.000	.702
b29	1.000	.811

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
b30	1.000	.818
b31	1.000	.821
b32	1.000	.820
b33	1.000	.787
b34	1.000	.798
b35	1.000	.783
b36	1.000	.832
b37	1.000	.806
b38	1.000	.830
b39	1.000	.743
b40	1.000	.640
b41	1.000	.612
b42	1.000	.710
b43	1.000	.659
b44	1.000	.650
b45	1.000	.642
b46	1.000	.576
b47	1.000	.673
b48	1.000	.647
b49	1.000	.710
b50	1.000	.628
b51	1.000	.600
b52	1.000	.842
b53	1.000	.854
b54	1.000	.720
b55	1.000	.588
b56	1.000	.649
b58	1.000	.582
b59	1.000	.693
b60	1.000	.774
b61	1.000	.736
b62	1.000	.742
b63	1.000	.772
b64	1.000	.837
b65	1.000	.746

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
b66	1.000	.709
b67	1.000	.668

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.115	30.341	30.341	19.115	30.341	30.341
2	8.174	12.974	43.315	8.174	12.974	43.315
3	3.942	6.257	49.572	3.942	6.257	49.572
4	3.019	4.791	54.363	3.019	4.791	54.363
5	2.271	3.604	57.967	2.271	3.604	57.967
6	1.931	3.065	61.032	1.931	3.065	61.032
7	1.765	2.802	63.834	1.765	2.802	63.834
8	1.441	2.287	66.122	1.441	2.287	66.122
9	1.370	2.175	68.297	1.370	2.175	68.297
10	1.286	2.041	70.338	1.286	2.041	70.338
11	.967	1.535	71.873			
12	.950	1.508	73.381			
13	.928	1.473	74.854			
14	.882	1.400	76.254			
15	.850	1.350	77.603			
16	.750	1.191	78.794			
17	.748	1.188	79.982			
18	.741	1.176	81.158			
19	.688	1.092	82.250			
20	.638	1.013	83.263			
21	.606	.962	84.225			
22	.554	.880	85.105			
23	.539	.855	85.960			
24	.517	.820	86.780			
25	.494	.785	87.565			
26	.454	.720	88.285			
27	.434	.689	88.975			
28	.420	.667	89.642			
29	.383	.609	90.250			

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	14.010	22.239	22.239
2	6.090	9.666	31.905
3	4.650	7.382	39.286
4	3.870	6.143	45.429
5	3.416	5.422	50.851
6	3.201	5.081	55.932
7	2.812	4.463	60.395
8	2.524	4.006	64.401
9	2.016	3.200	67.601
10	1.724	2.737	70.338
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
30	.380	.604	90.854			
31	.368	.583	91.437			
32	.361	.574	92.011			
33	.326	.518	92.529			
34	.302	.479	93.007			
35	.292	.463	93.471			
36	.275	.436	93.907			
37	.273	.434	94.341			
38	.262	.415	94.756			
39	.247	.391	95.148			
40	.237	.376	95.523			
41	.221	.351	95.874			
42	.212	.336	96.210			
43	.204	.324	96.534			
44	.192	.305	96.840			
45	.181	.287	97.127			
46	.176	.279	97.406			
47	.166	.264	97.670			
48	.154	.245	97.915			
49	.149	.236	98.151			
50	.126	.199	98.350			
51	.118	.187	98.538			
52	.116	.184	98.722			
53	.108	.171	98.893			
54	.099	.157	99.050			
55	.092	.146	99.195			
56	.084	.133	99.328			
57	.082	.131	99.459			
58	.077	.122	99.580			
59	.064	.101	99.681			
60	.061	.097	99.778			
61	.051	.081	99.859			
62	.047	.074	99.933			
63	.042	.067	100.000			

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
60			
61			
62			
63			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
b1				.497				
b2				.567				
b3				.494				
b4								
b6			.401	.641				
b7		.500		.533				
b8		.436		.486				
b10					.558			
b11	.410							
b12	.447							
b13	.545							
b14	.614							
b15	.481							
b16	.532							
b17		.531						
b18	.453	.441						
b19	.407	.649						
b20	.426	.566						
b21	.558							
b22	.506	.442						
b24		.554						
b25		.546						
b26	.550							
b27	.620							
b28	.625							
b29	.775							
b30	.813							
b31	.778	-.410						
b32	.722	-.463						
b33	.768							
b34	.720	-.447						
b35	.752	-.419						
b36	.772	-.403						
b37	.765							

Extraction Method: Principal Component Analysis.

a. 10 components extracted.

Component Matrix[a]

	Component	
	9	10
b1		
b2		
b3		
b4		
b6		
b7		
b8		
b10		
b11		
b12		
b13		
b14		
b15		
b16		
b17		
b18		
b19		
b20		
b21		.468
b22		
b24		
b25		
b26		
b27		
b28		
b29		
b30		
b31		
b32		
b33		
b34		
b35		
b36		
b37		

Extraction Method: Principal Component Analysis.

a. 10 components extracted.

Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
b38	.776	-.420						
b39	.679	-.439						
b40	.429	.493						
b41	.523							
b42	.514	.521						
b43	.484	.530						
b44	.679							
b45	.688							
b46	.493							
b47	.698							
b48	.484	.455						
b49	.615							
b50	.435				-.420			
b51	.660							
b52	.762	-.470						
b53	.708	-.565						
b54	.746							
b55	.494							
b56	.587							
b58	.597							
b59	.548					.419		
b60	.629					.432		
b61	.558							
b62			-.632					
b63	.512		-.608					
b64	.425		-.681					
b65	.483		-.555					
b66			-.592					
b67			-.633					

Extraction Method: Principal Component Analysis.

a. 10 components extracted.

Component Matrix[a]

	Component	
	9	10
b38		
b39		
b40		
b41		
b42		
b43		
b44		
b45		
b46		
b47		
b48		
b49		
b50		
b51		
b52		
b53		
b54		
b55		
b56		
b58		
b59		
b60		
b61		
b62		
b63		
b64		
b65		
b66		
b67		

Extraction Method: Principal Component Analysis.

a. 10 components extracted.

Rotated Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
b1							.798	
b2							.828	
b3							.782	
b4							.566	
b6								.866
b7								.837
b8								.807
b10								.613
b11								.698
b12								.469
b13								.598
b14								.639
b15								.620
b16				.656				
b17				.774				
b18				.743				
b19				.624				
b20				.725				
b21				.513				
b22				.690				
b24		.532						
b25		.503						
b26		.520						
b27		.531						
b28		.428						
b29		.847						
b30		.836						
b31		.872						
b32		.871						
b33	.834							
b34	.846							
b35	.847							
b36	.877							

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Rotated Component Matrix[a]

	Component	
	9	10
b1		
b2		
b3		
b4		
b6		
b7		
b8		
b10		
b11		
b12		
b13		
b14		
b15		
b16		
b17		
b18		
b19		
b20		
b21		
b22		
b24		
b25		.450
b26		
b27		
b28		
b29		
b30		
b31		
b32		
b33		
b34		
b35		
b36		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Rotated Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
b37	.868							
b38			.893					
b39			.831					
b40			.752					
b41			.682					
b42			.727					
b43			.604					
b44						.648		
b45						.705		
b46						.622		
b47						.705		
b48		.465				.539		
b49						.670		
b50						.681		
b51						.486		
b52						.864		
b53						.870		
b54								
b55								
b56								
b58					.567			
b59					.690			
b60					.697			
b61					.694			
b62								
b63								
b64								
b65								
b66								
b67								

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Rotated Component Matrix[a]

	Component	
	9	10
b37		
b38		
b39		
b40		
b41		
b42		
b43		
b44		
b45		
b46		
b47		
b48		
b49		
b50		
b51		
b52		
b53		
b54	.776	
b55	.422	
b56	.569	
b58		
b59		
b60		
b61		
b62		.831
b63		.781
b64		.883
b65		.778
b66		.784
b67		.728

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Component Transformation Matrix

Component	1	2	3	4	5	6	7	8
1	.756	.358	.260	.242	.273	.256	-.024	.001
2	-.583	.560	.136	.361	.158	.224	.254	.198
3	.244	.139	-.791	.195	-.225	-.027	.332	.308
4	.114	-.270	.422	-.220	-.046	-.074	.614	.550
5	.010	-.231	.176	.654	-.195	-.481	.149	-.245
6	-.041	-.257	-.161	.231	.801	-.190	-.048	.186
7	.072	.391	.189	.053	-.261	-.488	-.410	.420
8	-.012	.033	.071	.006	-.169	.357	.062	-.107
9	.083	.339	.025	-.172	.086	-.322	.502	-.529
10	-.041	.278	-.111	-.459	.255	-.377	-.014	.014

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Component Transformation Matrix

Component	9	10
1	.158	.091
2	.086	.104
3	.022	-.040
4	.011	-.022
5	.363	-.065
6	-.229	-.295
7	-.316	-.228
8	.098	-.902
9	-.445	-.083
10	.689	-.126

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Factor Analysis

```
[DataSet0] D:\sufli\data.sav
```

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.875
Bartlett's Test of Sphericity	Approx. Chi-Square	1301.302
	df	21
	Sig.	.000

Communalities

	Initial	Extraction
c1	1.000	.511
c2	1.000	.587
c3	1.000	.595
c4	1.000	.718
c5	1.000	.674
c6	1.000	.663
c7	1.000	.637

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.385	62.638	62.638	4.385	62.638	62.638
2	.766	10.939	73.577			
3	.524	7.491	81.068			
4	.491	7.014	88.082			
5	.335	4.792	92.874			
6	.263	3.763	96.637			
7	.235	3.363	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
c1	.715
c2	.766
c3	.772
c4	.847
c5	.821
c6	.814
c7	.798

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Rotated Component Matrix[a]

a. Only one component was extracted. The solution cannot be rotated.

Factor Analysis

```
[DataSet0] D:\sufli\data.sav
```

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.825
Bartlett's Test of Sphericity	Approx. Chi-Square	1522.543
	df	28
	Sig.	.000

Anti-image Matrices

		e1	e2	e3	e4	e5	e6
Anti-image Covariance	e1	.460	-.152	-.104	.011	.003	-.091
	e2	-.152	.350	-.134	-.050	.007	.072
	e3	-.104	-.134	.343	.040	-.131	-.020
	e4	.011	-.050	.040	.557	-.197	-.104
	e5	.003	.007	-.131	-.197	.441	-.079
	e6	-.091	.072	-.020	-.104	-.079	.347
	e7	.113	-.132	-.035	.032	.014	-.153
	e8	-.114	.050	.016	-.058	-.009	-.035
Anti-image Correlation	e1	.804[a]	-.379	-.262	.022	.006	-.227
	e2	-.379	.793[a]	-.387	-.113	.018	.208
	e3	-.262	-.387	.864[a]	.092	-.337	-.058
	e4	.022	-.113	.092	.849[a]	-.398	-.236
	e5	.006	.018	-.337	-.398	.859[a]	-.203
	e6	-.227	.208	-.058	-.236	-.203	.841[a]
	e7	.305	-.411	-.111	.079	.040	-.477
	e8	-.243	.122	.039	-.113	-.019	-.085

a. Measures of Sampling Adequacy(MSA)

Anti-image Matrices

		e7	e8
Anti-image Covariance	e1	.113	-.114
	e2	-.132	.050
	e3	-.035	.016
	e4	.032	-.058
	e5	.014	-.009
	e6	-.153	-.035
	e7	.297	-.168
	e8	-.168	.479
Anti-image Correlation	e1	.305	-.243
	e2	-.411	.122
	e3	-.111	.039
	e4	.079	-.113
	e5	.040	-.019
	e6	-.477	-.085
	e7	.757[a]	-.445
	e8	-.445	.855[a]

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
e1	1.000	.516
e2	1.000	.599
e3	1.000	.665
e4	1.000	.440
e5	1.000	.578
e6	1.000	.668
e7	1.000	.646
e8	1.000	.524

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.636	57.956	57.956	4.636	57.956	57.956
2	.931	11.641	69.597			
3	.788	9.845	79.442			
4	.492	6.155	85.597			
5	.404	5.045	90.641			
6	.352	4.400	95.041			
7	.235	2.940	97.981			
8	.162	2.019	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
e1	.718
e2	.774
e3	.815
e4	.663
e5	.761
e6	.818
e7	.804
e8	.724

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Rotated Component Matrix[a]

a. Only one component was extracted. The solution cannot be rotated.

Factor Analysis

```
[DataSet0] D:\sufli\data play.sav
```

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.886
Bartlett's Test of Sphericity	Approx. Chi-Square	6042.961
	df	210
	Sig.	.000

Communalities

	Initial	Extraction
d1	1.000	.556
d2	1.000	.598
d3	1.000	.532
d4	1.000	.807
d5	1.000	.726
d6	1.000	.601
d7	1.000	.497
d8	1.000	.606
d9	1.000	.681
d10	1.000	.793
d11	1.000	.735
d12	1.000	.677
d13	1.000	.642
d14	1.000	.643
d15	1.000	.736
d16	1.000	.716
d17	1.000	.654
d18	1.000	.761
d19	1.000	.674
d20	1.000	.655
d21	1.000	.635

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.123	52.968	52.968	11.123	52.968	52.968
2	1.530	7.285	60.253	1.530	7.285	60.253
3	1.274	6.066	66.319	1.274	6.066	66.319
4	1.176	5.599	71.918			
5	.853	4.060	75.978			
6	.767	3.651	79.629			
7	.627	2.986	82.615			
8	.560	2.667	85.282			
9	.482	2.297	87.579			
10	.429	2.043	89.622			
11	.353	1.680	91.302			
12	.318	1.515	92.817			
13	.301	1.432	94.249			
14	.253	1.207	95.456			
15	.208	.992	96.447			
16	.191	.910	97.357			
17	.150	.716	98.073			
18	.131	.623	98.696			
19	.109	.518	99.213			
20	.087	.416	99.630			
21	.078	.370	100.000			

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	5.172	24.630	24.630
2	4.521	21.529	46.160
3	4.233	20.159	66.319
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component		
	1	2	3
d1	.630		
d2	.703		
d3	.605		
d4	.725		-.459
d5	.714		
d6	.674		
d7	.663		
d8	.769		
d9	.707	.402	
d10	.762	.435	
d11	.705	.483	
d12	.655	.496	
d13	.698		
d14	.787		
d15	.823		
d16	.798		
d17	.659		.468
d18	.817		
d19	.795		
d20	.773		
d21	.766		

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Rotated Component Matrix[a]

	Component		
	1	2	3
d1	.703		
d2	.648		
d3	.671		
d4	.836		
d5	.769		
d6		.563	
d7		.595	
d8		.494	.496
d9		.720	
d10		.794	
d11			.797
d12			.778
d13		.431	.657
d14			.590
d15			.617
d16	.464		.655
d17		.415	.694
d18		.410	.732
d19			.657
d20			.586
d21	.466		.587

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Component Transformation Matrix

Component	1	2	3
1	.625	.558	.546
2	-.462	.828	-.318
3	.629	.053	-.775

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

APPENDIX G:

RELIABILITY ANALYSIS

Reliability

```
[DataSet1] D:\sufli\data play.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.785	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b1	16.2611	12.347	.620	.718
b2	16.2070	12.305	.743	.661
b3	16.4427	12.235	.622	.717
b4	16.9936	14.383	.411	.821

Reliability

```
[DataSet1] D:\sufli\data play.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.691	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b6	54.1943	26.342	.420	.657
b7	53.7293	25.917	.431	.655
b8	53.6911	25.345	.502	.635
b9	53.0828	32.536	.256	.683
b10	53.3790	31.450	.294	.678
b11	53.1783	32.428	.296	.678
b12	52.8408	32.090	.417	.667
b13	52.9586	31.688	.420	.664
b14	53.5860	31.847	.211	.692
b15	53.1688	31.138	.404	.663

Reliability

```
[DataSet1] D:\sufli\data play.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.825	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b16	35.4522	19.974	.580	.801
b17	35.5732	18.820	.612	.795
b18	35.4013	19.359	.641	.791
b19	35.7420	18.556	.679	.783
b20	35.7070	19.141	.657	.788
b21	36.0064	21.559	.264	.857
b22	35.5382	19.636	.631	.793

Reliability

```
[DataSet1] D:\sufli\data play.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.835	9

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b24	46.8217	41.304	.146	.865
b25	46.4331	39.524	.351	.838
b26	46.4236	39.203	.538	.822
b27	46.5573	37.813	.593	.815
b28	46.6178	37.777	.638	.813
b29	46.9713	32.565	.744	.793
b30	46.9968	33.345	.714	.797
b31	46.9204	33.850	.710	.798
b32	46.9459	33.642	.614	.811

Reliability

```
[DataSet1] D:\sufli\data play.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.944	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b33	22.2166	21.391	.854	.930
b34	22.3631	21.452	.879	.925
b35	22.3790	20.383	.843	.933
b36	22.1688	21.777	.851	.930
b37	22.1338	22.372	.820	.936

Reliability

[DataSet1] D:\sufli\data play.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.773	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b38	29.2293	12.695	.487	.752
b39	29.3885	12.660	.448	.767
b40	29.0478	13.860	.569	.730
b41	29.1561	13.429	.619	.718
b42	28.7134	13.892	.550	.734
b43	28.9713	13.868	.521	.740

Reliability

[DataSet1] D:\sufli\data play.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.873	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b44	54.5828	37.637	.648	.856
b45	54.4809	35.988	.644	.857
b46	53.8726	41.856	.451	.870
b47	54.2866	36.116	.752	.847
b48	53.9299	41.893	.408	.873
b49	54.0510	41.141	.571	.864
b50	54.1274	41.939	.379	.875
b51	54.0732	39.953	.612	.860
b52	54.5828	34.314	.771	.844
b53	54.6497	34.618	.704	.852

Reliability

```
[DataSet1] D:\sufli\data play.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.709	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b54	12.1720	2.667	.510	.684
b55	11.7420	3.713	.567	.594
b56	11.6975	3.502	.551	.596

Reliability

```
[DàtaSet1] D:\sufli\data play.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.858	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b58	18.6178	6.371	.563	.873
b59	18.5701	5.358	.713	.817
b60	18.5573	5.423	.781	.787
b61	18.3854	5.541	.767	.794

Reliability

```
[DataSet1] D:\sufli\data play.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.880	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b62	29.6338	14.885	.697	.860
b63	29.7102	14.104	.720	.855
b64	29.5860	14.173	.814	.842
b65	29.7325	13.494	.695	.860
b66	29.8025	14.536	.614	.872
b67	29.7038	14.094	.633	.870

Reliability

```
[DataSet1] D:\sufli\data play.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.897	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
c1	34.7516	19.734	.605	.892
c2	34.8694	18.069	.670	.886
c3	34.6783	19.561	.679	.885
c4	34.6561	18.597	.775	.875
c5	34.8280	17.025	.745	.878
c6	34.7580	17.852	.746	.877
c7	34.7261	18.180	.716	.880

Reliability

```
[DataSet1] D:\sufli\data play.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.791	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
d1	22.5223	9.004	.377	.798
d2	22.4841	8.608	.369	.788
d3	22.6401	9.183	.297	.730
d4	23.5510	7.430	.219	.786
d5	22.9045	7.058	.223	.795

Reliability

```
[DataSet1] D:\sufli\data play.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.769	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
d6	24.2261	5.287	.369	.795
d7	24.6019	4.982	.412	.768
d8	24.5064	4.826	.442	.749
d9	24.3567	5.546	.226	.770
d10	24.6529	5.135	.231	.780

```
RELIABILITY
  /VARIABLES=d11 d12 d13 d14 d15 d16 d17 d18 d19 d20 d21
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```


Reliability

```
[DataSet1] D:\sufli\data play.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.740	11

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
d11	59.4936	24.698	.186	.752
d12	59.3917	24.463	.143	.768
d13	59.0000	24.224	.410	.720
d14	59.1146	22.626	.557	.700
d15	59.1783	21.540	.662	.683
d16	59.1146	21.865	.624	.689
d17	59.2484	23.714	.454	.714
d18	59.2389	22.010	.662	.687
d19	59.3917	21.338	.585	.691
d20	59.5287	25.515	.120	.759
d21	59.3376	26.218	.116	.751

```
RELIABILITY
  /VARIABLES=e1 e2 e3 e4 e5 e6 e7 e8
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```


Reliability

```
[DataSet1] D:\sufli\data play.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	314	100.0
	Excluded[a]	0	.0
	Total	314	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.796	8

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
e1	40.7771	13.394	.044	.746
e2	41.3662	11.760	.165	.775
e3	40.3662	13.134	.304	.709
e4	40.6943	13.031	.254	.724
e5	40.8854	12.153	.271	.707
e6	40.6911	14.521	.169	.768
e7	40.4841	14.238	.205	.755
e8	40.1242	15.470	.013	.717

APPENDIX H:

CORRELATION ANALYSIS

Correlations

[DataSet0] D:\sufli\data play.sav

Correlations

		performance	traits	opportunity	relationship	operational
performance	Pearson Correlation	1	.682	.353	.656	.539
	Sig. (2-tailed)		.000	.000	.000	.000
	N	314	314	314	314	314
traits	Pearson Correlation	.682**	1	.689**	.865**	.718**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	314	314	314	314	314
opportunity	Pearson Correlation	.353**	.689**	1	.404**	.147**
	Sig. (2-tailed)	.000	.000		.000	.009
	N	314	314	314	314	314
relationship	Pearson Correlation	.656**	.865**	.404**	1	.534**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	314	314	314	314	314
operational	Pearson Correlation	.539**	.718**	.147**	.534**	1
	Sig. (2-tailed)	.000	.000	.009	.000	
	N	314	314	314	314	314

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

Correlations

[DataSet0] D:\sufli\data play.sav

Correlations

		performance	skills	strategic	commitment	learning
performance	Pearson Correlation	1	.629**	.642**	.500**	.602**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	314	314	314	314	314
skills	Pearson Correlation	.629**	1	.909**	.849**	.844**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	314	314	314	314	314
strategic	Pearson Correlation	.642**	.909**	1	.795**	.793**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	314	314	314	314	314
commitment	Pearson Correlation	.500**	.849**	.795**	1	.678**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	314	314	314	314	314
learning	Pearson Correlation	.602**	.844**	.793**	.678**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	314	314	314	314	314
personal	Pearson Correlation	.486**	.907**	.762**	.780**	.745**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	314	314	314	314	314
innovative	Pearson Correlation	.406**	.783**	.627**	.616**	.654**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	314	314	314	314	314
human	Pearson Correlation	.436**	.739**	.595**	.453**	.541**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	314	314	314	314	314
analytical	Pearson Correlation	.391**	.528**	.355**	.260**	.291**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	314	314	314	314	314

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

Correlations

		personal	innovative	human	analytical
performance	Pearson Correlation	.486**	.406**	.436**	.391**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	314	314	314	314
skills	Pearson Correlation	.907**	.783**	.739**	.528**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	314	314	314	314
strategic	Pearson Correlation	.762**	.627**	.595**	.355**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	314	314	314	314
commitment	Pearson Correlation	.780**	.616**	.453**	.260**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	314	314	314	314
learning	Pearson Correlation	.745**	.654**	.541**	.291**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	314	314	314	314
personal	Pearson Correlation	1	.735**	.621**	.351**
	Sig. (2-tailed)		.000	.000	.000
	N	314	314	314	314
innovative	Pearson Correlation	.735**	1	.639**	.319**
	Sig. (2-tailed)	.000		.000	.000
	N	314	314	314	314
human	Pearson Correlation	.621**	.639**	1	.475**
	Sig. (2-tailed)	.000	.000		.000
	N	314	314	314	314
analytical	Pearson Correlation	.351**	.319**	.475**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	314	314	314	314

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

Correlations

```
[DataSet0] D:\sufli\data play.sav
```

Correlations

		performance	org_structure
performance	Pearson Correlation	1	.359**
	Sig. (2-tailed)		.000
	N	314	314
org_structure	Pearson Correlation	.359**	1
	Sig. (2-tailed)	.000	
	N	314	314

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

Correlations

```
[DataSet0] D:\sufli\data play.sav
```

Correlations

		performance	innovation	incremantal	radical	open
performance	Pearson Correlation	1	.211**	.193**	.224**	.179**
	Sig. (2-tailed)		.000	.001	.000	.001
	N	314	314	314	314	314
innovation	Pearson Correlation	.211**	1	.867**	.884**	.964**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	314	314	314	314	314
incremantal	Pearson Correlation	.193**	.867**	1	.668**	.753**
	Sig. (2-tailed)	.001	.000		.000	.000
	N	314	314	314	314	314
radical	Pearson Correlation	.224**	.884**	.668**	1	.799**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	314	314	314	314	314
open	Pearson Correlation	.179**	.964**	.753**	.799**	1
	Sig. (2-tailed)	.001	.000	.000	.000	
	N	314	314	314	314	314

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

Correlations

```
[DataSet1] D:\sufli\data play.sav
```

Correlations

		performance	opportunity	relationship	operational	strategic
performance	Pearson Correlation	1	.353	.656	.539	.642
	Sig. (2-tailed)		.000	.000	.000	.000
	N	314	314	314	314	314
opportunity	Pearson Correlation	.353**	1	.404**	.147**	-.071
	Sig. (2-tailed)	.000		.000	.009	.209
	N	314	314	314	314	314
relationship	Pearson Correlation	.656**	.404**	1	.534**	.442**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	314	314	314	314	314
operational	Pearson Correlation	.539**	.147**	.534**	1	.620**
	Sig. (2-tailed)	.000	.009	.000		.000
	N	314	314	314	314	314
strategic	Pearson Correlation	.642**	-.071	.442**	.620**	1
	Sig. (2-tailed)	.000	.209	.000	.000	
	N	314	314	314	314	314
commitment	Pearson Correlation	.500**	-.204**	.228**	.328**	.795**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	314	314	314	314	314
learning	Pearson Correlation	.602**	.008	.420**	.639**	.793**
	Sig. (2-tailed)	.000	.887	.000	.000	.000
	N	314	314	314	314	314
personal	Pearson Correlation	.486**	-.123*	.346**	.473**	.762**
	Sig. (2-tailed)	.000	.030	.000	.000	.000
	N	314	314	314	314	314
innovative	Pearson Correlation	.406**	-.140*	.278**	.474**	.627**
	Sig. (2-tailed)[c]	.000	.013	.000	.000	.000
	N	314	314	314	314	314
human	Pearson Correlation	.436**	.032	.318**	.460**	.595**
	Sig. (2-tailed)	.000	.577	.000	.000	.000
	N	314	314	314	314	314
analytical	Pearson Correlation	.391**	-.022	.186**	.282**	.355**
	Sig. (2-tailed)	.000	.696	.001	.000	.000
	N	314	314	314	314	314

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

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

Correlations

		commitment	learning	personal	innovative
performance	Pearson Correlation	.500**	.602**	.486**	.406**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	314	314	314	314
opportunity	Pearson Correlation	-.204**	.008	-.123*	-.140*
	Sig. (2-tailed)	.000	.887	.030	.013
	N	314	314	314	314
relationship	Pearson Correlation	.228**	.420**	.346**	.278**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	314	314	314	314
operational	Pearson Correlation	.328**	.639**	.473**	.474**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	314	314	314	314
strategic	Pearson Correlation	.795**	.793**	.762**	.627**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	314	314	314	314
commitment	Pearson Correlation	1	.678**	.780**	.616**
	Sig. (2-tailed)		.000	.000	.000
	N	314	314	314	314
learning	Pearson Correlation	.678**	1	.745**	.654**
	Sig. (2-tailed)	.000		.000	.000
	N	314	314	314	314
personal	Pearson Correlation	.780**	.745**	1	.735**
	Sig. (2-tailed)	.000	.000		.000
	N	314	314	314	314
innovative	Pearson Correlation	.616**	.654**	.735**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	314	314	314	314
human	Pearson Correlation	.453**	.541**	.621**	.639**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	314	314	314	314
analytical	Pearson Correlation	.260**	.291**	.351**	.319**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	314	314	314	314

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

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

Correlations

		human	analytical
performance	Pearson Correlation	.436**	.391**
	Sig. (2-tailed)	.000	.000
	N	314	314
opportunity	Pearson Correlation	.032	-.022
	Sig. (2-tailed)	.577	.696
	N	314	314
relationship	Pearson Correlation	.318**	.186**
	Sig. (2-tailed)	.000	.001
	N	314	314
operational	Pearson Correlation	.460**	.282**
	Sig. (2-tailed)	.000	.000
	N	314	314
strategic	Pearson Correlation	.595**	.355**
	Sig. (2-tailed)	.000	.000
	N	314	314
commitment	Pearson Correlation	.453**	.260**
	Sig. (2-tailed)	.000	.000
	N	314	314
learning	Pearson Correlation	.541**	.291**
	Sig. (2-tailed)	.000	.000
	N	314	314
personal	Pearson Correlation	.621**	.351**
	Sig. (2-tailed)	.000	.000
	N	314	314
innovative	Pearson Correlation	.639**	.319**
	Sig. (2-tailed)	.000	.000
	N	314	314
human	Pearson Correlation	1	.475**
	Sig. (2-tailed)		.000
	N	314	314
analytical	Pearson Correlation	.475**	1
	Sig. (2-tailed)	.000	
	N	314	314

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

Correlations

[DataSet1] D:\sufli\data play.sav

Correlations

		performance	org_structure
performance	Pearson Correlation	1	.359**
	Sig. (2-tailed)		.000
	N	314	314
org_structure	Pearson Correlation	.359**	1
	Sig. (2-tailed)	.000	
	N	314	314

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

Correlations

[DataSet1] D:\sufli\data play.sav

Correlations

		performance	incremantal	radical	open
performance	Pearson Correlation	1	.193**	.224**	.179**
	Sig. (2-tailed)		.001	.000	.001
	N	314	314	314	314
incremantal	Pearson Correlation	.193**	1	.668**	.753**
	Sig. (2-tailed)	.001		.000	.000
	N	314	314	314	314
radical	Pearson Correlation	.224**	.668**	1	.799**
	Sig. (2-tailed)	.000	.000		.000
	N	314	314	314	314
open	Pearson Correlation	.179**	.753**	.799**	1
	Sig. (2-tailed)	.001	.000	.000	
	N	314	314	314	314

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

APPENDIX I:

REGRESSION ANALYSIS

Regression

[DataSet0] D:\sufli\data play.sav

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	operational, opportunity, relationship[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: performance

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.703[a]	.494	.489	.34145

a. Predictors: (Constant), operational, opportunity, relationship

b. Dependent Variable: performance

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.291	3	11.764	100.901	.000[a]
	Residual	36.142	310	.117		
	Total	71.433	313			

a. Predictors: (Constant), operational, opportunity, relationship

b. Dependent Variable: performance

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.253	.205		11.010	.000
	opportunity	.055	.019	.127	2.872	.004
	relationship	.364	.041	.457	8.809	.000
	operational	.182	.032	.277	5.768	.000

a. Dependent Variable: performance

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	opportunity	.830	1.205
	relationship	.606	1.649
	operational	.709	1.410

a. Dependent Variable: performance

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	opportunity
1	1	3.961	1.000	.00	.00
	2	.027	12.007	.02	.86
	3	.007	23.508	.62	.05
	4	.004	29.988	.35	.09

a. Dependent Variable: performance

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		relationship	operational
1	1	.00	.00
	2	.01	.06
	3	.01	.70
	4	.99	.24

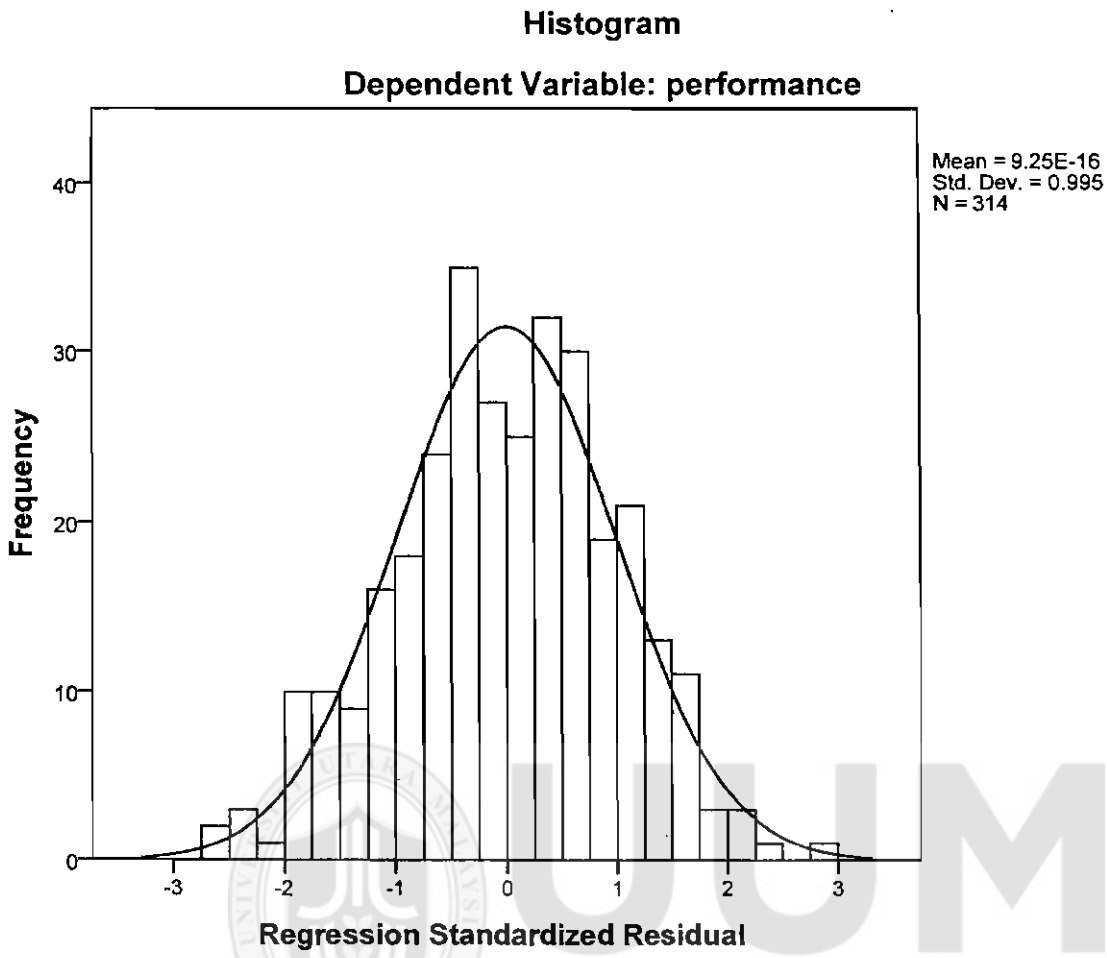
a. Dependent Variable: performance

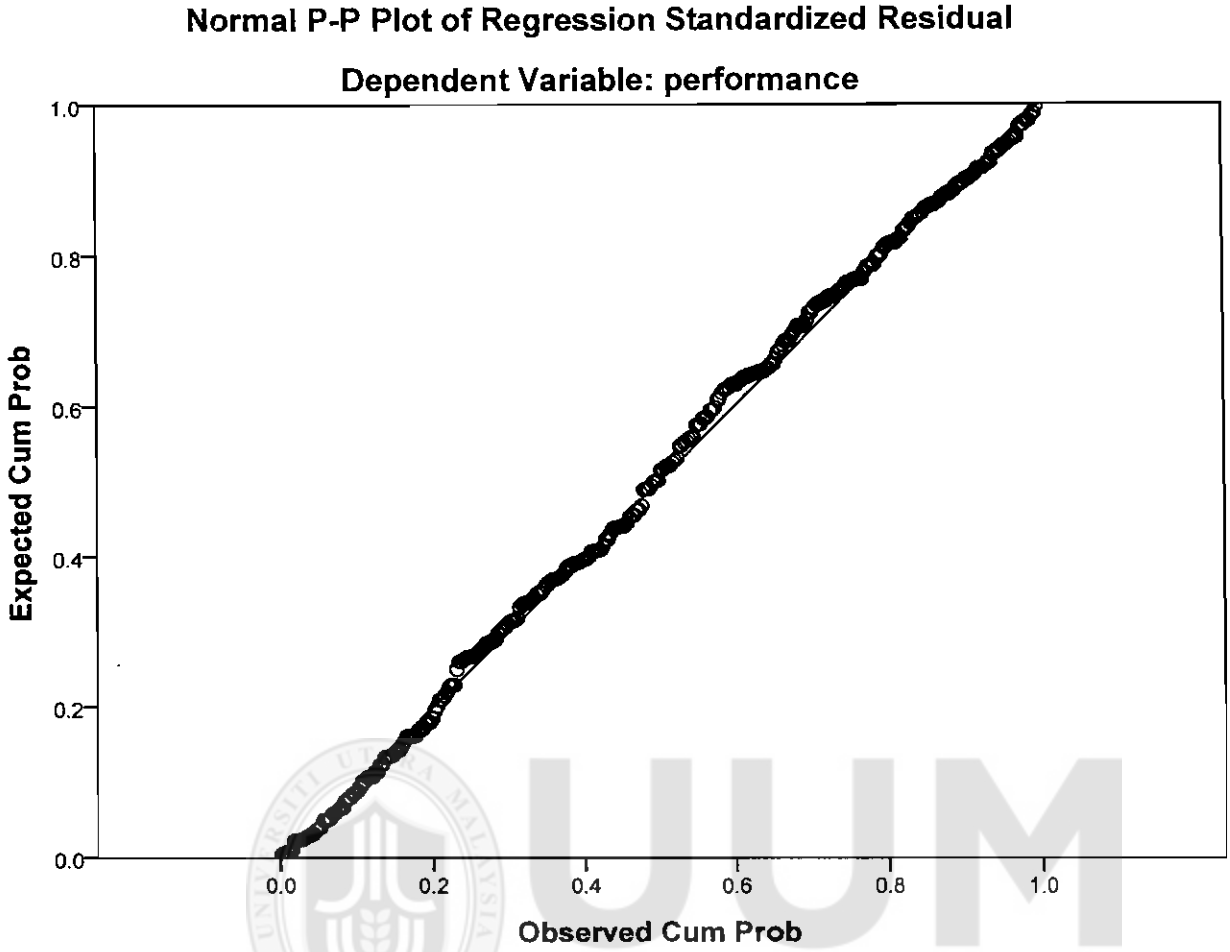
Residuals Statistics[a]

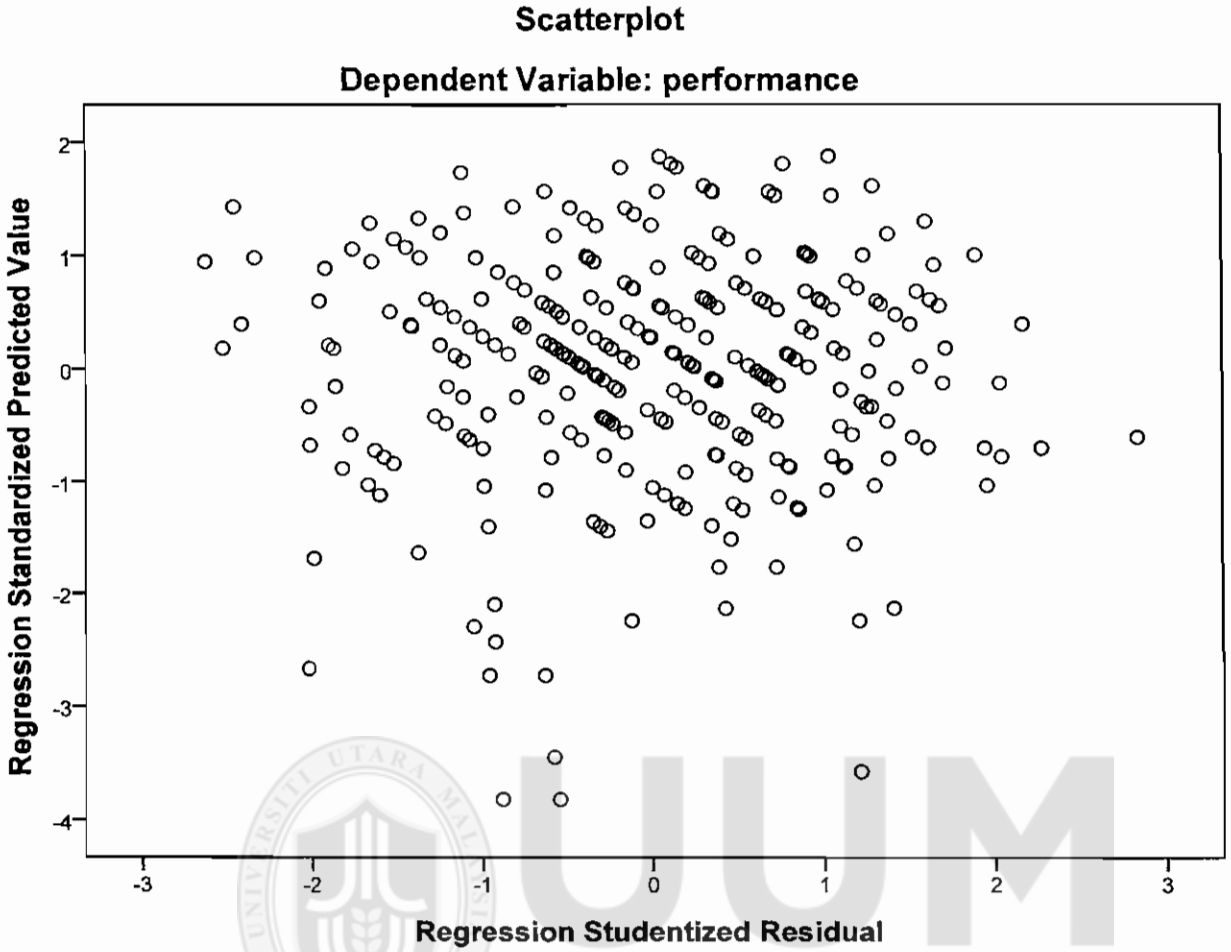
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.5152	6.4261	5.7955	.33578	314
Std. Predicted Value	-3.813	1.878	.000	1.000	314
Standard Error of Predicted Value	.020	.081	.036	.014	314
Adjusted Predicted Value	4.5262	6.4258	5.7954	.33557	314
Residual	-.89178	.96247	.00000	.33981	314
Std. Residual	-2.612	2.819	.000	.995	314
Stud. Residual	-2.621	2.836	.000	1.001	314
Deleted Residual	-.89779	.97397	.00005	.34412	314
Stud. Deleted Residual	-2.646	2.868	.000	1.004	314
Mahal. Distance	.041	16.787	2.990	3.499	314
Cook's Distance	.000	.038	.003	.005	314
Centered Leverage Value	.000	.054	.010	.011	314

a. Dependent Variable: performance

Charts







Regression

```
[DataSet0] D:\sufli\data play.sav
```

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.689[a]	.474	.462	.35034

a. Predictors: (Constant), analytical, commitment, human, learning, innovative, personal, strategic

b. Dependent Variable: performance

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.874	7	4.839	39.426	.000[a]
	Residual	37.558	306	.123		
	Total	71.433	313			

a. Predictors: (Constant), analytical, commitment, human, learning, innovative, personal, strategic

b. Dependent Variable: performance

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.737	.232		11.806	.000
	strategic	.276	.057	.422	4.807	.000
	commitment	.014	.033	.033	.414	.679
	learning	.210	.050	.315	4.242	.000
	personal	-.095	.059	-.136	-1.597	.111
	innovative	-.040	.038	-.070	-1.053	.293
	human	.024	.040	.037	.602	.548
	analytical	.134	.033	.193	4.060	.000

a. Dependent Variable: performance

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	strategic	.222	4.494
	commitment	.278	3.601
	learning	.311	3.216
	personal	.238	4.199
	innovative	.384	2.602
	human	.444	2.254
	analytical	.763	1.311

a. Dependent Variable: performance

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	strategic	commitment	learning
1	1	7.939	1.000	.00	.00	.00	.00
	2	.028	16.979	.04	.00	.23	.00
	3	.010	28.268	.03	.01	.14	.00
	4	.008	32.114	.22	.02	.07	.14
	5	.006	37.664	.22	.09	.05	.06
	6	.005	40.808	.30	.01	.11	.28
	7	.003	53.502	.08	.40	.00	.09
	8	.002	58.978	.10	.48	.40	.42

a. Dependent Variable: performance

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions			
		personal	innovative	human	analytical
1	1	.00	.00	.00	.00
	2	.00	.00	.01	.07
	3	.00	.37	.06	.22
	4	.00	.04	.08	.36
	5	.01	.31	.39	.01
	6	.01	.07	.31	.34
	7	.56	.20	.01	.00
	8	.42	.00	.14	.00

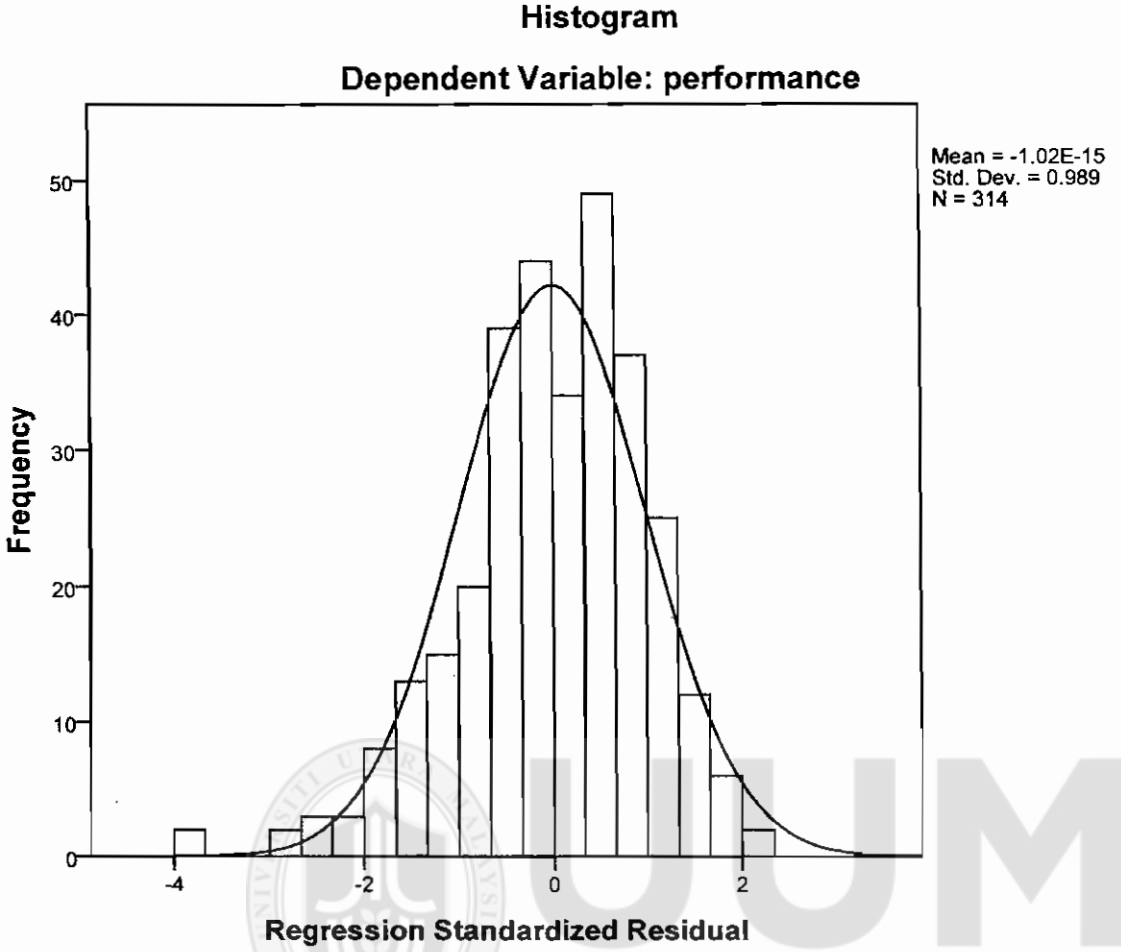
a. Dependent Variable: performance

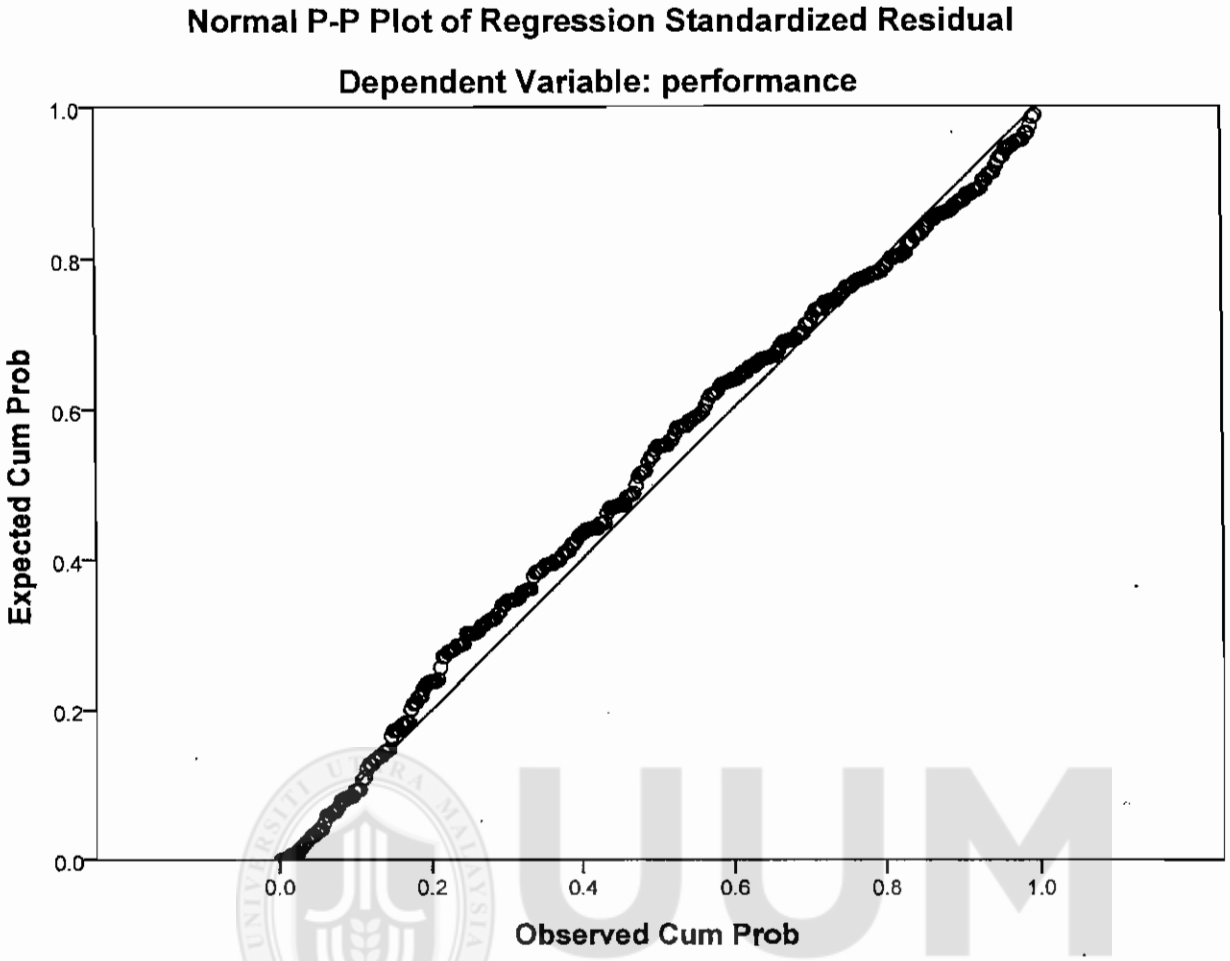
Residuals Statistics[a]

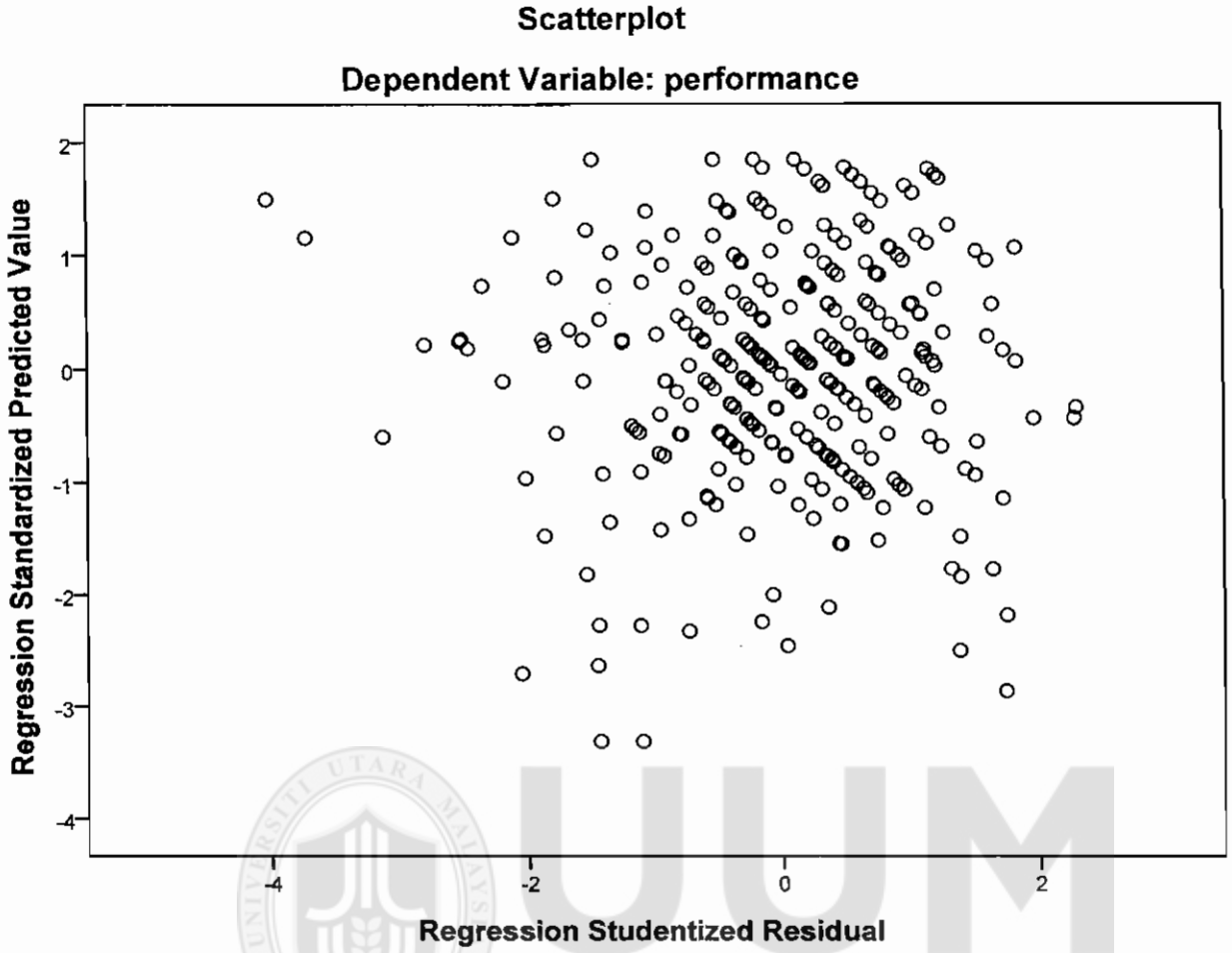
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.7046	6.4037	5.7955	.32897	314
Std. Predicted Value	-3.316	1.849	.000	1.000	314
Standard Error of Predicted Value	.024	.112	.053	.017	314
Adjusted Predicted Value	4.7385	6.4119	5.7956	.32804	314
Residual	-1.39975	.79282	.00000	.34640	314
Std. Residual	-3.995	2.263	.000	.989	314
Stud. Residual	-4.023	2.293	.000	1.003	314
Deleted Residual	-1.41889	.84752	-.00015	.35692	314
Stud. Deleted Residual	-4.127	2.309	-.001	1.009	314
Mahal. Distance	.510	30.768	6.978	5.480	314
Cook's Distance	.000	.125	.004	.010	314
Centered Leverage Value	.002	.098	.022	.018	314

a. Dependent Variable: performance

Charts







Regression

[DataSet0] D:\sufli\data play.sav

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.359[a]	.129	.126	.44663

a. Predictors: (Constant), org_structure

b. Dependent Variable: performance

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.194	1	9.194	46.091	.000[a]
	Residual	62.238	312	.199		
	Total	71.433	313			

a. Predictors: (Constant), org_structure

b. Dependent Variable: performance

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.396	.208		21.173	.000
	org_structure	.242	.036	.359	6.789	.000

a. Dependent Variable: performance

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	org_structure	1.000	1.000

a. Dependent Variable: performance

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	org_structure
1	1	1.993	1.000	.00	.00
	2	.007	16.415	1.00	1.00

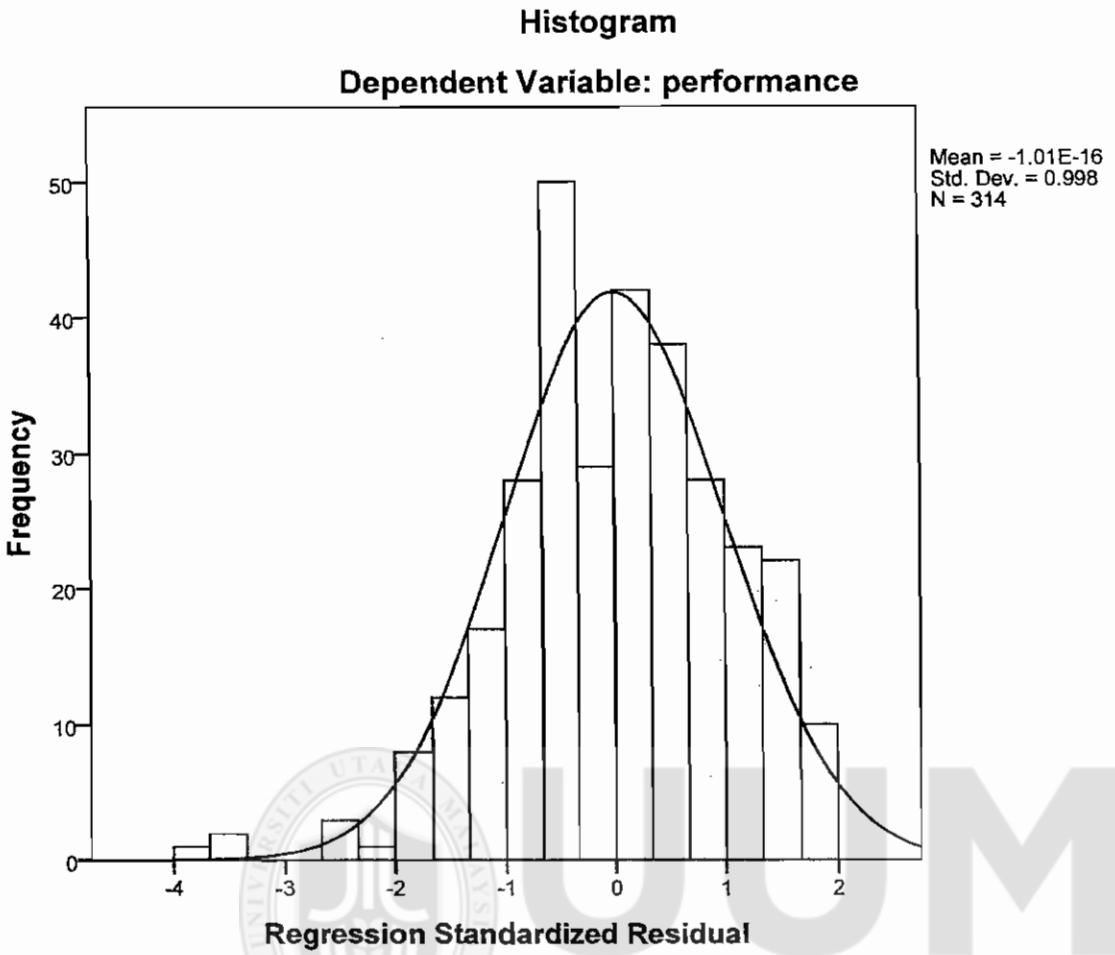
a. Dependent Variable: performance

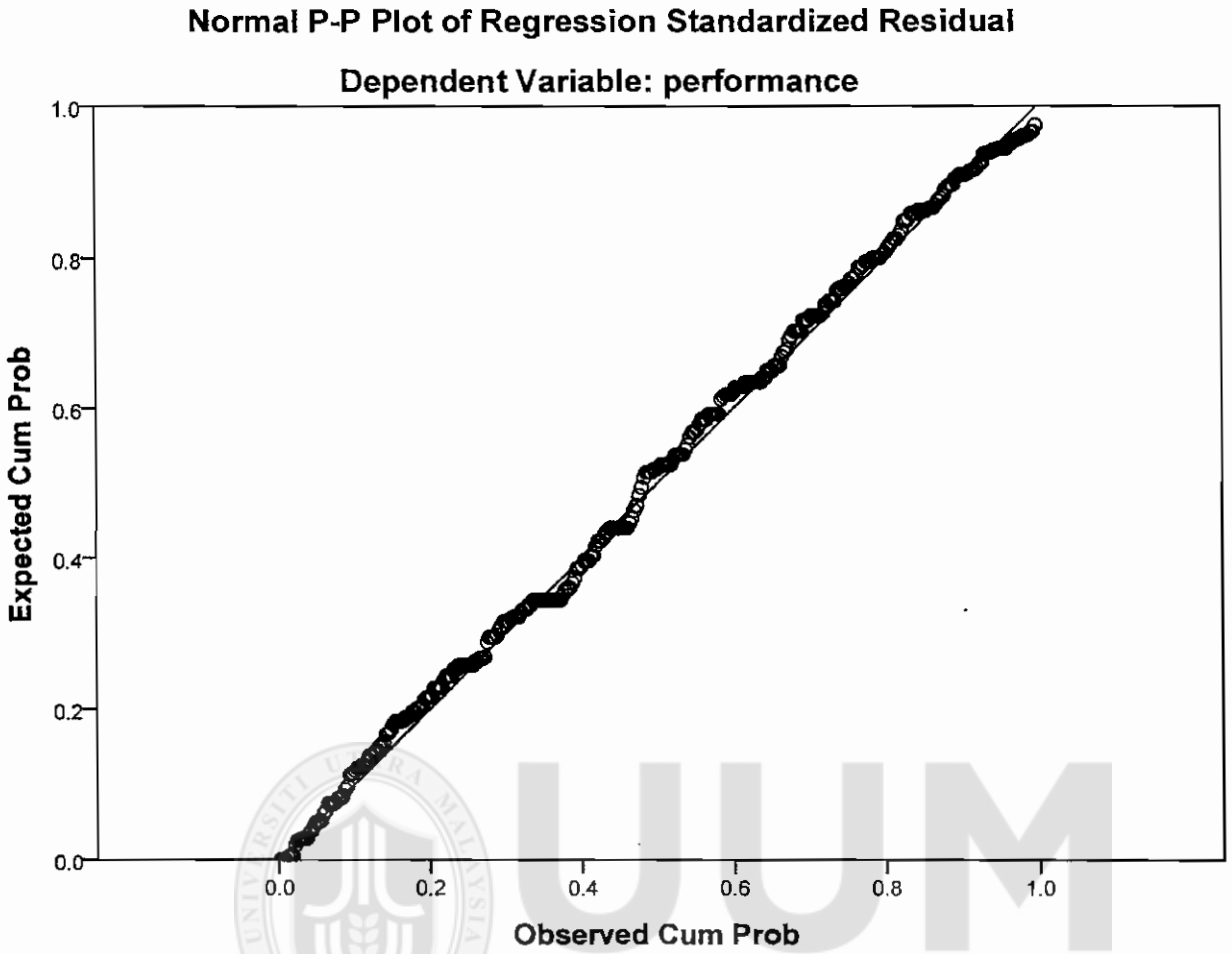
Residuals Statistics[a]

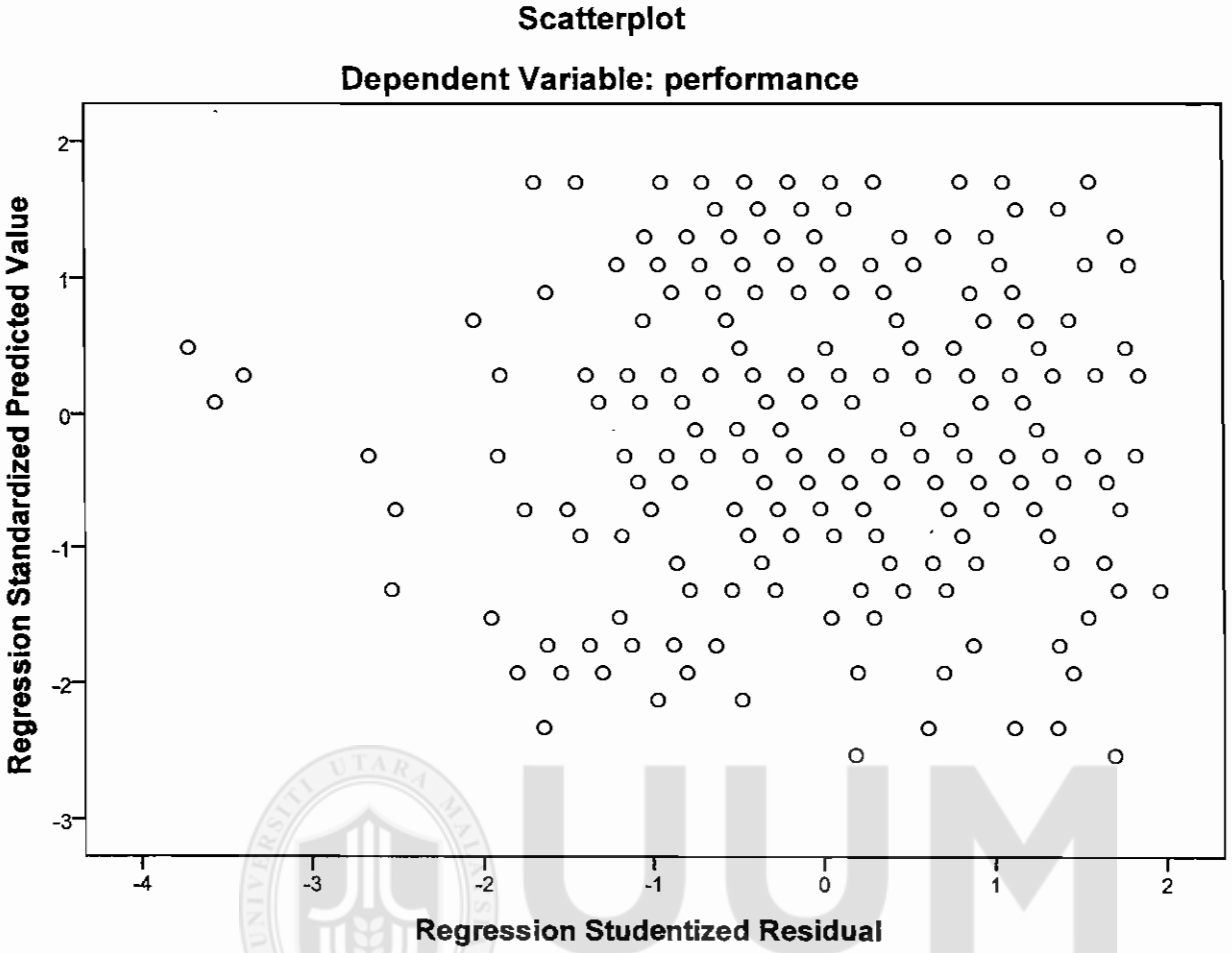
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5.3625	6.0873	5.7955	.17139	314
Std. Predicted Value	-2.526	1.703	.000	1.000	314
Standard Error of Predicted Value	.025	.069	.034	.010	314
Adjusted Predicted Value	5.3445	6.0968	5.7955	.17146	314
Residual	-1.65799	.87483	.00000	.44592	314
Std. Residual	-3.712	1.959	.000	.998	314
Stud. Residual	-3.720	1.967	.000	1.002	314
Deleted Residual	-1.66459	.88254	-.00004	.44883	314
Stud. Deleted Residual	-3.799	1.976	-.001	1.006	314
Mahal. Distance	.008	6.380	.997	1.232	314
Cook's Distance	.000	.035	.003	.005	314
Centered Leverage Value	.000	.020	.003	.004	314

a. Dependent Variable: performance

Charts







Regression

[DataSet0] D:\sufli\data play.sav

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.234[a]	.055	.046	.46671

a. Predictors: (Constant), open, incremantal, radical

b. Dependent Variable: performance

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.910	3	1.303	5.984	.001[a]
	Residual	67.522	310	.218		
	Total	71.433	313			

a. Predictors: (Constant), open, incremantal, radical

b. Dependent Variable: performance

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.737	.276		17.183	.000
	incremantal	.070	.058	.102	1.200	.231
	radical	.154	.070	.206	2.212	.028
	open	-.049	.084	-.062	-.591	.555

a. Dependent Variable: performance

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	incremantal	.421	2.373
	radical	.352	2.842
	open	.275	3.634

a. Dependent Variable: performance

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	incremantal	radical	open
1	1	3.987	1.000	.00	.00	.00	.00
	2	.007	23.666	.92	.15	.02	.02
	3	.004	31.474	.06	.68	.42	.03
	4	.002	45.997	.01	.17	.56	.95

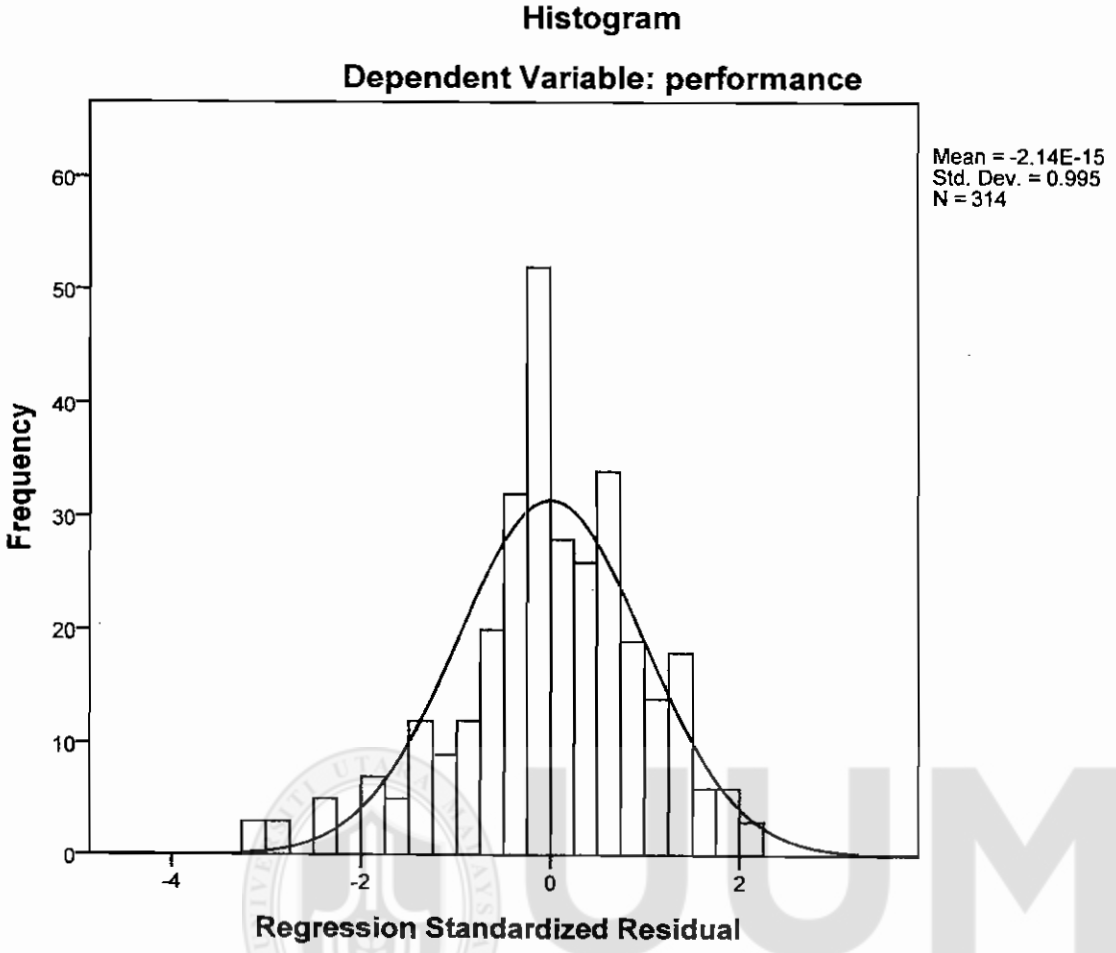
a. Dependent Variable: performance

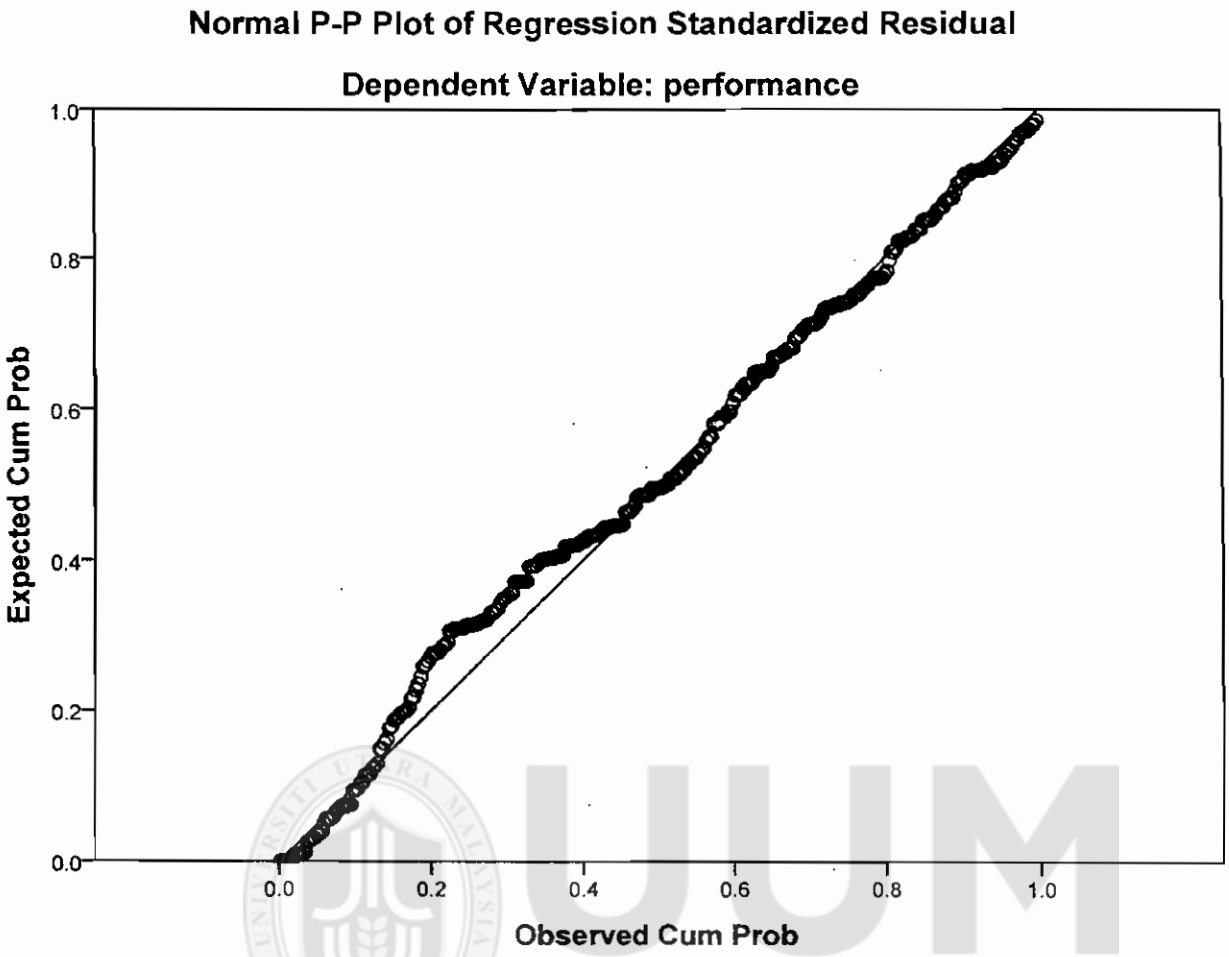
Residuals Statistics[a]

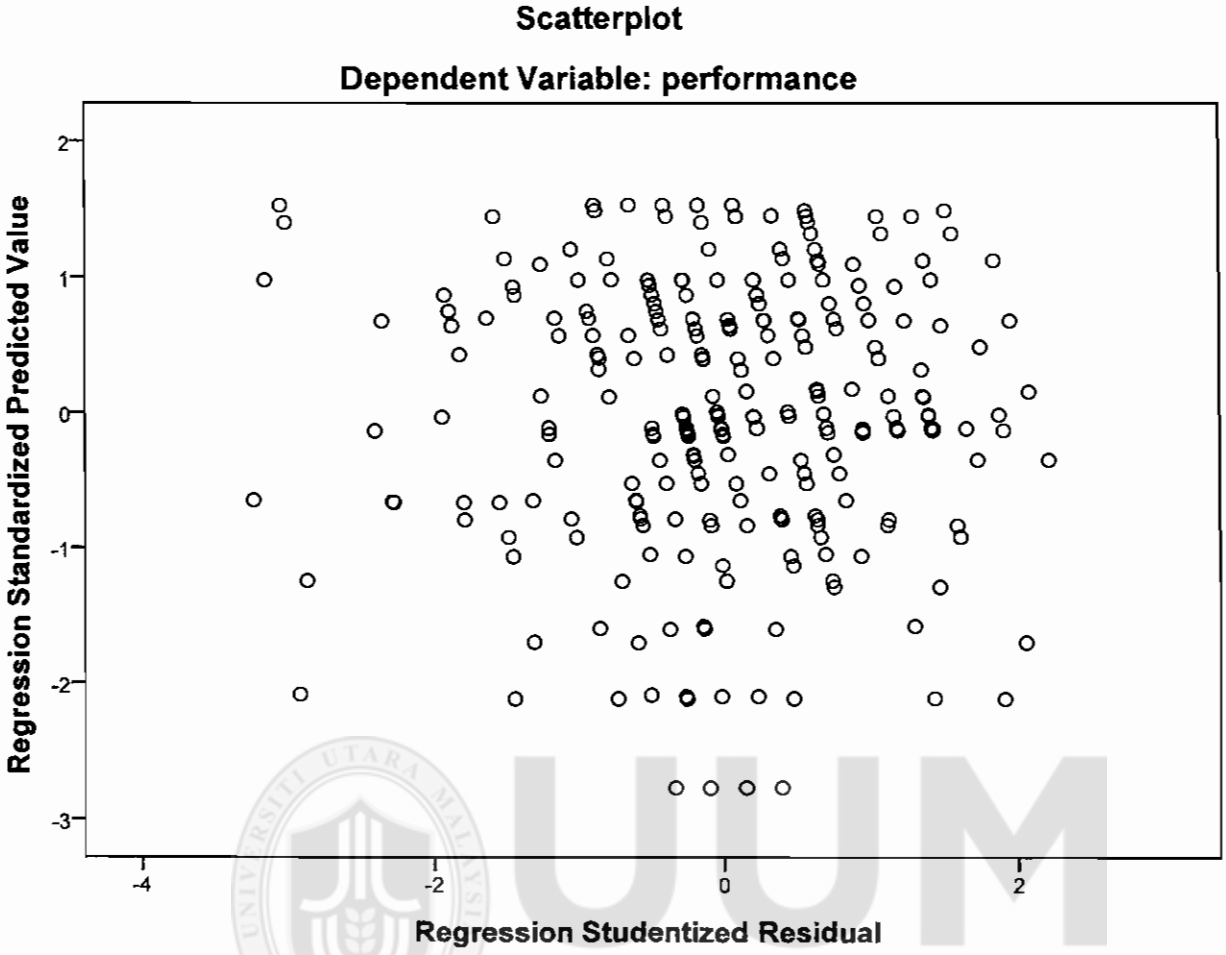
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5.4865	5.9663	5.7955	.11177	314
Std. Predicted Value	-2.764	1.528	.000	1.000	314
Standard Error of Predicted Value	.027	.112	.050	.016	314
Adjusted Predicted Value	5.4804	5.9818	5.7954	.11185	314
Residual	-1.50090	1.02133	.00000	.46446	314
Std. Residual	-3.216	2.188	.000	.995	314
Stud. Residual	-3.231	2.214	.000	1.001	314
Deleted Residual	-1.51478	1.04580	.00004	.47035	314
Stud. Deleted Residual	-3.281	2.229	-.001	1.006	314
Mahal. Distance	.024	16.981	2.990	2.858	314
Cook's Distance	.000	.057	.003	.006	314
Centered Leverage Value	.000	.054	.010	.009	314

a. Dependent Variable: performance

Charts







Regression

[DataSet1] D:\sufli\data play.sav

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.829[a]	.688	.685	.56163611

a. Predictors: (Constant), Zscore(org_structure), Zscore (traits), Zscore(skills)

b. Dependent Variable: Zscore(performance)

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	215.215	3	71.738	227.427	.000[a]
	Residual	97.785	310	.315		
	Total	313.000	313			

a. Predictors: (Constant), Zscore(org_structure), Zscore(traits), Zscore(skills)

b. Dependent Variable: Zscore(performance)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.185E-15	.032		.000	1.000
	Zscore(traits)	.504	.034	.504	14.667	.000
	Zscore(skills)	.402	.035	.402	11.652	.000
	Zscore(org_structure)	.254	.032	.254	7.906	.000

a. Dependent Variable: Zscore(performance)

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Zscore(traits)	.854	1.172
	Zscore(skills)	.845	1.183
	Zscore(org_structure)	.978	1.022

a. Dependent Variable: Zscore(performance)

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Zscore(traits)
1	1	1.443	1.000	.00	.25
	2	1.000	1.201	1.00	.00
	3	.939	1.240	.00	.09
	4	.618	1.528	.00	.66

a. Dependent Variable: Zscore(performance)

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zscore(skills)	Zscore(org_ structure)
1	1	.26	.08
	2	.00	.00
	3	.03	.90
	4	.70	.01

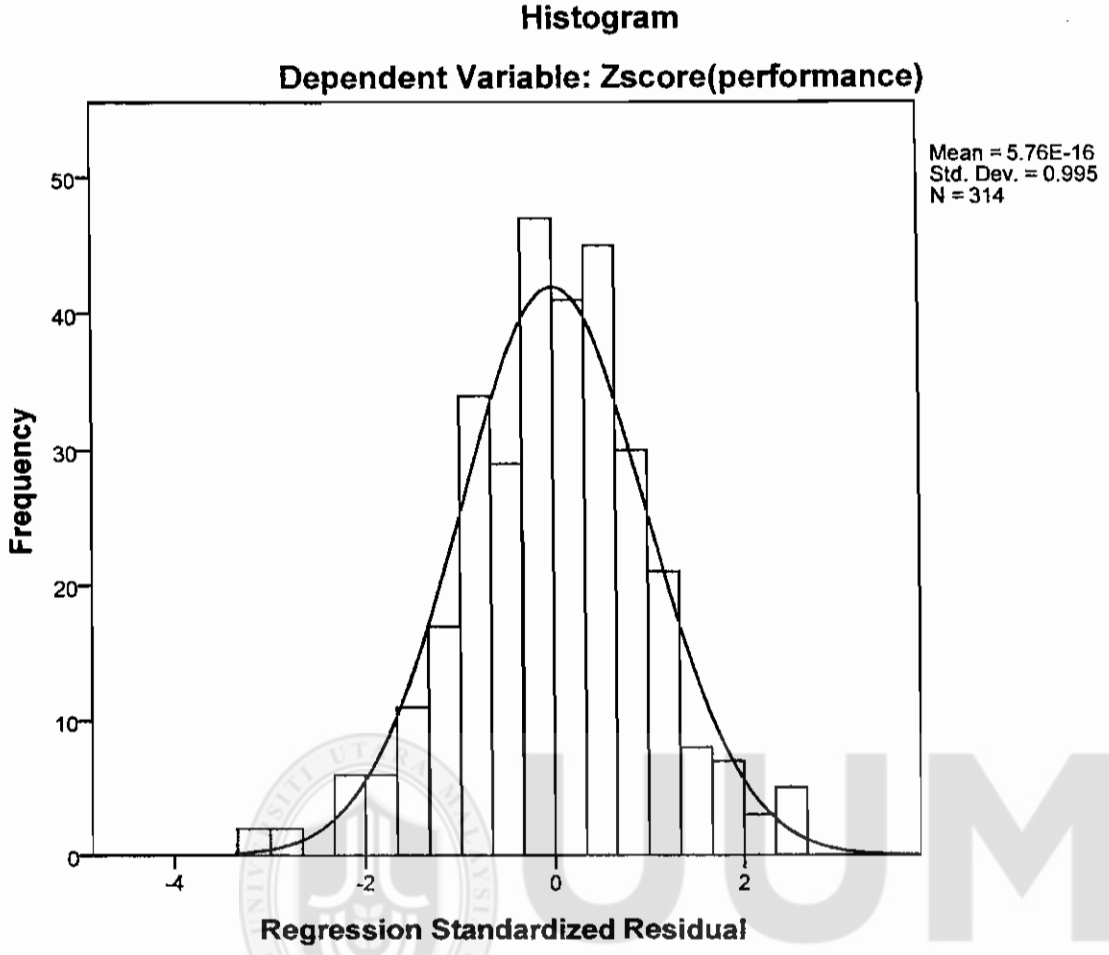
a. Dependent Variable: Zscore(performance)

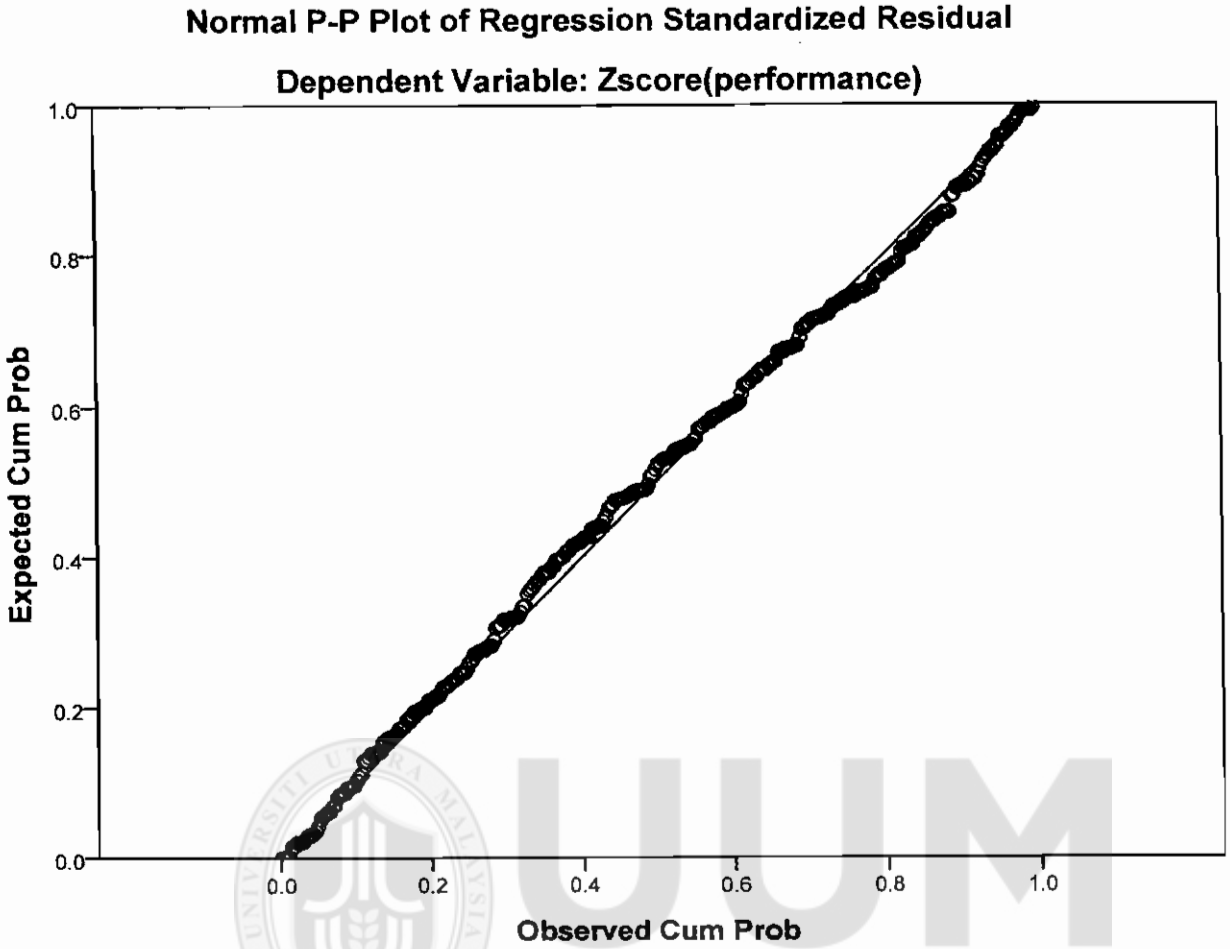
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-3.0769908	1.9356675	.0000000	.82920939	314
Residual	-1.75820017	1.48446858	.00000000	.55893808	314
Std. Predicted Value	-3.711	2.334	.000	1.000	314
Std. Residual	-3.130	2.643	.000	.995	314

a. Dependent Variable: Zscore(performance)

Charts





Regression

[DataSet1] D:\sufli\data play.sav

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.834[a]	.695	.691	.55589128

a. Predictors: (Constant), Zscore(innovation), Zscore (org_structure), Zscore(skills), Zscore(traits)

b. Dependent Variable: Zscore(performance)

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	217.514	4	54.379	175.974	.000[a]
	Residual	95.486	309	.309		
	Total	313.000	313			

a. Predictors: (Constant), Zscore(innovation), Zscore(org_structure), Zscore(skills), Zscore(traits)

b. Dependent Variable: Zscore(performance)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.097E-15	.031		.000	1.000
	Zscore(traits)	.475	.036	.475	13.340	.000
	Zscore(skills)	.386	.035	.386	11.148	.000
	Zscore(org_structure)	.239	.032	.239	7.427	.000
	Zscore(innovation)	.096	.035	.096	2.728	.007

a. Dependent Variable: Zscore(performance)

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Zscore(traits)	.778	1.285
	Zscore(skills)	.822	1.217
	Zscore(org_structure)	.952	1.051
	Zscore(innovation)	.804	1.243

a. Dependent Variable: Zscore(performance)

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Zscore(traits)	Zscore(skills)
1	1	1.790	1.000	.00	.14	.13
	2	1.000	1.338	1.00	.00	.00
	3	.940	1.380	.00	.09	.04
	4	.691	1.610	.00	.01	.61
	5	.579	1.758	.00	.76	.21

a. Dependent Variable: Zscore(performance)

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zscore(org_ structure)	Zscore (innovation)
1	1	.05	.14
	2	.00	.00
	3	.86	.00
	4	.03	.52
	5	.06	.34

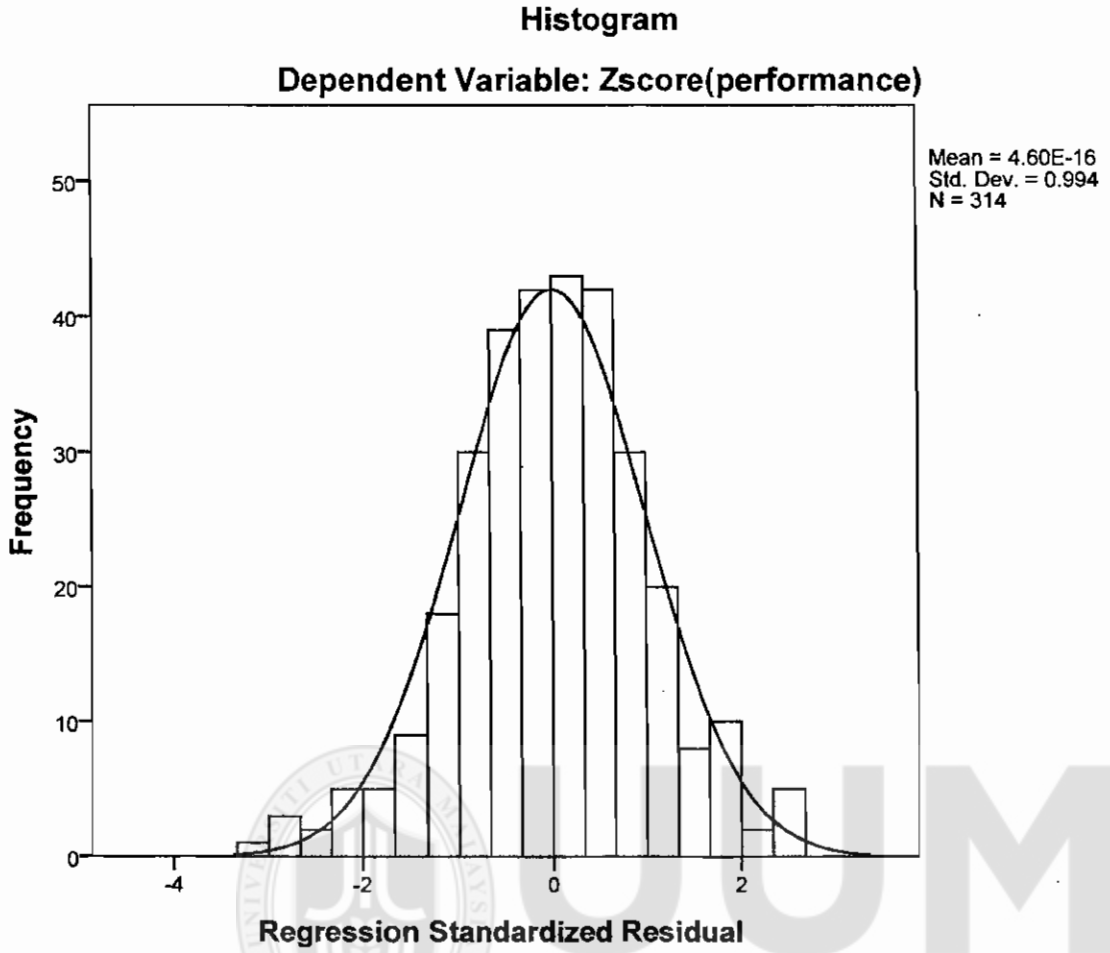
a. Dependent Variable: Zscore(performance)

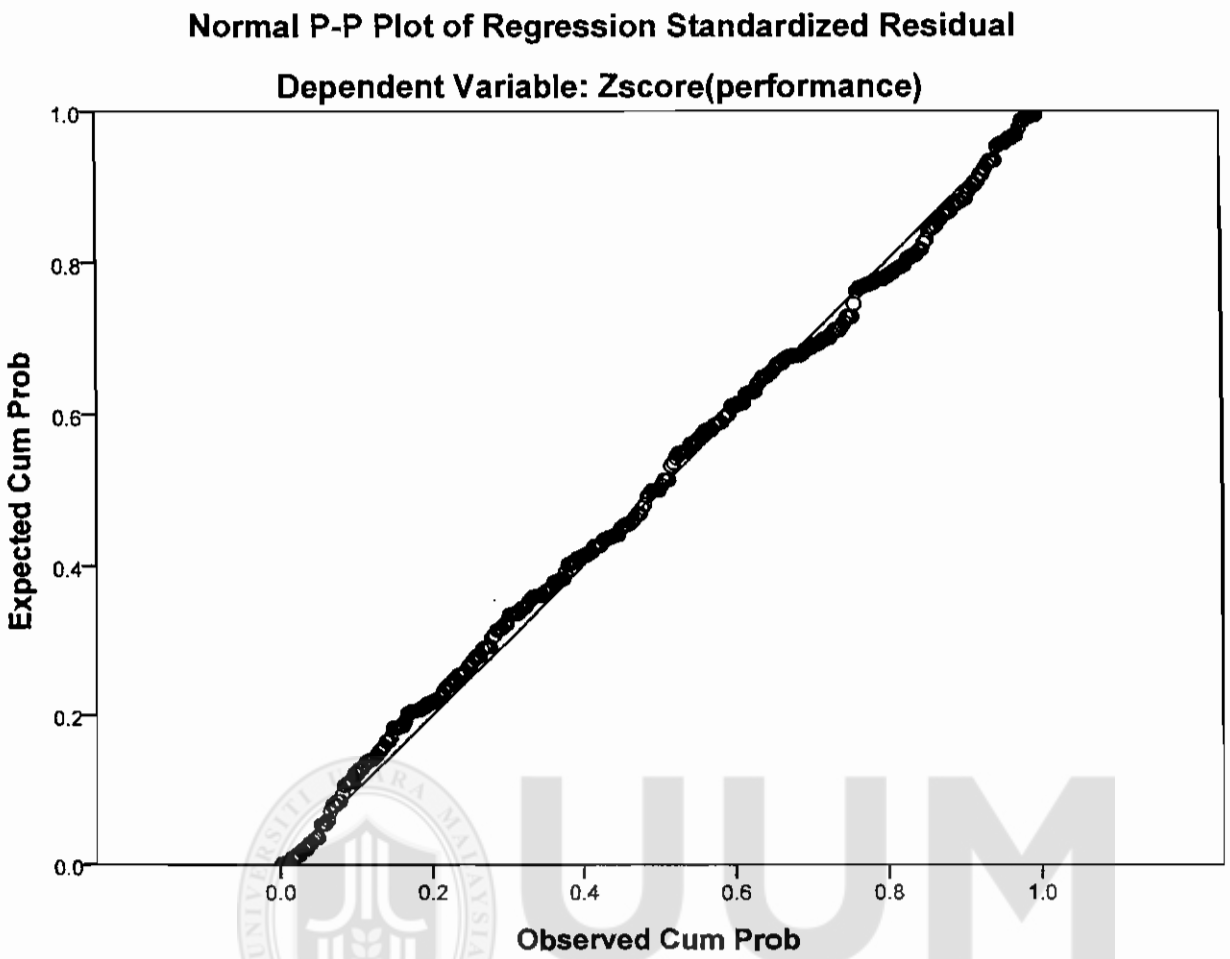
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-3.0183382	1.9683374	.0000000	.83362699	314
Residual	-1.84523106	1.42716432	.00000000	.55232784	314
Std. Predicted Value	-3.621	2.361	.000	1.000	314
Std. Residual	-3.319	2.567	.000	.994	314

a. Dependent Variable: Zscore(performance)

Charts





Regression

[DataSet1] D:\sufli\data play.sav

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Zscore (analytical), Zscore (opportunity), Zscore (learning), Zscore (relationship), Zscore (human), Zscore (operational), Zscore (commitment), Zscore (innovative), Zscore (personal), Zscore (strategic)[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Zscore(performance)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.831[a]	.691	.681	.56522562

a. Predictors: (Constant), Zscore(analytical), Zscore (opportunity), Zscore(learning), Zscore(relationship), Zscore (human), Zscore(operational), Zscore(commitment), Zscore (innovative), Zscore(personal), Zscore(strategic)

b. Dependent Variable: Zscore(performance)

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	216.198	10	21.620	67.672	.000[a]
	Residual	96.802	303	.319		
	Total	313.000	313			

a. Predictors: (Constant), Zscore(analytical), Zscore(opportunity), Zscore(learning), Zscore(relationship), Zscore(human), Zscore(operational), Zscore(commitment), Zscore (innovative), Zscore(personal), Zscore(strategic)

b. Dependent Variable: Zscore(performance)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.607E-15	.032		.000	1.000
	Zscore(opportunity)	.269	.038	.269	7.077	.000
	Zscore(relationship)	.334	.043	.334	7.777	.000
	Zscore(operational)	.023	.050	.023	.460	.646
	Zscore(strategic)	.227	.075	.227	3.019	.003
	Zscore(commitment)	.271	.066	.271	4.078	.000
	Zscore(learning)	.160	.061	.160	2.621	.009
	Zscore(personal)	-.167	.066	-.167	-2.530	.012
	Zscore(innovative)	.002	.053	.002	.030	.976
	Zscore(human)	-.026	.048	-.026	-.534	.594
	Zscore(analytical)	.201	.037	.201	5.478	.000

a. Dependent Variable: Zscore(performance)

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Zscore(opportunity)	.706	1.417
	Zscore(relationship)	.552	1.812
	Zscore(operational)	.416	2.402
	Zscore(strategic)	.180	5.550
	Zscore(commitment)	.232	4.318
	Zscore(learning)	.275	3.638
	Zscore(personal)	.235	4.251
	Zscore(innovative)	.369	2.713
	Zscore(human)	.435	2.301
	Zscore(analytical)	.760	1.316

a. Dependent Variable: Zscore(performance)

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Zscore (opportunity)	Zscore (relationship)
1	1	5.186	1.000	.00	.00	.01
	2	1.521	1.847	.00	.23	.11
	3	1.000	2.277	1.00	.00	.00
	4	.923	2.370	.00	.00	.01
	5	.582	2.984	.00	.37	.01
	6	.534	3.116	.00	.00	.05
	7	.412	3.549	.00	.28	.74
	8	.319	4.032	.00	.04	.00
	9	.217	4.889	.00	.07	.03
	10	.192	5.202	.00	.00	.01
	11	.114	6.758	.00	.02	.03

a. Dependent Variable: Zscore(performance)

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions				
		Zscore (operational)	Zscore (strategic)	Zscore (commitment)	Zscore (learning)	Zscore (personal)
1	1	.01	.01	.01	.01	.01
	2	.03	.00	.01	.00	.00
	3	.00	.00	.00	.00	.00
	4	.00	.00	.01	.01	.00
	5	.31	.00	.03	.00	.02
	6	.05	.02	.08	.00	.00
	7	.09	.01	.00	.08	.00
	8	.00	.07	.00	.02	.01
	9	.22	.04	.16	.73	.02
	10	.13	.08	.01	.10	.82
	11	.16	.78	.69	.06	.10

a. Dependent Variable: Zscore(performance)

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions		
		Zscore (innovative)	Zscore (human)	Zscore (analytical)
1	1	.01	.01	.01
	2	.01	.00	.00
	3	.00	.00	.00
	4	.00	.07	.58
	5	.02	.05	.02
	6	.16	.19	.25
	7	.03	.01	.01
	8	.44	.53	.13
	9	.10	.02	.00
	10	.19	.00	.00
	11	.04	.12	.00

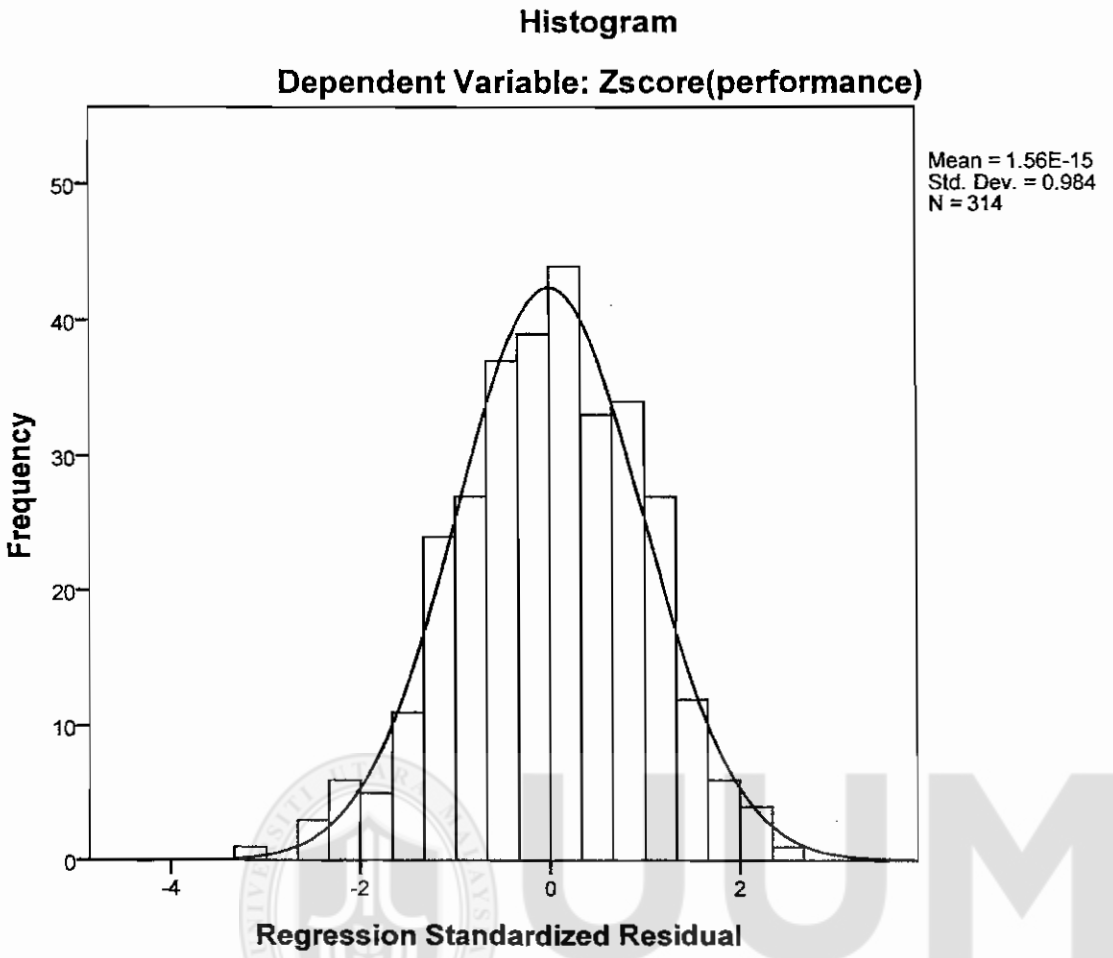
a. Dependent Variable: Zscore(performance)

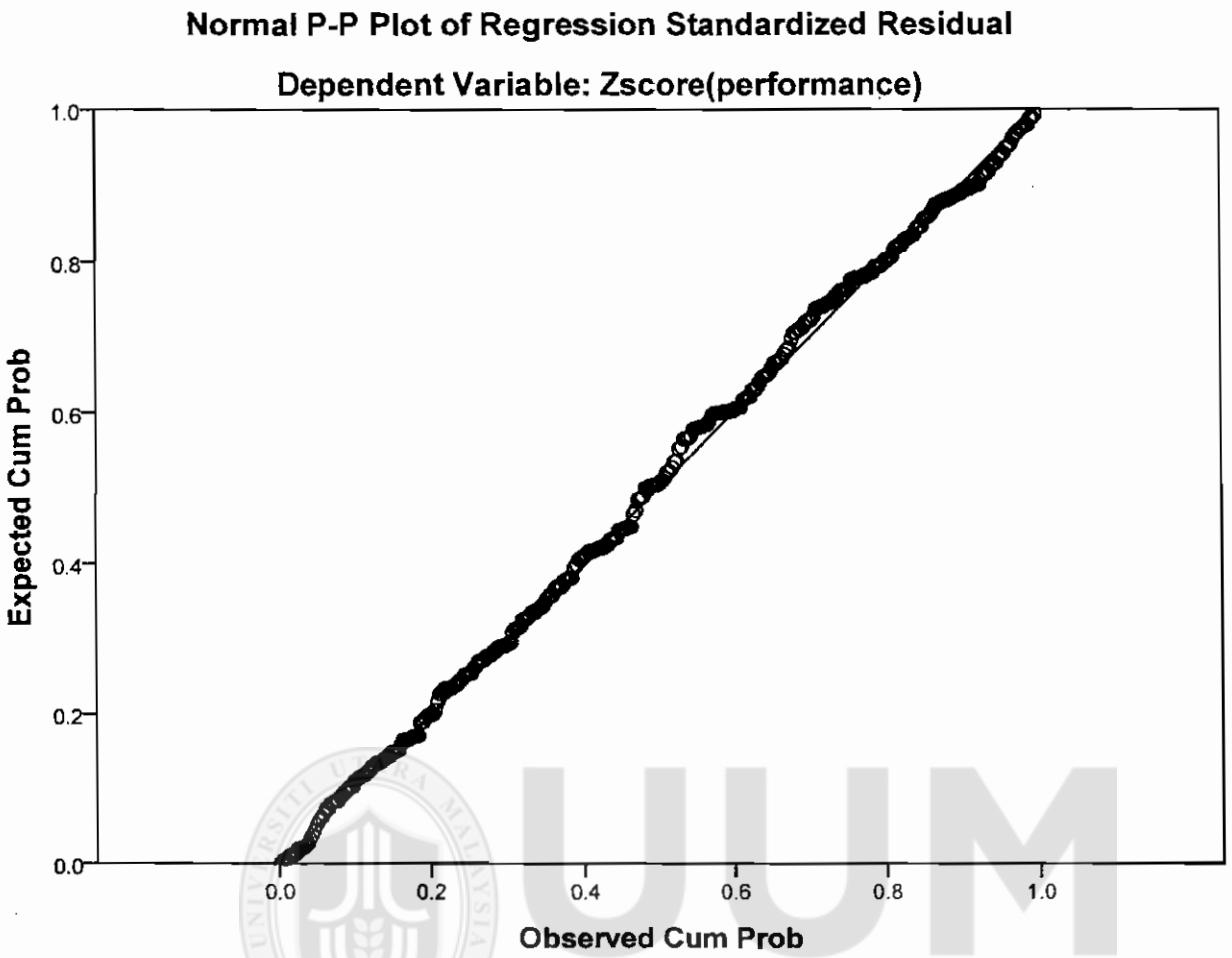
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-3.0664229	1.7342201	.0000000	.83109989	314
Residual	-1.74764025	1.38584721	.00000000	.55612316	314
Std. Predicted Value	-3.690	2.087	.000	1.000	314
Std. Residual	-3.092	2.452	.000	.984	314

a. Dependent Variable: Zscore(performance)

Charts





Regression

[DataSet1] D:\sufli\data play.sav

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.234[a]	.055	.046	.97693755

a. Predictors: (Constant), Zscore(open), Zscore(incremantal), Zscore(radical)

b. Dependent Variable: Zscore(performance)

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.134	3	5.711	5.984	.001[a]
	Residual	295.866	310	.954		
	Total	313.000	313			

a. Predictors: (Constant), Zscore(open), Zscore(incremantal), Zscore(radical)

b. Dependent Variable: Zscore(performance)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.781E-15	.055		.000	1.000
	Zscore(incremantal)	.102	.085	.102	1.200	.231
	Zscore(radical)	.206	.093	.206	2.212	.028
	Zscore(open)	-.062	.105	-.062	-.591	.555

a. Dependent Variable: Zscore(performance)

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Zscore(incremantal)	.421	2.373
	Zscore(radical)	.352	2.842
	Zscore(open)	.275	3.634

a. Dependent Variable: Zscore(performance)

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Zscore (incremantal)
1	1	2.481	1.000	.00	.05
	2	1.000	1.575	1.00	.00
	3	.337	2.714	.00	.75
	4	.183	3.686	.00	.20

a. Dependent Variable: Zscore(performance)

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zscore (radical)	Zscore(open)
1	1	.05	.04
	2	.00	.00
	3	.40	.01
	4	.55	.95

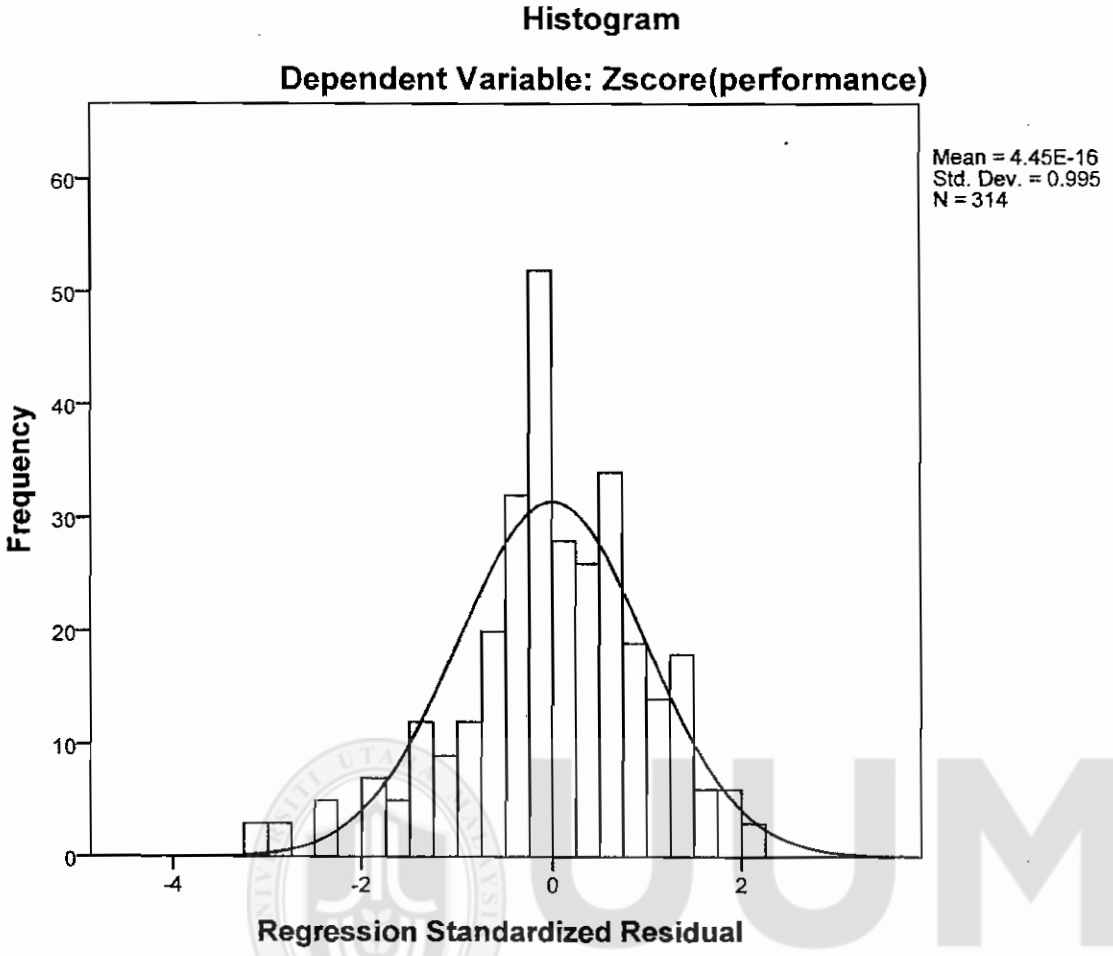
a. Dependent Variable: Zscore(performance)

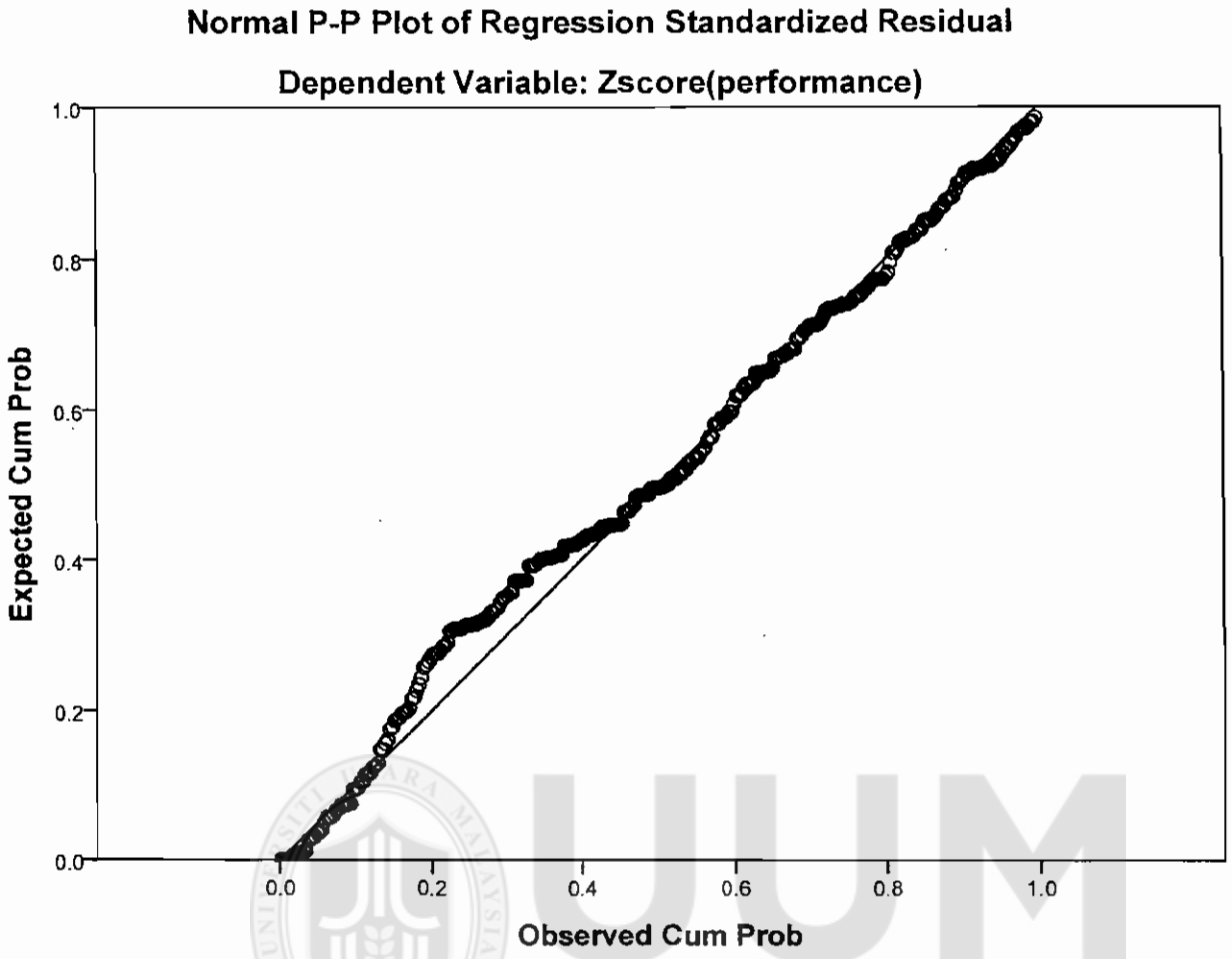
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-.6466612	.3574891	.0000000	.23396730	314
Residual	-3.14178944	2.13791060	.00000000	.97224447	314
Std. Predicted Value	-2.764	1.528	.000	1.000	314
Std. Residual	-3.216	2.188	.000	.995	314

a. Dependent Variable: Zscore(performance)

Charts





APPENDIX J:

HIERARCHICAL REGRESSION ANALYSIS

Regression

[DataSet1] D:\sufli\data play.sav

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Zscore(org_ structure), Zscore(traits), Zscore(skills)[a]	.	Enter
2	Zscore (innovation)[a]	.	Enter
3	structure_X_ innovation, skills_X_ innovation, traits_X_ innovation[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Zscore(performance)

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.829[a]	.688	.685	.56163611	.688	227.427	3
2	.834[b]	.695	.691	.55589128	.007	7.440	1
3	.837[c]	.701	.694	.55310724	.006	2.040	3

a. Predictors: (Constant), Zscore(org_structure), Zscore(traits), Zscore(skills)

b. Predictors: (Constant), Zscore(org_structure), Zscore(traits), Zscore(skills), Zscore(innovation)

c. Predictors: (Constant), Zscore(org_structure), Zscore(traits), Zscore(skills), Zscore(innovation), structure_X_innovation, skills_X_innovation, traits_X_innovation

d. Dependent Variable: Zscore(performance)

Model Summary[d]

Model	Change Statistics	
	df2	Sig. F Change
1	310	.000
2	309	.007
3	306	.108

d. Dependent Variable: Zscore(performance)

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	215.215	3	71.738	227.427	.000[a]
	Residual	97.785	310	.315		
	Total	313.000	313			
2	Regression	217.514	4	54.379	175.974	.000[b]
	Residual	95.486	309	.309		
	Total	313.000	313			
3	Regression	219.386	7	31.341	102.445	.000[c]
	Residual	93.614	306	.306		
	Total	313.000	313			

a. Predictors: (Constant), Zscore(org_structure), Zscore(traits), Zscore(skills)

b. Predictors: (Constant), Zscore(org_structure), Zscore(traits), Zscore(skills), Zscore (innovation)

c. Predictors: (Constant), Zscore(org_structure), Zscore(traits), Zscore(skills), Zscore (innovation), structure_X_innovation, skills_X_innovation, traits_X_innovation

d. Dependent Variable: Zscore(performance)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.185E-15	.032		.000	1.000
	Zscore(traits)	.504	.034	.504	14.667	.000
	Zscore(skills)	.402	.035	.402	11.652	.000
	Zscore(org_structure)	.254	.032	.254	7.906	.000
2	(Constant)	1.097E-15	.031		.000	1.000
	Zscore(traits)	.475	.036	.475	13.340	.000
	Zscore(skills)	.386	.035	.386	11.148	.000
	Zscore(org_structure)	.239	.032	.239	7.427	.000
	Zscore(innovation)	.096	.035	.096	2.728	.007
3	(Constant)	.025	.034		.727	.468
	Zscore(traits)	.460	.037	.460	12.343	.000
	Zscore(skills)	.390	.035	.390	11.187	.000
	Zscore(org_structure)	.242	.032	.242	7.514	.000
	Zscore(innovation)	.089	.035	.089	2.549	.011
	traits_X_innovation	-.050	.029	-.063	-1.741	.083
	skills_X_innovation	.023	.033	.024	.691	.490
	structure_X_innovation	-.061	.034	-.057	-1.792	.074

a. Dependent Variable: Zscore(performance)

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Zscore(traits)	.854	1.172
	Zscore(skills)	.845	1.183
	Zscore(org_structure)	.978	1.022
2	(Constant)		
	Zscore(traits)	.778	1.285
	Zscore(skills)	.822	1.217
	Zscore(org_structure)	.952	1.051
	Zscore(innovation)	.804	1.243
3	(Constant)		
	Zscore(traits)	.704	1.420
	Zscore(skills)	.805	1.242
	Zscore(org_structure)	.945	1.058
	Zscore(innovation)	.796	1.257
	traits_X_innovation	.748	1.336
	skills_X_innovation	.802	1.247
	structure_X_innovation	.963	1.038

a. Dependent Variable: Zscore(performance)

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation
1	Zscore(innovation)	.096[a]	2.728	.007	.153
	traits_X_innovation	-.062[a]	-1.847	.066	-.104
	skills_X_innovation	-.016[a]	-.504	.615	-.029
	structure_X_innovation	-.059[a]	-1.868	.063	-.106
2	traits_X_innovation	-.055[b]	-1.652	.100	-.094
	skills_X_innovation	-.009[b]	-.289	.773	-.016
	structure_X_innovation	-.055[b]	-1.754	.080	-.099

a. Predictors in the Model: (Constant), Zscore(org_structure), Zscore(traits), Zscore(skills)

b. Predictors in the Model: (Constant), Zscore(org_structure), Zscore(traits), Zscore(skills), Zscore (innovation)

c. Dependent Variable: Zscore(performance)

Excluded Variables[c]

Model		Collinearity Statistics		
		Tolerance	VIF	Minimum Tolerance
1	Zscore(innovation)	.804	1.243	.778
	traits_X_innovation	.899	1.113	.770
	skills_X_innovation	.988	1.013	.840
	structure_X_innovation	.992	1.008	.841
2	traits_X_innovation	.893	1.120	.717
	skills_X_innovation	.981	1.019	.778
	structure_X_innovation	.990	1.010	.775

c. Dependent Variable: Zscore(performance)

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Zscore(traits)	Zscore(skills)
1	1	1.443	1.000	.00	.25	.26
	2	1.000	1.201	1.00	.00	.00
	3	.939	1.240	.00	.09	.03
	4	.618	1.528	.00	.66	.70
2	1	1.790	1.000	.00	.14	.13
	2	1.000	1.338	1.00	.00	.00
	3	.940	1.380	.00	.09	.04
	4	.691	1.610	.00	.01	.61
	5	.579	1.758	.00	.76	.21
3	1	2.067	1.000	.03	.06	.05
	2	1.550	1.155	.12	.06	.07
	3	1.049	1.404	.01	.06	.01
	4	.873	1.539	.00	.01	.15
	5	.731	1.681	.74	.01	.06
	6	.695	1.724	.03	.04	.46
	7	.614	1.835	.05	.29	.02
	8	.421	2.216	.03	.47	.19

a. Dependent Variable: Zscore(performance)

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions				
		Zscore(org_ structure)	Zscore (innovation)	traits_X_ innovation	skills_X_ innovation	structure_X_ innovation
1	1	.08				
	2	.00				
	3	.90				
	4	.01				
2	1	.05	.14			
	2	.00	.00			
	3	.86	.00			
	4	.03	.52			
	5	.06	.34			
3	1	.02	.06	.07	.06	.02
	2	.03	.06	.04	.07	.06
	3	.35	.00	.11	.00	.29
	4	.47	.00	.04	.02	.31
	5	.01	.04	.02	.18	.09
	6	.01	.31	.01	.21	.08
	7	.10	.51	.09	.08	.14
	8	.00	.01	.62	.37	.01

a. Dependent Variable: Zscore(performance)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-3.2058294	1.7689091	.0000000	.83720620	314
Residual	-1.93258858	1.42198837	.00000000	.54688736	314
Std. Predicted Value	-3.829	2.113	.000	1.000	314
Std. Residual	-3.494	2.571	.000	.989	314

a. Dependent Variable: Zscore(performance)

Charts