

The copyright © of this thesis belongs to its rightful author and/or other copyright owner. Copies can be accessed and downloaded for non-commercial or learning purposes without any charge and permission. The thesis cannot be reproduced or quoted as a whole without the permission from its rightful owner. No alteration or changes in format is allowed without permission from its rightful owner.



**CONTINGENCY FACTORS, BALANCED SCORECARD  
AND FIRM PERFORMANCE: EVIDENCE FROM IRAQI  
MANUFACTURING INDUSTRIES**



**KHALIS HASAN YOUSIF AL-NASER**

**DOCTOR OF PHILOSOPHY  
UNIVERSITI UTARA MALAYSIA  
OCTOBER 2017**

**CONTINGENCY FACTORS, BALANCED SCORECARD AND FIRM  
PERFORMANCE: EVIDENCE FROM IRAQI MANUFACTURING  
INDUSTRIES**

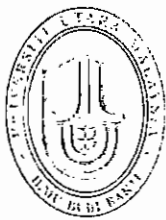
**By**

**KHALIS HASAN YOUSIF AL-NASER**



**UUM**  
**Universiti Utara Malaysia**

**Thesis Submitted to  
Tunku Puteri Intan Safinaz School of Accountancy,  
Universiti Utara Malaysia,  
in Fulfillment of the Requirement for the Degree of Doctor of Philosophy**



**TUNKU PUTERI INTAN SAFINAZ**  
**SCHOOL OF ACCOUNTANCY**  
**COLLEGE OF BUSINESS**  
**Universiti Utara Malaysia**

**PERAKUAN KERJA TESIS / DISERTASI**  
*(Certification of thesis / dissertation)*

Kami, yang bertandatangan, memperakukan bahawa  
*(We, the undersigned, certify that)*

**KHALIS HASAN YOUSIF AL-NASER**

calon untuk Ijazah **DOCTOR OF PHILOSOPHY**  
*(candidate for the degree of)*

telah mengemukakan tesis / disertasi yang bertajuk:  
*(has presented his/her thesis / dissertation of the following title):*

**CONTINGENCY FACTORS, BALANCED SCORECARD AND FIRM PERFORMANCE: EVIDENCE FROM IRAQI  
MANUFACTURING INDUSTRIES**

seperti yang tercatat di muka surat tajuk dan kulit tesis / disertasi.  
*(as it appears on the title page and front cover of the thesis / dissertation).*

Bahawa tesis/disertasi tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan, sebagaimana yang ditunjukkan oleh calon dalam ujian lisan yang diadakan pada:  
**22 Oktober 2017.**

*(That the said thesis/dissertation is acceptable in form and content and displays a satisfactory knowledge of the field of study as demonstrated by the candidate through an oral examination held on:*

**22 October 2017.**

Pengerusi Viva : **Assoc. Prof. Dr. Zaimah Zainol Ariffin**  
*(Chairman for Viva)*

Tandatangan  
*(Signature)*

Pemeriksa Luar : **Assoc. Prof. Dr. Ruzita Jusoh**  
*(External Examiner)*

Tandatangan  
*(Signature)*

Pemeriksa Dalam : **Assoc. Prof. Dr. Che Zuriana Muhammad Jamil**  
*(Internal Examiner)*

Tandatangan  
*(Signature)*

Tarikh: **22 October 2017**  
*(Date)*

Nama Pelajar : Khalis Hasan Yousif Al-Naser  
(Name of Student)

Tajuk Tesis / Disertasi : CONTINGENCY FACTORS, BALANCED SCORECARD AND FIRM  
(Title of the Thesis / Dissertation) PERFORMANCE: EVIDENCE FROM IRAQI MANUFACTURING INDUSTRIES

Program Pengajian : Doctor of Philosophy  
(Programme of Study)

Nama Penyelia/Penyelia-penyelia : Assoc. Prof. Dr. Rapih Mohamed  
(Name of Supervisor/Supervisors)

Tandatangan

Nama Penyelia/Penyelia-penyelia :  
(Name of Supervisor/Supervisors)

Tandatangan

## **PERMISSION TO USE**

In presenting this thesis in fulfillment of the requirements for a Post Graduate degree from the Universiti Utara Malaysia (UUM), I agree that the Library of this university may make it freely available for inspection. I further agree that permission for copying this thesis in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor (s) or in their absence, by the Dean of Tunku Puteri Intan Safinaz School of Accountancy where I did my thesis. It is understood that any copying or publication or use of this thesis or parts of it for financial gain shall not be allowed without my written permission. It is also understood that due recognition given to me and to the UUM in any scholarly use which may be made of any material in my thesis.

Request for permission to copy or to make other use of materials in this thesis in whole or in part should be addressed to:

Dean of Tunku Puteri Intan Safinaz School of Accountancy  
Universiti Utara Malaysia  
06010 UUM Sintok  
Kedah Darul Aman



## ABSTRACT

This study focused on contingency factors, the balanced scorecard (BSC) and firm performance. Specifically, the study examined the mediating role of BSC on the relationship between contingency factors and firm performance. The research framework was developed based on contingency theory. The population of the study comprised 1,213 companies from manufacturing sector of Iraq. The analysis of data utilised 301 responses that represented 49.38% of the total responses. Data were collected via self-administered questionnaires distributed to top management and were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings indicated that intensity of competition, political turbulence, corporate culture and total quality management (TQM) had a significant and positive influence on BSC usage. The results also showed that political turbulence had a negative and significant influence on firm performance, whereas intensity of competition, corporate culture and TQM had a positive and significant influence on firm performance. Furthermore, a significant and positive association existed between BSC usage and firm performance. The result of this study indicated that the higher the level of political turbulence the higher the BSC usage; and this is a confirmation of applicability and value of contingency theory. Finally, the results indicated that BSC usage mediated the relationship between exogenous variables (intensity of competition, political turbulence, corporate culture and TQM) and firm performance. The result implies that contingency factors are important antecedents that influence BSC usage, and BSC is a vital strategic management accounting tool to assist in planning and decision making in Iraqi's manufacturing industry. These indicate theoretical and managerial implications of the research. Therefore, managers and government could adopt the technique to improve firm performance. This study has made a solid contribution to the knowledge in theory and practice. Limitations and suggestions for future research were offered.

**Keywords:** BSC, TQM, corporate culture, perceived environmental uncertainty, Iraq

## ABSTRAK

Kajian ini memberi tumpuan kepada faktor kontingensi, kad skor berimbang (*BSC*) dan prestasi firma. Secara khususnya, kajian ini menyelidik peranan pengantaraan *BSC* dalam hubungan antara faktor kontingensi dan prestasi firma. Rangka kerja penyelidikan dibangunkan berdasarkan teori kontingensi. Populasi kajian terdiri daripada 1,213 syarikat dari sektor pembuatan di Iraq. Analisis data menggunakan 301 maklum balas yang mewakili 49.38% daripada jumlah keseluruhan maklum balas. Data dikumpul melalui soal selidik tadbir sendiri yang diedarkan kepada pengurusan atasan, dan dianalisis dengan menggunakan *Partial Least Squares Structural Equation Modelling (PLS-SEM)*. Dapatan kajian menunjukkan bahawa intensiti persaingan, pergolakan politik, budaya korporat dan pengurusan kualiti menyeluruh (*TQM*) mempunyai pengaruh yang signifikan dan positif terhadap penggunaan *BSC*. Dapatan juga menunjukkan bahawa pergolakan politik mempunyai pengaruh yang negatif terhadap prestasi firma, sedangkan intensiti persaingan, budaya korporat dan *TQM* mempunyai pengaruh positif yang signifikan terhadap prestasi firma. Selain itu, hubungan signifikan dan positif wujud antara penggunaan *BSC* dan prestasi firma. Hasil kajian ini menunjukkan bahawa semakin tinggi tahap pergolakan politik, semakin tinggi penggunaan *BSC*; dan ini mengesahkan kebolegunaan dan nilai teori kontingensi. Akhir sekali, dapatan kajian menunjukkan bahawa penggunaan *BSC* telah memantapkan hubungan antara pemboleh ubah eksogen (intensiti persaingan, pergolakan politik, budaya korporat dan *TQM*) dan prestasi firma. Hasilnya menunjukkan bahawa faktor kontingensi adalah pemboleh ubah penting yang mempengaruhi penggunaan *BSC*, dan *BSC* adalah alat perakaunan pengurusan strategik yang penting untuk membantu perancangan dan pembuatan keputusan dalam industri pembuatan di Iraq. Hal ini menggambarkan implikasi teori dan pengurusan penyelidikan. Oleh itu, pengurus dan kerajaan boleh menggunakan teknik ini untuk meningkatkan prestasi firma. Kajian ini telah memberikan sumbangan ilmu yang mantap dalam teori dan amalan. Limitasi dan cadangan untuk penyelidikan pada masa hadapan turut dikemukakan.

**Kata kunci:** *BSC*, *TQM*, budaya korporat, ketidakpastian tanggapan persekitaran, Iraq



## ACKNOWLEDGEMENT

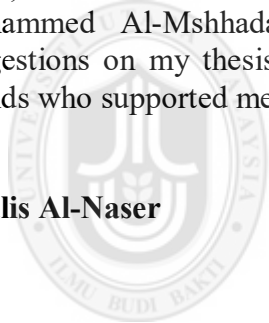
Alhamdulillah, Praise is to ALLAH, Lord of the worlds. May peace and the blessings of ALLAH be upon our prophet Muhammad (SAW) and his family members, companions and followers.

First, I deeply thank and express my sincere gratitude to ALLAH (SWT) WHO out of HIS infinite mercy supported me in completing this PhD thesis. I would like also to express my deep gratitude to my supervisor Associate Prof. Dr. Rapiah Mohamed for her support, guidance and patience throughout my PhD journey, which made my work a great learning experience.

I owe a big personal debt to my family especially to my late father. May Allah have mercy on him and my mother who have been supportive to me with prayers and many other things. Big thanks also are directed to my beloved wife Khamael Al-Naser as well as my wonderful children, Khalid, Lyan and Yousif who accompanied me in this PhD journey.

Furthermore, my gratitude goes to my brothers Yousif, Wael, Masood and all my sisters. My appreciation also goes to Associate Prof. Dr. Che Zuriana Muhammad Jamil, Dr. Zarifah Abdullah, Prof. Dr. Hussein Aljarjary, Prof. Dr. Tariq Shareef, Mohammed Al-Mshhadani and Ban Badawi, for their support and valuable suggestions on my thesis. Last, but not least, I would like to thank my wonderful friends who supported me to complete this PhD journey.

**Khalis Al-Naser**



Universiti Utara Malaysia

## TABLE OF CONTENT

<b>CERTIFICATION OF THESIS WORK</b>	<b>iii</b>
<b>PERMISSION TO USE</b>	<b>v</b>
<b>ABSTRACT</b>	<b>vi</b>
<b>ABSTRAK</b>	<b>vii</b>
<b>TABLE OF CONTENTS</b>	<b>ix</b>
<b>LIST OF TABLES</b>	<b>xiii</b>
<b>LIST OF FIGURES</b>	<b>xiv</b>
<b>LIST OF ABBREVIATIONS</b>	<b>xv</b>
 <b>CHAPTER ONE INTRODUCTION</b>	
1.1 Background of the Study	1
1.2 Problem Statement	5
1.3 Research Questions	13
1.4 Research Objectives	14
1.5 Significance of the Study	14
1.5.1 Theoretical Significance	15
1.5.2 Practical Significance	17
1.6 Scope of the Study	18
1.7 Definition of Key Terms	19
1.8 Organization of the Thesis	20
 <b>CHAPTER TWO LITERATURE REVIEW</b>	
2.1 Introduction	21
2.2 Development of Cost and Management Accounting	21
2.3 The Balanced Scorecard (BSC)	29
2.3.1 Balanced Scorecard Measurement Perspectives	30
2.3.2 Balanced Scorecard in Arab Countries	34
2.3.3 Balanced Scorecard in the Manufacturing Sector	35
2.3.4 Benefits and Advantages of Balanced Scorecard	36
2.4 Contingency Factors	39
2.5 Perceived Environmental Uncertainty (PEU)	42
2.5.1 Political Turbulence	46
2.5.2 Intensity of Competition	50
2.5.3 Perceived Environmental Uncertainty in Arab Countries	54
2.6 Total Quality Management (TQM)	56
2.6.1 Total Quality Management in Arab Countries	60
2.7 Corporate Culture	62
2.7.1 Adaptability	65
2.7.2 Involvement	65
2.7.3 Mission	66
2.7.4 Consistency	66
2.7.5 Corporate Culture in Arab Countries	67
2.8 Firm Performance	70
2.9 Underpinning Theory	72
2.9.1 Contingency Theory	73
2.9.2 Advantages and Disadvantages of Contingency Theory	75

2.10	Chapter Summary	76
<b>CHAPTER THREE THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT</b>		
3.1	Introduction	78
3.2	Theoretical Framework	78
3.3	The Relationship between Contingency Factors (Political Turbulence, Intensity of Competition, Total Quality Management, Corporate Culture) and Balanced Scorecard	82
3.3.1	The Relationship between Political Turbulence and Balanced Scorecard	82
3.3.2	The Relationship between Intensity of Competition and Balanced Scorecard	84
3.3.3	The Relationship between Total Quality Management and Balanced Scorecard	86
3.3.4	Relationship between Corporate Culture and the Balanced Scorecard	89
3.4	The Relationship between Contingency Factors (Political Turbulence, Intensity of Competition, Total Quality Management, Corporate Culture) and Firm performance	92
3.4.1	The Relationship between Political Turbulence and Firm Performance	92
3.4.2	The Relationship between Intensity of Competition and Firm Performance	95
3.4.3	The Relationship between Total Quality Management and Firm Performance	97
3.4.4	The Relationship between Corporate Culture and Firm Performance	99
3.5	The Relationship between the Balanced Scorecard and Firm Performance	100
3.6	The Relationship between Contingency Factors (Political Turbulence, Intensity of Competition, Total Quality Management, Corporate Culture), the Balanced Scorecard and Firm Performance	103
3.6.1	The Mediating Effect of the Balanced Scorecard between Political Turbulence and Firm Performance	104
3.6.2	The Mediating Effect of the Balanced Scorecard between Intensity of Competition and Firm Performance	106
3.6.3	The Mediating Effect of the Balanced Scorecard between Total Quality Management, and Firm Performance	108
3.6.4	The Mediating Effect of the Balanced Scorecard between Corporate Culture and Firm Performance	109
3.7	Summary of Research Objectives and Research Hypotheses	111
3.8	Conclusion	112
<b>CHAPTER FOUR RESEARCH METHODOLOGY</b>		
4.1	Introduction	113
4.2	Research Design	113
4.3	Quantitative Research Approach	115
4.4	Operationalization and Measurement of Variables	115
4.4.1	Firm Performance	116

4.4.2	Balanced Scorecard - Mediating Variables	118
4.4.3	Perceived Environmental Uncertainty – Exogenous Variables	119
4.4.4	Total Quality Management	122
4.4.5	Corporate Culture	123
4.5	Questionnaire Design	125
4.6	Pilot Study	126
4.6.1	Content validity	126
4.6.2	Statistical Validity and Reliability of the Pilot Study	127
4.7	Unit of Analysis	130
4.8	Population of the Study	130
4.8.1	Sample Size	131
4.8.2	Stratified Sampling Technique	132
4.9	Data Collection	133
4.10	Data Analysis Procedures	134
4.10.1	Partial Least Squares Structural Equation Modeling (PLS-SEM)	137
4.11	Chapter Conclusion	141
<b>CHAPTER FIVE RESULTS AND DISCUSSION</b>		
5.1	Introduction	142
5.2	Data Screening and Cleaning	142
5.2.1	Missing Data	142
5.2.2	Removing Outliers	143
5.2.3	Non-response Bias	144
5.3	Analysis of Survey Response	145
5.3.1	Response Rate	145
5.3.2	Profile of Respondents	145
5.4	Descriptive Statistics of the Research Variables	149
5.4.1	Endogenous Variable — Firm Performance	149
5.4.2	Mediating variable – Balanced Scorecard	150
5.4.3	Exogenous variables – Perceived Environment Uncertainty	153
5.4.4	Exogenous variables – Corporate Culture	155
5.4.5	Exogenous variables – Total Quality Management	157
5.5	PLS-SEM Analysis Results	158
5.5.1	Testing the Goodness of the Measurements Model (Outer Model)	158
5.6	Testing the Measurement Model (Outer Model)	159
5.6.1	Assessment of Convergent Validity	160
5.6.2	Assessment of Discriminant Validity	163
5.7	Conclusion of the Measurement Model	168
5.8	Assessment of the Structural Model (Inner Model)	170
5.8.1	Assessment of Coefficient of Determination ( $R^2$ )	170
5.8.2	Assessing the Effect Size	172
5.8.3	Determining the Predictive Relevance	173
5.8.4	Assessing Goodness of Fit (GoF)	174
5.8.5	Hypotheses Testing	175
5.9	Discussion of the Direct Hypotheses	181
5.9.1	The Relationship between Political Turbulence and Balanced Scorecard	181

5.9.2	The Relationship between Intensity of Competition and Balanced Scorecard	183
5.9.3	The Relationship between Total Quality Management and Balanced Scorecard	186
5.9.4	The Relationship between Corporate Culture and Balanced Scorecard	188
5.9.5	The Relationship between Political Turbulence and Firm Performance	191
5.9.6	The Relationship between Intensity of Competition and Firm Performance	194
5.9.7	The Relationship between Total Quality Management and Firm Performance	197
5.9.8	The Relationship between Corporate Culture and Firm Performance	200
5.9.9	The Relationship between Balanced Scorecard and Firm Performance	203
5.10	Discussion of the Indirect Hypotheses (Mediation Relationship)	206
5.10.1	The Mediating Effect of BSC on the Relationship between Political Turbulence and Firm Performance	206
5.10.2	The Mediating Effect of BSC on the Relationship between Intensity of Competition and Firm Performance	209
5.10.3	The Mediating Effect of BSC on the Relationship between TQM and Firm Performance	212
5.10.4	The Mediating Effect of BSC on the Relationship between Corporate Culture and Firm Performance	214
5.11	Hypotheses Summary	217
5.12	Chapter Conclusion	218
<b>CHAPTER SIX CONCLUSION AND RECOMMENDATIONS</b>		
6.1	Introduction	220
6.2	Summary of the Study	220
6.3	Recapitulation of the Main Findings	221
6.4	Contribution of the Study	223
6.4.1	Theoretical Contributions	223
6.4.2	Managerial Contributions	224
6.5	Research limitations	226
6.6	Future research	227
6.7	Conclusion	229
<b>REFERENCES</b>		231
<b>APPENDICES</b>		283

## LIST OF TABLES

Table	Page
Table 3.1: Summary of Research Objective and its Hypotheses	111
Table 4.1: Firm performance measurement	118
Table 4.2: Balanced Scorecard measurement	119
Table 4.3: Political Turbulence measurement	121
Table 4.4: Intensity of Competition measurement	122
Table 4.5: TQM Measurement	123
Table 4.6: Corporate Culture Measurement	124
Table 4.7: Summary of Survey Questionnaire Contents	126
Table 4.8: Average Variance Extracted (AVE), Composite reliability and Cronbach's alpha values of all Constructs	128
Table 4.9: Correlations of Constructs and Discriminant Validity Assessment	129
Table 4.10: Iraqi industrial companies and its stratified proportional random sample size	132
Table 4.11: Criteria for Assessing Measurement Model (Outer Model)	139
Table 4.12: Criteria of Assessing Structural Models	140
Table 5.1: Test of Non-Respondent Bias	144
Table 5.2: Profile of Respondents	146
Table 5.3: Descriptive Statistics of Firm performance	149
Table 5.4: Descriptive Statistics of Balanced Scorecard – Financial Perspective	150
Table 5.5: Descriptive Statistics of Balanced Scorecard – Customer Perspective	151
Table 5.6: Descriptive Statistics of Balanced Scorecard – Internal Business Process Perspective	152
Table 5.7: Descriptive Statistics of Balanced Scorecard – Innovation and Learning Perspective	152
Table 5.8: Descriptive Statistics of Perceived Environment Uncertainty	153
Table 5.9: Descriptive Statistics of Perceived Environment Uncertainty	154
Table 5.10: Descriptive Statistics of Corporate Culture	155
Table 5.11: Descriptive Statistics of Total Quality Management	157
Table 5.12: Factor Loadings, CR and AVE of all Constructs	160
Table 5.13: Factor Loadings of the filed items	162
Table 5.14: Factor Loadings and Cross-Loadings	164
Table 5.15: Correlations of Constructs and discriminant validity assessment	167
Table 5.16: Results of $R^2$	171
Table 5.17: The Effect Size of the Exogenous Constructs - Second Order	172
Table 5.18: Results of $Q^2$	174
Table 5.19: GoF Baseline Criteria	175
Table 5.20: Summary of Direct Hypotheses Results	176
Table 5.21: Summary of Indirect Hypotheses Results	180
Table 5.22: Summary of Findings	217

## LIST OF FIGURES

<b>Figure</b>		<b>Page</b>
Figure 1.1:	Contribution ratio of the manufacturing sector to GDP for the period 2002-2016	6
Figure 3.1:	Theoretical Framework	81
Figure 4.1:	Design Process	114
Figure 4.2:	Analysis procedures for both measurements model and structural model by using PLS-SEM	141
Figure 5.1:	Reliable and Valid Model by Using SmartPLS Version 2	169
Figure 5.2:	Results of $R^2$	171
Figure 5.3:	The mediating role of BSC between (political turbulence, intensity of competition, TQM, corporate culture) and firm performance	179



## LIST OF ABBREVIATIONS

ABC	Activity Based Costing
Adap	Adaptability
AMT	Advance Manufacturing Technology
AVE	Average Variance Extracted
BPR	Business Process Reengineering
BSC	Balanced Scorecard
CC	Corporate Culture
Cons	Consistency
CP	Costumer Perspective
CR	Composite reliability
$f^2$	Effect size
GoF	Goodness of fit
GDP	Gross Domestic Product
GDSR	General Directorate of Statistics and Research
ICSO	Iraqi Central Statistical Organization
Inv	Involvement
IP	Internal process Perspective
JIT	Just in Time
LCC	Life Cycle Costing
LGP	Innovation and Learning Perspective
FP	Financial Perspective
MIM	Ministry of Industry and Minerals
Mis	Mission
MOP	Ministry of Planning
P	Performance
PEU	Perceived Environmental Uncertainty
PLS	Partial Least Squares
PMS	Performance Measurement System
PT	Political Turbulence
$Q^2$	Predictive Relevance
$R^2$	Coefficient of determination
SCM	Strategic Cost Management
SEM	Structural Equation Modeling
SMA	Strategic Management Accounting
SOEs	State Owned Enterprise
TC	Target Cost
TOC	Theory of Constraints
TQM	Total Quality Management
UNAMI	United Nations Assistance Mission of Iraq



# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Nowadays, business environment is a highly competitive area in which many companies, regardless of type and nature, employ management accounting techniques to survive in this competitive world. However, the strategic management accounting has become essential for cost reduction as it facilitates the handling of multiple challenges characteristic of a highly competitive business environment. In this regard, the general improvement of the strategic position of a company via the performance measures process is termed as a strategic management accounting techniques (Modell, 2012; Ojua, 2016).

Strategic management accounting (SMA) is defined as "the provision and analysis of management accounting data about a business and its competitors, for use in developing and monitoring business strategy" (Simmonds, 1981). Management accounting is a key to providing organizations with accurate and relevant information to help them effectively design competitive strategies, resulting in a competitive advantage. Hence, SMA stands upon solid ground for making business decisions that would improve or positively affect firm performance and help them gain a better competitive advantage (Uyar, 2010).

Performance measurement systems (PMS) have also been integrated into SMA, particularly the Balanced Scorecard (BSC) (Ramljak & Rogošić, 2012). This development may result from the rise of the BSC in the world of management

accounting (Malleret, 2015). By implication, SMA serves as a basis for making business decisions that would improve and positively affect firm performance through several techniques among which activity based costing, target costing, balanced scorecard, total quality management and benchmarking (Gupata & Gunasekaran, 2005; Ramljak & Rogošić, 2012). These techniques help firms and other organisations gain a better competitive advantage in today's environment, which is full of uncertainties (Uyar, 2010).

SMA techniques such as the BSC (Modell, 2012) could facilitate a firm's performance as indicated in contingency theory for the application of the concept of fit, especially in relationship to management accounting systems (Otley, 1980; Abugalia, 2011). As Donaldson (2001) explained, an alignment for match or fit as posited in contingency theory would assist firms in improving their operational and financial objectives without causing confusion that might lead to disadvantageous consequences. The long history of research using contingency theory in management accounting has shown that poor coordination of contingent variables would bring about negative effects on the SMA techniques.

This study was motivated by the recent and extensive use of BSC. It is argued that BSC, which Kaplan and Norton (1992, 1993) popularized and adopted extensively throughout the world, is a superior set of financial and non-financial measures of performance. It is believed that the existing non-financial measures are better measures of future corporate performance, as they help managers refocus on the long-term aspects of their actions. Interest in BSC continues to grow. Consistent with Atkinson et al. (1997, p. 94), "the balanced scorecard is among the most

significant developments in management accounting and thus, deserves intense research attention." The Harvard Business Review classified it among the top 75 most effective and influential ways of performance measurement of the last century (Niven, 2006).

The current study examined the practice of BSC using contingency theory, which opines that the design and use of performance measurement depends upon organizational and environmental contexts (Hansen, Mowen, Senkow, & Pollanen, 2004). It is hypothesized that a better match between BSC and contextual variables, such as external environment, technology, structure, size, culture and strategy, leads to increased firm performance (Fisher, 1998; Sila, 2007), while poor fit denotes diminished performance.

Firm performance has become an essential concern for managers of all organizations (Acer & Acer, 2014; Pimentel & Major, 2014). Good firm performance is a basic driving force behind any powerful nation (Nickell, 1995). Indeed, several organizations worldwide are continuously working to improve their performance through various techniques. The ability of the top management to set appropriate organizational activities and strategies will determine the strength of an organization in maintaining its performance over the long term (Lynch & Cross, 1992; Neely, Mills, Platts, Gregory, & Richards, 1994).

The performance of large and medium companies manufacturing in Iraq has been declining throughout the last few decades (Yasir, 2015). Their contribution to Gross Domestic Product (GDP) has fallen to only 2.7% in 2013 compared to 30% in 2000.

In addition, the deleterious effects of political and security instability on economic activity, investment and implementation of projects form a great dilemma facing Iraq's economy (Yasir, 2015). Because of the decline in the industrial sector and the poor performance of manufacturing companies, the Iraqi government has undertaken many reforms and convened conferences and meetings at very high levels.

For example, the Conference of Iraqi Federal Board and Supreme Audit in April 2014 emphasized that attention should be paid to the industrial sector and a focus should be placed on improving its contributions toward supporting Iraqi economy (FBSA Journal of Auditor General, 2014). The Conference of the Economy and Investment Committee in the Iraqi Parliament, in cooperation with the National Investment Commission held in February 2015, recommended that the private sector should manage industrial production and that the state-owned companies be privatized gradually as one of their strategies (Al-Amal and Al-Iktissad Magazine, 2015). Despite these efforts, Iraqi manufacturing companies still encounter operational and marketing obstacles. The failure to meet these challenges has driven many manufacturing companies to bankruptcy and ultimately resulted in their closure (CBIAR, 2013). Therefore, an urgent need exists to evolve accounting practices in the Iraqi manufacturing sector performance to work according to international benchmark, namely, in quality, flexibility, and the reliability of organizations.

Against these issues and challenges facing the Iraqi manufacturing sector and the economy at large, this current research endeavours to examine the contribution of BSC with the combined effect of TQM, corporate culture and PEU (political

turbulence and intensity of competition) on the performance of the manufacturing companies in Iraq. Though these variables are not new in the literature, the context, relationships and holistic effects presented in this research framework are peculiar to the problem of this research and thus are completely new in this context. The following subsection provides the problem statement of the study with a clear identification and explanation of practical and theoretical gaps.

## **1.2 Problem Statement**

Generally, Arab countries face difficulties in terms of the expansion of their businesses – especially in the manufacturing sector in which operations remain slow due to the economic downturn arising from political instability (Shurafa & Mohamed, 2016; Al-Naser & Mohamed, 2016). A unique case is that of Iraq in which the resultant effect of political uncertainty continues to slow the pace of economic growth and has done so for an extended period. This process informs a practical issue for this study. The Iran-Iraq war in the 1980s was followed by the economic blockade by the United Nations on Iraq beginning in 1990, and the US occupation of Iraq in 2003. The accompanying events and the continuing political turbulence have contributed greatly to a poor business environment (World Bank Annual Report, 2016; Iraq News Network, 2015; Bureihi, 2011). In this respect, Iraq is now economically lagging behind to some extent compared to the period before the overriding political turbulence that continues causing politico-economic instability.

In the light of such politic-economic uncertainty, the performance of large and medium manufacturing companies in Iraq has been declining over the last few

decades (Yasir, 2015), and the contribution of these companies to GDP has fallen to only 0.8% in 2016 compared to 23% in 2002 (Central Bank of Iraq Annual Report, 2003-2016; Iraq News Network, 2015). Figure.1.1 shows the contribution ratio of the manufacturing sector to GDP for the period 2002-2016.

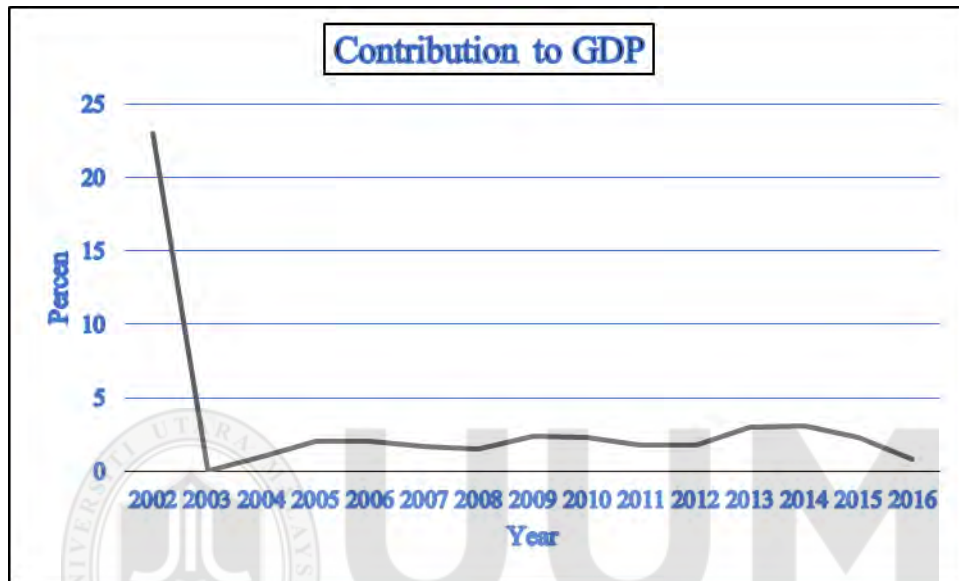


Figure 1.1. *Contribution ratio of the manufacturing sector to GDP for the period 2002-2016*  
Sources: Central Bank of Iraq Annual Report, 2003-2016; Iraq News Network, 2015.

In a situation of this nature, Iraqi manufacturing companies would perform better if managers better acquainted themselves with emerging mechanisms to cope with, and overcome, wherever possible, the diverse problems originating from the political instability and the resultant economic gaps requiring adequate control. In this regard, contingency theory suggests that no uniform global accounting system could collectively serve as a management accounting system (MAS) for all firms in all situations. This also means that, theoretically speaking, MAS is not totally complete in its design; hence, MAS must be synchronised with changes in the environment of companies.

Several scholars and professionals in accounting opined that firm performance would only become better whenever MAS was compatible with the environments of firms (Otley, 2016). Hence, the contingency approach would indicate deliberate actions that ascertain what best unify the performance of cost accounting managers and their management systems (Kreitner, 2001).

The pace of study of these issues was slow between the 1930s and the 1980s, but that pace has quickened in the past few decades (Johnson & Kaplan, 1987). Indeed, the past few decades have witnessed a fresh desire to advance the appreciable knowledge in performance measurement system because of the need to focus on non-financial means in evaluating the performance of companies, which has become a necessity model for valuing and measuring performance (Gupta & Gunasekaran, 2005). In this regard, this current study considered applications of performance measurement system among manufacturing companies in Iraq, since it has a strong relation with firm performance, as well as its role in generating a competitive advantage (Abushaiba & Zainuddin, 2012).

Similarly, BSC has also become a critical issue because the concept reflects the changes in today's business environment. Therefore, the latest dimensions for measurement such as the quality of products and services, customer satisfaction, innovation and flexibility should be added to the strategic tools of the organization (Otley, 2016). Such a strategic technique like BSC assists organizations in developing a sustainable competitive edge (Mohamed, Abdul Rahman, & Abdul Aziz, 2010). In fact, the key purpose behind BSC is to improve firm performance. When measures of performance are either directly or indirectly connected to the

output of companies, every possibility exists that they may achieve their expected goals (Otley, 2016; Behn, 2003). For organizational researchers, firm performance is a continuous issue that needs to be addressed properly (Barney, 1991).

Unlike more traditional metrics that are limited to financial measures, the BSC is a hybrid performance measure (Otley, 2016). A steady stream of previous management accounting research has often criticized the idea of relying solely on traditional performance measures that they are only financial in nature and stress the importance of using a combination of performance measures. The main reason is that combining the two would be more effective in evaluating performance (Otley, 2016; Atkinson et al., 1997; Chenhall & Langfield-Smith, 2007; Hoque, Mia, & Alam, 2001; Kaplan & Norton, 1992, 1993; Pimentel & Major, 2014).

The trend of integrating non-financial measures with traditional financial performance measures is growing. Integration is among the key factors for developing performance measurement systems (Otley, 2016; Eljido-Ten, 2010). BSC is among the most widely known performance assessment systems (Pimentel & Major, 2014). Moreover, BSC is an essential technique for SMA techniques (Malleret, 2015; Modell, 2012) that provides information about strategic decision-making. Many authors have noted the importance of BSC as a key source for improving firm performance (Kaplan & Norton, 1992; Sandström & Toivanen, 2002). Hence, the need exists for adoption and implementation for improving firm performance. Unfortunately, under such weak and unstable performance of the Iraqi manufacturing companies, few and limited studies have focused on the BSC as one of the management accounting techniques for performance measurement in the



Middle East in general and in Iraq in particular (Al-Sawalqa, Holloway & Alam, 2011; Al-Akra, Ali, & Marashdeh, 2009).

Accordingly, an urgent need exists to study BSC in the Iraqi manufacturing companies under the unique politico-economic uncertainty that has dominated the environment for decades, and represents, in fact, one of the toughest politico-economic uncertainties in the world. PEU is one of the factors that affect BSC and firm performance (Bastian & Muchlish, 2012). PEU includes two dimensions of turbulence: 1) political turbulence, and 2) intensity of competition (Khandwalla, 1972). However, despite the importance of such dimensions of PEU, the available literature indicates that studying these dimensions is minimal in developing economies (Adomako & Danso, 2014). As such, the current study explored this relationship empirically in Iraq as one of that most turbulent environment in the world (Shurafa & Mohamed, 2016; Al-Naser & Mohamed, 2016). Specifically, environmental uncertainty arises from a changing political structure and the impact of the consequences of these changes on the market. Organizations working under such conditions must address such changes. The political environment and uncertainty, which influence this environment in Iraq, arguably are extreme in the country and may not be found elsewhere in the world. This turbulence has affected major changes in political and environmental uncertainty, especially over the last few years (Kattan, Pike, & Tayles, 2007; Hoque & Hoper, 1997). Guidara and Khoufi (2014) recommended that researchers should investigate BSC under the influence of different contingent factors besides the PEU such as technologies, culture variables, and other economic sectors.

In this context, a search of the previous literature reveals that a corporate culture can have important productivity benefits (Otley, 2016). Otley (2016) opined that a need existed to build a culture that would strengthen performance of the companies and that a corporate culture remains a tool to improve management's performance. The main argument of the corporate culture-performance link is the belief that certain corporate cultures lead to superior firm performance (Ogbonna & Harris, 2000).

Corporate culture is linked to performance and is based on the perceived role that culture can play in generating competitive advantage; as corporate culture is significant to increased commitment, productivity and profitability (Al-Tameemi & Alshawhi, 2014). By looking at the literature, clearly corporate culture is a crucial factor that needs to be taken into consideration when reforming performance in the developing world (Al-Tameemi & Alshawhi, 2014). Previous literature reveals that little empirical evidence exists on the relationship between corporate culture and firm performance on the one hand (Eker & Eker, 2009; Abugalia, 2011) and between corporate culture and BSC on the other hand.

Furthermore, limited studies have empirically investigated the mediation role of the BSC between corporate culture and firm performance (Eker & Eker, 2009). Accordingly, Deem et al. (2010) recommended that additional studies should be conducted to investigate the mediating relationships of BSC between corporate culture and firm performance. Thus, as limited studies on the mediating relationships of BSC between corporate culture and firm performance, the current study is expected to bridge this research gap by understanding the way in which such

relationships can enhance Iraqi manufacturing companies to cope with the pressure of political-economic uncertainties and to enhance their performance.

In addition to the corporate culture and PEU that have been discussed, this study also focused on the TQM because of its potentially positive effects on firm performance. For instance, Wilkinson et al. (1992) argued that the long-term profitability of business could be enhanced by adopting TQM in organizations. The argument is that implementing TQM helps in achieving improvement in the quality of the product and assists in cost reduction as well, which ultimately results in improved customer satisfaction and enhanced financial gains (Walton, 1986). Yet, the opponents of the TQM strategy argue that its implementation is very costly and faces many obstacles (Powell, 1995). Furthermore, Errikson and Hansson (2003) also stressed that the outcomes of TQM implementation concerning performance are inconclusive.

Despite negative arguments, certain researchers have argued that TQM helps in improving performance. For example, Errikson and Hansson (2003) argued that TQM helped improve the financial performance of Swedish organizations. However, even though TQM might increase organizational competitiveness and performance, very few studies have examined TQM in the Middle East in general (Alswidi & Mahmood, 2012) and in Iraq in particular. Accordingly, limited literature is available regarding the impact of TQM on BSC and firm performance in Iraqi environment. This limitation hinders the ability to provide assistance to enhance the performance of Iraqi manufacturing companies. In other words, not enough studies exist on the mediating role of BSC between TQM and firm performance. Hence, the present study is aimed at filling the stated gap in the Iraqi context.

As discussed earlier, previous studies reported mixed results between contingency factors (PEU, TQM and corporate culture) and firm performance. Certain scholars (Bastiana & Muchlish, 2012; Mia & Clarke, 1999) found a positive relationship between PEU and the firm performance, while, Jusoh (2008); Boyne and Meier (2009) reported a negative relationship between both constructs. Moreover, past studies (Al-Dhaafri, Al-Swidi, & Yusoff 2016; Sholihin & Laksmi, 2009; Prajogo & Brown, 2004) found that TQM had a positive relationship with firm performance, but the outcomes of Wilkinson (1998) and Yeung and Chan (1998) showed a negative relationship between TQM and firm performance. Additionally, certain studies (Tseng, 2010; Duke II & Edet, 2012) examined the linkages between corporate culture with firm performance and reported positive relationships between them; whereas Yesil and Kaya (2013) revealed that there is no relationship between corporate culture and firm performance.

In this aspect, the mediating role of BSC between contingency factors and firm performance has received few attentions in the previous studies which hinder the ability to understand the influence of such contingency factors and firm performance (e.g., Chong and Chong, 1997; Sholihin, & Laksmi, 2009; Bastian & Muchlish, 2012). One of these few studies is the work of Mia and Clarke (1999). They found that an increase in the market competition increased the use of MAS Information, which, in turn, led to performance improvement. In addition, Jusoh (2008) reported the mediating role of BSC on the relationship between PEU and firm performance. Similarly, Chong and Chong (1997) found that competitive strategy and environmental uncertainty were important antecedents to the use of MAS Information and this, in turn, had a positive influence on performance. Therefore, the

conclusion can be made that BSC can be examined as a mediator variable between contingency factors and firm performance. However, to the best knowledge of the researcher, no study exists that has examined the mediating role of BSC between the stated contextual factors and organizational performance collectively in one research framework. Therefore, this study aims to fill these gaps and provide empirical evidence towards the linkages between the stated factors from the Iraqi context.

In conclusion, this research aims at filling the gaps that have previously existed by using contingency theory and focusing on the mediating role of the BSC between contingency factors (i.e., PEU, TQM and corporate culture), and firm performance. Thus, BSC has an indirect effect on the link between contingency factors (i.e. PEU, TQM and corporate culture) and firm performance in Iraqi manufacturing industries. Consequently, more knowledge and literature would assist in understanding Iraqi manufacturing performance measurement systems. Furthermore, this knowledge and literature should help in understanding the consequences of the influences of BSC on firm performance so as to enhance the performance of Iraqi companies as well as any other companies that operate and function under a similar environment and/or culture.

### **1.3 Research Questions**

The present study poses the following research questions:

1. What is the relationship between the contingency factors (political turbulence, intensity of competition, TQM and corporate culture) and the use of BSC?

2. What is the relationship between the contingency factors (political turbulence, intensity of competition, TQM and corporate culture) and firm performance?
3. What is the relationship between the use of BSC and firm performance?
4. Does the use of BSC play a mediating role in the relationship between contingency factors (political turbulence, intensity of competition, TQM and corporate culture) and firm performance?

#### **1.4 Research Objectives**

The research objectives of this study are as follows:

1. To examine the relationship between the contingency factors (political turbulence, intensity of competition, TQM and corporate culture) and the use of BSC;
2. To determine the relationship between the contingency factors (political turbulence, intensity of competition, TQM and corporate culture) and firm performance;
3. To examine the relationship between the use of BSC and firm performance;
4. To examine the mediating influence the use of BSC on the relationship between contingency factors (political turbulence, intensity of competition, TQM and corporate culture) and firm performance.

#### **1.5 Significance of the Study**

This section introduces the theoretical and methodological contributions of the current study. Furthermore, this study is expected to contribute practically by

assisting manufacturing organizations in Iraq through the enhancement of their performance. The contributions are highlighted in the details provided below.

### **1.5.1 Theoretical Significance**

This study provides a significant theoretical contribution to the area of performance measurement system, specifically BSC. From the theoretical perspective, this study contributes to support the accounting literature in several ways. This is brought about stressing several factors, namely, PEU (political turbulence, intensity of competition), corporate culture, TQM and the mediating variable of BSC as an example of performance measurement system, all of which might influence the firm performance.

In this context, significant contributions can be derived from the study of these variables. First, PEU, i.e., political turbulence, intensity of competition in the context of Arab world and specifically in Iraq, have been neglected in previous performance measurement system research (Kattan, Pike, & Tayles, 2007; Ojra, 2014). For the first time, those significant contributions added additional information to the existing knowledge by examining the effect of political uncertainty on BSC in the Arab world. Hence, the adoption of a BSC is an important contribution to this study as most of the previous researches studied just parts of performance measurement system and did not utilize a holistic approach that combine financial and non-financial measurement in the Iraq environment (Hoque, 2005; Fisher, 1995).

Second, the relationship between corporate culture and firm performance has received little attention in the context of the Arab world (Al-Tameemi & Alshawhi,

2014; Mushref, 2014). Thus, there is a crucial need to examine whether corporate culture can influence the firms performance in an area such as the Arab world; this is expected to contribute to the limited studies that have empirically investigated this relationship. Furthermore, this study would contribute to consolidate the body of knowledge by examining the mediation role of the BSC between corporate culture and firm performance which is, to the best of the researcher's knowledge, the first time in Iraq. In addition to the previous contribution, this study adds to the body of knowledge the importance of TQM in enhancing firm performance as well as TQM in relation to BSC. Moreover, for the first time in the case of Iraq, this study adds to the literature the mediation role of the BSC between TQM and firm performance; i.e., this would significantly contribute to the body of knowledge in regard to this mediating relationship.

Based on what has been mentioned forward and for better theoretical contribution, this research uses contingency theory as the underpinning theory. Hence, there would be a significant contribution to the previous literature by examining the ability of these theories to work in different cultures and especially under a high level of political turbulence as an example of environmental uncertainty. Although this theory has been tested in developed economies, little attention has been given with respect to the Arab countries as an example of the developing countries. Thus, the adoption of contingency theory can assist in understanding the association between BSC and its contingent factors (i.e., PEU, TQM and corporate culture), as well as the relationship between BSC and firm performance to the final test of the mediating role of BSC between contingent factors (i.e., PEU, TQM, corporate culture) and firm performance of the current study.



### **1.5.2 Practical Significance**

This study contributes to the research in the context of improved firm performance; as related to managers' decision making, policy makers', and professional bodies' awareness. The thesis supposes that senior managers need to put more emphasis on the use of multiple measures of performance since they are fundamental to the success of their companies. This would encourage Iraqi companies to pay more attention to firm performance of their companies.

Accordingly, this study helps the Iraqi managers to understand the significance of BSC as well as the factors that are important in the use of BSC. For organizations, the findings of this study could guide manufacturing organization in making proper decisions and by focusing on use of BSC; especially in management accounting practices in Iraq and other Arab countries.

The role of management accounting in Iraq companies has become increasingly important in providing management with appropriate information for decision-making. Knowledge about how Iraqi companies design and use accounting systems is limited. As a result, the findings of this study can assist policy makers, namely, the Iraqi Federal Board of Supreme Audit, the Iraqi Ministry of Industry and Minerals, the Iraqi Central Statistical Organization, the Iraqi Ministry of Planning, the Iraqi General Directorate of Statistics and Research, and the management of various manufacturing companies in Iraq, gaining valuable insights into the importance of the procedures for implementing BSC in improving firm performance.

From the professional practice perspective, the study establishes the key role of contingency factors that can be given more attention through large and medium enterprises to enhance the impacts of BSC and, consequently, to enhance firm performance. This study ascertains the crucial role of comprehensive BSC as a strategic tool that can be used by large and medium enterprises to improve firm performance, through enabling them to create a competitive advantage.

### **1.6 Scope of the Study**

This study investigated the mediating role of BSC between contingency factors (PEU, TQM, and corporate culture) and firm performance within large and medium manufacturing companies in Iraq. Hence, it investigated variables such as exogenous variables (PEU with political turbulence and intensity of competition, TQM, corporate culture; endogenous variables (firm performance); and the mediator (BSC). The choice of large and medium manufacturing companies in Iraq was based on the serious underproduction and low performance that has made the Iraqi government focuses on reviving the industry (FBSA Journal of Auditor General, 2014; Al-Amal & Al-Iktissad Magazine, 2015).

The manufacturing companies in Iraq are at a critical stage of transformation after decades of crises that have erupted in the country. At this critical stage, BSC is critical to serve as a mechanism to mediate contingency factors and firm performance, especially towards evaluation and improvement of these organizations. This study choice of the organization as a unit of analysis is consistent with efforts to maximize the benefit of BSC in terms of enhancing organizational effectiveness and performance, improving social capital, increasing organizational returns, and

generally enlarging the national income within all geographical regions of Iraq (Behn, 2003).

## **1.7 Definition of Key Terms**

### **Strategic Management Accounting (SMA)**

A specific definition to SMA could be given as “The provision and analysis of management accounting data about a business and its competitors for use in developing and monitoring business strategy” (Simmonds, 1981, p. 26).

### **Perceived Environmental Uncertainty (PEU)**

PEU is “the lack of information regarding the environmental factors associated with a given decision-making situation” (Duncan, 1972, p. 318).

### **Corporate Culture**

Corporate Culture “consists of shared vision, systems, mechanisms and process. These four factors are created by the people on whom the organization depends, from the visions of the founding members or managing directors of the organization to the process being carried out by employees at the shop-floor level” (Branine, 2011, p. 21-22).

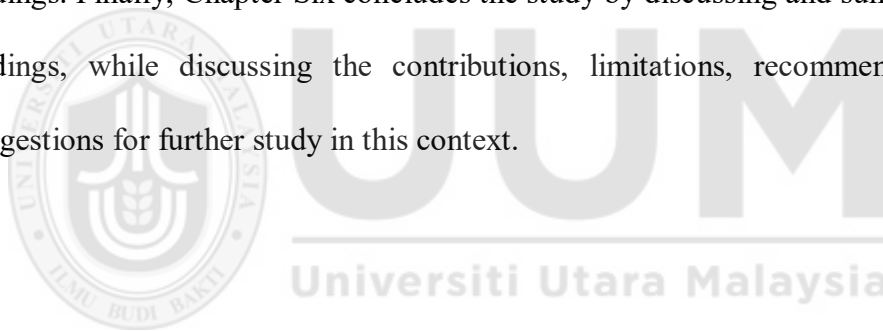
### **Total Quality Management (TQM)**

Total quality management (TQM) is “a philosophy that emphasizes the need to provide customers with highly valued products and to do so by improvements in efficiency by way of eliminating waste, reducing lead times at all stages of the

production process, reducing costs, developing people, and improving continuously” (Chenhall, 1997, p. 188).

## **1.8 Organization of the Thesis**

Chapter One covers the background, problem statement, objectives, and significant contributions of the study. Chapter Two explains the related literature review, which discusses the various strategic issues of using BSC and contingency factors. The theoretical framework and hypothesis development are presented in Chapter Three. Chapter Four presents the research methodology and explains the sampling procedure and the analytical tools used. Chapter Five includes data analysis and findings. Finally, Chapter Six concludes the study by discussing and summing up the findings, while discussing the contributions, limitations, recommendations and suggestions for further study in this context.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter covers the literature that has been reviewed relevant to the research topic, and comprises ten sections, which include Introduction; Development of Cost and Management Accounting; BSC; Contingency factors; PEU; TQM; corporate culture; firm performance; underpinning theory, and the conclusion of the chapter.

#### **2.2 Development of Cost and Management Accounting**

The purpose of this section is to explain the development of cost and management accounting from traditional approach to strategic management accounting approach. In the early stage, cost accounting has long been provided by information about the costs of production and sales, guide business decisions in relationship to market forces.

Hence, knowledge about the data remains paramount for making appropriate decisions concerning monitoring implementation by control systems of every organization. Moreover, that knowledge is critical for increasing the survival of firms and for coping with increasingly competition markets that have consequences for the profit margins of firms. This is to say that cost accounting is primarily concerned with production structure, costs of goods procurement, and budgeting for expected overall returns for a company (Miculescu & Miculescu, 2012). Cost accounting has played several roles at various times, among which have included the determination of prices with selling margins of products, which could sometimes

achieve business forecast precision (Bromwich & Bhimani, 1994). Unfortunately, cost accounting later became ineffective in catering to the emerging trends in the business world because it could not cater for the surge in business information in the rapidly changing business environment. With above limitations related to cost accounting, it is appeared that cost accounting does not meet the long terms objectives of decision making for managers, thus, a new term has emerged by researchers called management accounting, its objective is to help managers more in fulfil their achievements for decision making.

Management Accounting (MA) emerged as a better alternative for cost accounting shortly after the Second World War (Baines & Langfield-Smith, 2003). Advocating of management accounting had early maintained that it would help managers in making useful and functional decisions in accounting that would properly promote better managerial and firm performance (Horngren, Foster, & Datar, 1994; Shah, Malik & Malik, 2011; Shank, 1989). Furthermore, management accounting has long remained a remedy for tackling economic and financial impediments that had crippled the effective use of the traditional cost accounting. Management accounting became well known for comparative decision-making and analysis between pre-determined goals/standards and actual results while taking into consideration the identification and analysis of variances to ensure remedial actions drive actualization of future budget expectations that would match desire business outcomes.

Although management accounting solved issues related to accounting during a period of time due to development of performance and quality and cost control in terms of strategic decision making (Campanale, Cinquini & Tenucci, 2010),

shortcomings regarding management accounting are raised by scholars, stating that management accounting remained unable to review ongoing activities for decision making. Both academicians and professionals in accounting industry have made appreciable efforts to move away in part from management accounting. This was done to provide a more overreaching and dynamic paradigm for improving firm performance (Shank, 1989).

Therefore, the alternatives by academicians were to improve management accounting to match the strategic goals of firm, and under the economic environmental developments, the need to outcomes of cost and management accounting is not only related to industrial firms but the need was expanded to all kinds of firms regardless to the nature of the firm's activity either in it's service or industry. Thus, due to the strategic goals of firms about performance, quality and cost control, new terms have appeared which were called Strategic Cost Management (SCM) (Shank, 1989) and Strategic Management Accounting (SMA) (Simmonds, 1981). Scholars have different definitions about both terms while most of them ended with same concepts. Malleret (2015) concluded that scholars as well as practitioners of accounting/management control systems commonly use the term Strategic Management Accounting (SMA) in countries like the United Kingdom while those in/or from United State adopted the other.

Ramljak and Rogošić (2012) noted that two various schools of thought in the accounting discipline evolved in overlapping but different literature, which are often referred to either SMA or SCM, Notwithstanding, both concepts (SCM and SMA) are either used interchangeably or considered as different separate concepts

(Malleret, 2015). Hence, as earlier indicated at the beginning of this section, discussions on SMA appear intermittently in the literature. SMA, in the opinion of Shah, Malik, and Malik (2011), has been seen as a panacea for overcoming the shortcomings observed in traditional cost accounting practices.

However, Malleret (2015) stated that both terms SCM and SMA have emerged in same period, SCM focuses on cost structure of firm in order to improve the competitive position, on the other hand, SMA focuses on contributing in strategic decision making. SCM, though, cost analysis is implemented to serve strategy. In contrast, SMA appears to be more in-depth in management accounting techniques and contributes in firm's decision making.

Consequently, Strategic Cost Management (SCM) is a mutation of the management accounting to permanently improve strategic corporate objectives of organizations and to equally analyze costs of production and the competitive transfer of goods to customers within and beyond an economic environment. SCM confirmed it's success to tackle the shortcomings of management accounting, and it's effectiveness to support competitiveness for firms (Miculescu & Miculescu, 2012). In this regard, SCM has become a meaningful logic for managing costs for competitive advantage and reducing costs to the barest minimum and any adverse consequences of politics across firms (Grundy, 1996).

From this perspective, Strategic Cost Management (SCM) can be defined “as the managerial use of cost information explicitly directed at stages of the strategic



management cycle. It is explicit attention to the strategic management context that distinguishes SCM from managerial accounting” (Shank, 1989, p. 50).

Similarly, Cooper and Slagmulder (1998a) said that SCM focuses on cost management techniques that reduce production and distribution costs, while simultaneously aiming at improving strategic positions across organizations. Miculescu and Miculescu (2012) observed that a systematic approach and a cost management approach would achieve the overall SCM objectives. The former approach is used to analyze and adopt affordable costs mainly for satisfying customers’ demands relative to production goal(s), finance or/and viability of firms. The latter method is focused with the holistic and integrative cost analysis to achieve the general goal(s) and corporate objectives of firms (Miculescu & Miculescu, 2012). Again, Cooper and Slagmulder (1998b) observed that achieving SCM objectives would strengthen the organizational strategic position and, at the same time reduce costs, thereby extending the focus of managers beyond the internal environments of firms.

On that note, strategic cost management are tools and projects utilized by organizations in controlling and planning of decision making through short and long-term (Miculescu & Miculescu, 2012). Strategic cost management has become very important in coping with changing environments in the economy and market segmentation, and the present period of globalization has warranted greater competition due to technological advancements and instabilities, that now mean that firms require more information so that organizations can consistently adapt to constant change in customers’ demands for products and services, supporting in

increasing the value of products and at the same time decreasing costs (Miculescu & Miculescu, 2012).

Furthermore, Michael (2013) observed that SCM remained important in the managerial structure of firms in achieving their organizational goals and objectives, and strategies formulated to do this would clearly include various key cost drivers that are viable and result-driven. As Davig, Elbert, and Brown (2004) explained, firms would be able to focus on about 90% of their total costs when they paid attention to key cost drivers due to the adoption and application of SCM. Therefore, application of SCM could be in several business areas like in strategic, operational, and organizational areas identified by Davig et al., (2004), or in functional areas identified by Gregory (2010) as core functions, or support functions as cited by Michael (2013, p .73). Consequently, any organization that wants to adopt SCM could do so by relying on top management support and sponsorship, data availability and information systems, or the willingness to embrace change (Michael, 2013, 73-74) among other strategies. Thus, SCM remains paramount within the contingency perspective for flexible and readily adaptable techniques that support and ensure the survival and growth of companies in any competitive market environment.

Concerning with Simmonds (1981) maintained that SMA concentrates more on the correlation between the business and its competitors, and this provides managers with the opportunity to carefully predict and take meaningful decisions in anticipation of any procedures or/and techniques that their competitors might apply (Bromwich, 1990). In this regard, the common functions of SMA include: 1) generation of information about competitors, 2) making strategic decisions through

accounting; 3) formulating strategic decisions with minimal costs; and 4) achieving desirable advantages (Lords, 1996).

Moreover, Langfield-Smith (2008) believed that the application of SMA logic provided conditions for firms to effectively and efficiently produce goods/services for a customer in a more economical manner for maximising satisfaction, which means that this objective pushes firms to position their management accounting procedures in this direction.

Malleret, (2015) explained that, “SMA should be implemented by management accountants, strategists, jointly by both types of actor, or by other functions or combinations of functions in organizations has also been debated over the years in the SMA literature. Thus, SCM and SMA have “certainly helped to bring customers and markets into management accounting logics, to place costing in a dynamic, competitive perspective, to develop the ideas of the attribute and value for the customer, to begin the search for links between costs and value, and more” (Malleret, 2015, p. 30).

It has been facilitated the use of traditional accounting techniques alongside recently advanced management accounting techniques like Activity-Based Costing (ABC), Balanced Scorecard (BSC), Just-In-Time (JIT) Inventory, Product Life Cycle Costing (PLCC), Target Costing (TC), Total Quality Management (TQM), and Value Chain Analysis to mention but few. (See Abdel-Kader & Luther, 2008; Anderson & Lanen, 1999; Chenhall & Langfield-Smith, 1998; Innes & Mitchell, 1995; Islam & Kantor, 2005 and Luther & Longden, 2001). In furtherance of that,

Gupata and Gunasekaran (2005) and Ramljak and Rogošić (2012) have categorized SMA techniques to assist managers in making strategic decisions for both accounting and management control systems, although Soljakova (2012) opined that not all those techniques are purely advanced in nature.

To this end, this study focused on BSC as a tool in strategic management accounting techniques because of the recommendations of the Conference of Iraqi Federal Board and Supreme Audit in April 2014 that emphasized paying more attention to the industrial sector and focusing on improving its contributions toward supporting the Iraqi economy (FBSA Journal of Auditor General, 2014). Moreover, the use of BSC is based on suggestions from previous literature (Mehralian, Nazari, Nooriparto, and Rasekh, 2017). Hence, there are discussions of the BSC in the next section of this chapter. Moreover, Abdel-Maksoud, Cerbioni, Ricceri & Velayutham, (2010) stated to examine other potential factors that may affect the use of accounting innovations such as the BSC approach. Also, Sawalqa, Holloway & Alam (2011) outlined in their research that chances available for coming studies to exam the interactions between strategic alignment and firm performance in organizations applying the BSC methods. To the knowledge of the researcher of this study, there are limitations in studies regarding BSC in the geographical location of the study in which encouraged the researcher to focus on such study as a contribution. The next section focused on BSC as a tool of SMA techniques, the importance and need of this technique and the four perspectives of BSC.

### **2.3 The Balanced Scorecard (BSC)**

The BSC is an outstanding method that integrates old financial measurements of department performance (Kaplan & Norton, 1992). The word “balanced” is regarding to the scale between the performance of measurements of financial and non-financial activities, between latter and former measurements and between interior and exterior point of view of performance indicators (Jusoh, Ibrahim & Zainuddin, 2008). The BSC is a system of measurement which assists organisations to interpret their sight and vision into activities, and delivers a clear outline of firm performance. It's presented by Kaplan and Norton in 1992, the BSC is a structure that measures both the existing performance and operators for performance in future. Therefore, the BSC support organizations to view at their activities from four essential perspectives like, the financial perspective, customer perspective, internal business perspective, and innovation and learning perspectives. Therefore, the BSC method joins the conventional financial measures and non-financial measures of customer, internal business processes, and innovation and learning perspectives.

In this context, scholars and academicians documented the necessity for and significance of BSC, which was facilitated when they began studying it empirically (Hoque, 2014; Norreklit, Norreklit, Mitchell, & Bjomenak, 2012). Today, although BSC is considered as among the highest best techniques in management accounting, little conclusive observed assistance is existed in the business. Thus, a need exists for continued research in the field in various contexts. BSC is a performance measurement system that measures performance in reaching strategic objectives. This technique covers leading and lagging performance indicators and covering internal as well as external perspectives of performance (Kaplan & Norton, 1996b).

BSC is based on the linkage between different metrics of performance and creating a scorecard includes four steps (Kaplan & Norton, 1996a). These are: 1) translating a vision into an operational objective, 2) communicating the vision and attaching it to performance, 3) setting an index for measurement, and 4) gaining feedback and learning.

In that regard, Sharma (2009) said that the first step to take prior to implementing BSC was ensuring that managers transform the firm's vision into unambiguous strategic objectives. Kaplan and Norton (1996b) had earlier suggested that managers should begin with stating in clear terms the lasting financial targets that they want to achieve, and the significant lasting position these would yield on assets and investments. BSC being a performance measurement system can combine a multitude of performance metrics. These performance measures are related to the different strategic objectives of the organization, which are combined in a balanced scorecard and then measured. The effective use BSC can help top-level management avoid under-performance (Kaplan & Norton, 1992). This is done by getting a clear picture of the importance of achieving the necessary changes without sacrificing performance in other areas.

### **2.3.1 Balanced Scorecard Measurement Perspectives**

The BSC is commonly broken down into four perspectives, although any of the perspectives can be added or deleted depending on the strategy of the organization (Kaplan & Norton, 1996). Because the BSC is aligned with goals of organizations, it can be modified to fit the objectives of an organization. The primary objective of

BSC can be achieved from four different perspectives, including those of customers, innovation and learning, internal processes, and financial (Kaskey, 2008).

#### **2.3.1.1 Customer Perspective**

Selecting measures from the customers perspective, a BSC rely on the kind of customers and their desires in response to the value that the organisation is providing to them (Niven, 2002; Farooq & Hussain, 2011). The basic purpose is to emphasis on the assign customers of the organizations. This helps organizations in developing strategies in accordance with the desires of the customer to satisfy them (Farooq & Hussain, 2011).

An organization that adopts the philosophy of trying to please every customer is not differentiating itself from its competitors and will most likely be unsuccessful (Porter, 2001). Instead, organizations should determine their target markets and should assess customer satisfaction, customer loyalty, percentage of new customers, and total purchases per customer in those markets (Niven, 2002). This information will supply an organization with information that they can use to determine whether they are reaching their target markets regarding sales. Moreover, assessing customer perspectives that fall into three classes of relationships determines the quality of purchasing, the experience, personal relationships, and brand building, which assesses organizational image (Kaplan & Norton, 1993).

#### **2.3.1.2 Internal Business Process Perspective**

The internal perspective of BSC helps the manufacturers to identify the procedures that should be adopted by them to gain success. Elements like order processing,

manufacturing, delivery, and product development are those upon which the organizations must concentrate (Niven, 2002; Farooq & Hussain, 2011). The main focus of this perspective is satisfying a customer because organizations need to focus on customers to gain a competitive edge.

For example, when target customers become dissatisfied due to lengthy or time-taking processes, then an organization must concentrate on internal procedures. An organization needs to develop efficient delivery mechanisms by refining the systems that are currently being used. For achieving this task, managers must not only access internal procedures but review innovative strategies. This is important because global competition is increasing and the time for bringing products to the customers is being squeezed (Bose & Thomas, 2007; Farooq & Hussain, 2011).

#### **2.3.1.3 Innovation and Learning Perspective**

The perspective of innovation and learning is considered the backbone for the successful implementation of BSC, as it helps employees to learn new skills and information systems (Kaplan & Norton, 1996b). If employees are satisfied with their jobs, their productivity increases, thus, positively affecting the perspectives of customers, perspectives of internal procedures, and ultimately the financial measures of an organization (Appelbaum, Deguire, & Lay, 2005).

Employee's satisfaction, coordination between employee skills and job requirements, implementation of employee suggestions, and employee training hours are chiefly linked with perspective of innovation and learning. Based on a comparison of the skills that employees possess and the skills that are desired, companies alter job



details, transfer staff to other units, apply incentives to encourage staff, and deliver on the job training and education. All these things are done to reduce employee turnover and to enhance employee retention (Niven, 2002; Farooq & Hussain, 2011).

#### **2.3.1.4 Financial Perspective**

The final perspective, known as financial perspective, is basically the traditional and most common perspective for measuring the success of organizations. The financial perspective involves profitability, revenue enhancement, growth in sales, and revenue per customer per visit. Even though BSC addresses the need to utilize several measures for determining success, financial measures are given top priority for achieving success (Niven, 2002; Farooq & Hussain, 2011).

A prime concern of profit-making organizations is its stakeholders, which include anyone affected by the actions of the organization (Robbins & Decenzo, 2001). Thus, the elements of innovation and learning, customer perspectives, and internal business processes can all potentially affect the financial piece of the BSC because stakeholders can be customers, employees, or community members.

Based on the forgoing, BSC is a performance measurement system that incorporates customer, internal process, innovation and learning and financial perspectives that are essential for organisations especially those that are profit oriented. Therefore, firm performance must be viewed not only from financial aspects but non-financial aspects. BSC is a powerful technique that can improve firm performance in today's competitive environment by considering costumers, internal processes, innovation and learning and financial perspectives.

### **2.3.2 Balanced Scorecard in Arab Countries**

In Arab countries, the role of management accounting has become critical to organizations for providing appropriate information to decision makers. However, information regarding the use of accounting systems is limited in organizations operating in Arab countries because research conducted previously in the field of management accounting has mainly focused on developed nations. Most researches have been lead in European countries and not in the Middle East despite significant changes in the economic environment (Al-Akra, Ali, & Marashdeh, 2009). Thus, the overall situation concerning management accounting and how and what information is provided is unclear. Therefore, Arab countries and other developing countries should examine management accounting techniques like BSC. This is because very little is known about the actual practices of BSC in Arab countries (Judeh, 2008).

The studies that have been conducted in Arab countries have highlighted that organizations use multiple measures for evaluating performance, but these studies have failed to determine what measures of performance are relevant in the context of the Arab region (Zurickat, 2007). Previous studies also called for further research to investigate performance measurement practices such as BSC and other management accounting techniques and practices in Arab countries and to assess the impact of various contextual factors on their usage (Al-Khadash & Feridun, 2006). In the United Arab Emirates, Saudi Arabia kingdom, and Jordan they tried BSC and found it to have found a positive impact (Al-Sawalqa et al., 2011). So, the study will add new experience and evidence of Iraqi practice to the Arab area cases.

### **2.3.3 Balanced Scorecard in the Manufacturing Sector**

In the manufacturing sector, long-term objectives are given importance when financial perspectives are considered. Financial perspectives typically have included growth in sales and improvements in productivity, which are of importance to shareholders. Thus, factors like return on equity and performance variation reduction are usually measured. While correlating the internal factors of business with the stock price of shares, many researchers and practitioners have considered the importance of economic value addition, economic profit, and return for shareholders. During the last few years, return on net assets has also gained importance (Carmona, Iyer, & Reckers, 2011; Huang, Lai, & Lin 2011).

On the other way, the perspective of customers usually focuses upon the development of a lifetime relationship between the customer and service delivery. The basic purpose is to understand that how well the organization is successful in attracting, retaining, and meeting the needs of their customers (Hosseini, Safaei, & Asgharpour 2011). For any industry a customer focus is a top priority, if the products being sold are not the products that are customers demand then manufacturers do not have any reason to sustain their customers and they neither preserve the loyalty of current customers nor attract new ones.

In this regard, new products and services are developed, as per customer requirements, and the organization must focus on perspectives of internal processes. Thus, information plays a key role from the internal process perspective, and the internal value chain may be divided into four broad categories. These four categories

are: 1) innovation, 2) management of customers, 3) regulations and operations, and 4) the operating environment of the organization (Carmona et al., 2011).

Innovation as well as learning is critical, and the capabilities of employees and the procedures of organizations must be inculcated to manage the business in such a way as to cope with the ever-changing environmental conditions. This will help to develop the capability to motivate labour, which, in turn, helps in implementing innovations. Innovation and learning are tailored to achieve organizational visions, and improving strategies helps an organization meet the challenges of an ever-changing environment.

#### **2.3.4 Benefits and Advantages of Balanced Scorecard**

One fascinating advantage of BSC is its traits which are adjusted or balanced. Kaplan and Norton (1992, p. 73) said that by compelling senior directors to reflect all the main effective measures, the BSC gives them a chance to see whether change in one zone may have been accomplished to the detriment of another. The rationale behind this is that a company's technique interfaces with all the alternate points of view and their measures. In this way, the company's long-haul objectives are described.

Accordingly, BSC helps develop strategies that will aid in achieving organizational objectives (Herath, Herath, & Bremser, 2010). The BSC helps in the determination of activities that should be given priority for integrating strategies for what must be done to enhance organizational capabilities for success. This may be achieved through downstream structures and objectives to improve leadership efficiency for

approaching high performance management systems. To do so, aligning BSC with the approach used for the achievement of organizational vision and mission is necessary. A correctly aligned BSC method may be useful because this method develops the effectiveness of the BSC as well as improves the benefits to organizations that apply it (Thompson & Mathys, 2008).

The BSC enhances value by civilising management procedures and by investing staff within an organization (DeGeuser, Moorai, & Oyon, 2009). The translation of the organizational strategy into effective view according to which staff can better comprehend and developing the processes, services and competencies within the organization, adds value to an organization and assists management in reaching their desired goals (DeGeuser et al., 2009). Thus, BSC assists everyone in the organization by providing them with guidelines to work towards in achieving the organizational strategies and visions set by management.

The BSC system endeavours to address the necessities of the diverse partners of an association by making a mix of key measures: 1) result and driver measures, 2) financial and non-financial measures, and 3) inside and outer measures (Anthony & Govindarajan, 2007). Result estimations are identified with the consequences of methodology. They commonly are "lagging indicators" that tell administration what has happened. Conversely, driver measures are "leading indicators" that identify with procedures of key zones in actualizing a methodology.

The most critical part of this technique is its capacity to gauge results and drivers in a way that should make the association demonstrated via its systems. Kaplan and

Norton (1996) focused on the significance of the connection between an association's methodology and its execution estimation framework. They contended that BSC helps administration in four stages: 1) translating the vision, 2) communicating the strategy and linking it to departmental and individual objectives, 3) business planning, and 4) feedback and learning.

Organizations ought to have a range of measures covering both financial and non-financial parts of performance. Both inner and outside benchmarking can be utilized to set gauges against which execution is measured. Adequacy might be more major than effectiveness in that cost decreases ought not be given more prominent significance than accomplishing yield goals. Efficiency is "the ratio of outputs to inputs, or the amount of output per unit of input" and effectiveness "the relationship between a responsibility centre's outputs and its objectives" (Anthony & Govindarajan, 1998, pp. 130-131). As Hansen et al. (2004) noted, managing cost may build an activity's efficiency. However, if an action is superfluous, it does not make a difference whether that action is performed proficiently. On the face, a superfluous activity is inefficient and ought to be disposed of. A proper bundle of motivator and reward courses of action ought to be integral to a performance measurement system. There ought to be an adjustment and trade-off between compensating results and conduct (Otley, 2005).

In general, BSC has a few potential advantages. Initially, BSC was contrasted and compared with traditional measurement system that incorporated financial measures, for example, Economic Value Added (EVA) and stock return. BSC is intended to enhance the basic leadership of administrators by managing their consideration of a

more extensive vision of an organization's operations (Kaplan & Norton, 1992). Also, as a comprehensive performance measurement system, BSC provides causal connections interfacing the various classes of non-financial measures ("drivers of the performance") and the financial measures ("final outcome") (Ittner, Larcker, & Randall, 2003). All things considered, BSC plainly demonstrates the connections by which particular upgrades in the drivers are relied upon to prompt the results desired by the system. Also, BSC can be utilized as a strategic management system (Kaplan & Norton, 1996, 2001).

Therefore, the conclusion is that BSC is critical in today's competitive business environment because it strengthens the policies and operations of the firms based on an outward-looking perspective. BSC makes firms look outwards from a customer's perspective and, as a result, develop internal processes that can give a better financial perspective taking in to consideration the aspects of research, learning and development.

## **2.4 Contingency Factors**

Over the last three decades, contingency theory has provided a convenient theoretical framework for studying various aspects of organisational structures and behaviors in addition to management accounting (Chenhall, 2003, 2007; Gerdin & Greve, 2004; Chapman, 1997). Gerdin and Greve (2004) provided a framework to map various forms of contingency fit. Though their primary emphasis was on MAS communication with strategy, it can be implemented equally to other kinds of contingent researches. Chenhall (2003) provides an extensive evaluate of observed contingency-based research developed since the 1980s and discusses the importance

of contemporary dimensions of management control systems, contexts as well as organisational and social outcomes (Abdel-Kader & Luther, 2008; Chenhall, 2003). Contemporary contingency theory of management accounting focuses primarily on clarifying how specific conditions (that are contingent) form the form of the PMS (Reid & Smith, 2000). According to Otley (1980):

*“Contingency approach to management accounting indicates that there is no collective accounting system that is applicable to all organisations in a similar circumstance. Rather, contingency theory tries to recognize certain characteristics of an accounting system which are related with specific circumstances and to validate an appropriate matching” (p. 413).*

Most empirical research based on contingency theory involves a search for systematic relationships between the performance measurement system and specific environmental variables. For instance, the distribution of tasks is considered significant in understanding the control systems of an organisation (Waterhouse & Tiessen, 1978). Five contingent factors are identified by Fisher (1998). The factors include: 1) uncertainty of task and external environment, 2) different industry, organizational and unit variables (such as size, diversification and structure), 3) organizational technology and interdependence, 4) behaviour and outcome observability, and 5) competitive strategy and mission. Chenhall (2003) proposed several suggestions, including external environment, generic concepts of technology, organisational structure and variables, while combining control with organisational contexts.



Hansen et al. (2004) identified eight organisational factors (size, systems, structure, resources, strategy, management philosophy, staff skills and organisational norms) along with seven environmental factors (technology, culture, competition, social values, economy, regulations and politics). However, after reviewing all the contingency-based studies during the past twenty years, Chenhall (2007) identified six classes of contingent factors that are likely to affect and explain the effectiveness of performance measures usage. These factors include: 1) environment, 2) technology, 3) size, 4) structure, 5) strategy and 6) culture. Pollanen (2001) argued that organisations can exercise better and more reasonable control by placing more emphasis on internal factors rather than on external factors. Furthermore, Maltz, Shenhar, and Reilly (2003) stated that, “the appropriate set of measures depends on the firm’s size, technology, strategy, industry and environment in which a firm operates” (p. 188).

The above arguments indicate that the role of contingent factors is critical in explaining the motivation of organisations in designing and using performance measurements. Different contingent factors are investigated to test their effect on the plan and usage of resistor and BSC. In relationship to creating better performances, empirical research on management accounting has applied contingency-theoretical approaches and tried to identify what the key issues effect the use of BSC in effective organizations, how popular and widely used various management accounting practices are in different settings and whether the use of non-financial or comprehensive management control formation leads to better firm performance. Thus, this body of research has looked at the effect of environmental uncertainty (e.g., Hoque, 2005), market competition and technology (e.g., Haldma & Lääts,

2002; Hoque et al., 2001; Mia & Clarke, 1999), TQM (e.g., Sholihin, & Laksmi) and corporate culture (e.g., Henri, 2006).

Through the discussion above, it has been revealed that the contingency theory approach is essential for understanding most of the measurement diversity approach (Zuriekat, 2005). This study extends previous research and considers three contingent factors to assess their effect on use of BSC among Iraqi industrial companies. These three contingent factors include: PEU, TQM and corporate culture. These factors as indicated in chapter one is relevant to the specific business environment of Iraqi companies. Notably, there is no single study that has investigated all these contingent variables at the same time as far as the researcher knows. The following sections discuss and review these three factors (PEU, TQM and corporate culture).

## **2.5 Perceived Environmental Uncertainty (PEU)**

The environment factors are considered the interface of any organization performance, this kind of environment should be identified according to its type whether perceived or not perceived. In this context PEU have been perceived as either certain or uncertain (Achrol & Stern, 1988; Duncan, 1972). Daft, Sormunen, and Parks (1988) considered PEU to be lacking information regarding organizational activities and procedures. While Ebrahimi, (2000) perceived PEU as being subjective rather than objective being based on facts. Moreover, changes in the marketing environment can make companies to face serious uncertainty pressures on many occasions (Dibb, 1996). Indeed, the two important attributes of market turbulence and competitive intensity have become a focal point regarding the issue of

environmental uncertainty (e.g., Baum & Wally, 2003; Hwang, 2005; Alkaraan & Northcott, 2006; Dik, 2011).

Fisher (1995) argued that external factors signify the level of environmental uncertainty on many occasions. Scholars such as Chapman (1997) and Barnett, & Kendrick, (2004) considered PEU as a most achievable task wherein an organization is characterized by its available information levelled (Miller 1987; Tymon Jr, Stout, & Shaw, 1998). Daft (1992) and Duncan (1972) came up with two basic dimensions that mostly operate within the level of organizational uncertainty. Such dimensions include static and the simple-complex dimensions. A static dimension is concerned with decision-making processes that remain stagnant or without many changes over a period of time. The sample-complex dimension is the number of elements that have been taken into consideration when a decision is taking place. A degree of low uncertainty clearly characterises the simple-static environment. In contrast, the complex-dynamic environment produces a high degree of uncertainty. Duncan (1972) characterizes PEU as an absence of data to decide, not knowing how to react to the distinctive issues and not knowing the outcomes and results of those choices. Likewise, Gerloff, Muir, and Bodensteiner (1991) consider PEU as an absence of data or learning with respect to reacting to accessible choices or the powerlessness to anticipate feasible outcomes of a reaction decision.

Regardless of the contradictions concerning either the conceptualization or the estimation of conditions, most past examinations have concentrated on targeting outer conditions as producing an essential impact on hierarchical basic leadership and execution (McCabe, 1990). Khandwalla (1977) distinguished four measurements

of PEU. These included 1) turbulence, 2) hostility, 3) diversity and 4) complexity (referred to in Chenhall, 2007, p. 172). In other words, PEU is a vital factor in examining and clarifying why firms embrace diverse management accounting practices (Abdel-Kader & Luther, 2008). PEU was an early contingent factor studied for its effects on the design for the management accounting systems. The bases of the relationships between PEU and MAS lie at the essential of initial contingency theories of organizations. The basic thought is that the situation figures organizational structures and firm performance relies upon either the competition or the fit between the firm's and its setting (Hoque, 2005).

The literature helps in building the contention that environmental uncertainty is categorically related to the enterprise of management accounting and control systems. The works in management accounting and control systems contends that managers who understand the significance of environmental uncertainty give more importance to management accounting systems. The information extracted by MAS helps managers in understanding questionable conditions (Mia, 1993). Research on SMA information influenced by uncertainty of environment has shown that financial controls are utilized to a slighter degree during high uncertainty stages (Abernethy & Stoelwinder, 1991). In a highly uncertain environment, management has to utilize non-financial measures to beat with external uncertainty (Chenhall & Morris, 1986; Chenhall, 2003). Chenhall and Morris (1986) opined that organizations facing unpredictable changes, as a rule have really actualized traditional financial evaluation systems. These frameworks as a rule manage inward issues of associations, which are incapable of control and correspondence, because they are historical and are oriented financially (Otley, 2016). All analysts share unanimity on

the idea that dependence on non-financial performance measures demonstrates better outcomes in profoundly unspecified conditions. This investigation extends the degree by connecting environmental uncertainty to the scope of performance measures in organizations.

Based on the above explanations, this study has focused on factors including political turbulence and the intensity of competition for the following reasons. First, Iraq has been among the most politically intensified and troubled countries since 1980. Second, war in Iraq had impacted to a substantial level the performance of the performance of many countries. Third is the increasing competition among the industrial companies in Iraq, including local and multinational companies that have invaded the Iraqi markets.

Because of political turbulence, the manufacturing performance of companies in Iraq has been declining and has contributed to the fall of GDP to 0.8% in 2016 compared to 23% in 2002 (Central Bank of Iraq Annual Report, 2003-2016; Iraq News Network, 2015). That has led to an increase in imports of goods and services to \$75.000 billion USD in 2013 compared to \$35.011 billion USD in 2008 (Abdul-Hamid, Agoawike & Odulaja (2013).

The decline of the industrial sector and the poor performance of manufacturing companies have made the Iraqi government undertake many reforms and hold conferences and meetings at a very high level, such as the Conference of Iraqi Federal Board of Supreme Audit in April 2014 and the Conference of the Iraqi Parliament held in February 2015. Despite these efforts, Iraqi manufacturing

companies still suffer from operational and marketing obstacles (*FBSA Journal of Auditor General*, 2014; *Al-Amal and Al-Iktissad Magazine*, 2015). The attending consequences have seriously contributed to the high costs of production, the inability to compete favourably, and the inability to introduce new products to compete with imported ones. Therefore, need exists to study the factors affecting the performance of manufacturing companies in Iraq including the political turbulence and the intensity of competition. Therefore, the next two sub-sections discuss the political turbulence and intensity of competition.

### **2.5.1 Political Turbulence**

Many scholars have made considerable efforts to understanding the effects of political turbulence. Rodrik (1991) emphasized that political instability has a profound result on the economic and social development of any country that focuses its attention on other interest groups on short-term motives while neglecting long term costs. Additionally, Hoque and Hopper (1997) maintained that many statutory corporations in third world countries mostly have greater economic capabilities but unstable political transformation results in poor checks and balances leading to political upheavals in their country.

The Arab world has generally suffered from the pressures of political turbulence for decades, from the Arab spring revolution in 2011, and the subsequent armed and political conflict in many countries including Yemen, Saudi Arabia, Iraq, Syria, Lebanon, Libya, and Egypt leading to one of the most critical strategic uncertainties that are dominating the Arab world. These issues may lead to different kinds of strategic uncertainties.

Example of such emergence uncertainties brought to the market as a side effect of the political turbulence include: supply and demand fluctuation, assets safety, employees' safety, aggressive price competition, new government legislation, public boycott products of some countries, and the prevention of import and/or export of raw materials to and from some countries, declining purchasing power, high unemployment rates, and extreme poverty, among others (Shurafa & Mohamd, 2016). Rapid and complex changes that dominate the Iraqi political environment as shown earlier, give rise to economic instability. This instability has caused market demand to drop rapidly, which has forced some firms to change their behavior and act aggressively to ensure their survival.

In the present Iraqi circumstances, the economic context is unverifiable due to the changing political situation. This changing condition makes business sectors and their structures exceptionally unstable and unreliable. Because of these, organisations working in such a context are exposed to great dangers and must grow aptitudes that are essential to achieving their goals and that they must react to changing condition quickly (Zainy, 2011).

The Iraqi manufacturing sector is a viable specimen for an investigation of this nature because exceptionally unpredictable and dubious conditions impacted any examination. UNAMI (2010) noted that in the last years of the 1980s, the business condition in Iraq had gone different degrees of turbulence. The execution of firms was not merely influenced by these political turbulences but also by the circumstances related to the second war against Iraq and the worldwide coalition driven by the United States in 1990, in which the political turmoil was high (Zainy,

2011). Notwithstanding the subsequent economic blockade, the political turbulence affected all zones of life, including firm performance (Lallo & Selamat, 2014). The period between the update of memorandum of understanding amongst Iraq and the United Nations in 1996 to the US occupation of Iraq in April 2003 was described as serene for businesses in Iraq (UNAMI, 2010).

In particular, regarding Iraq, political uncertainty has remained a drag upon economic development for a considerable length of time. This drag began amid the Iran-Iraq war in the 1980s, which was followed by the economic embargo by the United Nations of Iraq that started in 1990 and proceeded by the US control of Iraq in 2003. The ongoing injurious occasions that have proceeded have decreased the economic conditions profoundly. Thus, Iraq has remained economically in reverse to some degree in contrast with the period before the political turmoil because of politico- economic uncertainty.

Management accounting and control system for the most part rotate around the environmental factors that include social, political and economic elements (Sharma, 2000). Hence, Granlund (2001) and Haldma and Laats (2002) opined that numerous Management accounting and control system rely on the context in which they work, and this context regularly impacts and manages administrative change, wherein changes in accounting standards and applications are a consequence of economic crises (Hopwood, 1987). Additionally, the emergence of political and social parameters has enormously affected the standard costing of firms, and, along these lines impacted management accounting (Oakes & Miranti, 1996).



Basically, firms utilize and management accounting to different degrees with respect to institutional changes in the context in which they operate. This is a condition that a few scientists have considered with respect to change and security (Nabiha & Scapens, 2005). In line with earlier discussion, numerous events can make for turbulent (Khandwalla, 1972), including political elements (Kattan et al, 2007). A context in which extensive recurrent or different uncertainties of economic movement happen and in quickly developing industries are probably going to be seen as turbulent. Fast sociocultural change, quick change in the necessities of a firm's customer base, or erratic moves in government policies can also lead to decision makers to perceive the environment as turbulent (Khandawlla, 1972).

Hoque and Hopper (1997) reasoned that large-scale environmental factors, for example, the political climate, government regulations, competition, industrial relations and aid agencies that influenced factors related to budgetary procedures (e.g., budget evaluation, participation, flexibility) are also causal agents of environmental turbulence. Along these lines, it might be right to concur with the notion that, despite the colossal political, financial and social changes influencing organizations in these nations, traditional management accounting practices are yet predominant, while no evidence exists of the use of the so-called advanced management accounting techniques, such as ABC and BSC.

Aggressive behavior has brought new problems to the business environment along with political turbulence. In this case, two types of uncertainty arise, namely, 1) a turbulent environment steaming from political conflict and 2) competitive uncertainty emerging from the behavior of competitors. Therefore, a firm that

functions in such an environment, regardless industry type or firm size, suffers from the negative side effects of the political turbulence dominating the environment. Accordingly, companies must consider the different negative side effects existing under such political turbulence to cope with such dangerous uncertainties.

### **2.5.2 Intensity of Competition**

Since the contingency theory has included vast number of factors which in some kind or another considered as sources of influencing firm performances, the intensity of competition consequently should be perceived in analysing the expected trends toward future competitive organization positioning. Many researchers have highlighted the need to conduct research on the intensity of competition (e.g., Hwang, 2005; Huang, Tayles, & Luther, 2010). For example, Khandwalla (1972) noted that competition exists, especially in the quality of distribution and selling of goods/services, human resource competency and rivalry in the quest for raw materials and diverse goods, services and price. Thus, organizations compete for raw material, distribution channels, quality, product diversity, price, and selling (Khandwalla, 1977). In response to increasing competition in the cotemporary business environment, all organizations are vigorously working to gain a competitive advantage with the objective of becoming strategic in their functions (Kalagnanam & Lindsey, 1998). Consistent with such argument, Yasai-Ardekani and Haug (1997) highlighted that environment forecasting is necessary for identifying the situation of competitive environment. Consequently, environmental analysis is compulsory to compete favourably in the marketplace (Khandwalla, 1977). In such situations, the rapidity of decision making is crucial in aligning an organization with its environment (Yasai-Ardekani & Haug, 1997).

Khandwalla's (1972) considered only price, product, and marketing channels as determinants of firm profitability. However, price, product, and marketing channels are not the only factors that trigger competition because competitors, technology, and regulations also have significant impacts. These factors have simultaneous influence and should be studied collectively for understanding competition (Porter, 1979). Subjective evidence also supports the nature of competition (Mia & Clarke, 1999). This evidence clearly indicates that the determinants of firm profitability have an interlink relationship with the intensity of competition and firm performance. The intensity of competition, BSC and firm performance would be incomplete if competition relating to management accounting were not given adequate attention. That is because competition remains the major indicator for designing and implementing new management accounting system (Fadaly, 2008).

However, this does not refute the fact that different types of competition (e.g., prices, advertising, branding, and marketing) influence management accounting and control systems in manufacturing firms. Invariably, as Otley (1980) had previously suggested, the intensity of competition among firms determines the level of sophistication of the accounting and control system. In turn, this had made managers seek for information to create and aligns plans geared towards highly increasing market competition (Chong, Eggleton, & Leong, 2005). In support of Otley (1980), Johnson and Kaplan (1987) reiterated the inability of traditional cost accounting systems to provide the required and adequate information for manufacturing operations of firms. Consequently, Johnson and Kaplan (1987) said that adjusting management accounting and control systems for manufacturing operations of firms in line with competitive pressures had become necessary. This is because the

intensity of competition results in both high-level financial and non-financial risk for firms, which become confounded due to internal and external environmental pressures and uncertainty. Thus, a need is present for constant amendments or/and improvements of management accounting systems to manage both opportunities and dangers arising from the competitive environment (Mia & Clarke, 1999).

Furthermore, research has indicated that both technology and globalization factors are not spared from the intensity of competition and eventually result in modifications of management accounting systems, with a special focus on the management accounting reports of firms (Cobb, Helliard, & Innes, 1995). Similarly, Miller (1992) criticized the quick pace of intensity of competition when he observed that recent cost accounting systems were inadequate for supplying firms with sufficient financial information required by management. This is unfortunate because sufficient management information would go a long way to meeting the threat of international competitive pressures (Burns & Scapens, 2000).

Studies on the relationship of conservational issues and management accounting systems are numerous (Otley, 1978; Khandwalla, 1972). Among such studies are those of Khandwalla (1972) who empirically determined the relationship between various kinds of rivalry and a set of classy management accounting control systems in manufacturing companies, and Otley (1978) who inspected the influence of differences in the setting formed by unit managers. Both Otley (1978) and Khandwalla (1972) agreed that management accounting systems had stayed generally been affected by environmental factors, while specific competition factors also effected the operations of management accounting systems. In another vein,

Kaplan (1983) focused on other aspects of competition, which comprised cost minimization, high productivity, and improved quality of goods and services that engender the evolution of a fresh management accounting and control system in every firm. Kaplan (1984) also stated that competitive pressures affect quality, performance and price.

In furtherance to the foregoing, Hussain and Hoque (2002), O'Connor et al. (2004), and Hoque (2005) conducted empirical studies that showed the way to recognize and apply management accounting practices and control systems in firms to enjoy a competitive advantage. In essence, Hussain and Hoque (2002) concluded that PMS greatly depended on competitive factors. In a related study, O'Connor et al. (2004) found that increased competition in institutional variables like experience from joint ventures and stock market listings reshape the management accounting and control systems of many firms. Finally, Hoque (2005) maintained that competition has become very crucial, and this competition has resulted in the use of specific practices like non-financial performance measures to gauge the performances of firms in modern times. Consequently, the new trend in assessing the competitive advantages for modern organizations focuses on the non-financial aspects of evaluation concerns. This issue is included the human side of concern and the internal developments to the operations process per se.

In the Iraqi context, the performance of manufacturing companies has declined and has led to an increase in imports of goods and services. Despite the efforts of the Iraqi government to improve firm performance in industrial sector, Iraqi manufacturing companies still suffer from operational and marketing obstacles.

These issues are reflected in high costs of production, the inability for better competition, and the inability to introduce new products to compete with imported ones. This is also in alignment with the view of Rodrik (1991) that most developing countries like Iraq engage in achieving short-term objectives rather than in achieving long-term objectives. In addition, Hoque and Hopper (1997) emphasized the efforts of developing countries that operate in less stable political systems, resulting in increased competition. Therefore, there is a need to study factors such as the intensity of competition that affects the performance of manufacturing companies in Iraq.

### **2.5.3 Perceived Environmental Uncertainty in Arab Countries**

PEU includes political uncertainty and policy uncertainty. Political instability references to the impetuosity of update in political regimes (Shubik, 1983; Ting, 1988). Policy turbulence, on the other way, shows unreliability in the policies of the government that affect the business society (Ting, 1988). Recently, political uncertainty has receded among many Arab countries in transition, reflecting that progress has been ended in introducing fairly designated governments and comprehensive political transformations. By dissimilarity, the encounter in Syria has increased into a civil war and is achieving to a solemn humanitarian disaster with substantial regional spill-overs, particularly for neighboring countries (International Monetary Fund, 2012).

The on-going political transitions, with short planning horizons for governments in several countries and upcoming constitutional changes in many Arab countries in change are a source of uncertainty and possible setbacks, which would hold back

private investments and more broadly reduce economic confidence (International Monetary Fund, 2012). For example, in Egypt growth has been held back by political and policy uncertainty, security problems, and the global slowdown. Social outcomes have remained unacceptable as unemployment has remained high, double-digit inflation has eroded household incomes, and privatization has been perceived to have benefited only a few. Another example is Jordan. The economy is among the most open in the Middle East; tourism receipts, remittances, foreign direct investment flows, and external grants play important roles. However, the economy has suffered from exogenous shocks, including high energy prices and regional unrest, particularly in neighbouring countries, especially Syria (International Monetary Fund, 2012). In addition, Yemen has also faced continuing uncertainties. Even before the 2011 disaster, Yemen was fronting serious economic and security issues. The country knowledgeable a severe political disaster in 2011, that caused in policy powerlessness and lacks of basic supplies (International Monetary Fund, 2012). Moreover, Yemen in 2015 faced the near-collapse of its government due to a civil war.

Additionally, countries such as Libya, Iraq, Palestine, Saudi Arabia and Tunisia also have suffered from political uncertainties especially after the uprising of the so-called Arab spring revolution in 2011. Because of these uncertainties, the performance of manufacturing organizations in Middle Eastern countries sharply declined during the last decade. Many of them collapsed, and some are still struggling to survive (Institute of Chartered Accountants in England and Wales, 2011).

In retrospect, scholars have made considerable attempts to explain the major concern of this study including the PEU with its two dimensions, political turbulence, and intensity of competition. Those factors have had a profound influence upon the main focus of this study, which that is Iraqi manufacturing companies. Furthermore, political turbulence is also concerned with the negative effects of social and economic aspects of an organization. Intensity of competition is a situation where manufacturing companies can compete with each other for profit maximization.

## **2.6 Total Quality Management (TQM)**

Quality in contemporary organizations is associated with different administrative theories. This combination became a competitive indicator. In this context, following a call by Young and Selto (1991) and Abdel-Kader & Luther, (2008) for deviations in machinery to be measured within their structural context, contingency studies was protracted to test the impact of new management accounting tools such as TQM on the use of BSC. In fact, one approach that is used to control overall quality is quality management or what is called TQM (Horngren, 2009). TQM is one of the most important production technology practices to help reduce costs, and improve the competitive position of a company (Ayedh & Eddine, 2015; Hertati, 2015; Hertati & Sumantri, 2016; Ibrahim, Sukeri & abd-Rashid, 2014; Gupta & Gunasekaran, 2005).

According to Hoque (2003, p. 90), “TQM thoughts have been applied by firms concerned in attractive their existence prospects by counting quality and steady development into their strategic significances.” TQM is a strategy for enhancing customer fulfilment in the long term. Quality information is a way to continuously improve and increase the financial performance of the company in the long term so



as to increase competitive advantage. The growing and intensive literature in the management accounting field reveals that TQM has become a crucial tool for organizations in achieving a sustainable competitive advantage (Shea & Kleinsorge, 1994).

Competition in the global market has increased in the last few years. Determination of quality of products and services are decided by the customers; thus, customers are the key factor for achieving a competitive advantage (Eugenia, 2009). Focusing on customers assists producers in concentrating more on quality. Today, competitive advantage resides in knowing the demands of customers. Today, a customer is the starting point rather than the end point for determining the success of any organization. Organizations need to create management tactics based on total quality management for them to remain viable (Eugenia, 2009).

Quality management is a key factor for the success of any organization (Demirbag, Tatoglu, Tekinkus, & Zaim, 2006); thus, successful organizations emphasize customer-driven quality (Reid & Sanders, 2007). Therefore, most competitive organizations continuously enhance their quality standards. If products or services are of low quality, the result will be the dissatisfaction of customers. This will cause the loss of customer loyalty and provide opportunities for rivals to enter the marketplace (Reid & Sanders, 2007). Thus, organizations that pay serious attention to the needs of customers, give preference to quality. A key component of TQM is involving employees in decision making for the development of products that either meet or exceed customers' expectations (Reid & Sanders, 2007; Arumugam & Mojtahedzadeh, 2011).

However, in the literature of quality management, various definitions exist for TQM. One view is that TQM is a management approach that ensures participation of employees for customer satisfaction (Dale, 2003). Flynn, Schroeder, and Sakakibara (1994) suggested that TQM is an integrated approach that provides high-quality outcomes because of continuous improvement. Quality improvement is a decrease in wastage that minimizes costs and raises product quality (Kumar, Choisine, Grosbois, & Kumar, 2009). Those organizations that have good quality usually enhance their market share, which consequently increases their profitability.

As the global trade in the production sector is growing, developing and sustaining a viable production base by incorporating proper quality practices is critical (Kumar et al., 2009). Saizarbitoria (2005) argued that organizations that produce quality products gain customer satisfaction, which, in turn, results in increased customer loyalty and improved profitability because of increased market share.

Performance measurement is at the core of TQM. Some researchers have given top priority to performance metrics (Phusavat, Anussornnitisarn, Helo, & Dwight, 2009). This aspect covers financial as well as non-financial indicators (Wilson, Hagarty, & Gauthier, 2003). Performance measurement can be recognized as a significant factor that is responsible for either success or failure and can be measured in terms of the consequences of quality efforts by organizations (Phusavat et al., 2009). To this end, Hamza and Al-Kassar (2015) highlighted the importance of TQM as including the following:

1. Reducing costs at all phases of production in an organization, which means that managers consistently apply TQM to minimize costs of production to the

barest minimum. Such minimization includes adequate provisions to take care of scrap, as well as preparedness to cut costs for work redo, and avoiding wasteful expenses on outside-company services that also include the issue of warranties. Consequentially, cost reductions affect profits with respect to the organizational bottom-line and consistently avoid any extra expenditures in augmenting gross profit;

2. Achieving a better record in satisfying customers' demands also remains a priority of TQM so that services provided to customers are Grade A like the products offered by the company. The goal is to produce error-free interactions from customers due to standardized products and services that are error-free, and this usually increases a firm's value, especially with respect to existing customers who go a long way in selling the firm's image to potential customers;
3. Improving the quality of products and services as a result of the constant use of TQM, which go a long way in reducing product and service defects, by making managers focus on how to improve the process quality instead of examining how the process attracts the quality. Moreover, the essence of this process is to minimize the duration of fixing errors or to at least avoid a reason to hire the services of quality assurance experts or professionals; and,
4. Creating a morale booster effect of TQM that plays a prominent role in the psyche of workforce that leads to a high workforce retention rate that saves companies from bearing the financial burdens of procuring new workers whenever staff turnover occurs.

### **2.6.1 Total Quality Management in Arab Countries**

Although an increasing awareness has developed about quality management in Middle Eastern countries (Dedhia, 2001), the speed of TQM implementation and adoption has been very low compared to that of developed countries (Al-Khalifa & Aspinwall, 2000). A comprehensive literature review in the domain of quality management has shown that most TQM studies were conducted in developed countries.

Thus, a lack of studies exists regarding quality management in developing countries in general and the Middle East in particular (Alswidi & Mahmood, 2012). Very little attention has been paid by researchers in carrying out empirical research in quality management in developing countries, including Arab and Middle Eastern countries (Al-Khalifa & Aspinwall, 2000). Hence, a lack of knowledge related to TQM implementation is present in the Middle East, including Saudi Arabia, the UAE, and Qatar (Sila & Ebrahimpour, 2002).

However, only a few studies have been conducted in the area. Khalaf (2011) conducted a study related to TQM practices in Iraq. The study examined the level of TQM implementation in Iraqi organizations. He found that TQM implementation led to continuous cost reductions and contributed significantly to improved firm performance. In the same research direction, Salaheldin (2003) investigated the challenges in implementing TQM and supporting factors using 84 Egyptian manufacturing organizations. The research highlighted that implementing TQM in Egypt faced the same challenges as in other developing countries. Chapman and Al-Khawaldeh (2002) examined the relationship between TQM implementation and

labour productivity in Jordanian manufacturing companies. Their findings revealed that labour productivity in companies with high TQM implementation was high compared to that of low TQM implementation companies. Curry and Kadasah (2002) explored the problems facing TQM implementation and key TQM factors in Saudi Arabia and found that a clear and thorough understanding of TQM concept and philosophy is critical for successful implementation of TQM.

Practically speaking, very poor knowledge exists regarding the productivity, efficiency, and organizational competitiveness, and implications of TQM strategies in Middle Eastern countries (Al-Khalifa & Aspinwall, 2000). However, the adoption of TQM strategies in the Middle Eastern region has been driven by globalization, open global economies, fluctuating oil prices, and stiff competition from multinational organizations offering high-quality products and services (Al-Khalifa & Aspinwall, 2000).

Considering the literature on TQM across the world, the conclusion can be made which means that a global model for TQM implementation in both manufacturing and service organizations has been established in the Western and developing world. However, despite the growing attention paid by researchers on TQM strategy, the available relevant literature in developing countries is scarce and is mainly conceptual or case study-based. Therefore, further research needs to be conducted in developing and newly industrialized countries to provide an avenue for TQM implementation research. As we introduced a long with the literature content analysis and the themes we provided earlier in the above discussion that we seek to provide the extended concepts and themes based on the results of this research.

## 2.7 Corporate Culture

Corporate culture is another factor that likely affects the use of BSC. Here, Henri (2006, p. 82) stated, "...as a part of control practices and organizational activities, the use of PMS and the diversity of measurement are also influenced by corporate culture". Though, the importance of corporate culture in checking the variation in the use of BSC, few studies have considered corporate culture as a contextual factor. Chenhall (2007, p. 188) stated, "Little work has been completed in the area of corporate culture and MCS design". Similarly, Ismail (2007, p. 512) stated, "... one of the issues that was not tested is the impact of corporate culture on the performance evaluation system, which may influence management's selection of performance evaluation indicators". Therefore, an understanding of this contingent factor is necessary to be examined and evaluated the concept of PMS.

Generally speaking debate about corporate culture is controversial and spacious, the common beliefs that operational values and norms of any organization, is the basis for staff understanding of internal and external relations with both colleagues and customers/clients can be regarded as corporate culture (Obasan, 2012). This could mean that corporate culture comprises a constellation of principles and practices that guide the workforce – whether as individuals or groups. Thus, personnel performance would revolve around corporate culture of each organization. Oghuvwu and Omoye (2016) emphasized that corporate culture comprises the common beliefs, as well as the generally accepted values, which shape the behaviour of people who work in an organization within a prescribed control system and institutional structure as dictated by the culture. This is what Obasan (2012) perceived as a complex phenomenon characterized by interpersonal symbols and assumptions that direct

individual and corporate behaviours of stakeholders in matters relating to official assignments of organizations.

To give a more robust meaning to corporate culture, Rababah and Bataineh (2016) said that it was a set of presumptions, which determine both organizational structure and procedures and drive all as essential mechanisms for organizational success. Such a circumstantial structure might be established or conceived by a certain group to cope with a critical situation, created during an adaption phase. This framework is achieved over the course of time and is the sum total of a series of original perceptions, thinking, and feeling. This is believed to be true for problem solving when these characteristics are transferred to the new employees who join an organization at a later stage. These often delineate the characteristics of one organization and its members of staff from those of another (Cameron & Quinn, 1999). Moreover, Denison (1990) emphasized that various researchers have argued that any good corporate culture would improve firm performance with respect to successful operations and, thus, would subsequently yield higher returns.

In relationship to this, Ogbonna and Harris (2000) reported that various variables had been analysed in different studies to show how corporate culture influenced and determined firm performance. Different scholars have been developed cultural dimensions such as Hofstede (1982) and cultural dimensions are usually used for measuring the influence of the national culture (Harrison & McKinnon, 1999; Harrison, McKinnon, Panchapakesan & Leung, 1994; Merchant, Chow & Wu, 1995; Suh, 2016). The Denison culture dimensions are used to measure the internal culture of a company (corporate culture). Because the objective of the current study was to

examine corporate culture, the study focused on Denison's cultural dimensions and not those of Hofstede.

Acar and Acar (2014) emphasized that corporate culture remains essential for creating a competitive advantage. Most researchers and practitioners have focused on firm performance because of traits that influence the performance of organizations and their effectiveness (Lee & Yu, 2004). Research on the impact of culture of an organization with respect to its performance has grown continuously over the last two decades (e.g., Denison, 1990, 2000; Denison & Mishra, 1995).

However, different scholars have developed cultural dimensions to understand its influence on the firm performance. One of the pioneer scholars in this field was Hofstede (1980), based on his survey of staff approaches in the world-wide companies of IBM, categorized culture into four standard values, which he called "dimensions" of culture. These: 1) uncertainty avoidance, 2) power distance, 3) individualism vs. collectivism, and 4) masculinity vs. femininity. Subsequently, as study expanded, Hofstede and Bond (1988) added Confucian dynamism to the four existing dimensions. However, Hofstede (1980) cultural dimensions are usually used for measuring the influence of the national and not corporate culture (Harrison & McKinnon, 1999; Harrison et al., 1994; Merchant et al., 1995; Suh, 2016; Van der Stede, 2002).

On other hand, Denison (2000) argued that four traits of corporate culture could be identified, and these four traits have a major impact on firm performance. These four traits are: 1) adaptability, 2) involvement, 3) mission, and 4) consistency. Because



the objective of the current study was to examine the influence of corporate culture on the performance measurement system and firm performance, the study focused on Denison's (2000) cultural dimensions. These four characteristics or traits of Denison (2000) are explicated in greater detail below.

### **2.7.1 Adaptability**

Adaptation theory suggests that organizations must be vigilant in accepting, interpreting, and translating the influence of environmental change in their norms for achieving organizational goals (Denison, Nieminen & Kotrba, 2014). Three aspects of adaptability have an essential influence on the effectiveness of organizations (Denison, 1989). The first is the capability to perceive external environment. The second aspect is responding internally to customers. The last is the reaction to both internal and external customers (Abdullah et al., 2014). These require abilities like restructuring and reorganizing, and, without these abilities, an organization will find difficulty in gaining success (Schein, 1990).

### **2.7.2 Involvement**

The theory of involvement argues that a sense of ownership and responsibility can be created in the employees by involving them in the decision-making process (Abdullah et al., 2014; Denison, 1989). In line with this theory, employees who have a high involvement in the process of decision making and have autonomy usually perform better (Denison et al., 2014). Despite Denison's (1990; 2000) argument that the involvement of employees leads to higher performance Lock and Schweiger (1979) said that only a modest correlation existed between employee involvement and firm performance.

### **2.7.3 Mission**

A mission statement provides the purpose for the existence of an organization via its social role. The level of understanding of a mission statement by employees is directly related to the behaviour of employees regarding decisions and discussions. Because of this process, intrinsic as well as spiritual meanings are given to employees that transcend functionally, and a mission statement, therefore, contributes to both short-term and long-term commitment, which ultimately leads to a more effective performance of the organization (Abdullaha et al., 2014; Denison, 1989). In this regard, a mission statement provides direction and clarity necessary for firm performance. Organizations succeed when they are goal oriented (Denison, Nieminen & Kotrba, 2014; Denison, 2000). That is to say, goals of organizations should be coordinated and aligned with the organizational structure and positive behaviours of employees (Alswidi & Mahmood, 2012).

### **2.7.4 Consistency**

A strong and positive culture that includes shared beliefs and values among the employees of an organization assists them in coordinating their functions (Denison, et al., 2014). The success of organizations is dependent on continuity. The basic concept implies an implicit control system that is based on internalized values. Internalized values are effective means for the development of coordination between rules and regulations and external control systems (Denison, 2000).

Effective organizations seem to mix constancy and participation cannons in repeated cycles. Potential ideas and solutions are generated because of the involvement of employees. Precise principles like continuous improvement and total quality

management are the refined and precise outcomes of ideas and solutions are gained through employee involvement in decision making. This requires the involvement of employees, which, in turn, provides higher standardization in providing quality products and services by the organization (Abdullaha et al., 2014; Denison, 2000).

#### **2.7.5 Corporate Culture in Arab Countries**

A comprehensive literature review indicated that several studies in the domain of corporate culture have taken place in advanced economies (Davidson, 2003; Zakari et al., 2013). However, a dearth of studies has been conducted of corporate culture in developing countries in general (Zakari et al., 2013; Al-Tameemi & Alshawi, 2014). That is, very little attention has been paid by researchers in the corporate culture in developing countries, including Arab and Middle Eastern countries (Mohamed, 2012; Hajjawi, 2009). This reveals a general lack of knowledge related to corporate culture in the Middle East including Iraq (Mushref, 2014; Al-Tameemi & Alshawi, 2014).

Some researchers have tried to investigate the challenges faced by organizations in the Middle East in their endeavours to create a corporate culture (Eker & Eker, 2009; Mushref, 2014; Acar & Acar, 2014). More emphasis has been given by academicians and researchers on Arab countries as a response to the stiff competition resulting from the global business expansion (Mushref, 2014; Marane, 2012; Hajjawi, 2009). In the meantime, corporate culture has been attracting attention in Africa as well (Zakari et al., 2013).

One study related to corporate culture in the Middle East was conducted by Marane (2012) in Iraq. In his study, he found that corporate culture has been facing major challenges such as limited access to information. In another study, Mushref (2014) found that corporate culture had positive effect on the performance of Iraqi companies. In the same research direction, El Sawah, Tharwat, and Rasmy (2008) investigated the challenges in corporate culture and supporting factors in Egyptian manufacturing organizations. The research highlighted that corporate culture in Egypt has been facing the same challenges as in other developing countries.

The aim of all the corporate culture studies conducted in various parts of the world is to reach a global model for corporate culture in both manufacturing and service organizations. Despite the growing attention paid by researchers about corporate culture, the available relevant literature in developing countries has been scarce (Mushref, 2014). The detailed and empirical literature regarding corporate culture in Japan, the United States, and European countries (Henri, 2006; Deem et al., 2010) that has created literature inequality between developed and less developed economies, encouraged this researcher to examine the influence of corporate culture on firm performance in Iraq.

Hall's (1976) categorised culture into high and low contexts. A high context culture is collectivist and has many shared values that do not change much over time and a low context culture is individualistic and has values that can change quickly, if this categorization was utilized with respect to corporate cultures. Arab companies would fall under the high context. In this situation, although the people may be different, they share many things in common with their leaders in the organization and the

corporate culture does not change very often or very quickly. As a result, messages passed within an organization tend to be understood by all members of the organization (Hall & Hall, 1990). In addition, the individual members of the organization understand and respect the information that is passed through the corporate culture for purpose of carrying out their responsibilities or tasks. So, most normal daily dealings do not need in-depth contextual information. Information is delivered by motions, status (title, age, education, gender, affiliation, and clan) and the entity's informal associations (Foster, 1992) that bring about a powerful and extensively recognised model for performance organisation.

Mazrui (1999) has opined that Arab companies can be affected by cross-cultural effects that move to make a more internationalize culture. However, an Arab company engrosses only those features of the global culture deemed appropriate with respect to its own national norms and values, and some companies powerfully resist most imported cultural impacts because such are regarded as unsuited with their existing standards and values (Mazrui, 1999). Nonetheless, some Arab companies have adopted a more flexible approach with respect to the elements of global culture that they perceive as well-suited with their basic cultural values and standards. That is because they accept that some foreign cultural impacts are beneficial, and they produce some fluctuations in the culture of the companies despite struggle by other companies (Shah, 2006). Examination of selected Arab companies indicates that cross-cultural influences affect their organisational structures, which incidentally reflect viewpoints of leadership factors regarding BSC that improve and sustain firm performance (Miller & Sharda, 2000).

In conclusion, at a more general level, the contention is that organizations in the Arab area have not adopted Western states of mind in terms of attitudes, qualities, values and norms; Budhwar and Mellahi (2007) demonstrated that Arab nations still have frameworks like most other developing nations that focus on local cultural values, beliefs and norms.

## **2.8 Firm Performance**

Firm performance has become an essential concern for organizations' managers (Acer & Acer, 2014; Pimentel & Major, 2014). Good firm performance is a basic driving force behind any powerful nation (Nickell, 1995). Indeed, numerous organizations worldwide continuously work to improve their performance by different methods. The capability of the top level management to customary appropriate organizational actions and policies will determine the strength of an organization in maintaining its performance over the long term (Lynch & Cross, 1992; Neely, Mills, Platts, Gregory, & Richards, 1994).

A critical question for all the researchers and practitioners is to identify the reasons behind the success or failure of organizations and why do some businesses succeed while others fail? Accordingly, firm performance is the most crucial issue for all organizations. For the management, knowing which factors significantly influence firm performance is vital. This identification will help them to take the steps necessary to gain success. Performance specifically is a basic determinant of a firm's future, on the condition that the firm will utilize relative, reliable, credible and informative measurements to help on predicting tomorrow while learning from yesterday. Appropriately, measuring firm performance requires using intelligent

tools to provide the most valid and reliable performance feedback to control firm performance completely.

However, defining, theorising about, and calculating the firm performance is not an easy task. Different researchers have difference opinions and do not share unanimity in defining the ways of measuring firm performance. The disagreement in definition of firm performance is a contentious issue among organizational researchers (Barney, 1997). A core issue is linked with the appropriateness of different approaches regarding the concept utilization and measurement of firm performance (Abu-Jarad ,Yusof, & Nikbin, 2010).

Nowadays, in an ever-changing and competitive business environment, measuring firm performance is critical for evaluating the success of organizational strategy (Neely, 1999). Moreover, improving a business entity without measuring its current situation is impossible. However, although extensive literature exists on firm performance, hardly any unity exists among scholars on the way of defining firm performance (Johannessen, Olaisen, & Olsen, 1999). Generally speaking, according to Antony and Bhattacharyya (2010), firm performance is a measurement that is used to assess the achievement of an organization to provide value to its exterior and interior customers. Accordingly, measuring business performance is an imperative piece of business administration and gives a radar screen by which to control a firm (Marr & Schiuma, 2003). Consequently, performance measurement permits correspondence, which, in fact, allows top management to compare planned with actual results, inputs to outputs, or surprising results to expectations (Neely, 2002).

Be that as it may, firm performance estimation is a multi-dimensional development, which includes both financial and non-financial performance (Bourne et al., 2003; Meyer, 2003; Neely, 2002). This blend (Bungay & Goold, 1991; Franco-Santos et al., 2007) evaluates the effect of activities on a firm's partners (Bourne et al., 2003) and gives assistance to decision makers (Neely, 2002), among different advantages.

In conclusion, firms must have a "two-vision strategy", which infers that a firm must keep an emphasis on both financial and non-financial performance. This system requires the presence of a phenomenal harmony between financial and non-financial measurements (Anthony & Govindarajan, 2007; Birley & Westhead, 1990; Hall, Johnson, & Turney, 1991; Hoque, 2005; Kaplan, 1990; Kaplan & Norton, 1996). Accordingly, previous researchers such as Likewise, Hussain, and Gunasekaran (2002) have argued strength increases the potentials for organisation to measure non-financial performance; thus, measuring the financial performance metrics of Iraqi manufacturing companies that work under a high level of environmental uncertainty was found to be more relative to achieving the objectives of the current study. Hence, this study opted to focus on financial performance to coincide with conclusions of the previous studies, which indicate that a top level of environmental uncertainty will have leading to more focus on financial measures.

## **2.9 Underpinning Theory**

This section discusses the relevant theory that underpins this study. This theory is contingency theory. The relative importance and limitations of this theory are explicated here.



### **2.9.1 Contingency Theory**

The history of contingency theory can be traced back as early as 1960s from organizational theory (Otley 1980). Contingency theory has developed quickly since the early 1980s and has been a milestone in organizational design. This theory challenges the idea that appropriate control mechanisms depend upon the circumstances surrounding an organization. In response, contingency theory posited that no best way existed to manage an organization, but that management was contingent upon internal and external situations. Contingency theory was utilized to create the best and more universal formal system for each organization to implement its strategies and objectives (Anthony, 1965).

Accordingly, contingency theory has a global relevant framework which is used to investigate a set of elements that are presumably have an impact on performance measurement (Otley, 2016). This theory, which is related to the work of Fiedler (Peters, Hartke & Pohlmann, 1985), adopts its hypothesis based on the theory of systems and stems from the basic assumption that every position that the institution is exposed to require appropriate actions and solutions, i.e, the absence of ready recipes, the recipe is based on the situation (Keim & Zeithaml, 1986; Govindarajan, 1988; Garengo & Bititci, 2007). The factors of the institution, whether associated with working people or the techniques used and the environmental factors prevailing at a certain time are dictating solutions to the problems they face, and despite some of the criticism of this theory as a compromise attempt to unify the theories and ideas and management and collection, they keep trying to adapt ideas with life-changing process in the enterprise, and respond to variables without restricting a specific

approach becomes a constraint encircles its efficiency and effectiveness (Beersma et al., 2003; Garengo & Bititci, 2007).

This theory is based on the following principles (Dobbins, Cardy & Platz-Vieno, 1990; Beersma et al., 2003; Garengo & Bititci, 2007; Weber, Otto & Österle, 2009):

- 1- There is no one means that can be tracked in management.
- 2- Management implementation must be in line with the diverse duty entities perform with the exterior situation and with the required of entities in the institute.
- 3- It is an encounter to the capability of analytical directors and the capability to see the nature and the situation with diverse kinds of circumstances and approaches and this is the method to develop personalities.
- 4- The organization is an open system containing of diverse subsystems that co-operate with one other and are unified with the exterior situation.
- 5- The organization contains three subsystems: the technical subsystem i.e the production of goods and services organization, the organizational subsystem i.e the coordination of the internal relations of the organization, the subsystem establishing any coordination of external dealings with the environment.

However, the contingency theory is attached also to the accounting area of specialization together with the management area. Thus, Contemporary contingency theory of management accounting focuses primarily on explaining how particular circumstances (that is contingencies) shape the form of the PMS (Reid & Smith, 2000). According to Otley (1980):

*“Contingency approach to management accounting indicates that there is no collective accounting system that is applicable to all organisations in a similar circumstance. Rather, contingency theory tries to recognize certain characteristics of an accounting system which are related with specific circumstances and to validate an appropriate matching” (p. 413).*

It is widely recognized in the management accounting that particular features of any accounting system will depend primarily on specific conditions in which an organization finds itself. However, effective accounting system design is based on its ability and capability to adapt to new changes in both internal and external conditions (Haldma & Lääts, 2002, p. 383).

### **2.9.2 Advantages and Disadvantages of Contingency Theory**

Although contingency theory can impact performance measurement systems significantly, it is not free of criticisms. The definitions and variable measures in contingency theory usually lack conceptual clarity (Chenhall, 2003). The term “contingency” refers to a specified condition that is possible but for which no certainty exists. Contingency theory has not yet been identified a complete set of possible contingent factors but can be defined as a variety of theories that explain and predict the conditions for particular measurement systems to perform better. Moreover, exploring the relationships among other variables (such as ownership, merger and acquisition, uncertainty, and product-life-cycle) relevant in the BSC is important. Another challenge is the absence of a process element in contingency theory as contingency-based research has focused mostly on the broader elements of management controls (Chenhall, 2003). The description of a comprehensive contingency theory of accounting is still visibly low in previous works in the area

(Chapman, 1997), although a successful contingency theory should be able to address aspects, especially the ones related to environments and appropriateness of matching (Otley, 1980), of an accounting system.

Contingency theory is considered to be an appropriate tool for providing guidance for the design of BSC systems (Donaldson, 1995). It is plausible to assume, from the pragmatic managerial point of view, that managers can play a constructive role in selecting and implementing fitting measurement systems to achieve the objectives of their organisations. Theories that are nurtured in many interrelated subjects develop performance measurement metrics and BSC. Donaldson (1995) observed that contingency theory remains important at both intellectual and empirical level. Hence, contingency theory should be adopted for performance measurement as it can interpret the results of empirical studies at the level of the organisation (Otley, 1980).

In conclusion, the contingency theory asserts that managers can play a constructive role in selecting and implementing appropriate measurement systems to achieve the objectives of their organisations. The contingency theory actually accepts variety of assumptions and debates; thus, according to relevant frameworks, investigating elements, institutions and their appropriate actions as well as their solutions. The research confirms that there are no ready recipes once they depend on situations and frameworks.

## **2.10 Chapter Summary**

The chapter reviewed relevant literature on the conceptual development of cost/management accounting, BSC, PEU, TQM, corporate culture and firm

performance as well as contingency theory. The research efforts have been focused on providing a theoretical frame of reference to the previous efforts and justifications behind the significant points motivate this kind of study associated with contingency theory and related factors to be investigated in Iraqi case. TQM has found as mandatory action which produce a strategic shift in recent trends and desired actions to be implemented side by side with the contingency theory and its related factors.

Corporate culture also has been addressed to accommodate the human capital resources which have significant role in any expected competitive advantage in the Iraqi situation. Theoretically speaking, the humanitarian side has a logical relationship to strengthen the relationship between contingency factors and the expected organization's strategic performance. However, based on the above context the BSC is significant to be used in the research model which constitute comprehensive concept and supported conceptually with what has provided by the researchers as referenced in this chapter. Finally, comprehensive and integrated foundation have provided in this chapter to be used as frame of reference to support the research findings and rationalizing the research expected results and recommendations. Ultimately the above conclusion is promoted align with the research questions and intended objectives and aims.

## **CHAPTER THREE**

### **THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT**

#### **3.1 Introduction**

This chapter discusses the theoretical framework of the study and includes the relationships among the exogenous variables, the mediating and the endogenous variables. This chapter seeks to carefully review the initial theoretical relationships that have been established in previous studies on performance measurements system and the strategic management accounting. Subsequently, the hypotheses of the study are developed along with the methodology and data analysis.

#### **3.2 Theoretical Framework**

The theoretical model of this study construction is based on the previous recommendations of various authors like Mehralian et al. (2017), Guidara and Khoufi (2014), and Koseoglu et al. (2013), Al Sawalqa et al. (2011), Eker and Eker (2009), among others, and the generated framework of Iraqi Federal Board of Supreme Audit conference in 2014. Following the integrated insights that have been provided by the above research efforts, a research model has been designed: firstly, to understand how managers can improve firm performance through using BSC in their organizations, secondly, to determine the effect of contingency factors and the expected impact on the usage of BSC, and thirdly, how to improve firm performance based on the previous literature that has been reviewed and presented in Chapter Two.

SMA literature provides relatively sufficient support that the performance of a firm is influenced by BSC. This study particularly tries to explain the relationship between contingency factors, namely, (PEU, TQM and corporate culture) and BSC. Contingency theory noted that organization's BSC adapts to fit the contingency or contextual factors (Ferreira & Otley, 2009; Kendall & Knapp, 2000), subsequently, leads to the optimization of structural variables (use of BSC) and the contingency. Important contingent factors likely to affect the usage of performance measures are environmental uncertainty, advanced manufacturing technology, size, market competition, business strategy and culture. In addition to these factors, some researchers have tried to add new factors such as TQM on the design of MAS into the contingency theory paradigm (e.g., Abdel-Kader & Luther, 2008; Young & Selto, 1991). Therefore, testing the effect of contingency factors that are relevant to a specific business environment of developing nations such as Iraq is necessary. This is because the design of each organization must be according to its environments in order not to suffer any decline in its performance.

The above discussion revealed that the contingency theory approach is essential for understanding most of the measurement diversity approach (Zuriekat, 2005). This research extends the previous study and considers three contingent factors to assess their impacts on the use of BSC among Iraqi industrial companies. These three contingent factors include: PEU (political turbulence, intensity of competition), TQM and corporate culture. These factors as indicated above are relevant to the specific business environment of Iraqi companies. What worth mentioning, no single study has simultaneously investigated all these contingent variables.

The mediating role of BSC between contingency factors and firm performance has received little attention in the previous studies which hinder the ability to understand the influence of such contingency factors and firm performance (e.g., Chong and Chong, 1997; Sholihin, & Laksmi, 2009; Bastian & Muchlish, 2012). One of these few studies is the work of Mia and Clarke (1999). The study posits that the use of MAS Information increases as there is increase in the market competition, which subsequently led to improvement in performance. In addition, Jusoh (2008) reported the mediating role of BSC on the relationship between PEU and firm performance. Similarly, Chong and Chong (1997) found that competitive strategy and environmental uncertainty were important antecedents to the use of MAS Information and thus, had a positive influence on organization performance.

The theoretical framework that has been derived is illustrated in Figure 3.1. This conceptual framework highlights the relationship among the overall variables included in the framework and as follows: First, the relationships among the contingent variables and the BSC (the exogenous variables and mediator) (PEU, TQM & corporate culture and BSC); second, the relationships among the contingent factors (PEU, TQM and corporate culture) and firm performance; and finally, the relationships between BSC (mediator) and firm performance.



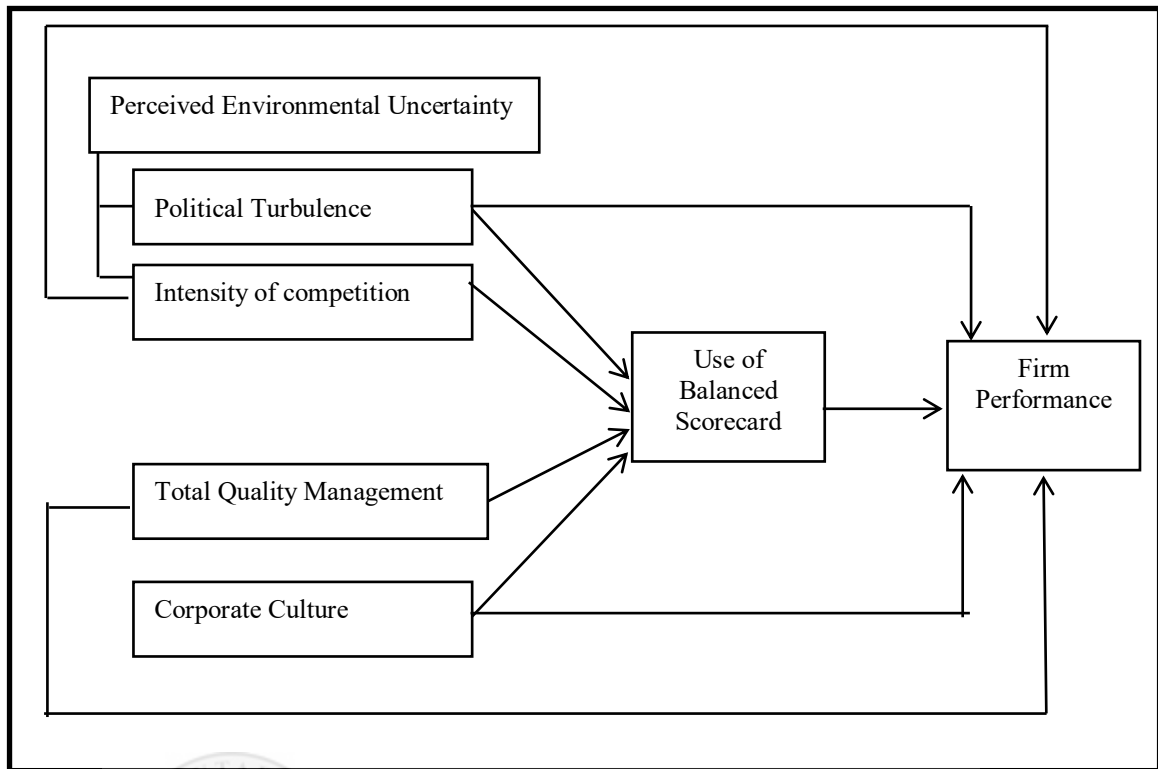


Figure 3.1 *Theoretical Framework*

Furthermore, the research framework suggests that BSC can influence firm performance; also, this assumption agrees with the previous research of Hoque and James (2000), Hoque et al. (2001), Sim and Koh (2001), Olson and Slater (2002), and Maiga and Jacobs (2003). Additionally, the theoretical framework proposes that BSC mediates the relationship between contingency factors and the firm performance. Though this study's framework harmonizes with previous studies, it is also unique. This study's framework for the first time combines research variables that have never been studied together before. For example, this included the influence of the political turbulence, TQM and corporate culture on BSC, which to the best knowledge of the researcher, has never been previously studied in the Iraqi environment, which gives the study a unique framework.

Accordingly, the researcher expected exceptional contribution from the above framework that will investigate the Iraqi firm's performance under its unique turbulent environment. The critical Iraqi situation has surrounded with many challenges compared to the countries in the region; this study probably reached other kind of conclusions.

### **3.3 The Relationship between Contingency Factors (Political Turbulence, Intensity of Competition, Total Quality Management, Corporate Culture) and Balanced Scorecard**

This sub-section discusses relevant literature that was used to generate the hypotheses of this study, having clarified the theoretical and conceptual framework of the study.

#### **3.3.1 The Relationship between Political Turbulence and Balanced Scorecard**

Abdel-Kader and Luther (2008) argued that PEU is a contingent factor that has been analysed for its influence on the design of MAS. The researchers argued that in industries in which the level of uncertainty is high (for example, political turbulence) organizations concentrate on profit measures rather than other measures to evaluate performance. Profit measures are considered to be a key predictor of performance and represent the overall efficiency of an organization (Abdel-Kader & Luther, 2008; Kaplan & Norton, 2001).

In line with foregoing, Hoque (2004) also argued that measurement depends on PEU factors like political turbulence, competition, technology, and uncertainty in economic conditions. A high level of PEU is strongly linked with information

strategic management (Otley, 2016). Likewise, the findings of Chenhall and Morris (1986) and Hoque (2005) supported previous studies and suggested that a positive association exists between PEU and BSC. They also suggested that PEU is significantly associated with comprehensive PMS.

Similarly, in a recent study, Housni and El-Abbadi (2016) examined PEU and BSC and found that PEU and among other factors have significant effects on the diversity of performance system measures. Again, Bastian and Muchlish (2012) reported a positive association between PEU, business strategy and non-financial performance measurement systems, but these were not significantly associated with the financial performance of the measurement system. However, one rare study in the Iraqi environment is the work of Al-fadhel & Al-Chlahawi, 2015; he examined the association between PEU and the diversity in performance measures. The study concludes that a positive association exists between PEU and diversity in performance measures. Even though recent literature has shown positive associations between PEU and BSC, Jusoh (2008) has a contrary view. She examined environmental uncertainties, BSC and performance. The result of the study indicates that higher degree of PEU is related to the lower usage of BSC measures.

Based on the above literature, clearly not much has been done in the area of the PEU-BSC relationship and has had mixed results. Some studies have shown a consistently positive association whereas some others have shown a negative association between PEU and use of BSC. Indeed, the association of political turbulence as an aspect of PEU with BSC has had very few studies hindering an understanding of the influence of such uncertainty on the use of BSC. Therefore,

these relationships need to be further examined in a turbulent context such as the Iraqi environment to add to the literature on the influence of the political turbulence on the use of BSC. Therefore, this study formulates the following hypothesis that posits a positive association between political turbulence and the use of BSC.

H1: There is a positive relationship between political turbulence and the use of BSC.

### **3.3.2 The Relationship between Intensity of Competition and Balanced Scorecard**

A strong relationship exists between competition in the marketplace and the performance of business units. A study conducted by whom highlighted that competition in a market that is perceived as being one burdened with environmental uncertainty has a significant impact on firm performance. Thus, gaining the information necessary may prove fruitful for an organization in identifying its position in the competitive market.

According to Neely (1999), increasing competition in businesses has had a significant impact on PMSs. In the current competitive environment, organizations are actively striving their level best to differentiate their organizations from their rivals in terms of quality, flexibility, innovation, customization and rapidly response. In addition, organisations are shaping their PMS to meet the challenging and competitive business world (Libby and Waterhouse, 1996).

In addition, Guidara and Khoufi (2014) who blended BSC, performance and competition together in their study found that the intensity of market competition was a determinant of the use of the BSC which, in turn, had a positive effect on firm performance. In the same way, market position and market competition have significant effects on BSC usage in South Korean firms (Lee, Folami, & Chung, 2014).

The suggestion has been made that, whenever an organization tries to become a market leader that organization should ensure that its products and services are of optimal quality and give full value to customers for the money that they have spent purchasing that product (Khandwalla, 1972). Such acts represent the integrated and coordinated efforts of the organization to gain competitive advantage. But greater integration and coordination requires sophisticated control systems to be successful. The sophistication in the control systems is strongly linked with the competition of the organization in the market (Khandwalla, 1972). Thus, the claim can be made that organizations having a strong position in the market require a variety of performance measurement systems such as BSC to collect valid and reliable data that can be used in confronting the surrounding uncertainty (Hoque & James, 2000). Therefore, organizations must strongly concentrate on designing proper PMS (Ong & Teh, 2008). Therefore, this study formulates the following hypothesis that posits a positive association between the intensity of competition and the use of BSC.

H2: There is a positive relationship between the intensity of competition and the use of BSC.

### **3.3.3 The Relationship between Total Quality Management and Balanced Scorecard**

TQM is a managerial tool used to involve employees and managers to improve their performance continuously (Powell, 1995; Boaden, 1997). The implementation of BSC focuses on the integration of ideas of strategic management that are used to appraise firm performance by using financial and non-financial measures of performance. The core idea of BSC and TQM is to develop synchronization among vision, operations, strategy, and employees (Hoque, 2003).

TQM can be considered as strategic initiative, but BSC on its own would provide information that may be useful for decision making and evaluating a strategic initiative (Hoque, 2003). BSC not only provides information, but also helps in evaluating the initiatives that are of the strategic level. By using financial as well as non-financial measures, BSC focuses on a set of ideas of integrated strategic management that helps analyse firm performance from the perspective of customers, financial, and organizational procedures. This approach can prove fruitful for organizations (Hoque, 2003), which is one aim of TQM. At the initial level, BSC helps organizations to translate vision in operations.

Afterwards, BSC helps in the communication of strategic objectives to all levels. The communication proves fruitful when rewards are linked with performance. Another advantage is that strategic planning and operational budgeting help in the allocation of resources. Lastly, BSC also provides feedback that is important for learning, when organizations link strategies with objectives that provide feedback that is important for strategic changes. Hoque (2003) supported the notion that BSC should be

implemented when organization are implementing TQM because a BSC helps to align objectives with strategies and helps to motivate employees through reward systems.

In the current competitive scenario, organizations need to adopt TQM. TQM should be adopted in coordination with performance evaluation systems that deploy measures in manufacturing that are linked with strategic operations. Nevertheless, many scholars have indicated the place of BSC in strategic implementation. Hoque (2003) argued that PMS like BSC is a must for TQM organizations, when they need continuous improvement in their functions.

BSC dimensions may prove fruitful in the improving the effectiveness of TQM programs (Hoque, 2003). The BSC incorporates financial as well as non-financial performance indicators. This combination provides management with signals that indicate the factors that should be added and should be given importance in day-to-day activities, which helps the management to understand where efforts must be directed. It also shows the need for implementing BSC in TQM organizations. This implementation will help in achieving the desired outcomes by motivating employees through appropriate reward systems and provide useful feedback in areas in which improvement is needed. However, this process will help in achieving performance by implementing TQM and empowering employees.

The literature of SMA suggests that accounting systems that are traditional do not support quality improvement; thus, managerial control is required to achieve high performance (Langfield-Smith, 1997). Quality is achieved by inculcating non-

financial measures like product design, delivery on time, and design of processes. Thus, to achieve a balance, managers must perform in multiple dimensions (Ittner & Larcker, 1998). Ittner and Larcker (1998) also argued that managers must concentrate on financial and non-financial measures to achieve strategic, operational, and corporate level success because management is incapable of having a holistic view via traditional financial measures.

Thus, no harm exists in saying that non-financial measures provide support in achieving financial performance with the support of TQM. As argued, non-financial factors like goals and objectives can be used to obtain proper feedback and then assign rewards for getting high performance, which supports the argument that BSC is a supplement that supports TQM (Ramezani & Beiglou 2014).

Similarly, Chenhall (1997) examined the reliance on manufacturing performance measures, TQM and firm performance and found that improved performance is associated with the interaction between well-developed TQM programmes and a reliance on manufacturing performance measures. Precisely, higher performance is related to the combination of TQM and a reliance on manufacturing performance measures compared to TQM without such measures. Pimentel and Major (2014) provided evidence showing that TQM contributed to organisational change, which increased the financial performance of an organisation. They highlighted the role of quality management and TQM as key tools in helping organisations to change and to improve efficiency and financial performance through the successful integration of quality management and BSC.



In another development, Mehralian, Nazari, Nooriparto, and Rasekh (2017) examined the relationship between the implementation of TQM and firm performance, using the BSC approach. They found that TQM implementation can positively and significantly influence the BSC and its four perspectives. Similarly, Sholihin and Laksmi (2009) supported the positive and significant association of TQM and BSC with firm performance. The foregoing literature show little empirical evidence on the relationship between TQM and BSC, especially in developing countries such as Iraq. Therefore, this study examines such a relationship in the Iraqi manufacturing industry to further validate the theoretical claim of this relationship; the relationship has been posited in this study as follows:

H3: There is a positive relationship between TQM and the use of BSC.

#### **3.3.4 The Relationship between Corporate Culture and the Balanced Scorecard**

Corporate culture has been overlooked in recent PMS studies even though numerous scholars have argued that corporate culture is a critical contingent factor that is likely to affect PMS. Therefore, an understanding of this contingent factor is necessary to examine PMS more deeply (Henri, 2006). Bhimani (2003) found that corporate culture can affect the design, usage and effectiveness of MCS. Similarly, Henri (2006) examined the relationship between corporate culture and the diversity of measurements. The findings of the study revealed that corporate culture influences the degree of measurement diversity that organisations use to evaluate their performance. These findings mean that corporate culture is a contingent factor that is

likely to impact the design and usage of PMS and, in particular, the diversity of measurement (Franco-Santos, 2007).

Corporate culture likely affects the use of financial and non-financial performance measures. In this context, Henri (2006, p. 82) stated, "...as a part of control practices and organizational activities, the use of PMS and the diversity of measurement are also influenced by organizational culture". Despite the importance of corporate culture in examining the variation in the use of performance measures, few studies have considered corporate culture as a contextual factor in making an organization successful; the basic purpose of BSC is to transform organizations via organizational change, which is considered the aim of corporate culture.

By implementing BSC, the environment of a business organization is changed to a knowledge-based environment (Kaplan & Norton, 2001a). BSC has the capability to link the cause-and-effect model with tangible and intangible assets (Kaplan & Norton, 2001a). This is the core cultural element that should be inculcated for value creation. Brown (2000) suggested that embedding the values in BSC is compulsory for success. He has also perceived culture as a distinct characteristic that cannot be replicated by any other organization. Communication between leaders and followers also plays a critical role for the successful implementation of BSC. If communication is poor, then employees may resist the adoption of a new culture and will resist BSC. Employees often resist the utilization of a BSC because they feel that the implementation of BSC is useless. Carmona et al. (2011) and Woodley (2006) highlighted that corporate culture has a major role in implementing BSC. The

researchers also demonstrated that organizational success is highly dependent on corporate culture.

Henri (2006) presented one of the most important contingency-based studies to investigate the effect of corporate culture on performance measurement diversity usage with a focus on examining the effects of corporate culture (i.e., control and flexibility) on two characteristics of PMS, namely, measurement diversity, and nature of usage. The findings showed that flexible management uses several techniques for performance management to focus attention in organizations, promote strategic decision making, and legitimize the actions of the top management that reflects bureaucratic control. Bititci et al. (2006) found the same result.

Additionally, Franco-Santos (2007) highlighted that the culture of an organization has a significant influence over the usage of financial and non-financial measures in the annual incentive payments of executives. These findings indicated that corporate culture is a contingent factor that might influence the design and usage of PMS, particularly with respect to one attribute of PMS, which is the variety of performance measurements. Recently, Eker and Eker (2009), Deem et al. (2010), and Rababah and Bataineh (2016) also supported the argument that corporate culture has a positive influence on the use of BSC.

BSC and corporate culture need to be examined in different contexts as Oghuvwu and Omoye (2016) suggested due to the influence and clear diversity in the level of adoption, especially between developed and developing economies. The direct inference from such diversity is that particular and peculiar incentives exist for its

adoption. Although the contingency theoretical framework provides the justification for such inference, the BSC, as a choice of strategic management and performance measurement, will depend upon the circumstances of the organisation. Therefore, this current study examines such a relationship in the context of Iraqi manufacturing company. Based on such discussions, the following hypothesis is posited:

H4: There is a positive relationship between corporate culture and the use of a BSC.

### **3.4 The Relationship between Contingency Factors (Political Turbulence, Intensity of Competition, Total Quality Management, Corporate Culture) and Firm performance**

This sub-section is in furtherance to hypothesis development with specific attention paid to the relationship between political turbulence, intensity of competition, TQM, corporate culture, and firm performance.

#### **3.4.1 The Relationship between Political Turbulence and Firm Performance**

Firm performance, as many researchers have viewed them, are contingent upon the fit between an organization and its contingent factors (Hammad, Jusoh, & Ghozali, 2013; Hoque, 2005). This means that contingency theory puts an emphasis on external contextual factors specifically environmental uncertainty. Therefore, performance is sensitive to those contingent variables regarding external environmental variables (Hoque, 2004).

Under this concept, uncertainty steaming from the external environment whatever its type and source can influence firm performance due to its sensitive level of

predictability that accompanies uncertainty. Chenhall (2003) argued that uncertainty is a more topical issue in the aspect of environmental research. This could explain the importance of the political turbulence that dominates the Iraqi environment with respect to overall firm performance.

Relatively speaking, firm performance stems from financial and non-financial measures and is contingent upon external factors that surround environment in which the organization is operating (Kaplan & Norton, 1992, 1996). The impact of political turbulence on financial performance can be measured easily by using pure accounting measurements ratios such as return on equity (ROE) and return on assets (ROA), return on investment (ROI), profitability and so on (Merchant, 1990). The impact of political turbulence will extend to non-financial performance including efficiency, internal processes, productivity, innovation, customer relations, creativity, product quality, among others. Hence, previous researchers have reported that, in instances of uncertainty, management must give more attention to non-financial measurements. This is because non-financial performance measurements can provide useful information to managers (Hoque, 2005; Hoque & James, 2000; Kaplan & Norton, 1992; Otley, 1999). Measuring non-financial performance may assist in addressing environmental uncertainty. Kaplan and Norton (1996) argued that non-financial measurement can help an organization to address uncertainty in an environment by focusing on core competencies of organizational processes, which will lead to greater efficiency. Hoque (2005) conducted research in New Zealand on manufacturing organizations and concluded that improvement in non-financial measures prove to be more beneficial in times of environmental uncertainty. This finding may logically explain the usefulness of such measurements in facilitating an

organization's decisions and actions that is very important, especially in times of uncertainty (Hoque, 2005; Hoque & James, 2000; Otley, 1999, 2003).

Hoque and Hopper (1997) argued in favour of a strong association of political turbulence with company performance. Assessing the desired outcomes or desired performance that every management looks for is contingent upon the fit between an organization's environment and performance measurement techniques that are used in performance evaluation (Chapman, 1997; Hoque, 2005). This again stresses the importance of contingency theory in confronting and dealing with political turbulence in enhancing firm performance.

Several studies have looked at PEU and its relationship with performance. Verma (2016) examined environmental uncertainties with respect to performance and found that PEU had a negative impact on firm performance. Similarly, Jusoh (2008) found a negative association between PEU and firm performance in the Malaysian manufacturing companies. Furthermore, Boyne and Meier, (2009) also found a negative influence of the environmental turbulence on the firm performance.

In addition, Adomako and Danso (2014) found that the environment was negatively related to firm performance. Furthermore, Boyne and Meier (2009) studied a turbulent external environment and found that it had damaging effects on firm performance. However, based on the above literature, the current study expects a negative association between political turbulence and firm performance. This is illustrated in the following hypothesis, which posits:

H5: There is a negative relationship between political turbulence and firm performance.

#### **3.4.2 The relationship between Intensity of Competition and Firm Performance**

With a specific end goal to attain and uphold competitive advantages, entities must adjust rapidly to their marketplace conditions (DeGeus, 1988; Senge, 1990; Day, 1991). Therefore, if an organization looks expanding rivalry in its marketplace yet neglects to manage such rivalry, its performance is probably going to decline. This is maybe a motive behind why Khandwalla (1972) reported a negative relationship between an organization's productivity and the company's profitability and the smooth of product price, and competition of marketing channel.

In any case, an organization's competitive ability could not be activated exclusively by price, product and competition of marketing channel, but by additional factors as well, for example, the number of rivals in the marketplace, technological variation in the industry, changes in government controls or policy, and package deals for offered of customers by competitors. In addition, these elements probably apply simultaneously and in deferent combination to influence competition. Porter (1979), for instance, proposes that the force or level of rivalry in an industry relies upon the aggregate quality of various factors in real life inside the business. Porter (1979) contended that episodic confirmation underpinned the composite idea of rivalry, and a firm would require numerous simultaneous activities to protect or increment its portion of the market.

There is a proof of enhanced organizational profit under expanding competition. For instance, various banks in Australia have been detailing expanding benefit ranks over the course of several years, despite the banking industry itself has as of recently become highly competitive because of deregulation. Expanding benefits have additionally been accounted for by firms working in other exceptionally aggressive enterprises like aeronautics, automobiles, electronics, paper, and mining (Mia & Clarke, 1999). They found that the intensity of competition is a determinant of the use of the information which, in turn, is a factor of business element performance. Thus, the use of information by managers plays a mediating role in the relationship between the intensity of competition and business item performance. They believed that those organizations that use information properly can effectively face competition in the marketplace and thus progress performance.

In a similar setting, Al-Rfou (2012) explored the effect of the intensity of competition on the performance of 33 firms on the Amman Stock Exchange for 2010. The results indicated that the intensity of competition had a positive and strong effect on the firm performance of these companies. In another examination, Asikhia and Binuyo (2012) explored the relationship of intensity of competition and the customer orientation-firm performance relationship, and the outcome demonstrated a positive relationship between these two factors. Wang, Jou, Chang & Wu, (2014) examined the intensity of competition and firm performance. Their experimental outcomes demonstrated the positive connection between the intensity of competition and firm performance. Additionally, O'Cass and Weerawardena (2010) indicated that managers view of the condition of his/her industry can affect a company's marketing learning and marketing capability development through their key reactions to their



impressions of the business environment. The investigation advocates that firms seeing their industry condition as turbulent will create superior market learning and advertising capacities. Market learning will aid the way toward building prevalent showcasing abilities, which will prompt higher performance. However, based on the above discussion, a positive association is expected between intensity of competition and firm performance. Thus, the following hypothesis is posited:

H6: There is a positive relationship between the intensity of competition and firm performance.

#### **3.4.3 The Relationship between Total Quality Management and Firm Performance**

During the last few years, the application of TQM has gained more attention because of its potentially positive effects on firm performance. Wilkinson et al. (1992) argued that the long-term business profitability could be enhanced by adopting TQM. The argument is that applying of TQM supports in attaining development in the quality of the product and contributions in reduction of cost as well, which eventually consequences in improved satisfaction of customer and improved financial gains (Walton, 1986). But, on the other hand, opponents argue that the implementation of TQM is very costly and that its implementation faces many obstacles (Powell, 1995). Furthermore, Errikson and Hansson (2003) also stressed that the results from the implementation of TQM on performance were inconclusive.

In spite of the opposing justification of academics studies, certain academics studies have argued that TQM helps in improving performance. For example, Errikson and

Hansson (2003) contended that TQM helped to improve the financial performance of Swedish organizations. The researchers compared Swedish recipients of quality awards with their competitors. The initial observation was that the implementation of TQM had no impact on financial performance but later on it was seen that implementation of TQM had a positive impact on performance. They found that companies that had implemented TQM successfully had experienced significant improvement in performance relative to their competitors. Prajogo and Brown (2004) compared organizations that had implemented TQM with those that had not implemented TQM formally. They found that the implementation of TQM practices enhanced the quality performance of Australian organizations.

Recent research on TQM has examined the relationships between TQM and firm performance. TQM emphasizes on continuous process improvement within organizations to deliver greater customer value and meet customer needs. For example, Gharakhani, Rahmati, Farrokhi, and Farahmandian (2013) examined the literature of TQM and confirmed that TQM has been found to be a critical factor for the long-term success of an organization. They reported that the links between TQM and performance have been examined by several scholars.

However, in investigative the relationship between TQM and performance, scholars has used different performance types such as financial, innovative, operational and quality performance. For example, Al-Dhaafri, Al-Swidi, and Yusoff, (2016) examined the joint outcome of business orientation and TQM on firm performance and found a optimistic effect on performance. In addition, the results also found TQM to partially mediate the effect of entrepreneurial orientation on firm

performance. Psomas and Jaca (2016) examined TQM implementation in provision organisations worried about quality practices of top management, process management, employee quality management, staff development and focus on customer. Likewise, the performance dimensions exposed distress about operational performance, financial performance, product/service quality performance and customer satisfaction. They found that the TQM factors regarding top management, staff and customers meaningfully affected the performance dimensions.

From this review of the literature, a correct conclusion would be that it is serious for the organizations to apply TQM as a set of practices as compared to only applying TQM as formal program for attractive performance. Thus, this current study examined the relationship between the adoption of TQM and firm performance in the manufacturing industry in Iraq. Based on the above discussion, the following hypothesis is posited:

H7: There is a positive relationship between TQM and firm performance.

#### **3.4.4 The Relationship between Corporate Culture and Firm Performance**

Explain the relationship between corporate culture and firm performance the issue cannot be done without highlighting the previous attempts made by scholars regarding the issue of firm performance. According to Schein, (1990) studies conducted on the performance of firm have taken culture as an issue for organizational effectiveness. However, Kuratko & Welsch, (2004) consider culture as the believed values shared in an organization. Policies are formulated and

implemented, and those formulated policies effect firm performance and are part of corporate culture.

Many believe that corporate culture is related to organizational success. For example, Deshpande and Farley (2004) believe that corporate culture has strong influence upon the ultimate success of an organization. As Ogbanna and Harris (2000) opined, corporate culture has an influence on financial achievement. In the same vein, Duke II & Edet (2012) consider that corporate culture, especially in the case of third world countries, to dominant and very influential with respect to firm performance. In addition, Jacobs et al, (2013) maintained that corporate culture and firm performance in hospital management in relationship to the senior management team varies depending on the nature of the setting of that hospital and day-to-day measures of performance.

In conclusion, differences in the performance levels in different organizations that are working in a similar industry support the notion that corporate culture influences performance either directly or indirectly. Accordingly, given the widespread interest in the potential effects of corporate culture on firm performance the current study expects a positive association between corporate culture and firm performance. Thus, the following hypothesis is posited:

H8: There is a positive relationship between corporate culture and firm performance.

### **3.5 The Relationship between the Balanced Scorecard and Firm Performance**

The significance of BSC is crucial in management accounting. Experimental examinations have affirmed the relationship of BSC to firm performance (Hoque & James, 2000). This implies that a BSC would decidedly influence organization yields. Experimental investigations by Towers Perrin Consulting confirmed that a BSC improves firm's performance (Hoque & James, 2000).

Regardless of the positive effect of BSC, the reasoning behind its development has been criticized for being excessively bland given the mind-boggling nature of corporate culture (Butler et al., 1997). Norreklit (2000) believes that a balanced scorecard can make unacceptable assumptions, which may prime to performance pointers that are faulty, resulting in sub-optimal performance. Despite its faults, BSC has been acknowledged as useful instrument of management to accomplish performance measures through business procedures (Otley, 1999), which tend to enhance responsibility and performance guidelines. Recent research has upheld the positive impact of BSC on performance (Guidara & Khoufi, 2014; Lee et al., 2014; Mehralian, et al., 2017).

The contention that legitimizes the impact of various sorts of performance measures on firm performance is based on an inspiration and control theory. Performance measures usage likens actual performance with aims and inspires labours to accomplish higher performance. These measures additionally go forward as a control system empowering the upgrading of good performance and the redress of poor performance. Both of these prompt higher performance. The performance impact happens contemporaneously with the utilization of performance measures. Those who understand that performance detailing and control are happening will be

persuaded to achieve better performance (Iselin et al., 2008). Non-financial measures such as quality and innovation increment client dependability thus influence firm performance emphatically.

Conversely, poor item quality diminishes customer reliability as disappointed customer take their business somewhere else or pay less for items, which, thus, decreases firm performance (Nagar & Rajan, 2001). Accordingly, numerous performance models that consolidate financial and non-financial performance measures will empower directors to address the issues related to an extensive variety of partners better (Brignall, 2007).

Financial performance measures tend to focus on short term profitability whilst non-financial performance measures emphasis on long term profitability. As such, there has been a shift in the methods of performance measurement towards complementing financial measures with a set of new non-financial measures (Chenhall & Langfiels-Smith, 2007). As a rule, past research in the field bolsters the noteworthy connection between measurement diversity and firm performance. In their examination, Ittner et al. (2003) found that organizations making broad utilization of an expansive arrangement of financial and non-financial measures (i.e., measurement diversity approach) have a higher measurement system fulfilment and securities exchange return than organizations that do not. Evans (2004) found that businesses in various segments with more developed PMS report better outcomes regarding customer, financial and market performance. Van der Stede, Young, & Chen (2006) demonstrated that firms with broader PMS, particularly those that incorporate objective and subjective non-financial measures, have higher

performance results. Van der Stede et al. (2006) found that performance measurement multiplicity assists performance, finding that irrespective of strategy, firms with more wide performance measurement systems, particularly those including objective and subjective nonfinancial measures, have higher performance. Their conclusions also partly supported the view that the strategy-measurement suitable affects performance. They found that firms emphasizing quality in manufacturing use both objective and subjective nonfinancial measures.

Chow and Van der Stede (2006) analyzed the degree to which firms combine financial, quantitative non-financial and subjective performance measures. Their investigation discovered that each kind of these measures assumes a diverse part in supporting a company's operations. Moreover, Jusoh et al. (2008) found that one key practical implication is that the creators of control and performance measurement systems should highlight the use of manifold performance measures that are important to the success of organizations. In light of the above information, the following hypothesis has been posited:

H9: There is a positive relationship between use of BSC and firm performance.

### **3.6 The Relationship between Contingency Factors (Political Turbulence, Intensity of Competition, Total Quality Management and Corporate Culture), Balanced Scorecard and Firm Performance**

As a sequel to the previous hypotheses development, the relationship between contingency factors, BSC and firm performance is discussed in this sub-section to evolve additional hypotheses that are crucial to this study.

### **3.6.1 The Mediating Effect of Balanced Scorecard between Political Turbulence and Firm Performance**

The available literature on “management accounting and control literature specifies that the environment is one of the issues that can control the management accounting and control systems fashioned to enhance the success of organization” (Jusoh, 2008, p. 116). Early on, Khandwalla (1977) identified four dimensions of PEU. These included turbulence, hostility, diversity and complexity. PEU has a much stronger impact on the design of a PMS and includes several factors external to an organisation such as customer demands, suppliers’ actions, deregulation and globalisation, tastes and preferences, market activities of competitors, government regulation and policies, production and information technology, economic environment and industrial relations. Companies are familiarising to this uncertainty by adopting PMS that allows for flexibility and supports a fast response capability (Hoque, 2004).

The fundamental nature of the relationships between environmental uncertainty and management accounting systems lies at the core of early contingency theories of organizations. The simplified idea is that the environment shapes organizational structures and firm performance depends on the match between the organization and its environment (Bourgeois, 1985; Hoque, 2005; Jänkälä, 2007).

The use of multiple performance measures provided by the BSC approach can play a significant role in providing internal and external broad-based information. BSC mixes dual methods across different perspectives that include financial, customer, internal business process, and innovation and learning which contribute significantly



in evaluating the performance from the financial and non-financial perspective that might work as a mediator variable between political turbulence and firm performance. To illustrate that, Gul (1991), Gul and Chia (1994), Chong and Chong (1997), Mia and Clarke (1999), and Widener (2006) have examined the role of BSC measures usage as a mediating variable; and such studies have provided evidence that, in part, a relationship could exist between PEU and firm performance, and this could have indirect effects on the extent to which an organization uses multiple performance measures to evaluate its performance through BSC measures (Jusoh, 2008).

Again, recent studies have examined the role of BSC as a mediating variable (Jusoh, 2008). Those examined such relationships in other contexts. For example, Jusoh (2008) shows a mediation effect of BSC on the relationship between PEU and firm performance in Malaysian manufacturing companies. Also, Hoque (2004) got a similar result in New Zealand. However, mediation effect of BSC on the relationship between political turbulence (as an example of the PEU) and firm's performance.

Therefore, this current study was set to examine such a relationship in that context along with other variables in the framework. With the above conversation, the present research posits that although the level of political turbulence and firm performance are directly related and negatively affect this relationship, BSC can mediate in that association. Based on the importance of this factor as a contingent factor that is likely to affect performance measurements usage, this study utilizes political turbulence as a contingent variable influencing the extent use of BSC in Iraqi industrial companies. Thus, the argument that BSC has an indirect impact on

the relationship between political turbulence and firm performance brings about the following hypotheses to illustrate this mediating relationship:

H10: The use of BSC mediates the relationship between political turbulence and firm performance.

### **3.6.2 The Mediating Effect of the Balanced Scorecard between the Intensity of Competition and Firm Performance**

The increase in scope of performance measures beyond solely financial ones will deliver complete information about market consequences and allow a firm to attain advantages over its competitors. Accordingly, this section addresses the probability of the BSC to mediate the relationship between intensity of competition and firm performance.

One of the external factors that comprise the organisation's environment is the intensity of competition (Chong & Rundus, 2004). Contingency theory suggests that an organisation must be aligned with its environment to achieve its objectives (Hayes, 1977). In contingency theory-based research, market competition is considered one of the key factors that may affect the extent of the usage of control and PMS (Chong & Rundus, 2004; Haldma & Lääts, 2002; Hoque et al., 2001; Hussain & Gunasekaran, 2002; Mia & Clarke, 1999). Early on, Khandwalla (1972) argued that high competition encourages managers to control costs and to evaluate different activities such as production, marketing and finance.

Barnett, & Kendrick, (2004) indicates that the global competitions have led some organizations to evaluate their performance to compete in the global market. In addition, for those companies they need to improve their key performances (Kaplan & Norton, 1996). Moreover, the monitoring of competitive proficiencies is very vital as it helps many companies ascertain an avenue that provides either value or non-value-added activities for their customers (Miles & Snow, 1978). To gain strategic advantages, a firm can increase these to measure the previous performance of nonfinancial measures to gain a long-term competitive performance (Kaplan & Norton, 1996; Otley, 1999). In a quest to enhance competitiveness, an organization can make integrated performance measures to observe and evaluate its processes. This will eventually help them benefit extensively in the global market (Lee & Yang, 2011).

Again, recent studies have examined the role of BSC as a mediating variable between a contingent variable and firm performance (Lee & Yang, 2011; Bastian & Muchlish, 2012). Those have examined such relationships in other contexts. For example, Bastian and Muchlish (2012) showed a mediation effect of BSC on the relationship between intensity of competition and performance in manufacturing in West Java, Indonesia. Also, Guidara and Khoufi (2014) found the same in Tunisia, and Lee and Yang (2011) got a similar result in Taiwan.

However, a mediation effect of BSC on the relationship between intensity of competition and firm performance, to the best of this researcher's knowledge, has not yet been examined in the context of Iraqi manufacturing industry in Iraq.

Therefore, this current study was set to examine such a relationship in that context along with other variables in the framework.

From the above discussion, this research assumes that, though the level of intensity of competition and firm performance are related directly and positively, in this relationship a BSC can mediate that association. This implies that some of the advantages stemming from contingency factors such as the intensity of competition would affect firm performance circuitously through an accent put on the usage of BSC. Thus, the argument that BSC has an indirect impact on the association between the intensity of competition and firm performance brings about the following hypotheses to illustrate this mediating relationship:

H11: The use of BSC mediates the relationship between the intensity of competition and firm performance.

### **3.6.3 The Mediating Effect of the Balanced Scorecard between Total Quality Management and Firm Performance**

Hussain and Gunasekaran (2002) reported that high competition and technological development encourage organisational management to use multidimensional performance measurements. To crystallize the evidence provided in the previous literature, the argument put forward is that TQM is associated with the use of a diverse set of financial and non-financial measures of performance (e.g., Mehralian et al., 2017; Hoque, 2003).

As mentioned above, increasing global competition has forced organizations to use certain techniques to compete in the dynamic market, and TQM and BSC are among the top most techniques opted for by organizations for the effective management of their operations. Otley (1999) opined that BSC strongly links performance measures with business unit strategy. Despite some weaknesses attributed to BSC, BSC has powerful potential to address the fundamental issue of efficiently positioning an organisation's strategic determined. Hoque (2003) agreed that TQM and BSC interact to influence the performance of organizations. Despite the controversy in the literature, BSC has been identified as having the capacity to mediate the relationship between TQM and firm performance (Kaynak, 2003; Chenhall, 1997; Chong & Rundus, 2004).

Other researches have also examined TQM and BSC, and how they affect firm performance (Ramezani & Beiglou, 2014; Hoque, 2003). Sholihin and Laksmi (2009) also supported the mediating role of BSC on the relationship between TQM and firm performance. Based on the literature, the mediating role of BSC on the relationship between TQM and firm performance is established. Therefore, this study hypothesises such a relationship for testing. Based on the above explanation, the following hypothesis is posited:

H12: The use of BSC mediates the relationship between TQM and firm performance.

#### **3.6.4 The Mediating Effect of the Balanced Scorecard between Corporate Culture and Firm Performance**

The literature has suggested that the success of BSC implementation might be linked with corporate culture and both may influence firm performance (Henri, 2006; Woodley, 2006). Therefore, examining the mediating role of BSC between corporate culture and firm performance is an important objective to understand how BSC can be affected by corporate culture and influence the firm performance.

BSC can be understood as a pointer of a corporate culture. So, by seeing BSC impressions can be obtained about cultural typologies of organizations and management use of measures. In this context, it is possible to argue that BSC has a positive relationship between a control value culture and traditional PMS (Abernethy & Lillis, 1995). The key cause of this is that both focus on concepts such as control, constancy, and hierarchical communication forms in organizational management. But, non-financial performance measures focus on process and, in this context, emphasizes items like continuously studying strategic imports, actual and double-faced feedback, and flexible and informal control (Simons, 2013).

The successful use of BSC is highly depending on a corporate culture in which mission, vision, and objectives are translated into actions (Kaplan & Norton, 2004). Researchers have also shown that corporate culture directly influences the use of BSC (Bititci et al., 2004, 2006; Assiri, Zairi, & Eid, 2006). The idea behind the mediating role of BSC between corporate culture and firm performance is that the corporate culture has been found to have a positive influence on firm performance (Deem et al., 2010; Jacobs et al., 2013; Acar & Acar, 2014). In addition, previous studies also confirm a positive influence of the corporate culture on the BSC (Eker & Eker, 2009; Bezrukova, Thatcher, Jehn, & Spell, 2012; Denison & Mishra, 1995).

On the other hand, previous studies have also found a positive influence of the BSC on firm performance (Hoque & James, 2000; Farooq & Hussain, 2011; Guidara & Khoufi, 2014). Accordingly, it was logically expected that BSC mediates the relationship between corporate culture and firm performance. Based on the above explanation, the following hypothesis is illustrated:

H13: The use of BSC mediates the relationship between corporate culture and firm performance.

### 3.7 Summary of Research Objectives and Research Hypotheses

This sub-section summarizes the relationship among the research objectives, with their hypotheses. Table 3.1 shows a summary of research objectives and their hypotheses.

Table 3.1  
*Summary of Research Objectives and their Hypotheses*

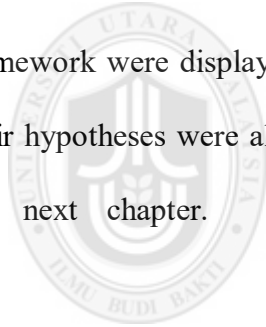
Research Objective	Hypothesis
<b>Research Objective 1</b> To examine the relationship between the contingency factors and BSC	H1: There is a positive relationship between political turbulence and use of BSC. H2: There is a positive relationship between the intensity of competition and use of BSC. H3: There is a positive relationship between TQM and use of BSC. H4: There is a positive relationship between corporate culture and use of BSC.
<b>Research Objective 2</b> To determine the relationship between the contingency factors and firm performance.	H5: There is a negative relationship between political turbulence and firm performance. H6: There is a positive relationship between intensity of competition and firm performance. H7: There is a positive relationship between TQM and firm performance. H8: There is a positive relationship between corporate culture and firm performance.
<b>Research Objective 3</b> To examine the relationship between BSC and firm performance.	H9: There is a positive relationship between use of BSC and firm performance.

Table 3.2 (Continued)  
*Summary of Research Objectives and their Hypotheses*

Research Objective	Hypothesis
<b>Research Objective 4</b> To examine the mediating influence of BSC on the relationship between contingency factors and firm performance.	H10: The use of BSC mediates the relationship between political turbulence and firm performance. H11: The use of BSC mediates the relationship between the intensity of competition and firm performance. H12: The use of BSC mediates the relationship between TQM and firm performance. H13: The use of BSC mediates the relationship between corporate culture and firm performance.

### 3.8 Conclusion

This chapter discussed the conceptual framework and the hypotheses development of this research. Nine direct and four indirect relationships comprising the research framework were displayed. Additionally, a summary of the research objectives and their hypotheses were also presented. The research methodology will be outlined in the next chapter.



UUM  
Universiti Utara Malaysia



## **CHAPTER FOUR**

### **RESEARCH METHODOLOGY**

#### **4.1 Introduction**

This chapter discusses the methodology that was used in this study. The chapter is divided into eleven main sections. The first and second sections contain the research design. The third section discusses the quantitative research approach, while section four deals with operationalization and measurement of variables. The fifth section dwells on the questionnaire design while section six discusses the pilot study of this research. The unit of analysis is duly presented in section seven. The population and sample size and the sampling technique of the study are discussed in section eight. The data collection followed in section nine, while the analysis of data follows in section ten and finally the chapter's conclusion is presented in section eleven.

#### **4.2 Research Design**

A research design is a structure that assists the researcher in finding a solution to a problem by utilizing a relevant methodology (Kerlinger, 1986; Davis, 2000). In other words, a research design is a master plan that specifies the techniques for collecting the information needed for research (Zikmund, 2003). It includes tasks related to the objectives of a study (Sekaran & Bougie, 2010). In the current study, the main objective is to explore the mediating effect of BSC on the relationship between contingency factors and firm performance. This study conducted descriptive statistics and then tested the developed hypotheses. Specifically, descriptive statistics were used to describe the population, and the hypotheses were tested to understand the relationships developed based on the literature (Sekaran & Bougie, 2010).

Therefore, the current study used quantitative research design. Figure 4.1 illustrates the research design of the current study.

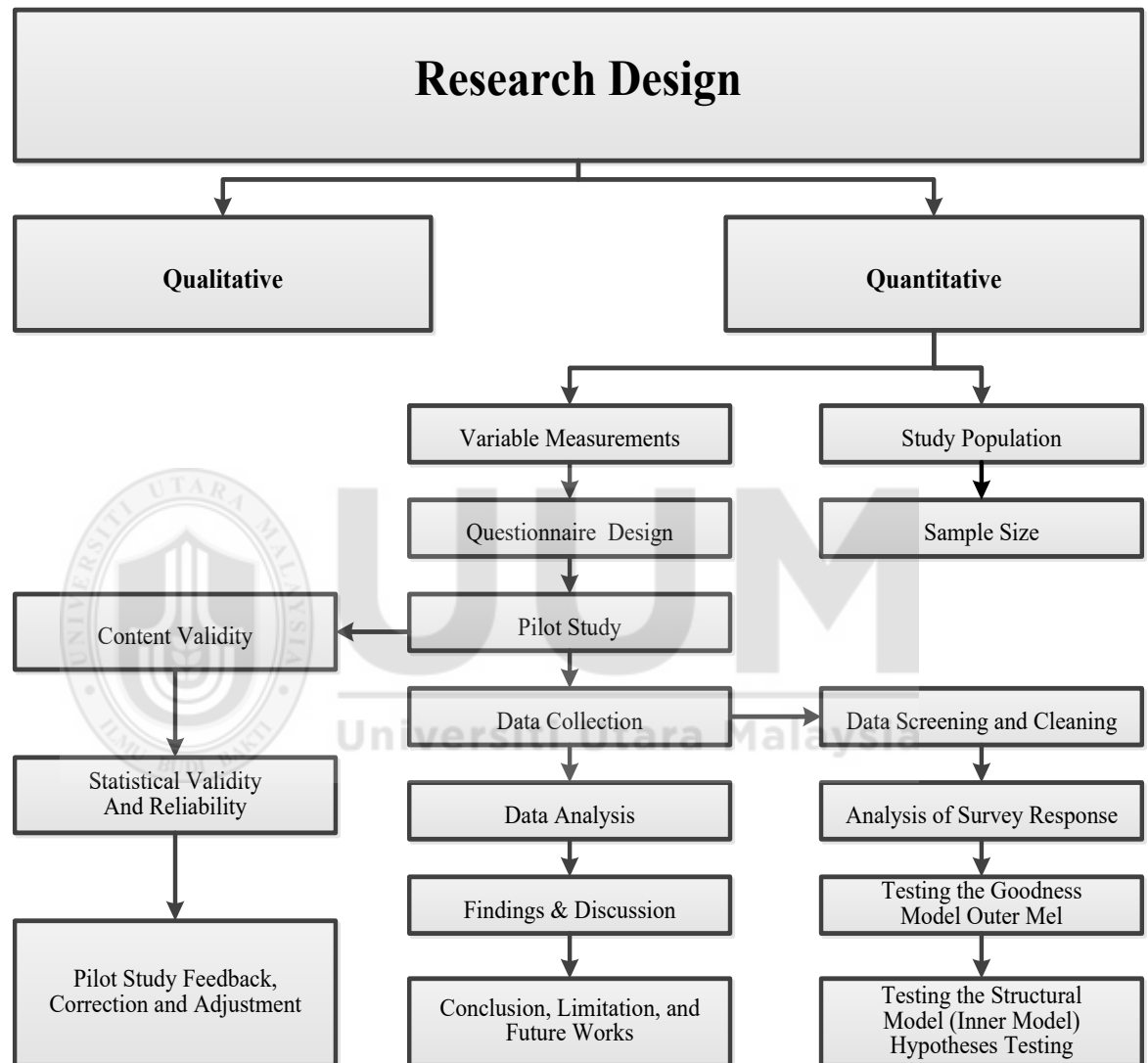


Figure 4.1. *Design Process.*

### **4.3 Quantitative Research Approach**

This research is quantitative in nature as directed by its objectives (Zikmund, 2003). It was designed to analyze the mediating effect of BSC on the relationship between contingency factors and firm performance. Several scholars (e.g., Bryman, 1984, 2001; Creswell, 2007; 2014; Creswell & Poth, 2017; Crotty, 1998) have recommended that any study that intends to measure perception that also wants to test the relationship should adopt a quantitative design. Thus, survey methodology was adopted to check the relationship among the variables (Davis, 2000). The unit of analysis is the organization. Therefore, respondents of this study were highly educated managers capable of giving the required information for the attainment of the research objectives. In addition, they are the correct people to give information that can answer the survey questions. The main advantage of survey method stems from the possibility of the generalization of results (Sekaran & Bougie, 2010).

The survey method was employed in this research, and a questionnaire was developed in line with the measurement of variables adapted from the past studies. The following section explains about the measurement of variables.

### **4.4 Operationalization and Measurement of Variables**

Generally, research is a routine procedure of gathering information to deal with a certain problem. As indicated by Cooper and Schindler (2003), hypothesis testing is performed in an empirical study through measuring and operationalization of variables. In this research, the variables consist of PEU (e.g., political turbulence and intensity of competition), TQM, corporate culture (e.g., embraces four dimensions, namely, involvement, adaptability, consistency, and mission), BSC, and firm

performance. PEU, TQM and corporate culture are examined as exogenous variables, whereas BSC is considered as a mediating variable, and firm performance represents the endogenous variable.

For developing the measurement items, this study adapted measurements for PEU, TQM, corporate culture, and firm performance from past studies while that of BSC was adopted from a seminal paper within the existing literature. Neuman and Rabson (2012) said that a 5-point Likert-type scale was the most suitable and that gave better results. Therefore, a 5-point Likert-type scale was used in measuring all the items of the variables. The next sections elucidate the measurements of each variable. This was also in accordance with the previous research (e.g., Garland, 1991).

#### **4.4.1 Firm performance**

Firm performance shows how organizations are successful in achieving their stated objectives or planned goals (Mia & Clarke, 1999). Therefore, the instrument proposed by Mia and Clarke (1999), Govindarajan (1984) and Salaheldin (2009) was utilized to measure firm performance. The items include “cost”, which is one of the five indicators taken from Mia and Clarke (1999); and four items, which include sales growth rate, operating profits, cash flow from operations, and return on investment that were taken from Govindarajan (1984). Degree

In addition to five items taken from Salaheldin (2009), others include waste reduction, revenue growth, net profits, return on assets, and the profit-to-revenue ratio. These items assess firm performance through several indicators over any single indicator or factor. However, for the purpose of measuring firm performance, this

study takes in the account the high level of environmental uncertainty that has dominated Iraq for decades. Accordingly, previous researchers such as Likewise, Hussain, and Gunasekaran (2002) have argued stability increases the possibilities for management to measure non-financial performance; thus, measuring the financial performance metrics of Iraqi manufacturing companies that work under a high level of environmental uncertainty was found to be more relative to achieving the objectives of the current study. Form this point of view, Jusoh (2008) argued that greater economic uncertainty increases the pressure on an organization to improve financial performance, and thus non-financial performance would be relatively less emphasized. Hence, this study opted to focus on financial performance to coincide with conclusions of the previous studies, which indicate that a high level of environmental uncertainty will lead to more focus on financial measures.

The following items have the ability to measure the performance of the companies in term of the financial perspective. To illustrate that, the first item measures the cost reduction that has the ability to improve sales growth that measure in item two. Sales growth in turn has the ability to influence the revenue growth, net profits, return on investment, return on assets, cash flow and ratio of profit-to-total revenue of the company. Based on the following items which are considered valid and reliable to measure the financial performance of the Iraqi companies, top management were asked to respond regarding the performance of their organizations according to the factors by employing a 5-point Likert-type scale with responses that range from: (1 = Significant Decrease, 2 = Decrease, 3 = No Change, 4 = Increase, 5 = Significant Increase), (see Table 4.1).

Table 4. 1  
*Firm Performance Measurement*

Construct	Item	Source(s)
Firm performance	Our costs of production have been reduced during the last three years.	Mia & Clarke (1999); Govindarajan (1984); and Salaheldin (2009)
	During the last 3 years we have enjoyed sales growth rate.	
	Our operating profits have increased during the last three years.	
	We have received considerable cash flow from our operations during the last 3 years.	
	Our return on investment has improved during the last three years.	
	Our waste costs were reduced during the last three years.	
	During the last 3 years, we have enjoyed a revenue growth rate.	
	Net profits have increased during the past three years.	
	Return on assets has improved during the past three years.	
	The ratio of profit-to-total revenue has increased during the past three years.	

#### 4.4.2 Balanced Scorecard - Mediating Variables

BSC is an approach to measurement with the basic idea of establishing a scorecard that takes multiple measures into account with four types of perspectives: 1) financial perspective; 2) internal business perspective; 3) innovation and learning perspective; and 4) customer perspective (Kaplan & Norton, 1992). BSC was operationalised by using an instrument that was developed by Kaplan & Norton (1992), which was subsequently used by Hoque and James (2000), Hoque et al. (2001) and Jusoh (2008). The instrument contains 21 items, which cover 4 perspectives of BSC including 4 financial items and 17 non-financial items from the three different perspectives of: 1) customers, 2) internal business processes, and 3) innovation and learning. However, BSC was measured in total using an aggregate value for all 4 perspectives. This approach used previously by many researchers (i.e. Sholihin & Laksmi, 2009; Jusoh, 2008). The respondents were asked to indicate the

extent to which each item was used in assessing performance, using a 5-point Likert-type scale. The dimensions of BSC breakdown and its associated measures and sources of references are presented in Table 4.2.

Table 4. 2  
*Balanced Scorecard Measurement*

<b>Dimension</b>	<b>Item</b>	<b>Source(s)</b>
Financial	1. Operating income 2. Sales growth 3. Cash flows 4. Sales Revenue	Kaplan & Norton (1992); Hoque & James (2000); Jusoh (2008)
Customer	1. Market share 2. On-time delivery 3. Number of customer complaint 4. Survey of customer satisfaction 5. Customer response time 6. Cycle time from order to delivery 7. Percent shipments returned due to poor quality	
Internal Business Process	1. Manufacturing lead time /cycle time 2. Rate of material scrap loss 3. Labour efficiency variance 4. Material efficiency variance 5. Ratio of good output to total output	
Innovation and learning	1. Number of new patents 2. Number of new product launches 3. Time to market new products 4. Employee satisfaction 5. Employee training	

#### 4.4.3 Perceived Environmental Uncertainty – Exogenous Variables

PEU primarily focuses on uncertainty arising out of the political turbulence and the intensity of competition. Environmental uncertainty is regarded as the degree of certainty to which environmental changes are difficult to predict. Miles and Snow (1978); Duncan (1972) posits that, environmental predictability could be related to the condition of turbulence and instability. In the same vain, PEU will occurs when administrators perceive that the environment of the organization to be unpredictable.

Hence, environmental uncertainty refers to the unpredictability of the actions of the task environment which comprises of suppliers, customers, competitors, regulatory groups, and labour unions (Duncan, 1972). In this study, the PEU was divided into the two dimensions of political turbulence and the intensity of competition, which are separately discussed in the following sub-sections.

#### **4.4.3.1 Political Turbulence**

PEU has been measured several times by previous researchers (Chenhall & Morris, 1986; Haldma & Lääts, 2002; Hammad et al., 2013; Hoque, 2004, 2005). Nevertheless, instruments to measure PEU originating from political uncertainty are generally unavailable as most previous researchers have focused on the uncertainty of the business environment. In addition, Kattan et al. (2007) described an environment as being turbulent due to high levels of instability and volatility while Khandwalla (1977) developed instruments to measure turbulent environments originating from reasons other than political conflicts.

This study adapted the 4 items from Hoque and Hopper (1997), which include: 1) the political situation in the country is unstable; 2) interventions by politicians; 3) the joint actions of trades unions and political parties; and 4) strikes and worker violence. Hoque and Hopper (1997) used the fourth item "strikes and worker violence" as an industrial relation factor to measure the industrial relations' turbulence. However, the item was adapted for political turbulence in the current study, according to experts' suggestions in Iraq; where there is violence against workers in Iraq due to political instability. Additional single item was also adapted from Smart and Vertinsky (1984). This item, "the environment of your firm is in a



continual process of change,” and the other 4 items form appropriate metrics in measuring PEU in the context of this study. These 5 items were prepared to measure a dimension of PEU originating from political uncertainty. Respondents were asked to choose their selection on a 5-point Likert-type scale: (1 = Very low influence, 2 = Low influence, 3 = Average influence, 4 = High influence, 5 = Very high influence). The following Table 4.3 illustrates the measurement items of the political turbulence.

Table 4. 3  
*Political Turbulence Measurement*

Dimension	Item	Source(s)
Political turbulence	1- The political instability in Iraq influences our business.	Hoque & Hopper (1997); Smart & Vertinsky, 1984
	2- The interventions by national politicians interrupt our performance	
	3- Our business can be greatly affected by trade union links with political parties.	
	4- Work stoppages and workers' violence are serious issues that influence the operation of business.	
	5- Our work environment undergoes continuous change due to the political instability	

#### 4.4.3.2 Intensity of Competition

The intensity of competition refers to the level of competitions that is faced by a business unit on price; distribution or marketing channels; new product development; market (revenue) share; competitors' actions; and the number of market competitors (Hoque et al., 2001). For measuring the intensity of competition, this study adopted the instrument used by Lee and Yang (2011) and Hoque et al. (2001). This instrument includes 6 items mainly based on the dimensions of intensity of competition: price, new product development, marketing or distribution channels, market (revenue) share, competitors' actions, and the number of competitors in the market. Accordingly, the respondents were asked about the degree of competition

intensity in the market. The top management were asked to rate the degree of intensity of competition by using a 5-point Likert-type scale (1 = Strongly disagree, 2 = Disagree, 3 = Somewhat disagree, 4 = Agree, 5 = Strongly agree). The intensity of competition breakdown and its associated measures and sources of references are highlighted in Table 4.4.

Table 4.4  
*Intensity of Competition Measurement*

Dimension	Item	Source(s)
Intensity of Competition	1- Our company faces a high degree of price competition on products.	Hoque et al. (2001);
	2- There is a high degree of market competition in the new products development faced by our company.	Lee & Yang (2011)
	3- There is a high degree of competition in marketing the products that faced by our company.	
	4- Our company faces a high degree of competition to gain market share in products.	
	5- Behaviours of competing companies are taking a great threat to our company.	
	6- The level of competition in the market for the major products of our company is extremely intense.	

#### 4.4.4 Total Quality Management

TQM has grown as an attitude that stresses the need to provide highly valued products to customers and at the same time improve the efficiency by eliminating waste, reducing costs, improving continuously, developing people and reducing lead times at all stages of the production process (Chenhall, 1997). Basically, this study adopted the instrument by Chenhall (1997) to measure the TQM construct, which was developed based on Hayes and Wheelwright (1984), Schonberger (1986) and Hall (1987). The TQM construct include 7 items which are mostly based on TQM dimensions (focuses on improved cycle time, material procurement programs (quality and reliability), employee involvement in quality improvement programs, production efficiency, involvement of functional personnel in strategy formulation,

development of contact between manufacturing and customers, and coordination of quality improvements within the organizations). Consequently, the instrument will assist in inquiring about the dimension of TQM. The top management were asked to rate the degree of agreement on each question based on its implementation in their organization's by using a 5-point Likert-type scale (1 = Strongly disagree, 2 = Disagree, 3 = Somewhat disagree, 4 = Agree, 5 = Strongly agree). The breakdown of TQM, its measurements and sources of references are included in Table 4.5.

Table 4.5  
*TQM Measurement*

Dimension	Item	Source(s)
Total Quality Management (TQM)	1- Programs to improve the quality and reliable delivery of materials and components provided by suppliers.	Chenhall (1997)
	2- Programs to reduce waste or non-value-added activities throughout the production process.	
	3- Programs to reduce time delays in manufacturing and designing products (i.e., improves cycle time).	
	4- Involvement of employees in quality improvement programs.	
	5- Involvement of functional personnel (manufacturing, marketing, R & D) in strategy formulation.	
	6- Developing close contact between manufacturing and customers.	
	7- Programs to co-ordinate quality improvements between parts of the organisation	

#### 4.4.5 Corporate Culture

Corporate culture includes collective perceptions of work practices within an organisational unit that may differ from other organisational units (Van den Berg & Wilderom, 2004). Throughout the literature, corporate culture theory is prominent and mostly used to study the performance implications of corporate culture (Denison, 1990, 2000; Denison, Denison, & Mishra, 1995). In addition, this theory also focuses on four cultural traits, namely, 1) involvement, 2) consistency, 3) adaptability, and 4) mission. Denison (2000) posits that these four cultural dimensions explain the effort of an organizational to create balance between many

contradictions in the environment that the organization operates. The items were adopted exactly with referring to “in our company” only. These instruments have been used previously in the Arab world by Al-Swidi, (2011). The top management was asked to rate the level of their organization’s culture by using a 5-point Likert-type scale (1 = Strongly disagree, 2 = Disagree, 3 = Somewhat disagree, 4 = Agree, 5 = Strongly agree). The dimensions of corporate culture breakdown and its associated measures and sources of references are highlighted in Table 4.6.

Table 4. 6  
*Corporate Culture Measurement*

Dimension	Item	Source(s)
Involvement	1-In our company most employees are highly involved in their work. 2-Information in our company is widely shared so that everyone can get the information he or she needs when it is needed. 3-Teams are the primary building blocks in our company. 4-Work is organized so that each person can see the relationship between his/her job and the goal of our company). 5-In our company there is continuous investment in the skills of employees. 6-In our company the capabilities of people are viewed as an important source of competitive advantage.	Denison (2000)
Consistency	1-In our company there is a clear and consistent set of values that governs the way we do business. 2-In our company there is a clear agreement about the right way and the wrong way to do things. 3-In our company, there is a good alignment of goals across levels.	
Adaptability	1- In our company, we respond well to competitors and other changes in the business environment. 2- Different parts of our company often co-operate to create change. 3-In our company, customers’ input directly influences our decisions. 4-In our company, we encourage direct contact with customers by our people. 5-In our company, we view failure as an opportunity for learning and improvement. 6-In our company, innovation and risk taking are encouraged and rewarded.	
Mission	1-In our company, there is a clear mission that gives meaning and direction to our work. 2-In our company, employees understand what needs to be done for us to succeed in the long run. 3-Our vision creates excitement and motivation for our employees.	

#### **4.5 Questionnaire Design**

The survey questionnaire was designed using both Arabic and English Languages. First, the questionnaire was written in English language and then translated to Arabic language via the back-translation method to ensure that no change in meaning happened. Two lecturers and business experts translated the Arabic version to ensure that the language was understandable. A few mistakes were found and modified. Then, the questionnaire was sent to an expert in Arabic and English languages to translate the Arabic version back to English. The final version was compared to the original one for final modifications to confirm the clarity of the language. It was expected that the Arabic translation of the questionnaire would enhance the respondents' understanding of its items, which, in turn, would motivate them to respond to the survey.

The main instrument was divided into six sections with a total of 67 items (excluding the respondents' profiles). A cover letter was attached to each set of the questionnaire to explain the aims of this study, the confidentiality of data and instructions about how to fill in the questionnaire. In addition, instructions were made for all sections of the questionnaire to assist the respondents to better understand the purpose of each section (See Appendix 1).

The first section comprised questions about the organization's industry, employee numbers, year of establishment, the position of respondent and information about the organization and the respondents. Then, the second and third sections were designed to measure BSC and PEU, whereas the fourth section was about corporate culture. Additionally, items of the fifth section were about TQM. Finally, the sixth section

was designed to assess the firm performance as the ultimate aim of this research. Table 4.7 presents a summary of the survey questionnaire contents. The English version of the questionnaire is shown in Appendix 1, while Appendix 2 provides the Arabic version of the actual questionnaire that was distributed to the Iraqi manufacturing firms.

Table 4.7  
*Summary of Survey Questionnaire Contents*

Section	Description
Section One	This section comprised 8 items about the organization and respondents.
Section Two	This section comprised 21 items about BSC.
Section Three	This section comprised 11 items about PEU.
Section Four	This section comprised 18 items about corporate culture.
Section Five	This section comprised 7 items about TQM.
Section Six	This section comprised 10 items about firm performance.

## 4.6 Pilot Study

This section discusses how the current study tested measurement validity and reliability before collecting the actual data; for that end, the researcher examined the content validity and the reliability, which will be discussed in the next two sub-sections.

### 4.6.1 Content validity

The initial version of the questionnaire was pretested to assess content validity through a panel of experts (Lewis et al., 2005). The panels of experts were two groups of experts: the first group comprised three managers working in the manufacturing companies, while the second group comprised three academics in the accounting field from the Universiti Utara Malaysia (UUM). The panel of experts was asked to check the scale items for content, wording, formats, ambiguity and clarity. They were also asked to make sure that the items reflected the construct of

interest. Based on the feedback from the panel of experts, the questionnaire was revised.

#### **4.6.2 Statistical Validity and Reliability of the Pilot Study**

To assess the content validity and reliability of measurement scales, a pilot test was conducted. The pilot study was conducted with 48 respondents. Smart PLS 2.0M3 (Ringle, Wende, Will (2005) was used to evaluate the validity and reliability of measurement scales used in the study. Cronbach's alpha and composite reliability were used to assess reliability of constructs. As shown in Table 4.8, all constructs had Cronbach's alpha values above the threshold of 0.60 (Hair et al. 2006). The composite reliability values of the all constructs were also greater than the threshold of 0.70 (Bagozzi & Yi, 1998). Thus, the results indicated that the reliability of the all constructs was acceptable in the pilot study. Table 4.8 illustrates that fact.

Convergent validity and discriminate validity were used to assess the validity of constructs. Table 4.8 showed that all the constructs had an average variance extracted (AVE) value of more than the 0.50 cut-off value for the validity of constructs (Fornell & Larcker, 1981). Therefore, the convergent validity of constructs was confirmed.

Table 4.8

*Average Variance Extracted (AVE), Composite Reliability and Cronbach's alpha Values of all Constructs*

<b>Construct</b>	<b>AVE</b>	<b>Composite Reliability</b>	<b>Cronbach's Alpha</b>
Performance	0.611	0.938	0.925
Financial perspective	0.629	0.871	0.803
Costumer perspective	0.558	0.895	0.862
Internal process perspective	0.617	0.887	0.836
innovation and learning perspective	0.606	0.884	0.838
Political turbulence	0.674	0.909	0.878
Intensity of Competition	0.650	0.916	0.891
TQM	0.559	0.908	0.881
Involvement	0.540	0.872	0.877
Consistency	0.761	0.905	0.848
Adaptability	0.770	0.944	0.927
Mission	0.654	0.840	0.739

The square root of the AVE of each construct was compared with the correlation between that construct and the other constructs. As shown in Table 4.9, the square root of the AVEs exceeded the highest correlation between that construct and the other constructs, providing support of discriminant validity of constructs (Chin 1998; Fornell & Larcker, 1981). Thus, the results indicated that the validity of the all constructs was acceptable in the pilot study. Table 4.9 shows the results.



Table 4.9

*Correlations of Constructs and Discriminant Validity Assessment*

Construct	Adap.	Cons.	CP	FP	IC	IP	Inv	ILP	Mis	P	PT	TQM
Adaptability (Adap.)	<b>0.878</b>											
Consistency (Cons.)	0.408	<b>0.872</b>										
Costumer (CP)	0.185	0.343	<b>0.747</b>									
Financial (FP)	-0.011	-0.17	0.196	<b>0.793</b>								
Competition (IC)	0.16	0.274	0.07	0.122	<b>0.806</b>							
Internal process (IP)	-0.051	-0.062	0.359	0.341	0.009	<b>0.785</b>						
Involvement (Inv.)	0.527	0.44	0.279	0.013	0.181	0.165	<b>0.735</b>					
Innovation and Learning (ILP)	0.037	-0.076	0.147	0.298	0.126	0.23	0.139	<b>0.778</b>				
Mission (Mis)	0.536	0.554	0.326	-0.037	0.128	0.062	0.469	-0.135	<b>0.808</b>			
Performance (P)	0.331	0.176	0.297	0.067	0.359	0.337	0.237	0.308	0.168	<b>0.781</b>		
Political turbulence (PT)	-0.203	-0.105	-0.12	-0.308	-0.23	-0.24	-0.03	-0.07	-0.35	-0.09	<b>0.821</b>	
TQM	0.401	0.197	0.188	0.324	0.254	0.221	0.128	0.136	0.209	0.407	-0.375	<b>0.747</b>

Note: The bold values at the diagonal line represent the square root of the AVE diagonal.

#### **4.7 Unit of Analysis**

According to the nature of this study, which was to examine the hypothesized relationships on the firm level, the unit of analysis of the current study was Iraqi manufacturing companies represented by the top management who work in certain top management positions. Top managers can give accurate information that are reflective of real situations of the company in particular regarding the research variables to test the hypothesized relationships. Therefore, for the current study, the assumption was that the Chief Executive Officer (CEO), Chief Financial Officer (CFO), Chief Management Accountants and Chief Controller had specific knowledge of PMS, contingency factors, and firm performance, or knowledge processes within the organization.

#### **4.8 Population of the Study**

The group of interests or events that the researcher intends to study represent the population of the study (Sekaran & Bougie, 2010). In other words, they include all elements that are intended to be targeted for doing a particular research. In this research, the targeted population of the study were large and medium-scale manufacturing companies that listed in the industrial sector in 2013.

According to the Federation of Iraq Manufacturing Directory, a total of 1,213 large and medium-scale manufacturing companies were present in the industrial sector of Iraq, which is large enough to choose an appropriate sample size. However, this study focused only on large and medium-scale organizations because the large and medium-scale industrial organizations occupy a larger part of the sectors capable of boosting the

economy in Iraq, and that was why the Iraqi Federal Board of Supreme Audit had suggested a need to enhance the performance of the large- and medium-scale organizations.

Another reason for choosing the large and medium-scale organizations is that the study might not obtain accurate data from the small-scale organizations because of poor documentation of financial activities, which is due to perceived environmental uncertainty that results from the persistent political turbulence.

However, Iraqi Ministry of Planning defined large, medium, and small-scale companies based on number of employees. They considered a company to be small if the number of employees was less than 10, whereas a company with 10-29 employees was considered to be medium. Finally, large companies were those having more than 30 employees (Iraqi Central Statistical Organization, 2014), based on this classification the number of the medium and large manufacturing companies was 1,213, which is the population of the current study.

#### **4.8.1 Sample Size**

A sample could be defined as part of the target population of interest to be studied; it can be statistically referred to as a sub-collection that is selected from a population of interest. Sampling and decisions regarding the selection of sample are crucial for business research (Maxwell, 2005). Because a total number of 1,213 large and medium-scale organizations existed, according to Krejcie and Morgan (1970) and Sekaren (2003) the

minimum sample size required from those firms (1,213) should be no less than 302 firms. However, to ensure the minimum sample size required for the study was achieved, 604 survey questionnaires were distributed. Hair, Wolfenbarger, and Ortinail (2008) recommend that the sample size should be doubled to minimize sampling error.

#### 4.8.2 Stratified Sampling Technique

This study adopted the stratified sampling technique instead of simple random sampling for the following reasons. Stratified sampling represents the main subgroups of the population besides the overall population (Schreuder, Ernst, & Ramirez-Maldonado, 2004; Cochran 1977), thus providing an effective discussion of the subgroups. Similar sampling fractions used within the strata to carry out a proportionate stratified random sampling achieve better results (Trochim & Donnelly, 2006; Basri, 2012). Moreover, stratified random sampling provides more precise data without bias estimation as compared to simple random sampling (Castillo, 2009). Table 4.10 shows the sample

Table 4.10  
*Iraqi Industrial Companies and the Stratified Proportional Random Sample Size*

Company	No.	Percentage %	Required Sample	Distributed
Large	761	63 %	190	380
Medium	452	37 %	112	224
Total	1,213	100%	*302	604

Sources: Central Statistical Organization, 2013; Krejcie and Morgan, 1970.

The process of stratified sampling technique adopted for this study was achieved by grouping the manufacturing organizations into large- and medium-scale according to the Iraqi Federal Board of Supreme Audit records.

Using the Federation of Iraq Manufacturing (FIM) Directory (2013), manufacturing organizations are grouped into large and medium groups. Then, samples were chosen randomly from each group. The minimum sample size was 302 respondents. This number was divided depending on percentage of each group. Thus, 63% were large and equalled 190 respondents, while medium was 37% which equalled 112 firms. The number of distributed sample was 604.

#### **4.9 Data Collection**

To obtain the data to examine the model of this study, questionnaires were sent to the managers of medium- and large-manufacturing companies listed in the 2013 FIM directory. According to Baines and Langfield-Smith (2003), the perceptions of top managers for a study of this nature are considered appropriate.

For the actual data collection, first sets of questionnaires, 220 in number, were sent in January 2016 of which, 89 were returned. To obtain a large enough sample and achieve a better representation for proper generalization, another set of 180 questionnaires was sent in March 2016, and 68 were returned. Again, to increase the response rate, a last group of questionnaires was sent in May 2016, which included 204 questionnaires of which 79 were returned. In the months of June and July the research assistants returned to the field and were able to retrieve 67 additional questionnaires from amongst those respondents that did not return administered questionnaires initially.

Thus, the total number of questionnaires sent was 604, and the total returned was 341, constituting a response rate of 56.45%. Of the 341, 303 questionnaires were usable as 38 were not completed properly. The response rate was around the normal rate reported by most research in this area. For example, Ojra (2014) recorded a 43.75% response rate, and Marane (2012) achieved a 44% response rate. Some challenges were encountered during the data collection procedure. These included: the laxity of the managers in responding to the questionnaire, the tight schedule of the respondents, security issues in research, heavy dependency on research assistance in the data collection process due to the ill health of the researcher, and prohibitive costs among others. Much effort was made by following up with late respondents, via mail and phone calls, which yielded more results.

#### **4.10 Data Analysis Procedures**

This process had several steps. First, after data collection, individual respondents were given identification numbers and all items were properly coded and input into the software for analysis. The statistical analysis was conducted after screening the empirical data. Examining the raw data is important as it reveals critical characteristics of the data while evaluating the relationships between variables (Hair et al., 2006), which help in correcting coding errors.

In the current study, Structural Equation Modeling (SEM) using Partial Least Square (PLS) software was used for testing the fit between the model variables and the data obtained. SEM has been applied extensively in previous management and accounting

research to assess and determine the simultaneous models (Hair, Black, Babin, Anderson, & Tatham, 2006). The current study utilized this method due to its ability to study and investigate a series of dependent relationships concurrently, particularly the direct and indirect consequences among the constructs presented contained in the model (Hair et al., 2006).

Nowadays, scholars consider the Structural Equation Model (SEM), specifically the Partial Least Square (PLS-SEM) method, as a more robust estimation of the structural model (Henseler et al., 2009). The method has been adopted widely and received considerable attention in a variety of business research fields including marketing (Hennig-Thurau et al., 2006), strategic management (Hulland, 1999; Hair et al., 2012), management information systems (Ringle, Sarstedt, & Straub, 2012) and accounting (Lee, Petter, Fayard, Robinson, 2011). The increased usage of PLS-SEM method can be credited to its ability to handle problematic modelling issues that routinely occur in the social sciences such as unusual data characteristics (e.g., non-normal data) and highly complex models (Hair et al., 2014). PLS-SEM can also achieve higher levels of statistical power and demonstrates much better convergence with sample sizes, even when the achieved models are highly complex (Henseler et al, 2009).

The current study used both inferential and descriptive statistics. Hence, different statistical software was used. These included the Statistical Package for the Social Sciences (SPSS( version 22.0 and smart PLS version 2. SPSS version 22 was used to

create descriptive statistics, and Smart PLS version 2 was used to create inferential statistics related to hypotheses testing related to the model.

Before applying SEM, two types of methods must be considered by researchers. Firstly, the covariance-based approach (CB-SEM) which comprises of various techniques that can be utilized to carry out analysis such as Analysis of a Moment Structures (AMOS) and the Linear Structural Relations (LISRE) program (Haenlein & Kaplan, 2004). Secondly, the variance-based approach of the PLS-SEM (Haenlein & Kaplan, 2004; Hair, Ringle, & Sarstedt, 2011). Although PLS-SEM and CB-SEM share the same background, previous studies have mainly focused on CB-SEM (Hair, Sarstedt, Ringle, & Mena, 2012a). In contrast, the PLS-SEM method has been applied in the social sciences field such as business and marketing because of its typical methodological features that enhance its possibility of being a reliable and strong alternative to the more popular CB-SEM approach (Henseler, Ringle, & Sinkovics, 2009).

However, for selecting the most appropriate and powerful method, i.e., either CB-SEM or PLS-SEM, reviewing the features and requirements of the available methods is a prerequisite. The CB-SEM method has many essential features that must be considered such as data distribution, model specification, identification, non-convergence and large sample size (Henseler & Sarstedt, 2013). Thus, researchers have recognized the advantageous properties of the alternative approach of variance-based PLS-SEM due to its flexibility in coping with a small sample size by providing an alternative solution to overcome this limitation (Hair et al., 2011; Hair, Sarstedt, Pieper, & Ringle, 2012b;



Henseler et al., 2009). Therefore, PLS-SEM was adopted in this study as the more appropriate method to examine the measurement model and to test the relationship of the hypothesis. Hence, SmartPLS version 2 was used to evaluate the research model that is proposed in this study.

#### **4.10.1 Partial Least Squares Structural Equation Modeling (PLS-SEM)**

A SEM with latent constructs comprises two components. The structural model represents the first component, which is normally denoted as the inner model in the PLS-SEM context (Henseler et al., 2009) that illustrates the relationships (paths) among the latent constructs. In this model, PLS-SEM only allows recursive relationships (i.e., no causal loops). Therefore, the structural paths among the latent constructs can only head in a single direction. Additionally, this model has exogenous and endogenous constructs. The term exogenous refers to latent constructs that do not have any structural path relationships pointing at them. In contrast, the term endogenous refers to latent target constructs that are explained by other constructs through structural model relationships (Hair et al., 2011).

The measurement models represent the second component. These models are also known as outer models in the PLS-SEM context (Henseler et al., 2009). They include the unidirectional predictive relationships between each latent construct and its associated observed indicators. Multiple relations are not allowed; therefore, indicator variables are associated with only one latent construct. Both formative and reflective measurement models can be handled through PLS-SEM.

Reflective indicators are considered to be functions of the latent construct, and hence, changes in the indicator (manifest) variables are reflected from the changes in the latent construct. These indicators are symbolized by single-headed arrows pointing from the latent construct outward to the indicator variables. The associated coefficients for these reflective relationships are called outer loadings in PLS-SEM. Formative indicators are expected to cause a latent construct; hence, changes in the value of the latent construct are determined by changes in the indicators (Diamantopoulos & Winklhofer, 2001; Diamantopoulos, Riefler, & Roth 2008). These indicators are symbolized by single-headed arrows pointing toward the latent construct inward from the indicator variables. The associated coefficients for these formative relationships are called outer weights in PLS-SEM (Hair et al., 2011).

As has been mentioned previously, non-normality and outlier assumptions do not affect the PLS-SEM technique. Therefore, the normality distribution of the data was not tested. However, handling any missing values before assessing the model is necessary because the SmartPLS program is sensitive to missing values. To examine the model presented in this study, two steps were undertaken as follows:

#### **4.10.1.1 Assessing the Measurement Model (Outer Model)**

The first step is to assess the measurement model (outer model). Before analysing the structural model, examining the measurement model to assess the reliability and validity of the variables is necessary. Because the measurement model of this study is reflective,

reliability and validity were assessed, which included the following criteria (Hair et al., 2011; Henseler et al., 2009): see Table 4.11.

Table 4.11

*Criteria for Assessing Measurement Model (Outer Model)*

<b>Convergent Validity</b>	
<b>Criteria</b>	<b>Description</b>
1. Factor loading (Outer loading)	Factor loading should be greater than 0.70 for each item.
2. Composite reliability (CR)	(CR) should be higher than 0.70 to materialize internal consistency between constructs' indicators.
3. Average variance extracted (AVE)	AVE should be greater than 0.50.
<b>Discriminant Validity</b>	
	<b>Description</b>
1. Cross loading	The value of the factor loading of each item to its respective construct should exceed the correlation with other constructs.
2. Square root of AVE	The value of square root of AVE should be higher than the correlation between the factors off-diagonal elements in the rows and columns.

Sources: Hair et al., 2011; Henseler et al., 2009.

#### 4.10.1.2 Assessing the Structural Model (Inner Model)

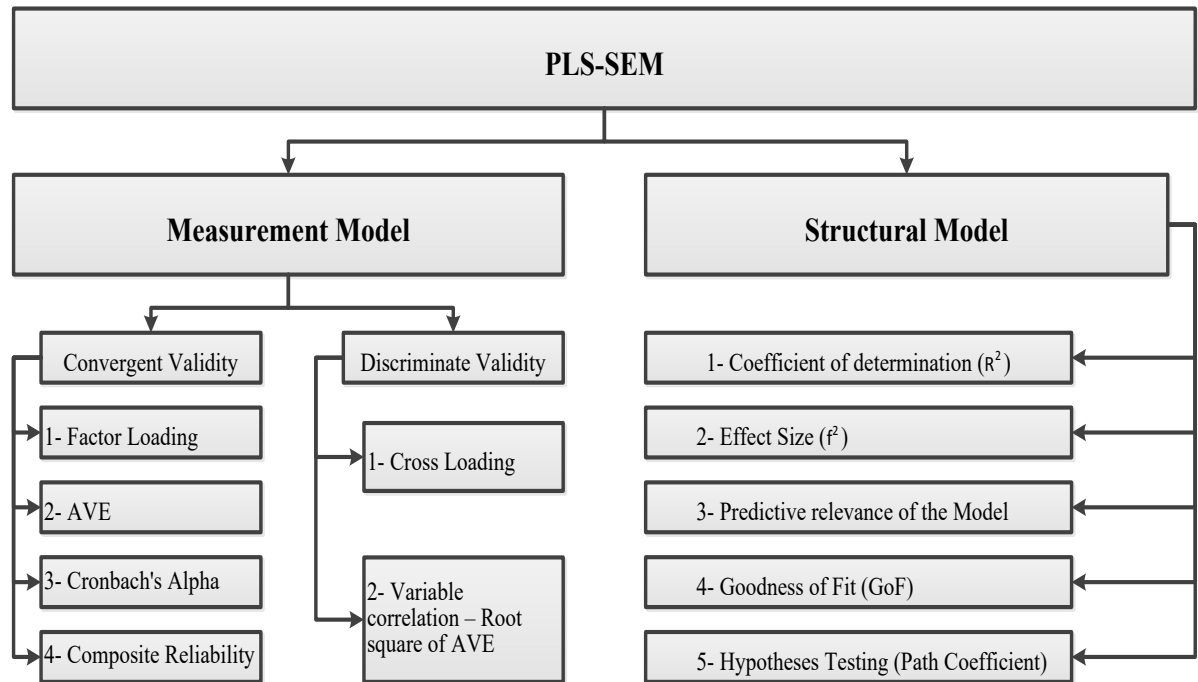
Having assessed the measurement model for reliability and validity, the next step is the assessment of the structural model. PLS-SEM does not have a standard goodness-of-fit statistic and prior efforts to establish a corresponding statistic have proven highly problematic (Henseler & Sarstedt, 2013). Reliable and valid outer model estimations permit an evaluation of the inner path model estimates. The essential criteria are presented in Table 4.12. In addition to that Figure 4.2 shows the analysis procedures for both measurements model and structural model.

Table 4.12

*Criteria of Assessing Structural Models*

Criterion Description	Criterion Description
$R^2$ of endogenous latent variables Table to be continued	$R^2$ values of 0.75, 0.50, or 0.25 for endogenous latent variables in the structural model can be described as substantial, moderate, or weak, respectively.
Estimates for path coefficients	The estimated values for path relationships in the structural model should be evaluated in terms of sign, magnitude, and significance (the latter via bootstrapping). Critical $t$ -values for a two-tailed test are 1.65 (significance level = 10 percent), 1.96 (significance level = 5 percent), and 2.58 (significance level = 1 percent).
Effect size $f^2$ Table to be continued	$f^2 = (R^2_{included} - R^2_{excluded}) / (1 - R^2_{included})$ values of 0.02, 0.15, and 0.35 can be viewed as a gauge for whether a predictor latent variable has a weak, medium, or large effect at the structural level.
Prediction relevance ( $Q^2$ and $q^2$ )	Predictive relevance: Use blindfolding to obtain cross-validated redundancy measures for each construct. Make sure the number of valid observations is not a multiple integer number of the omission distance $d$ . Choose values of $d$ between 5 and 10. Resulting $Q^2$ values of larger than zero indicate that the exogenous constructs have predictive relevance for the endogenous construct under consideration.
Goodness of fit (GoF)	Regarding the criteria of (Wetzels, Odekerken-Schröder, & Van Oppen, 2009), 0.1 means small GoF, 0.25 considered medium and value greater than 0.36 indicate large GoF.

Sources: Hair et al., 2011; Henseler et al., 2009.



*Figure 4.2.* Analysis procedures for both measurements model and structural model by using PLS-SEM.

#### 4.11 Chapter Conclusion

This chapter began with a discussion about the research design. The description of the variables measurement followed this, namely, exogenous variables, mediating variables, and endogenous variable. Afterward, the operational definitions and measurement scales were provided to measure the research variables. After that, detailed explanations about the sample size, justification of stratified sampling technique, population, and respondents were highlighted. The description of the data collection procedures followed this. In addition to a discussion of the research instruments, a discussion of the data analysis procedures and a discussion on the preliminary examination of data was also done. Finally, the relevant data analysis techniques that were appropriate to the current study were shown.

## **CHAPTER FIVE**

### **RESULTS AND DISCUSSION**

#### **5.1 Introduction**

This chapter presents and discusses the research results. Descriptive statistics are discussed first. Then, the measurement model is assessed to evaluate the validity and reliability of variables followed by the structural model estimation to test the hypotheses of the study. The chapter also discusses the results and gives practical implication.

#### **5.2 Data Screening and Cleaning**

##### **5.2.1 Missing Data**

Due to several reasons, missing data may occur, and it may have effect on the statistical result of the study. This may be as a result of invalid procedural factors that is used by the researcher or from the subject who fail to answer a certain item from the questionnaire (Hair et al., 1998). Hence, the collected data were fully examined because previous studies have established that missing values are a considerable issue due to their ability to affect the findings of empirical studies negatively (Cavana, Delahaye, & Sekaran, 2001). Sixty-one items were discovered missing after the data collection processes, and these were replaced via the mean substitution of the data. Mean substitution is a widely-used method for replacing missing data, whereby missing values for a variable are replaced with the mean value based on all valid responses (Hair et al., 1998).

### 5.2.2 Removing Outliers

According to Byrne (2010), outliers refer to any observation which is numerically distant from the rest of the dataset. Several methods may be utilized to detect outliers within a given research. One method is to classify a data point based on the Mahalanobis distance from the expected value of the research (Hair et al., 2006). It has been argued that Mahalanobis distance serves as an effective way of detecting outliers through the predetermined threshold settings that will help to determine whether a point could be classified as an outlier (Hair et al., 2006).

In the present study, chi-square statistical table is used as threshold value to determine the empirical optimum values. Hence, the value was set at 20.515 as it was related to 5 exogenous variables at the level of 0.001. Hair et al. (2010) recommended to create a new variable in the SPSS excel labelled as “response” to signify the beginning to the end of all variables. The Mahalanobis distance can achieved by running a simple linear regression model through selecting the newly created response number as the endogenous variable and selecting all measurement items apart from the demographic variables as the exogenous variables. A new output was called MAH\_1 for which a comparison was made between the chi-square as stipulated in the table and the newly Mahalanobis output. Based on MAH\_1 output, two cases were identified as outliers because their MAH\_1 was greater than the threshold value (20.515) (i.e., 28.94 and 21.60). Consequently, they were deleted from the dataset. Following the treatment of these outliers, the last step of analysis in this study was conducted using the remaining 301 samples of data (see Appendix 3).

### 5.2.3 Non-response Bias

Non-response bias was tested using a t-test to compare the similarities between the means, standard deviations, and standard errors of early and late response. Levene's test of the early and late responses in the main study variables was employed. In this study, the sample was categorized into two groups, namely, early responses and late responses. The early respondent group comprised those who returned the questionnaires within first four months of the distribution and the late respondent group comprised those who returned the questionnaires within the fifth and sixth months. Therefore, 236 responses were considered early and 67 were considered late. Descriptive statistics as well as Levene's test were conducted for equality of variance on the main variables of the study.

Table 5.1 shows that the equal variance significance values for all constructs were greater than the 0.05 level of significance between the two groups (Pallant, 2007). The two groups were found to come from the same population because no significant differences existed between early and late respondents for the main variables ( $p < 0.05$ ). Therefore, no evidence of non-response bias was reported in this study. Table 5.1 presents the results.

Table 5.1  
*Test of Non-Respondent Bias*

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	Sig. (2- tailed)	Mean Difference	Std. Error Difference
Firm performance	1.829	0.366	1.578	0.180	.15883	.10068
Political turbulence	2.780	0.762	-.215	0.804	-.03009	.14012
TQM	.505	0.282	-.162	0.272	-.01819	.11215
Culture	.040	0.852	1.314	0.339	.09625	.07322
BSC	.475	0.703	.268	0.780	.01871	.06993
Competition	.003	0.865	1.617	0.285	.17941	.11094



### **5.3 Analysis of Survey Response**

#### **5.3.1 Response Rate**

A total of 604 questionnaires were distributed to the top management of the large- and medium-scale manufacturing companies within the industrial sector of Iraq. A total of 341 questionnaires were ultimately returned constituting 56.45%; of these 38 were not properly filled and had substantial parts missing. According to Hair, Black, Babin, and Anderson (2010), excluding a respondent if the missing values are more than 50% is prudent. Consequently, these 38 were eliminated, reducing the number of questionnaires to 303. Two cases of outliers were also found and removed from the collected data as explained in section 5.2.2. Therefore, a total of 301 questionnaires were used in further analysis.

A total of 301 useable questionnaires, representing an effective response rate of 49.83%, constituted a good response compared to past studies. For example, Ojra, (2014) recorded a 43.75% response rate in the Arab world (Palestine in particular) and Marane (2012) achieved a 44% response rate in the Iraqi environment. Moreover, the response rate (49.83%) in this study was deemed satisfactory as PLS-SEM was selected as tool of analysis; PLS-SEM does not necessarily require too large of a dataset. Additionally, Hair (2010) considers 30% as an adequate response rate for a survey.

#### **5.3.2 Profile of Respondents**

The first part of the questionnaire gathered information on the demographic characteristics of the respondents. This section describes the background of the

respondents who participated in this study. The characteristics examined included gender, age, work position, work experience, industry type, employee numbers, assets, revenue. Using SPSS version 22, the descriptive analysis was carried out to describe the respondents' profiles as illustrated in Table 5.2.

Table 5.2  
*Profile of Respondents (N = 301)*

Item	Frequency	Percentage (%)
1. <b>Gender</b>		
Male	230	76.4%
Female	71	23.6%
2. <b>Age</b>		
Between 21-30	40	13.3%
Between 31-40	85	28.2%
Between 41-50	109	36.2%
Between 51-60	62	20.6%
Above 60 years	5	1.7%
3. <b>Position</b>		
Chief Executive Officers	89	29.6%
Chief Financial Officers	11	3.7%
Chief Management Accountants	178	59.1%
Chief Controller	23	7.6%
4. <b>Work experience</b>		
Less than 5 years	12	0.4%
Between 6-10	47	15.6%
Between 11-15	76	25.2%
Between 16-20	112	37.2%
More than 20 years	54	17.9%
5. <b>Industry</b>		
Food and beverage	60	19.9%
Textile and wearing apparel	65	21.6%
Wood and wood products	34	11.3%
Electric and electronic	17	5.6%
Non-metallic mineral	39	13%
Paper and paper product	18	6%
Chemical products	36	12%
Plastic product	12	4%
Iron and steel	13	4.3%
Machinery products	7	2.3%
6. <b>Employee's numbers</b>		
10 - 29	121	40.2%
Between 30-100	165	54.8%
More than 101	15	5%
7. <b>Assets</b>		
Less than 100 M Iraqi Dinars	126	41.8%
Between 101 M to 150 M Iraqi Dinars	115	38.2%
More than 151 M Iraqi Dinars	60	20%

Table 5.2 (continued)			
<i>Profile of Respondents (N = 301)</i>			
Item	Frequency	Percentage (%)	Item
8. <b>Revenue</b>			
Less than or = 50M Iraqi Dinars	62	20.6	
Between 51 M to 250 M Iraqi Dinars	111	36.9	
Between 251M to 450 M Iraqi Dinars	106	35.2	
Above 451 M Iraqi Dinars	22	7.3%	

Table 5.2 confirmed that most of the sample was male respondents as they consist of 76.4% of the sample while 23.6% of respondents represents the females. This result indicates that the top management in the industrial sector in Iraq employs less females to the number of males, which is probably due to the nature of society.

In terms of age, the age of samples respondents ranged from 20 to above 60 years. From the response gathered, it shows that 36.2% were between 41 and 50 years, 28.2% are between 31 and 40 years, 20.6% are between 51 and 60, 13.3% were between 21 and 30 years and while only 1.7% of the sample ages was above 60. In terms of position, most respondents (59.1%) were management accountants, 29.6% of respondents were chief executive officers, 7.6% were controllers, and 3.7% were chief financial officers.

In terms of working experience in industry, most respondents (62.4%) had working experience from 11 to 20 years in the industry. 17.9% of the respondents had working experience of more than 20 years. Next, 15.6% of respondents had working experience from 6 to 10 years and 4% had working experience of less or equal to 5 years.

In relation to industry, majority (78%) of the respondent firms were from four industries: 21.6% were textile and wearing apparel firms; 19.9% were food and beverage firms; 13% were non-metallic mineral firms; 12% were chemical products firms; and 11.3% were wood and wood products firms. The other 22% of firms were from paper and paper products with 6%, electrical and electronic with 5.6%, iron and steel with 4.3%, plastic products with 4% and machinery products with 2.3%. Table 5.4 shows the sample distribution by industry.

In terms of number of employees, most respondent firms (54.8%) had employees numbering from 30 to 100, 40.2% with the number of employees 10- 30 and 5% with the number of employees more than 101 employees.

In terms of total assets, most respondent firms (41.8%) had total assets of less than 100 M (Million / Iraqi Dinar). 38.2% had total assets ranging from 100 M to 150 M (Million / Iraqi Dinar) while 20% had total assets of more than 150 M (Million / Iraqi Dinar).

In terms of average annual revenue, most respondent firms (72.1%) had an average annual revenue between 51 Million to 450 Million Iraqi Dinar. 7.3% of the firms had an average annual revenue of more than 651 Million and 20.6% had an average annual revenue of less than or equal to 50 Million.

Based on the analysis of the respondents, the conclusion can be made that the features of the respondents characterized a true representation of the respondents. Most of them were

management staff with 16 years of working experience and from different industrial backgrounds. Therefore, their views are relevant and can be used for further analysis.

## 5.4 Descriptive Statistics of the Research Variables

This section provides descriptive analyses of the research variables. The analysis indicated the minimum and maximum values, mean and standard deviation of the constructs under study.

### 5.4.1 Endogenous Variable — Firm Performance

Table 5.3 shows the means, standard deviations, and ranges for firm performance examined in this study.

Table 5.3  
*Descriptive Statistics of Firm Performance*

Construct	Code	Min	Max	Mean	Std. Dev
<b>Firm performance - All items</b>	P	1	5	4.05	0.847
1. The ratio of profit to total revenue has increased during the past three years.	P10	1	5	4.13	1.00
2. During the last 3 years, we have enjoyed sales growth rate.	P2	1	5	4.11	1.03
3. Our operating profits have increased during the last 3 years.	P3	1	5	4.11	1.04
4. Return on assets has improved during the past three years.	P9	1	5	4.10	1.02
5. We have received considerable cash flow from our operations during the last 3 years.	P4	1	5	4.09	1.06
6. Net profits have increased during the past three years.	P8	1	5	4.09	1.10
7. Our costs of production have reduced during the last 3 years.	P1	1	5	4.07	1.07
8. Our return on investment has improved during the last 3 years.	P5	1	5	4.04	1.07
9. During the last 3 years we have enjoyed revenue growth rate.	P7	1	5	3.96	1.05
10. Our waste costs reduced during the last 3 years.	P6	1	5	3.93	1.07

Firm performance was measured using ten items. The mean values of each firm performance items ranged from 3.93 to 4.13, indicating high perceptions of respondents on all the items of firm performance. However, the mean score of all the items for firm performance was found to be ( $m = 4.05$ ). Most respondents believed agreed with the statement the “Ratio of profit to total revenue has increased during the past three years” was a common feature of the firm performance ( $m = 4.13$ ). The lowest mean score ( $m = 3.93$ ) of all firm performance items was be P6, which stated “Our waste costs reduced during the last 3 years” ( $m = 3.93$ ) and that reflects that attention to decreasing operational costs was relatively neglected. These results show that Iraqi manufacturing companies need to give more attention to cost reduction to succeed in a competitive world as well as to face the increasing level of the environmental uncertainty. This can be achieved through adapting SMA techniques such as ABC, TQM, target cost, BSC, and Kaizen costing.

#### 5.4.2 Mediating variable – Balanced Scorecard (BSC)

Tables 5.4 to 5.7 present the descriptive analysis of BSC as examined in this study.

Table 5.4

##### *Descriptive Statistics of Balanced Scorecard – Financial Perspective*

Construct	Code	Min	Max	Mean	Std. Dev
<b>BSC- All dimensions</b>	BSC	1	5	4.15	.586
Financial- All items	FP	1	5	4.05	.886
1. Operating income	FP1	1	5	4.10	1.03
2. Sales growth	FP2	1	5	4.08	.99
3. Cash flows	FP3	1	5	4.06	.97
4. Sales Revenue	FP4	1	5	4.02	1.0

Financial perspective was measured by using four items. The mean values of each firm performance item ranged from 4.02 to 4.10, an indication of high perceptions of the items by the respondents. Additionally, the mean score of the all financial perspective items was  $m = 4.05$ . Most respondents believed that item FP1, which stated “Operating income” ( $m = 4.10$ ), was a common feature of the financial perspective. The lowest mean score ( $m = 4.02$ ) of all financial perspective items was FP4, which stated “Sales Revenue”. This shows that Iraqi manufacturing companies need to give more attention to increasing sales revenue to succeed in this competitive world as well as to face the increasing level of the competition.

Table 5.5  
*Descriptive Statistics of Balanced Scorecard – Customer Perspective*

Construct	Code	Min	Max	Mean	Std. Dev
<b>Customer perspective- All items</b>	CP	1	5	4.13	.728
1. Customer response time	CP5	1	5	4.29	.90
2. Market share	CP1	1	5	4.23	.934
3. On-time delivery	CP2	1	5	4.23	.910
4. Number of customer complaint	CP3	1	5	4.19	.984
5. Percent shipments returned due to poor quality.	CP7	1	5	4.14	1.05
6. Survey of customer satisfaction	CP4	1	5	3.98	1.13
7. Cycle time from order to delivery	CP6	1	5	3.91	1.33

The customer perspective of the BSC was measured by using seven items. Mean scores ranged from 3.91 to 4.29, and the overall mean score was  $m = 4.13$ . This shows that the overall items had a high mean score, which suggests that respondents tended to have a high level of perception on the customer perspective. Respondents believed that item 1 (Customer response time) was one of the essential characteristics of the BSC with a mean score of  $m = 4.29$ . Similarly, item two (Market share) was found to be the second highest mean score ( $m = 4.23$ ). The lowest mean score ( $m = 3.91$ ) of all customer perspective

items was CP6, which stated “Cycle time from order to delivery”, and that reflected that less attention was paid to increase cycle time from order to delivery.

Table 5.6

*Descriptive Statistics of Balanced Scorecard – Internal Business Process Perspective*

Construct	Code	Min	Max	Mean	Std. Dev
<b>Internal Business Process - All items</b>	IP	1	5	4.18	.830
1. Manufacturing lead time/cycle time	IP1	1	5	4.28	.88
2. Ratio of good output to total output	IP5	1	5	4.22	.92
3. Labour efficiency variance	IP3	1	5	4.19	.95
4. Material efficiency variance	IP4	1	5	4.18	.100
5. Rate of material scrap loss	IP2	1	5	4.10	1.06

The internal business process perspective was also measured by using five items. Mean scores ranged from 4.10 to 4.28, an indication of high perceptions of the items by the respondents. The overall mean value of all internal business process perspective items was  $m = 4.18$ . The majority of respondents believed that manufacturing lead time/cycle time in the internal business process perspective was the most important. This clearly appears in the mean score item 1 (manufacturing lead time/cycle time), as it had the highest mean score ( $m = 4.28$ ) of internal business process perspective.

Table 5.7

*Descriptive Statistics of Balanced Scorecard – Innovation and Learning Perspective*

Construct	Code	Min	Max	Mean	Std. Dev
<b>Innovation and learning – All items</b>	ILN	1	5	4.22	.755
1- Number of new patents	ILN1	1	5	4.31	.88
2- Number of new product launches	ILN2	1	5	4.28	.91
3- Time to market new products	ILN3	1	5	4.21	.89
4- Employee satisfaction	ILN4	1	5	4.15	.97
5- Employee training	ILN5	1	5	4.14	.97

The innovation and learning perspective was measured by using five items. Mean scores ranged between 4.14 and 4.31, indicating high perceptions of respondents on all the items



of innovation and learning perspective. However, overall mean value of all innovation and learning perspective items was  $m = 4.22$ . The Iraqi managers surveyed believe that item 1 (Number of new patents) was the most common feature of innovation and learning perspective as its mean score ( $m = 4.31$ ) was the highest among all items. In addition, item 2 (number of new product launches) was also considered an important common feature for the innovation and learning perspective with mean score of ( $m = 4.28$ ).

### 5.4.3 Exogenous variables – Perceived Environment Uncertainty (PEU)

Tables 5.8 to 5.9 show the descriptive analysis of PEU examined in this study.

Table 5.8

#### *Descriptive Statistics of Perceived Environment Uncertainty*

Construct	Code	Min	Max	Mean	Std. Dev
<b>Political Turbulence -All items</b>	PT	1	5	2.73	1.17
1. The interventions by national politicians interrupt our performance.	PT2	1	5	2.89	1.43
2. Our business can be greatly affected by trade union links with political parties.	PT3	1	5	2.79	1.48
3. The political instability in Iraq influences our business.	PT1	1	5	2.76	1.50
4. Work stoppages and workers' violence are serious issues that influence the operation of business.	PT4	1	5	2.70	1.56
5. Our work environment undergoes continuous change due to the political instability.	PT5	1	5	2.53	1.57

Political turbulence was measured by using five items. As illustrated in Table 5.8, the overall mean score of all items was  $m = 2.73$ , whereas the mean scores for those indicators ranged from 2.53 to 2.89. For example, most respondents believed that item 1 (the interventions by national politicians interrupt our performance) was a common feature of the political uncertainty that has dominated the Iraqi environment for decades. This, in turn, reflects the difficulties that Iraqi firms face in implementing their strategies and plans due to the political turbulence. Similarly, most respondents scored item 2 (our

business can be greatly affected by trade union links with political parties) highly at  $m = 2.79$ . However, as Iraq has three main parts (North, middle and south region areas) the northern area has been more stable since 1990. Thus, its stability is the reason why the mean score of the political turbulence variable was 2.73 and not more than that. Accordingly, the differences between the turbulent middle, south and the stable north influence the mean score of the political turbulent varied.

Table 5.9  
*Descriptive Statistics of Perceived Environment Uncertainty*

Construct	Code	Min	Max	Mean	Std. Dev
<b>Intensity of Competition- All items</b>	IC	1	5	4.13	.93
1. Our company faces a high degree of price competition on products.	IC1	1	5	4.20	1.01
2. There is a high degree of market competition in the new products development faced by our company.	IC2	1	5	4.18	1.02
3. Company faces a high degree of competition to gain market share in products.	IC4	1	5	4.15	.99
4. Behaviours of competing companies are taking a great threat to our company.	IC5	1	5	4.13	1.05
5. The level of competition in the market for the major products of our company is extremely intense.	IC6	1	5	4.12	1.05
6. There is a high degree of competition in marketing the products that faced by our company.	IC3	1	5	4.09	1.08

The intensity of competition was the second dimension in the PEU, which was measured by using six items. The overall mean score for those six items was  $m = 4.13$ . Whereas the mean score for those indicators ranged from 4.09 to 4.20. Respondents gave item 1 (our company faces high degree of price competition on products) the highest attention as its mean score was  $m = 4.20$ .

The majority of the respondents believe that item three (company faces a high degree of competition to gain market share in products) with a mean score of  $m = 4.15$  and item six (there is a high degree of competition in marketing the products that faced by our company) with mean score of  $m = 4.09$  are common features of the competitive uncertainty that dominating Iraqi business environment. This suggests that respondents tended to have high level of perception on the intensity of competition.

Comparing this result with political turbulence, it is obvious that the overall competitive uncertainty mean score was higher than that of political uncertainty. This result indicates that competitive uncertainty was more important than political uncertainty in the context of Iraqi manufacturing companies.

#### 5.4.4 Exogenous variables – Corporate Culture (CC)

Table 5.10 shows the descriptive analysis of corporate culture examined in this study.

Table 5.10

##### *Descriptive Statistics of Corporate Culture*

Construct	Code	Min	Max	Mean	Std. Dev
<b>Corporate culture - All dimensions</b>	CC	1	5	4.22	.61
1. Work is organized so that each person can see the relationship between his/her job and the goal of our company.	CC4	1	5	4.35	.84
2. In our company, the capabilities of people are viewed as an important source of competitive advantage.	CC6	1	5	4.33	.87
3. In our company, most employees are highly involved in their work.	CC1	1	5	4.29	.91
4. Different parts of our company often cooperate to create change.	CC11	1	5	4.29	.86
5. In our company, employees understand what needs to be done for us to succeed in the long run.	CC17	1	5	4.29	.86
6. In our company, we respond well to competitors and other changes in the business environment.	CC10	1	5	4.27	.87
7. In our company, we encourage direct contact with customers by our people.	CC13	1	5	4.25	.86

Table 5.10 (continued)  
*Descriptive Statistics of Corporate Culture*

Construct	Code	Min	Max	Mean	Std. Dev
8. In our company, there is a clear mission that gives meaning and direction to our work.	CC16	1	5	4.25	.91
9. In our company, there is a clear and consistent set of values that governs the way we do business.	CC7	1	5	4.24	.90
10. Teams are the primary building blocks in our company.	CC3	1	5	4.24	.91
11. In our company, innovation and risk taking are encouraged and rewarded.	CC15	1	5	4.24	.92
12. In our company, there is continuous investment in the skills of employees.	CC5	1	5	4.23	.95
13. In our company, we view failure as an opportunity for learning and improvement.	CC14	1	5	4.19	.93
14. In our company, there is a clear agreement about the right way and the wrong way to do things.	CC8	1	5	4.19	.92
15. Information in our company is widely shared so that everyone can get the information he or she needs when it is needed.	CC2	1	5	4.18	.98
16. In our company, there is a good alignment of goals across levels.	CC9	1	5	4.16	.93
17. In our company, customers' input directly influences our decisions	CC12	1	5	4.15	1.02
18. Our vision creates excitement and motivation for our employees.	CC18	1	5	4.00	1.07

Table 5.10 provides a summary of the means, standard deviations, and ranges for the entire item used in measuring corporate culture. Corporate culture was measured using eighteen items with an overall mean score of  $m = 4.22$ . The mean score for those indicators ranged from 4.35 to 4.00. Iraqi managers believed that item 4 (work is organized so that each person can see the relationship between his/her job and the goal of our company) was the most common feature of corporate culture as its mean score ( $m = 4.35$ ) was the highest among all items. In addition to that, item 2 also considered as important common feature for the corporate culture with mean score of  $m = 4.33$ .

#### 5.4.5 Exogenous variables – Total Quality Management (TQM)

Table 5.11 shows the descriptive analysis of TQM.

Table 5.11  
*Descriptive Statistics of Total Quality Management*

Construct	Code	Min	Max	Mean	Std. Dev.
<b>Total Quality Management - All items</b>	TQM	1	5	4.06	.945
1. Developing close contact between manufacturing and customers	TQM6	2	5	4.11	1.08
2. Programs to co-ordinate quality improvements between parts of the organisation	TQM7	2	5	4.10	1.09
3. Programs to reduce time delays in manufacturing and designing products (i. e., improve cycle time)	TQM3	1	5	4.10	1.07
4. Programs to improve the quality and reliable delivery of materials and components provided by suppliers.	TQM1	1	5	4.09	1.08
5. Involvement of employees in quality improvement programs	TQM4	1	5	4.08	1.11
6. Programs to reduce waste or non-value-added activities throughout the production process	TQM2	1	5	4.03	1.11
7. Involvement of functional personnel (manufacturing, marketing, R & D) in strategy formulation	TQM5	1	5	3.91	1.15

Table 5.11 presents the means, standard deviations, and ranges for TQM items in this study. TQM was measured using seven items. The overall mean score of the all TQM items was  $m = 4.06$ . The mean score for those indicators ranged from 4.11 to 3.91. The majority of respondents believed that item TQM 6, which stated “developing close contact between manufacturers and customers” ( $m = 4.11$ ), was a common feature of the TQM. The lowest mean score ( $m = 4.03$ ) of all TQM items was TQM 5, which stated “involvement of functional personnel (manufacturing, marketing, R & D) in strategy formulation”, and that reflect less attention being paid to decrease quality cost. This result shows that Iraqi manufacturing companies need to give more attention to the involvement of functional personnel (manufacturing, marketing, R & D) in strategy formulation to succeed in this competitive world.

## **5.5 PLS-SEM Analysis Results**

The results of PLS-SEM analysis are reported in this study following the widely accepted two-step approach as suggested by Chin (2010). The first step is to assess the measurement model (the outer model) for validity and reliability while the other step is to assess the structural model (the inner model) and evaluate the hypothesized relationships. First, the assessment of the measurement model is discussed. Then, the assessment of the structural model is presented.

### **5.5.1 Testing the Goodness of the Measurements Model (Outer Model)**

To confirm the validity and reliability of the results of the analysis procedure, this study tested the goodness of the measurement. The goodness of the measurement is usually tested by employing either EFA using SPSS or CFA using SEM. Determining the appropriate approach depends on the technique adopted to carry out the analysis. In fact, two generations of approaches of the statistical instruments exist, namely, the first-generation techniques, i.e. regression-based approach, and the second-generation techniques, i.e., SEM (Haenlein & Kaplan, 2004).

For the first-generation techniques or regression-based approach, SPSS software is the most popular program; hence, the goodness of the measurement is tested by employing EFA. On the other hand, SEM software is the program used to conduct the analysis processes in second-generation techniques; therefore, the goodness of the measurement is tested by using CFA. Despite being widely employed in organizational and marketing studies, the EFA approach has certain limitations (Sureshchandar, Rajendran, &

Anantharaman, 2001). One significant limitation of this approach is represented by the way through which an item is assigned to a factor, as the highest loading is the criterion regardless of whether this item may also load on other factors. Accordingly, the distinctiveness of factors may be affected by this criterion due to the cross loadings. Additionally, assigning the items to factors in EFA is based on statistical reasoning and not on theoretical justifications, as in the case of CFA. Therefore, CFA, in this current study, was performed to validate the measurement model (outer model) by examining the association between items/indicators and their respective underlying constructs. The reliability and validity of the measurement were estimated using Smart PLS version 2.0.M3.

## **5.6 Testing the Measurement Model (Outer Model)**

Before assessing the nature of the relationships in the overall model, the validity and reliability of the constructs and items in the measurement model were tested to guarantee that only the means of reliable and valid constructs were used. In PLS, individual construct/item reliability is assessed by examining the loadings of respective items on their respective latent construct (Hulland, 1999). Higher loadings indicate a more shared variance between the construct and its measures than error variance. However, low loadings add very little to the explanatory power of the model while attenuating the estimates of the parameters linking the constructs (Hulland, 1999). Several components including content validity and construct validity (convergent validity, and discriminant validity) were utilized to ensure construct validity and reliability. Throughout this

section, the current study tested and established convergent validity and discernment validity using the results of CFA from Smart PLS 2.0.

### 5.6.1 Assessment of Convergent Validity

To assess convergent validity, factor loading, composite reliability (CR) and the average variance extracted (AVE) of the construct were used. Item reliabilities in this study were examined by assessing the outer loading of each of the individual constructs (Durate & Raposo, 2010; Hair et al., 2014; Hulland, 1999). Also, this reliability was assessed in line with the rule of thumb of an individual item loading of between 0.40 and 0.70 as suggested by Hair et al. (2014). Thus, all items were retained except one that fell within the suggested threshold; however, that item was found to be relatively low 0.50 (0.45) but was retained (Hulland, 1999).

Composite reliability (CR) should be above the cut-off 0.70. Finally, an average variance extracted (AVE) value should be greater than 0.50 (Chin, 1998; Fornell & Larcker, 1981). Table 5.12 presents the values of factor loading, composite reliability and AVE.

Table 5.12  
*Factor Loadings, CR and AVE of all Constructs*

Construct	Item	Loadings	CR	AVE
Firm performance	P1	0.865	0.946	0.643
	P2	0.886		
	P3	0.906		
	P4	0.905		
	P5	0.863		
	P6	0.842		
	P7	0.854		
	P8	0.606		
	P9	0.608		
	P10	0.585		



Table 5.12 (continued)  
*Factor Loadings, CR and AVE of all Constructs*

Construct	Item	Loadings	CR	AVE
Financial perspective	FP1	0.868	0.925	0.756
	FP2	0.902		
	FP3	0.882		
	FP4	0.824		
Costumer perspective	CP1	0.722	0.894	0.586
	CP2	0.807		
	CP3	0.871		
	CP4	0.755		
	CP5	0.751		
	CP7	0.671		
Internal business process perspective	IP1	0.836	0.924	0.709
	IP2	0.818		
	IP3	0.836		
	IP4	0.889		
	IP5	0.829		
Innovation and learning perspective	ILN1	0.790	0.906	0.661
	ILN2	0.818		
	ILN3	0.697		
	ILN4	0.876		
	ILN5	0.871		
Political turbulence	PT1	0.909	0.948	0.858
	PT2	0.939		
	PT3	0.932		
Intensity of competition	IC1	0.833	0.957	0.786
	IC2	0.899		
	IC3	0.864		
	IC4	0.903		
	IC5	0.902		
	IC6	0.917		
TQM	TQM1	0.862	0.946	0.715
	TQM2	0.870		
	TQM3	0.884		
	TQM4	0.865		
	TQM5	0.756		
	TQM6	0.831		
	TQM7	0.845		
Involvement	CC1	0.826	0.917	0.651
	CC2	0.681		
	CC3	0.759		
	CC4	0.925		
	CC5	0.719		
	CC6	0.900		
Consistency	CC7	0.920	0.949	0.862
	CC8	0.921		
	CC9	0.944		

Table 5.12 (continued)

*Factor Loadings, CR and AVE of all Constructs*

Construct	Construct	Construct	Construct	Construct
Adaptability	CC10	0.842	0.926	0.676
	CC11	0.834		
	CC12	0.783		
	CC13	0.870		
	CC14	0.788		
	CC15	0.813		
Mission	CC16	0.945	0.861	0.686
	CC17	0.937		
	CC18	0.536		

Table 5.12 provides confirmation of the reliability of all the items of the variables of this study. From the table, the CR shows a high reliability for all measurement items for the constructs with values ranging from 0.861 to 0.957. Similarly, the AVE for all the items supported high reliability with values ranging between 0.586 and 0.862. Factor loading for items were above 0.70 except for one item (CC18) that loaded 0.536, which was also accepted (Hulland, 1999). However, three items were deleted from the measurement model as its factor loading was very low. Those items are illustrated in the following Table 5.13.

Table 5.13

*Factor Loadings of Deleted Items*

Code	Item	Factor loading
CP6	Cycle time from order to delivery	0.296
PT4	Work stoppages and workers' violence are serious issues that influence the operation of business.	0.285
PT5	Our work environment undergoes continuous change due to the political instability	0.319

However, the CR also shows high reliability for all measurement items for the constructs with values ranging from 0.861 to 0.957. Similarly, the AVE for all the items supported

high reliability with values ranging between 0.586 and 0.862. Therefore, the results mean that the measurements for all variables are reliable and ready for the analysis of the structural model.

### **5.6.2 Assessment of Discriminant Validity**

The second test of the measurement model is discriminant validity, which is the extent to which a construct is truly distinct from other constructs by empirical standards. Hence, discriminant validity is a statistical test used to evaluate the degree to which items differentiate among constructs. Consequently, discriminant validity measures the distinct concepts by examining the correlations between the measures of potentially overlapping constructs (Hair et al., 2014).

Based on that, high discriminant validity value implies that a construct is unique in measuring phenomenon in such a way that cannot be captured by other construct (Hair et al., 2010). Furthermore, discriminant validity is a critical test to ensure that no cross-loading issues related to the measured items exist, and as such, discriminant validity was employed to confirm that each group of measurement was more related to its construct instead to other construct by examining the overlap in variance.

Therefore, if a particular item shows that it is more correlated with other construct than with its own measures, this means that a possibility exists that the two constructs share the same types of measures, and they are not theoretically different (Chin, 2010). For that measurement purpose, two types of criteria were applied to test discriminant validity. The

first criteria to test discriminant validity is by examining the cross loading (correlation) (Chin, 2010; Hulland, 1999). In this method, the value of the factor loading of each item to its respective construct should be more than the correlation with other construct (i.e., cross loading) (Chin, 2010). Hence, the matrix of cross loading can explain the discriminant validity. Table 5.14 present the findings of the cross loading.

Table 5.14

*Factor Loadings and Cross-Loadings*

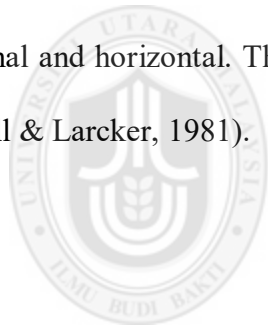
	Inv.	Cons.	Adap.	Mis.	CP	FP	IC	IP	ILP	P	PT	TQM
CC1	<b>0.83</b>	0.40	0.44	0.44	0.16	0.12	0.22	0.29	0.07	0.28	-0.12	0.19
CC2	<b>0.68</b>	0.35	0.31	0.35	0.14	0.14	0.17	0.20	0.11	0.29	-0.07	0.17
CC3	<b>0.76</b>	0.42	0.39	0.38	0.16	0.19	0.25	0.23	0.09	0.26	-0.12	0.25
CC4	<b>0.93</b>	0.41	0.52	0.51	0.23	0.20	0.26	0.28	0.16	0.34	-0.12	0.21
CC5	<b>0.72</b>	0.36	0.44	0.28	0.13	0.15	0.22	0.17	0.14	0.27	-0.05	0.22
CC6	<b>0.90</b>	0.41	0.51	0.51	0.24	0.22	0.26	0.27	0.15	0.33	-0.09	0.19
CC7	0.45	<b>0.92</b>	0.41	0.39	0.17	0.01	0.19	0.17	0.07	0.24	-0.09	0.28
CC8	0.46	<b>0.92</b>	0.42	0.38	0.11	0.00	0.24	0.14	0.12	0.26	-0.08	0.24
CC9	0.44	<b>0.94</b>	0.45	0.35	0.18	-0.01	0.25	0.20	0.07	0.31	-0.15	0.31
CC10	0.51	0.39	<b>0.84</b>	0.46	0.19	0.32	0.30	0.29	0.15	0.38	-0.06	0.30
CC11	0.45	0.40	<b>0.83</b>	0.40	0.16	0.20	0.27	0.15	0.09	0.30	-0.10	0.22
CC12	0.41	0.36	<b>0.78</b>	0.38	0.20	0.32	0.29	0.20	0.18	0.38	-0.15	0.31
CC13	0.51	0.45	<b>0.87</b>	0.46	0.19	0.22	0.30	0.19	0.16	0.35	-0.14	0.33
CC14	0.37	0.31	<b>0.79</b>	0.40	0.08	0.19	0.18	0.12	0.12	0.28	-0.06	0.25
CC15	0.38	0.33	<b>0.81</b>	0.42	0.06	0.16	0.18	0.11	0.13	0.31	-0.09	0.26
CC16	0.52	0.40	0.51	<b>0.94</b>	0.20	0.12	0.26	0.24	0.11	0.30	-0.08	0.24
CC17	0.47	0.39	0.50	<b>0.94</b>	0.17	0.10	0.26	0.22	0.09	0.27	-0.07	0.26
CC18	0.24	0.13	0.16	<b>0.54</b>	0.10	0.08	0.08	0.20	0.09	0.08	-0.09	0.11
CP1	0.20	0.10	0.15	0.18	<b>0.72</b>	0.34	0.15	0.39	0.20	0.23	0.03	0.16
CP2	0.15	0.07	0.14	0.17	<b>0.81</b>	0.40	0.30	0.42	0.25	0.28	0.12	0.26
CP3	0.20	0.09	0.19	0.19	<b>0.87</b>	0.38	0.28	0.41	0.31	0.34	0.14	0.28
CP4	0.18	0.20	0.16	0.14	<b>0.76</b>	0.33	0.23	0.39	0.28	0.36	0.05	0.31
CP5	0.18	0.15	0.13	0.12	<b>0.75</b>	0.34	0.14	0.22	0.26	0.27	0.10	0.14
CP7	0.12	0.16	0.07	0.08	<b>0.67</b>	0.25	0.11	0.23	0.14	0.23	0.13	0.12
FP1	0.12	-0.12	0.20	0.03	0.38	<b>0.87</b>	0.27	0.34	0.46	0.35	0.06	0.25
FP2	0.25	0.06	0.31	0.16	0.40	<b>0.90</b>	0.25	0.43	0.34	0.44	-0.03	0.31
FP3	0.21	0.03	0.31	0.14	0.42	<b>0.88</b>	0.26	0.40	0.35	0.38	0.03	0.34
FP4	0.16	0.04	0.21	0.09	0.34	<b>0.82</b>	0.19	0.37	0.33	0.27	0.03	0.22
IC1	0.20	0.16	0.22	0.22	0.23	0.29	<b>0.83</b>	0.30	0.17	0.50	-0.15	0.51

Table 5.14 (Continued)  
*Factor Loadings and Cross-Loadings*

	Inv.	Cons.	Adap.	Mis.	CP	FP	IC	IP	ILP	P	PT	TQM
IC2	0.30	0.20	0.31	0.26	0.21	0.29	<b>0.90</b>	0.36	0.17	0.54	-0.17	0.52
IC3	0.23	0.19	0.23	0.23	0.23	0.22	<b>0.86</b>	0.32	0.16	0.50	-0.22	0.54
IC4	0.28	0.18	0.28	0.22	0.27	0.26	<b>0.90</b>	0.38	0.16	0.53	-0.21	0.49
IC5	0.26	0.29	0.32	0.22	0.25	0.23	<b>0.90</b>	0.34	0.17	0.57	-0.18	0.51
IC6	0.25	0.29	0.34	0.26	0.27	0.22	<b>0.92</b>	0.37	0.19	0.59	-0.18	0.52
IP1	0.21	0.09	0.16	0.14	0.40	0.39	0.34	<b>0.84</b>	0.28	0.35	0.05	0.25
IP2	0.30	0.24	0.24	0.25	0.34	0.30	0.29	<b>0.82</b>	0.13	0.35	0.01	0.29
IP3	0.21	0.17	0.19	0.25	0.37	0.30	0.27	<b>0.84</b>	0.24	0.33	0.05	0.25
IP4	0.25	0.15	0.18	0.23	0.41	0.39	0.34	<b>0.89</b>	0.27	0.37	0.00	0.31
IP5	0.28	0.12	0.19	0.21	0.41	0.47	0.37	<b>0.83</b>	0.28	0.41	-0.01	0.31
ILP1	0.20	0.12	0.21	0.16	0.22	0.32	0.16	0.29	<b>0.79</b>	0.28	-0.01	0.17
ILP2	0.16	0.10	0.19	0.09	0.25	0.37	0.21	0.30	<b>0.82</b>	0.30	0.04	0.22
ILP3	0.09	-0.04	0.03	0.11	0.37	0.45	0.18	0.22	<b>0.70</b>	0.28	0.08	0.21
ILP4	0.08	0.10	0.14	0.05	0.24	0.30	0.11	0.19	<b>0.88</b>	0.29	0.16	0.10
ILP5	0.08	0.09	0.13	0.05	0.23	0.29	0.11	0.18	<b>0.87</b>	0.28	0.16	0.09
P1	0.28	0.23	0.34	0.22	0.32	0.34	0.50	0.40	0.30	<b>0.86</b>	-0.10	0.49
P2	0.32	0.27	0.36	0.22	0.37	0.36	0.52	0.39	0.33	<b>0.89</b>	-0.09	0.48
P3	0.36	0.26	0.40	0.27	0.36	0.38	0.52	0.39	0.34	<b>0.91</b>	-0.14	0.52
P4	0.33	0.29	0.39	0.23	0.34	0.36	0.55	0.38	0.33	<b>0.90</b>	-0.15	0.52
P5	0.32	0.25	0.36	0.27	0.33	0.36	0.47	0.36	0.29	<b>0.86</b>	-0.12	0.47
P6	0.30	0.28	0.31	0.24	0.29	0.30	0.49	0.38	0.26	<b>0.84</b>	-0.15	0.51
P7	0.30	0.26	0.33	0.26	0.31	0.33	0.48	0.39	0.27	<b>0.85</b>	-0.14	0.53
P8	0.24	0.18	0.25	0.18	0.20	0.36	0.50	0.30	0.20	<b>0.61</b>	-0.24	0.45
P9	0.24	0.18	0.26	0.19	0.24	0.29	0.39	0.23	0.23	<b>0.61</b>	-0.23	0.43
P10	0.20	0.16	0.31	0.17	0.25	0.27	0.41	0.20	0.23	<b>0.58</b>	-0.22	0.43
PT1	-0.12	-0.12	-0.07	-0.06	0.12	0.06	-0.15	0.00	0.12	0.14	<b>0.91</b>	-0.12
PT2	-0.13	-0.13	-0.13	-0.12	0.10	0.00	-0.21	0.04	0.12	0.20	<b>0.94</b>	-0.15
PT3	-0.09	-0.07	-0.13	-0.07	0.12	0.02	-0.20	0.02	0.05	0.19	<b>0.93</b>	-0.16
TQM1	0.24	0.26	0.28	0.18	0.24	0.27	0.54	0.27	0.18	0.54	-0.10	<b>0.86</b>
TQM2	0.23	0.23	0.29	0.22	0.20	0.25	0.49	0.24	0.14	0.45	-0.13	<b>0.87</b>
TQM3	0.20	0.23	0.27	0.23	0.23	0.30	0.52	0.32	0.20	0.50	-0.13	<b>0.88</b>
TQM4	0.23	0.25	0.26	0.26	0.25	0.29	0.49	0.35	0.15	0.51	-0.14	<b>0.86</b>
TQM5	0.18	0.22	0.26	0.16	0.32	0.30	0.48	0.31	0.18	0.55	-0.20	<b>0.76</b>
TQM6	0.21	0.29	0.34	0.24	0.22	0.26	0.46	0.25	0.16	0.50	-0.09	<b>0.83</b>
TQM7	0.20	0.29	0.34	0.26	0.23	0.26	0.45	0.24	0.15	0.50	-0.10	<b>0.84</b>

Table 5.15 shows that all items are loaded perfectly well in their respective construct. None of the cross loaded to a different variable. The factor loadings are presented in bold along the diagonal axis of the cross-loading matrix. The result implies good validity for the all variables and satisfies the requirement of discriminant validity. To further confirm this, the variables were subjected to correlation matrix assumptions as shown below.

Table 5.15 provides the correlation matrix of the variables to further confirm the non-discriminant validity issue in this study. The square root of the AVE of each construct was compared with the correlation between the constructs. The table shows that all the square root of AVEs exceeded the highest correlation between the variables both diagonal and horizontal. This is yet another support of discriminant validity (Chin 1998; Fornell & Larcker, 1981).



UUM  
Universiti Utara Malaysia

Table 5.15

*Correlations of Constructs and Discriminant Validity Assessment*

	<b>Adap</b>	<b>Cons</b>	<b>CP</b>	<b>FP</b>	<b>IC</b>	<b>IP</b>	<b>Inv</b>	<b>ILP</b>	<b>Mis</b>	<b>P</b>	<b>PT</b>	<b>TQM</b>
Adaptability (Adap)	<b>0.82</b>											
Consistency (Cons)	0.46	<b>0.93</b>										
Customer perspective (CP)	0.19	0.17	<b>0.76</b>									
Financial perspective (FP)	0.30	0.32	0.45	<b>0.87</b>								
Intensity of Competition (IC)	0.32	0.25	0.28	0.28	<b>0.89</b>							
Internal process (IP)	0.23	0.18	0.46	0.44	0.39	<b>0.84</b>						
Involvement (Inv)	0.54	0.48	0.23	0.22	0.29	0.30	<b>0.81</b>					
Innovation and learning perspective (ILP)	0.17	0.09	0.32	0.43	0.19	0.29	0.15	<b>0.81</b>				
Mission (Mis)	0.51	0.41	0.2	0.12	0.26	0.26	0.52	0.11	<b>0.83</b>			
Firm performance (P)	0.42	0.32	0.38	0.42	0.61	0.43	0.37	0.35	0.28	<b>0.80</b>		
Political Turbulence (PT)	-0.12	-0.12	0.12	0.03	-0.21	0.02	-0.12	0.1	-0.09	-0.19	<b>0.93</b>	
TQM	0.34	0.3	0.29	0.33	0.58	0.35	0.25	0.2	0.26	0.60	-0.15	<b>0.85</b>

Note: \* square root of the AVE on the diagonal.

## 5.7 Conclusion of the Measurement Model

Measurement model of this study was tested in accordance with the suggestions of SEM literature. Thus, convergent validity was used to measure the internal consistency of the construct indicators, and the results successfully exceeded the recommended values of all measurements techniques, namely, factor loading. Hence, items of this study passed reliability and validity test for its measurements.

Discriminant validity used to evaluate the degree to which items differentiate among constructs or measure distinct concepts was examined using square root of AVE and cross loading matrix. The results of square root of AVE implied that all values were higher than other off-diagonal elements in the rows and columns as Fornell and Bookstein recommended (1982). Additionally, the cross-loading matrix shows that the values of all factor loadings have higher loadings on their respective constructs instead of having a higher loading on another construct as Chin (1998, 2010) suggested.

As a result, the discriminant validity test successfully demonstrated the validity of the measurements. Figure 5.1 shows the final reliability and validity. Thus, the construct model was analyzed to test the research hypotheses, as discussed in the next section.



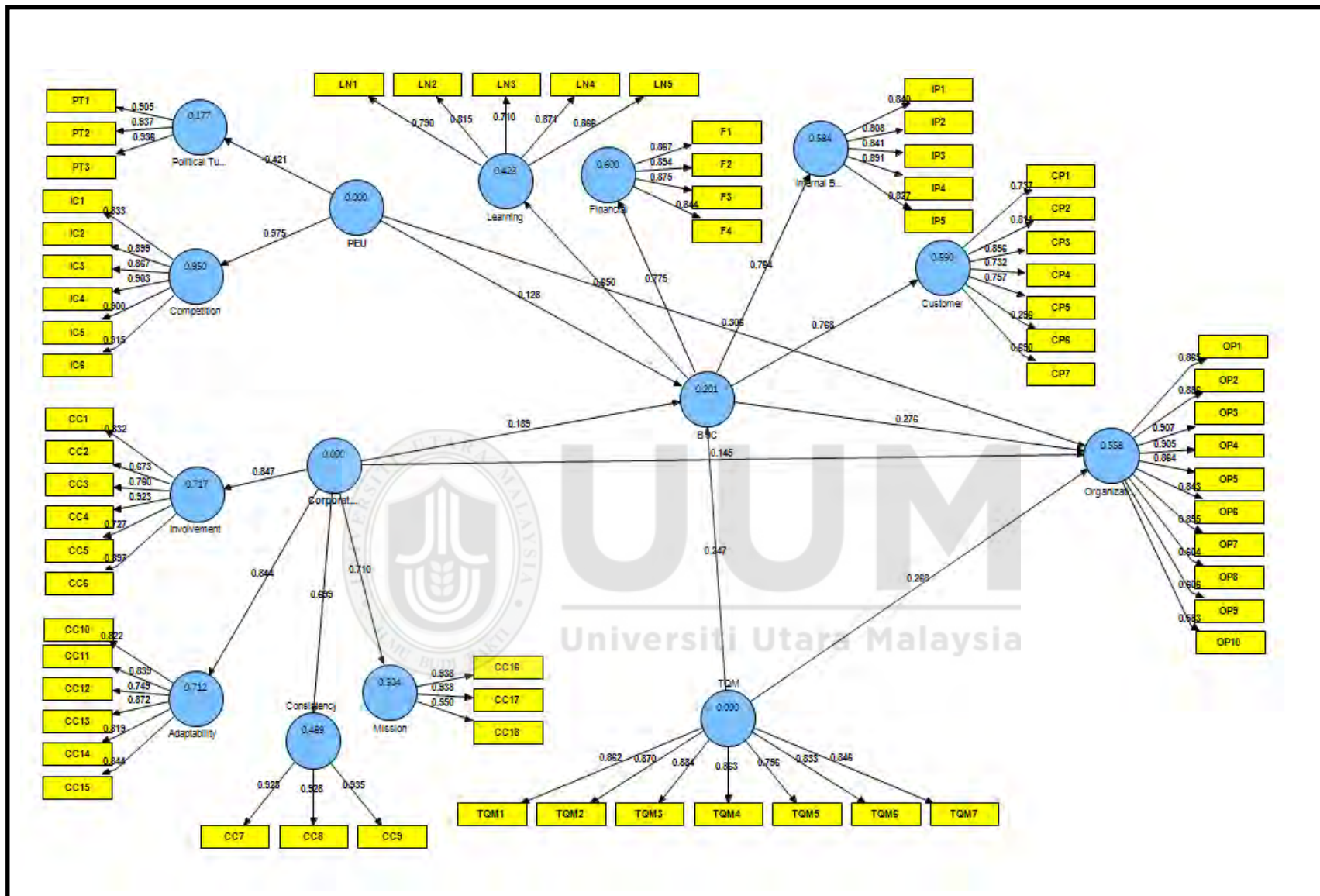


Figure 5.1. Reliable and Valid Model by Using SmartPLS Version 2.

## **5.8 Assessment of the Structural Model (Inner Model)**

Having assessed the measurement model for the reliability and validity of the measurement scale, the subsequent step is to assess the structural model. The structural model signifies the relationships between constructs or latent variables that were hypothesized in the research model. The following criteria facilitate the assessment of the structural model: Coefficient of determination ( $R^2$ ), effect size, predictive relevance ( $Q^2$ ), and goodness of fit and, finally, the path coefficients, which will be discussed separately in the following subsections.

### **5.8.1 Assessment of Coefficient of Determination ( $R^2$ )**

The coefficient of determination, or what known as  $R^2$ , is one of the focal criteria in the assessment of the structural model by PLS-SEM. The  $R^2$  level speaks to the portion of endogenous variable (s) that can be clarified by at least one exogenous factors. Hair et al. (2011) focused on the role of  $R^2$ , saying that “the primary evaluation criteria for the structural model are the  $R^2$  measures and the level and significance of the path coefficients. Because the goal of the prediction-oriented PLS-SEM approach is to explain the endogenous latent variables variance, the key target constructs level of  $R^2$  should be high” (p. 147).

Chin (1998) proposed that estimations of  $R^2$  more than 0.67 are high, while values running from 0.33 to 0.67 are moderate, though values between 0.19 to 0.33 are viewed as feeble and any  $R^2$  levels less than 0.19 are unsatisfactory. Along these lines, the nature of structural model relies upon the estimations of  $R^2$ , which show the capacity of the

exogenous variable(s) in clarifying the endogenous factors. Accordingly, in view of the consequences of this investigation, all estimations of  $R^2$  have satisfied.

The  $R^2$  value can be used to assess structural model quality, showing the difference of the exogenous value over the endogenous value. Per the results in Table 5.17, the  $R^2$  value was substantive enough, which indicates that PEU, corporate culture, TQM and BSC comprise 56% of the variance. For the mediating variable, BSC had a  $R^2$  value of 25.9%, which implies a substantive variance of the model (see Table 5.16 and Figure 5.2).

Table 5.16  
*Results of  $R^2$*

Construct	$R^2$	Assessment Criteria Chin (1998)
Contingency factors → BSC → Firm performance	0.560	substantial
Contingency factors → BSC	0.259	substantial

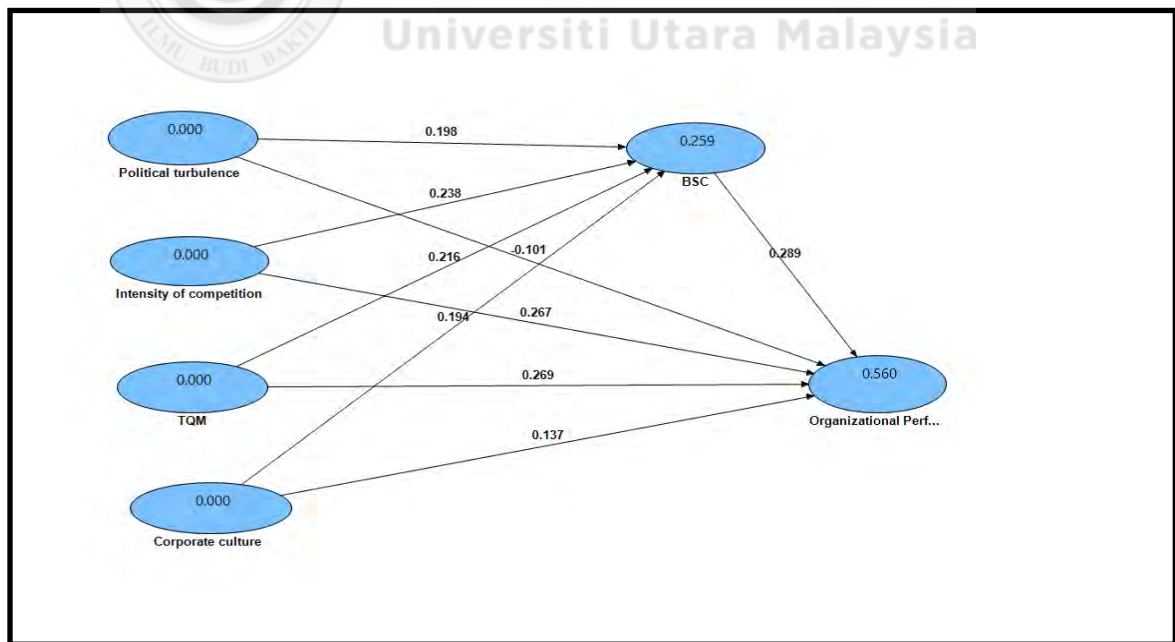


Figure 5.2. Results of  $R^2$

### 5.8.2 Assessing the Effect Size

Effect size in PLS-SEM was performed to determine the change in  $R^2$  to distinguish whether the impact of a particular exogenous latent variable on an endogenous latent variable had a substantive impact. Cohen's (1988) provided the effect size ( $f^2$ ) formula that was used in this study as follows:

$$f^2 = \frac{R_{included}^2 - R_{excluded}^2}{1 - R_{included}^2}$$

Where  $R^2$  included and  $R^2$  excluded are the R-squares provided on the endogenous latent variable when the predictor exogenous latent variable is used or omitted in the structural model respectively. The effect size  $f^2$  of 0.02, 0.15, and 0.35 is assessed based on Cohen's (1988) operational definitions for multiple regressions, which can be viewed as a gauge for whether a predictor exogenous latent variable has a small, medium, or large effect at the structural level. However, in this study the effect size of all variables that affecting BSC and firm performance was found to be small as shown in Table 5.17 below.

Table 5.17  
*The Effect Size of the Exogenous Constructs - Second Order*

Construct	$R^2$ Included	$R^2$ Excluded	Effect Size- $f^2$	Result
Political turbulence → BSC	0.259	0.223	0.049	Small effect
Competition → BSC	0.259	0.223	0.049	Small effect
Corporate Culture → BSC	0.259	0.228	0.042	Small effect
TQM → BSC	0.259	0.231	0.038	Small effect
Political turbulence → FP	0.560	0.549	0.0250	Small effect
Competition → FP	0.560	0.517	0.0977	Small effect
Corporate Culture → FP	0.560	0.546	0.0318	Small effect
TQM → FP	0.560	0.515	0.1023	Small effect
BSC → FP	0.560	0.499	0.1386	Small effect

Table 5.17 contains the respective effect sizes for the latent variables of the structural model. As Limayen, Hirt, and Chin (2001) argued, a small  $f^2$  does not essentially imply an insignificant effect.

### 5.8.3 Determining the Predictive Relevance

The predictive relevance  $Q^2$  represents another criterion to assess the structural model quality, or, in other words, the model's capability to predict (Chin, 2010). Basically, the predictive relevance proposes that the model must have the ability to adequately predict indicators of each endogenous latent construct (Geisser 1974; Stone, 1974). The  $Q^2$  value is obtained from the use of blindfolding procedure to generate the cross-validated communality and cross-validated redundancy. The blindfolding procedures are designed to eliminate amounts of the data and handle them as missing values to estimate the parameters of model. As Chin (2010), noted:

*“a sample reuses a technique that omits every  $D$  the\_data point part and uses the resulting estimates to predict the omitted part. It should be noted that the omission distance  $D$  must be chosen. Experience shows that the  $D$  value from 5 to 10 is advantageous” (as cited in Yusr, 2013, p. 213).*

The blindfolding procedure is only applied to endogenous latent variables that have a reflective measurement model specification (Hair et al., 2011; Henseler et al., 2009). As mentioned earlier,  $Q^2$  has two forms: the cross-validated redundancy and communality (Yusr, 2013, p. 213). In this regard, the predictive relevance of present study is presented subsequently in Table 5.18. Predictive relevance occurs when the value of endogenous

construct's cross-validated redundancy measure value (this is denoted as  $Q^2$ ) of any endogenous latent variable exceeds zero ( $Q^2 > 0$ ).

Table 5.18  
*Results of  $Q^2$*

Construct	$Q^2$
Firm performance	0.35
BSC	0.14

Table 5.18 shows the result of the predictive relevance ( $Q^2$ ) with value above zero (0) for both BSC and firm performance, indicating the predictive relevance of the model (Hair et al., 2014).

#### 5.8.4 Assessing Goodness of Fit (GoF)

Tenenhaus, Vinzi, Chatelin, and Lauro (2005), defined GoF as the global fit measure. It is the geometric mean of both the average variances extracted (AVE) and the average of R-square ( $R^2$ ) of the endogenous variables. The purpose of GoF is to account for the study model at both levels, namely, the measurement and structural models, with a focus on the overall performance of the model (Chin, 2010; Henseler & Sarstedt, 2013). The calculation formula for GoF is as follows:

$$GoF = \sqrt{(R^2 \times AVE)}$$

$$GoF = \sqrt{0.71575 \times 0.565} = 0.63$$

Wetzels, Odekerken-Schröder, and Van Oppen (2009) provided criteria for GoF to determine whether GoF values should be considered small, medium, or large in global valid PLS model. Table 5.19 below presents these criteria.

Table 5. 19

*GoF Baseline Criteria*

GoF small	0.10
GoF medium	0.25
GoF large	0.36

According to the criteria in Table 5.19 above, the value of the GoF (0.63) in this study, is large enough to provide sufficient global PLS model validity.

### 5.8.5 Hypotheses Testing

Finally, hypotheses were tested through PLS algorithm and bootstrapping algorithm with Smart PLS 2.0 3M. Although path coefficients are very important in PLS analysis, Hair et al. (2011) confirmed that the insignificance of paths reveals that a prior hypothesis should be rejected. In contrast, significant paths that show the hypothesized direction support the proposed empirical causal relationship. More so, it stated that each path coefficient's significance, just as with the indicators' weights and loadings, can be evaluated through the bootstrapping procedure. Figure 5.2 clearly shows the item loadings, path coefficients, and  $R^2$  values.

Using the bootstrapping method in the assessment of path coefficients entails a bootstrap sample of at least 5000, and the number of cases should be equal to the number of observations in the original sample (Hair et al., 2011). Moreover, the critical t-values for

a two-tailed test are 1.65 (with a significance level of 10%), 1.96 (with a significance level of 5%), and 2.58 (with a significance level of 1%). Table 5.20 contains the structural modeling results for the direct hypothesis and Table 5.21 for the indirect hypothesis.

Table 5.20  
*Summary of Direct Hypotheses Results*

Relationship	Std. Beta	Standard Error	t-value	p-value	Decision
H1: Political turbulence -> BSC	0.198	0.050	3.958	0.000	Support **
H2: Competition -> BSC	0.238	0.061	3.906	0.000	Support **
H3: TQM -> BSC	0.216	0.061	3.543	0.000	Support **
H4: Corporate culture -> BSC	0.194	0.052	3.725	0.000	Support **
H5: Political turbulence -> FP	-0.101	0.034	2.936	0.002	Support **
H6: Competition -> FP	0.267	0.066	4.031	0.000	Support **
H7: TQM -> FP	0.269	0.059	4.605	0.000	Support **
H8: Corporate culture -> FP	0.137	0.045	3.057	0.001	Support **
H9: BSC -> FP	0.289	0.055	5.273	0.000	Support **

Note: Significant at \*\*  $p < 0.01$  and \*  $p < 0.05$ .

In addition to the direct association as illustrated above, this study provided a unique opportunity to test whether the BSC mediates the relationship among political turbulence, intensity of competition, TQM, corporate culture and firm performance. A mediator is any variable that strengthens the influence of an exogenous variable over a endogenous variable (Baron & Kenny, 1986). The predictor in this study is the contingent factors (political turbulence, intensity of competition, TQM and corporate culture) while the outcome is the firm performance. Several views exist in the literature about the procedure for mediating testing. According to Baron and Kenny (1986)



*“to test mediation, one should estimate the three following regression equations: first, regressing the mediator on the independent variable; second, regressing the dependent variable on the independent variable; and third, regressing the dependent variable on both the independent variable and on the mediator. To establish mediation, the following conditions must hold: First, the independent variable must affect the mediator in the first equation; second, the independent variable must be shown to affect the dependent variable in the second equation and third, the mediator must affect the dependent variable in the third equation” (p. 1177).*

Baron and Kenny (1986) proposed that the strongest evidence for mediation is when there is no partial effect of the exogenous variable when the endogenous variable is predicted by both the exogenous variable and the mediator. Moreover, Preacher and Hayes (2008) used the bootstrapping method for testing hypotheses that have examined the mediating effect. The authors summarized the mediation testing procedure and reported that three conditions must be fulfilled. They are as follows. First, a mediating variable is a mediator if the endogenous variable (s) significantly affect (s) the mediator, the exogenous variable significantly accounts affects the endogenous variable. Second, the mediator significantly affects the endogenous variable when controlling for exogenous variable Third, the effect of exogenous variable on endogenous variable decreases substantially when the mediator is entered simultaneously with exogenous variable as a predictor of endogenous variable.

Additionally, Nitzl, Roldan, and Cepeda (2016) relied on bootstrapping for testing a mediating effect. The authors stated that all relationships among exogenous, mediating, and endogenous variables for each hypothesis must be examined at one time in one model. A full mediation is indicated in cases in which the direct effect of the exogenous

variable on the endogenous variable is not significant, whereas the indirect effect is significant. This means that a full mediation effect is supported only when the indirect effect of the exogenous variable on the endogenous variable through the mediator exists. In other words, full mediation means that the effect of the exogenous variable on the endogenous variable is completely transmitted with help of mediator. Partial mediation exists when both direct and indirect effects of the exogenous variable on the endogenous variable are significant. There would be no mediation if a presumed mediator variable does not strengthen a correlation between the exogenous variable (s) and the endogenous variable (s).

To test the above hypotheses, the current study used PLS-SEM utilizing the bootstrapping method that Nitzl et al. (2016) proposed to examine whether BSC was a mediator in the relationship between political turbulence, intensity of competition, TQM, corporate culture (exogenous variables) and firm performance (the endogenous variable). In other words, the study examined the indirect effect of political turbulence, intensity of competition, TQM and corporate culture on firm performance through BSC.

A crucial step of mediator analysis is to determine the extent to which the variance of the endogenous variable is directly explained by exogenous variables, and how much of the endogenous variable is explained by the indirect relationship via the mediator (how much the mediator variable absorbs).

Figure 5.3 and Table 5.21 shows the results of mediation hypothesis. To achieve that, this study followed Nitzl et al. (2016) and Hair, Hult, Ringle, and Sarstedt, (2016) in process and procedure for calculating mediation analysis.

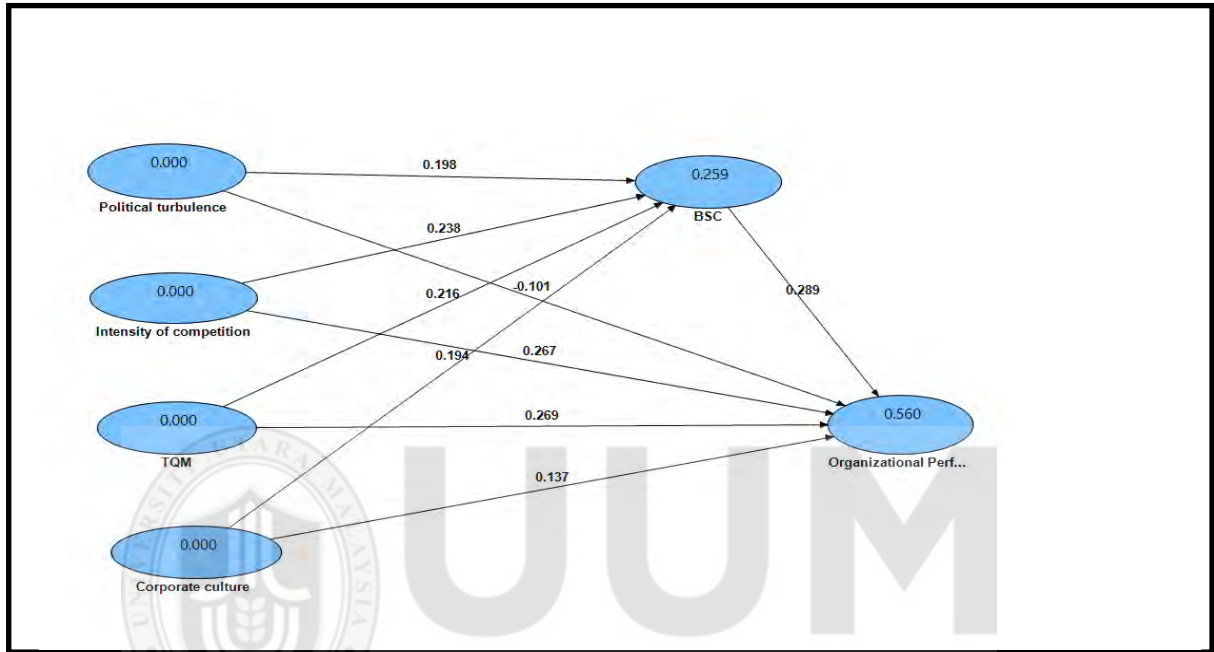


Figure 5.3. The mediating role of BSC between (political turbulence, intensity of competition, TQM, corporate culture) and firm performance.

Table 5.21  
*Summary of Indirect Hypotheses Results*

Additional hypotheses		C		C'		A		B		a*b		P Value	Decision
		Path	T	Path	T	Path	T	Path	T	Path	$t = \frac{a*b}{Sdt\ a*b}$		
<b>H10</b>	Political turbulence →BSC→ FP	-0.227	4.85**	<b>-0.101</b>	2.99**	0.198	3.91**	0.288	5.56**	0.057	3.211*	0.00	Supported
<b>H11</b>	Competition→BSC→ FP	0.609	14.56**	0.271	4.14**	0.235	3.69**	0.288	5.56**	0.068	2.588**	0.01	Supported
<b>H12</b>	TQM→BSC→ FP	0.605	14.71**	0.263	4.64**	0.222	3.89**	0.288	5.56**	0.064	2.234**	0.01	Supported
<b>H13</b>	Culture →BSC→ FP	0.442	9.19**	0.138	2.91**	.193	3.65**	0.288	5.56**	0.056	3.038**	0.00	Supported

Notes. T-values > t-values > 1.96\* (p < 0.05); t-values > 2.58\*\* (p < 0.01).

The results presented in Table 5.20 and Table 5.21 are explained based on the hypotheses of the study in the following subsections.

## **5.9 Discussion of the Direct Hypotheses**

This section presents a discussion of the direct hypotheses that examined the relationship between the exogenous variables, mediating variable and the endogenous variable. The direct hypotheses are discussed individually in line with Table 5.20.

### **5.9.1 The Relationship between Political Turbulence and Balanced Scorecard (H1)**

To test the association between political turbulence and BSC, the study developed hypotheses (H1), which stated “There is a positive relationship between the political turbulence and the use of BSC”. The hypothesis was tested by using PLS-SEM bootstrapping approach. The empirical results of PLS-SEM indicate that the proposed relationship between political turbulence and BSC was strongly significance at ( $\beta = 0.198$ ,  $t = 3.958$ ,  $p < 0.000$ ), and, thus, H1 was supported (see Table 5.20).

The above statistical parameters approve that evidence of relationship between political turbulence and BSC exists; this provides evidence of the alignment between the empirical investigation of the current study and the assumptions of the contingency theory. Thus, political turbulence is a contingent variable that influences BSC usage in Iraqi manufacturing companies. In other words, changes in external political turbulence that surround the Iraqi companies are associated with the use of BSC. Depending on that,

managers will use more of BSC to improve firm performance whenever political turbulence increases which is in line with previous studies (e.g., Schulz, Wu & Chow, 2010; Bastian & Muchlish, 2012; Housni & El-Abbadi, 2016).

Accordingly, a company can adjust its BSC to enhance performance based on the assessment of the level of current political turbulence that is present in the environment. Accordingly, in an uncertain environment such as Iraq, management should collect the most valid and reliable information that will assist in confronting environmental uncertainties. This reliable and valid data can be gathered from the use of BSC. Moreover, this data will be used to cope with surrounding political turbulence.

Indeed, one of the most dangerous uncertainties facing the Iraqi environment, especially those who work in the central and southern region, is the political turbulence. Based on the results of this study, this turbulence has influenced the use of the BSC. The more turbulent the environment becomes the more emphasis will be placed on the use of a BSC. Iraqi companies can choose to respond to the political turbulence by using a BSC.

If a company works under complicated and threatening turbulence without any adjustments to their PMS, they may face difficulties in their survival and growth. However, managers in the Iraqi environment understand the possible influences of political uncertainty, and they give proper attention to a variety of performance measures such as BSC. This can be seen from the results of the descriptive analysis of variables. The mean score of BSC was found to be 4.15 (See Table 5.4), which represents a high

agreement level with the usage of the BSC. Accordingly, Iraqi companies gave high attention to the use of BSC, which was confirmed by the empirical results of this study.

In conclusion, BSC usage is contingent upon the circumstances in which an organization operates and functions as it was confirmed by this current study as well as previous studies (Jusoh, 2008; Schulz, Wu & Chow, 2010; Bastian and Muchlish, 2012). This finding reflects consistency with what was expected from H1 in that political turbulence and using BSC were positively correlated. Thus, the findings of the study are consistent with the management accounting literature following the contingency theory approach. In fact, political turbulence is important contingent variable. This, in turn, requires companies to adapt environmental challenges and uncertainties. Therefore, Iraqi manufacturing companies that face an increased level of political turbulence should deal with such uncertainty by increasing the use of BSC in accordance with the existing level of environmental uncertainty.

### **5.9.2 The Relationship between Intensity of Competition and Balanced Scorecard (H2)**

Evaluating the effect of intensity of competition on firm performance is one objective of this study. Indeed, the Hypothesis (H2), states that, “There is a positive relationship between the intensity of competition and the use of BSC”, which was tested using PLS-SEM path analysis. The result of the PLS-SEM bootstrapping analysis shows the positive influence of the intensity of competition on the usage of BSC, with ( $\beta = 0.238$ ,  $t = 3.906$ ,

$p < 0.000$ ), (see Table 5.20). Therefore, H2 was supported as the intensity of competition positively influences the use of BSC.

The above statistical parameter demonstrates an accepted association between the intensity of competition and BSC is in line with the suppositions of contingency theory. Thus, the intensity of competition is important contingent variable that influences the usage of BSC in Iraqi manufacturing companies. This can be seen from the descriptive analysis of the current study. The mean score of the intensity of competition was found to be 4.13 which considered high. This in fact reflects the important of the intensity of competition to the Iraqi manufacturing companies.

Hence, the finding of this research concurs with the recommendation that modern performance measurement tools such as BSC should be used by the organization to enable them to become effective in today's global competition (Guidara & Khoufi, 2014). Hence, this study aligns with previous conceptual and empirical literature that the environment is one factor in determining the use of the BSC (Jusoh, 2008; Hoque, 2004). Therefore, the current result indicates that the increased intensity of competition in Iraq is positively related to the use of BSC, which supports the findings of Hoque et al. (2001), and Guidara and Khoufi, (2014) who confirmed a positive association between the intensity of competition and BSC usage.

However, more pressure in the Iraqi environment requires more attention to the use of BSC for confronting external challenges. Accordingly, Iraqi manufacturing companies



that operate under a high level of intensity of competition should adopt a BSC as a strategy to help overcome the problems of environmental uncertainties. Indeed, effective BSC under the case of intensity of competition can provide valid and reliable data that is useful in confronting rapid markets changes.

Furthermore, related research conducted on contingency theory has found that firms use BSC when facing competition (Hoque, 2004). Therefore, Iraqi companies that face an increased level of intensity of competition are expected to deal with such uncertainty by increasing the use of BSC. Therefore, the results suggest that competition, such as that in the Iraqi manufacturing sector, plays a key role in the use of performance measures. In fact, Iraqi managers were aware of the possible influence of the intensity of competition on the survival and growth of their companies, and thus, they give more emphasis to the influence of the intensity of competition which was clear in the result of the mean score of the intensity of competition and it was amounted to be 4.13.

In conclusion, the use of BSC is related to the intensity of competition and the circumstance in which an organization operates and functions as validated from the results of this study as well as previous studies (Housni & El-Abbadi, 2016; Lee & Yang, 2011; Lee, et al., 2014; Hoque et al., 2001; Mia & Clarke, 1999; Zuriekat, 2005). Consequently, the finding is consistent with the anticipation of H2 which states that, “There is a positive relationship between the intensity of competition and the use of BSC.” This finding aligns with the assumptions of contingency theory. Indeed, the intensity of competition is a potent contingent. Therefore, the more the company faces

the intensity of competition the more reliance will be placed on the variety of performance measurement system such as BSC.

### **5.9.3 The Relationship between Total Quality Management and the Balanced Scorecard (H3)**

Examining the effect of TQM practices on the use of BSC in Iraqi manufacturing environment is also one of the important objectives, which this study aims to achieve. For that, Hypothesis 3 postulates that, There is a positive relationship between TQM and the use of BSC”, and was examined using PLS-SEM path modeling analysis. The statistical result shows that a positive and significant relationship between TQM practices and BSC in the Iraqi manufacturing companies at ( $\beta = 0.216$ ,  $t = 3.543$ ,  $p < 0.000$ ), (refer to Table 5.20).

TQM is a managerial tool used to engage employees and managers in continuously improving their performance (Powell, 1995; Boaden, 1997). Thus, the implementation of BSC focuses on the integration of the ideas of strategic management that are used for firm performance appraisal by using financial and non-financial measures. Therefore, it seems that the core idea of BSC and TQM is to develop harmonization among visions, operations, strategies, and employees. Thus, the implementation of TQM subsequently led to increase the use of BSC (Hoque, 2003).

Accordingly, as TQM can be considered to be a strategic initiative. A BSC provides information that may be useful for decision-making and evaluating strategic initiatives

(Hoque, 2003). Iraqi manufacturing companies use BSC not only to provide information, but also to help in evaluating the initiatives that are at the strategic level by using financial and non-financial measures. In this context, BSC focuses on a set of ideas of integrated strategic management that helps the analysis of the firm performance from the perspective of customers, financial, and organizational processes. This approach has been proved to be fruitful for manufacturing firms (Hoque, 2003).

At the initial stage, BSC helps organizations to translate their visions into operations. Indeed, Iraqi manufacturing companies gave proper attention to TQM for the purpose of stimulating the use of BSC to confront uncertainties that surround the Iraqi environment. This can be seen through the descriptive analysis of the research variable. Data analysis shows a high mean score of TQM as it was found to be 4.06 (See Table 5.11) in the Iraqi manufacturing companies. This represents a high agreement level to the aspect of the TQM. Thus, Iraqi managers are using TQM to stimulate the use of diversity performance measures, which can assist in confronting the environmental uncertainties that faced by Iraqi companies.

Subsequently, the BSC helps in the communication of strategic objectives to all levels. Communication proves fruitful when rewards are linked with performance. Another advantage is that the strategic planning and operational budgeting helps in the allocation of resources. Finally, BSC also provides feedback that is valuable for learning, organizations link strategies with objectives that provide feedback is equally important for strategic change. Nevertheless, many scholars have indicated the suitable place of

BSC is in strategic implementation. Hoque (2003) argued that PMS like BSC is essential for TQM in organizations, when they need continuous improvement in their functions, which was confirmed by the empirical data of this study.

Similarly, Kaplan and Norton (1996) argued that BSC should adopt some actions that are congruent with the strategy of the organization; otherwise, BSC may hinder performance (Ittner & Larcker, 1997). Accordingly, BSC dimensions may prove fruitful in developing the effectiveness of TQM programs (Hoque, 2003).

In conclusion, BSC usage is influenced by TQM as substantiated by this study as well as previous studies (Mehralian et al, 2017; Sholihin & Laksmi, 2009; Ammar, Brikaa, and License 2013). Accordingly, the results of this study conform the assumption of H3, which states that there is a positive relationship between TQM and the use of BSC, where the TQM is a powerful contingent. Therefore, Iraqi manufacturing companies should give more attention to TQM to keep the positive influence of the TQM on use of BSC, which assists in facing the challenges dominating the Iraqi business environment.

#### **5.9.4 The Relationship between Corporate Culture and Balanced Scorecard (H4)**

Examining the effect corporate culture on BSC is another objective of this study. Hence, the third hypothesis captured this relationship, stating that “There is a positive relationship between corporate culture and the use of BSC”, which was tested using PLS-SEM path coefficient analysis. This was subsequently accepted based on the statistical

results at ( $\beta = 0.137$ ,  $t = 3.057$ ,  $p < 0.001$ ) (see Table 5.20). The study found that corporate culture significantly affects BSC usage in the Iraqi manufacturing companies.

This empirical finding is in line with previous studies that confirm a positive influence of corporate culture on firm performance (Berson, Oreg & Dvir, 2008; Kotter & Heskett, 1992). For instance, Shahzad, Luqman, Khan, and Shabbir, (2012) determined that corporate culture has a deep impact on a variety of organizations processes and employees, which ultimately has a positive influence on firm performance and its measurement systems such as BSC.

This describes the influence of culture on different process and parts of the firm, which contribute to the overall performance. In this regard, research shows that if employees are committed and have the same norms and values as their organizations have, then performance directed at achieving overall organization goals increases. Given the widespread interest in the potential effects of corporate culture on firm performance, there is evidence that corporate culture is positively associated with employee attitudes and performance (e.g., Bezrukova et al., 2012; Denison & Mishra, 1995). Accordingly, the managers of the Iraqi manufacturing companies should develop a strong corporate culture to encourage the use of variety of performance measurements such as BSC. Recently, Khan, Halabi, & Khan, (2011) indicated that the usage of non-financial measures of performance would influence positively by corporate culture.

Therefore, corporate culture can be considered as a unique and inimitable capability that contributes to the competitive advantage of an organization (Barney, 1986, 1991; Peteraf, 1993; Wernerfelt, 1984; Berson et al., 2008; Kotter & Heskett, 1992; Peterson et al., 2003). The findings of this research show high attention regarding the corporate culture. This can be seen from the descriptive analysis of the variables. Indeed, the mean score of the corporate culture is 4.22 (See Table 5.10) was found the highest mean score of the research variables, which reflects the positive relationship between corporate culture and firm performance.

In conclusion, the empirical results of the current study implied the importance of corporate culture in the Iraqi manufacturing sector in helping the companies implement BSC to evaluate firm performance effectively. Thus, corporate culture can be considered as an important variable in the Iraqi manufacturing environment. Accordingly, the stronger the culture in which an organization operates and functions, the more effective and successful firm performance will be. Therefore, the conclusion is that a firm's usage of BSC is contingent upon the corporate culture as explained in this study as well as previous studies (Wei, Samiee, & Lee, 2014; Jacobs et al., 2013; Berson et al., 2008; Kotter & Heskett, 1992; Peterson et al., 2003). Therefore, this finding is in line with hypothesis 4, which states that there is a positive relationship between corporate culture and the use of BSC. Previous studies have supported the argument that contingency theory helps explain the relationship between the corporate culture and the use of BSC (Eker & Eker, 2009). It would seem that the corporate culture is an effective contingent.

Thus, the present study is consistent with the previous management accounting literature following the contingency theory approach.

#### **5.9.5 The Relationship between Political Turbulence and Firm Performance (H5)**

To test the relationship between political turbulence and firm performance, Hypothesis (H5) was posited, which states that “There is a negative relationship between political turbulence and firm performance”. The result of the PLS-SEM bootstrapping approach showed a negative relationship between political turbulence and firm performance. This hypothesis was supported because this study expected a negative relationship between political turbulence and firm performance at ( $\beta = -0.101$ ,  $t = 2.936$ ,  $p < 0.002$ ), and, as such, H5 was supported (see Table 5.20).

This negative relationship between political turbulence and firm performance aligns with previous work of Verma (2016), Adomako and Danso (2014), Boyne and Meier (2009) and Jusoh (2008). The finding of this study confirms that the performance of the companies depends upon many factors such as environmental uncertainty as an example of the political turbulence. Thus, political turbulence is a powerful and critical contingent variable that influence firm performance. The political practice should be changed toward homogeneous attitude to run the economy and to meet the expectation of the Iraqi community regardless to locations.

However, the descriptive analysis showed the low level of the mean score of the political turbulence (2.73). The final analysis conducted by PLS-SEM confirmed the negative

relationship between political turbulence and firm performance. Based on the result of PLS-SEM ( $\beta = -0.101$ ,  $t = 2.936$ ,  $p < 0.002$ ), the conclusion is that a negative relationship existed between political turbulence and firm performance. In other words, the higher the level of the turbulence is, the lower the performance will be. This result is in line with many empirical studies that support the proposition that turbulence has a negative effect on performance (e.g., Boyne & Meier, 2009; Anderson & Tushman, 2001; Li & Atuahene-Gima, 2001; Kuivalainen, Sundqvist, Puumalainen, & Cadogan, 2004).

From the above perspective, the results have showed that the political instability in Iraq had continually deteriorated the business environment from 2003 until now. In fact, business organizations in the Arab world are generally suffering from the pressures of political and economic uncertainty due to Arab spring revolution in 2011, and the subsequent armed and political conflicts in many countries such as Yemen, Syria, Lebanon, Libya, and Egypt (Shurafa & Mohamed, 2016). In Iraq, political uncertainty has dominated the country (Demir, Ozmen, & Rashid, 2014), and after 2003, war and the withdrawal of US forces (Ali, Christopher, & Nordin, 2016). Indeed, some of the most critical strategic uncertainties dominating the Arab world are the political turbulence and the intensity of competition (Shurafa & Mohamed, 2016).

As a result, this study implies that companies can enhance their performance by assessing the extent to which political turbulence, as an example of the PEU, influences their performance and then adjust their BSC to provide the most reliable and valid information that are needed in making sound decisions. In this context, political turbulence should be



estimated according to the environment in which a firm operates and functions. In the midst of uncertainty, managers should be provided with reliable and valid information for quick responses to any potential uncertainty, which depends upon the available information.

The result suggests that political turbulence has a negative effect on the firm performance in the Iraqi industrial sector. This is due to the increased political instability in Iraq because of the increasing violence particularly after the US occupation to Iraq in 2003 (Ozmen, Demir, & Celepli, 2013; Al-Naser & Mohamed, 2016; Shurafa & Mohamed, 2016).

Applying contingency theory as a foundation for the research discussion and interpretation is crucial to support the findings that have been provided by data analysis in this kind of study. The impact of the concerned variables within the context of this study will be proven based on the statistical parameters. However, understanding the impacts, whether positive or negative, is essential for mapping a contingency paradigm to improve upon any alignment deficiencies and promote solutions based on a thorough analysis. In this case, the negative impact on the expected performance of Iraqi firm ultimately comes from exiting political factor and must be dealt with by these firms to survive.

In conclusion, firm performance is contingent upon the circumstances in which an organization operates and functions as this current study and previous studies (e.g.,

Verma, 2016; Adomako & Danso, 2014; Boyne and Meier, 2009; Jusoh, 2008) have confirmed. This finding concurred with hypothesis 5 which states that, there is a negative relationship between political turbulence and firm performance. Political turbulence is a sound contingent which is critical core factor that correlates with contingency theory in this study. The fact is that the contingency theory deals with external environments that impact a firm's performance. In this regard, any political turbulence has a direct impact environment or business environment that contingency theory focuses on. The external environment is important among contingent factors that involve a level of environmental irregularity or uncertainty, the degree of competition exhibited and environmental changes or turbulence that an organisation faces. This requires companies to fully adapt a strategy to confront political turbulence and to deal effectively with environmental challenges and uncertainties that dominate the Iraqi environment. Therefore, Iraqi manufacturing firms that facing the high level of political turbulence should deal with such uncertainties by increasing the use of BSC.

#### **5.9.6 The Relationship between Intensity of Competition and Firm Performance (H6)**

The intensity of competition is another PEU dimension that was examined with respect to firm performance in Iraqi manufacturing firms. Hypothesis H6 was posited to test this relationship. The results of the PLS-SEM bootstrapping approach show that a positive and significant association existed between the intensity of competition and firm performance in Iraqi manufacturing firms ( $\beta = 0.267$ ,  $t = 4.031$ ,  $p < 0.00$ ), (see Table 5.20).

The results of statistical analysis have demonstrated a significant association between the intensity of competition and firm performance. This kind of outcome demonstrated that this aspect is aligned with the assumptions of contingency theory. Contingency theory postulates that firms are always looking for innovative ways to beat their competitors to improve their performances (Hayes, 1977). For this reason, managers would seek for and subsequently adopt innovative ways or mechanisms to outsmart their competitors, which would tactically increase performance when the adopted innovative ways or mechanisms which are carefully and correctly followed or applied.

The results of previous studies have suggested that to achieve and maintain competitive advantages, organizations must adapt quickly to their market environment (Nadkarni and Narayanan, 2007; Cingöz, & Akdoğan, 2013). Consequently, if an organization faces an increasing competition in its market, then it must deal with such competition to maintain its performance.

In this study, Iraqi manufacturing companies faced high levels of market competition and gave great attention to the level of completion as the mean score was 4.13 (See Table 5.9). This attention was the reason behind the positive association between the intensity of competition and firm performance in the Iraq firms, and such contingency theory helps explain the performance of the companies. Accordingly, the more the companies give attention to the surrounding uncertainties the more their survival and growth is ensured, which was a result of the current study.

Particular to the Iraqi environment is that manufacturing companies are facing a very profound intensity of competition inside and outside the country. This is so because, during the war, the import operations and related procedures of most materials, accessories and equipment required for the manufacturing industrial companies in Iraq was very difficult. However, foreign products kept coming into the market freely, and because of this, local companies have faced many competitive challenges. One of those issues was the restriction of freely imported raw materials needed for manufacturing.

Firm performance, as many researchers have viewed, is contingent upon the fit between an organization and its contingent factors (Hammad, Jusoh, & Ghazali, 2013; Hoque, 2005). Contingency theory places much emphasis on external contextual factors, specifically environmental uncertainty. Therefore, performance is one of the sensitive issues related to those contingent variables on external environmental variables (Hoque, 2004; Hayes, 1977).

Under this concept, uncertainty steaming from the external environment, whatever its type and source, can influence firm performance due to its more sensitive level of predictability accompanying uncertainty. In this context, Chenhall (2003) argued that uncertainty is a more topical issue in the aspect of environmental research. This could explain the importance of uncertainty to overall firm performance. Relatively speaking, firm performance stems from financial and non-financial measures is contingent upon external factors that surround the environment in which an organization is operating (Kaplan & Norton, 1992, 1996).

In conclusion, firm performance is contingent upon the circumstances in which an organization operates and functions as demonstrated in this study as well as in previous studies (Mia & Clarke, 1999; Guidara & Khoufi, 2014; Chapman, 1997; Chenhall & Morris, 1986; Fisher, 1995, 1998; Gordon & Narayanan, 1984; Khandwalla, 1972; Otley, 1980; Hoque, 2011; Otley, 2012).

Accordingly, this finding is linked to hypothesis 6, which states that there is positive and significant relationship between the intensity of competition and firm performance and is consistent with contingency theory. Seemingly, the intensity of competition is a powerful contingent, and contingency theory supposes that different circumstances require different solutions for organizational effectiveness. This, in turn, requires companies to adaptable in dealing with surrounding challenges and uncertainties. Therefore, Iraqi companies facing an increased level of intensity of competition should deal with such uncertainty by increasing the use of procedures that develop valid and reliable information that is in accordance with the existing level of the environmental uncertainty.

#### **5.9.7 The Relationship between Total Quality Management and Firm Performance (H7)**

Examining the effect of TQM on firm performance was also an important objective, which this study aimed to achieve. Hypothesis 7 postulated that, “There is a positive relationship between TQM and firm performance”. This hypothesis was tested using the PLS-SEM bootstrapping approach. The result of the empirical data analysis shows that a positive and significant relationship between TQM and firm performance at ( $\beta = 0.269$ , t

= 4.605,  $p < 0.000$ ), (see Table 5.20). This suggests that the higher the level of TQM, the higher level of firm performance. In particular, the implementation of TQM lead to quality improvement, enhance customer satisfaction, reduce cost, and improve time delivery which has positive significant influence on the firm performance.

This finding gives support and evidence to previous empirical research that demonstrated a direct significant impact between TQM and firm performance (e.g., Sholihin & Laksmi, 2009; Al-Dhaafri et al, 2016; Psomas & Jaca, 2016). Accordingly, TQM practice explains a large proportion of the variance in firm performance. Thus, the more TQM is practiced, the higher level of firm performance. Similarly, Samson and Terziovski (1999) revealed that a very strong relationship is found between TQM practice and firm performance. Furthermore, based on several empirical studies, Boyne and Walker (2002) argued that the impact of TQM on firm performance cannot be denied. This further justifies how TQM and firm performance are related in Iraqi manufacturing companies.

According to EQUIS (2012), firm performance can be considered as a measure that is set to assess the individual achievement, a process, a team or an organization in any environment. Thus, manufacturing companies in Iraq can use TQM to confront the environmental uncertainty utilizing such technique (TQM) can provide a yardstick to evaluate achievement. This, in turn, might equip a company to face uncertainty and enhance performance by utilizing an appropriate standard, which a vital tool in an uncertain environment such as that of Iraq.

To illustrate more about TQM in Iraq the descriptive analysis of the TQM items reveals that “developing close contact between manufacturers and customers” is the most important features of the TQM in the Iraqi manufactures companies. In addition to those programs which co-ordinate quality improvements between parts of the organisation is also one of the vital TQM practise in the Iraqi manufactures. Furthermore, Programs to co-ordinate quality improvements between parts of the organisation and Programs to reduce time delays in manufacturing and designing products (i. e., improve cycle time( is also important features of the TQM practise in the Iraqi companies.

However, during the last few years, the strategy of TQM has gained more attention because of its potentially positive effects on firm performance, which the result of the current study confirmed. This great attention regarding TQM implementation can be seen via the descriptive analysis of the research variables. The mean score of the TQM was 4.06 (See Table 5.11), which indicates great attention being paid to the implementation of TQM in Iraqi manufacturing companies. These results coincide with reached by (Wilkinson et al. 1992). The argument is that the implementation of TQM will help in achieving improvement in product quality and also, assist in reducing cost. This will eventually result in enhanced financial gains and improved customer satisfaction (Walton, 1986).

In conclusion, certain researchers have found that TQM helps in improving performance (Gharakhani, Rahmati, Farrokhi, & Farahmandian, 2013; Sholihin & Laksmi, 2009; Al-Dhaafri et al, 2016; Psomas & Jaca, 2016). Thus, TQM has been found to be a significant

factor for the long-term success of an organization, and, because of this, the link between TQM and performance was found to be a critical factor in enhancing firm performance of the Iraqi manufacturing companies.

As stated earlier, the firm performance is contingent upon the circumstances in which an organization operates, and functions as confirmed by this study as well as previous studies (e.g., Sholihin & Laksmi, 2009; Al-Dhaafri et al, 2016; Psomas & Jaca, 2016). The above finding aligns with hypothesis number seven, which states that a positive relationship exists between TQM and firm performance. This is consistent contingency theory, which postulates that firm performance would be affected positively if the surrounding variables or internal variables support the performance mechanism. In this respect, this present study demonstrates that firm performance is contingent upon the TQM system, which was to be found positively support this kind of performance improvement in the Iraqi firms under investigation. Rather than spreading the applicable universal organization-management principles, the theory posited that different circumstances require different organizational structures. This in turn, requires companies to fully adapt TQM to deal effectively with the environmental challenges that dominate the Iraqi companies to enhance their performance.

#### **5.9.8 The Relationship between Corporate Culture and Firm Performance (H8)**

The third part of the second objective of the present study was to investigate the relationship between corporate culture and firm performance in the Iraqi manufacturing environment. To achieve this objective of this study, hypothesis (H8), which states



"There is a positive relationship between corporate culture and firm performance", was examined by using the PLS-SEM bootstrapping approach. The empirical findings of PLS-SEM showed that corporate culture has a positive and significant effect on firm performance at ( $\beta = 0.137$ ,  $t = 3.057$ ,  $p < 0.001$ ) (see Table 5.20). Therefore, H8 was supported.

The result of the current study is in line with previous studies such as (Wei, Samiee, & Lee, 2014; Jacobs et al, 2013) who found a positive influence of the corporate culture on firm performance. In fact, the positive influence of the corporate culture on firm performance could be because of the corporate culture enhances firm innovation and that innovation is related to performance (Naranjo, Jiménez, & Sanz-Valle, 2016). Therefore, the fact that culture has an indirect effect on performance may be assumed.

The assumption in the literature on the topic is that culture is related directly to performance because culture influences the behavior of the members of the organization (Galves & García, 2011; Hofstede, 1988; Martins & Terblanche, 2003). Furthermore, according to the resource-based view of a firm, culture can be a source of sustainable competitive advantage not only because this culture is valuable and rare but also because competitors find it difficult to imitate as many of its key characteristics that are tacit and highly complex (Coyne, 1986).

Furthermore, the literature suggests that different types of culture have different effects on performance. For instance, Gordon and DiTomaso (1992) concluded that companies

that emphasize adaptability tend to have better financial performance than companies that emphasize stability. Whereas, Xenikou and Simosi (2006) concluded that the achievement orientation (market culture) was related to performance, whereas, the humanistic orientation (clan culture) did not indicate that the organizational norms that promote goal setting, productivity, and effectiveness were related to high performance.

However, Iraqi manufacturing companies gave great attention to corporate culture. This can be seen in the mean score of corporate culture, which was 4.22 (See Table 5.10). This high mean score reflects the importance of corporate culture in the management style of such companies'. Based on the result of the descriptive analysis corporate culture on the Iraqi companies can be traced. For example, Iraqi managers believed that work should be organized so that each person can see the relationship between his/her job and the goal of their company. In addition, Iraqi managers believe that, the capabilities of employees are viewed as an important source of competitive advantage and for most of the employees are highly involved in their work which often help different parts of the company cooperate to create change. This culture usually assists employees to understand what needs to be done to succeed in the long run. Accordingly, Iraqi manufacturing companies believe that firm performance is contingent upon many factors, and, as such, they gave great attention to corporate culture (For more details refer to Table 5.10).

In conclusion, corporate culture is an important contingent factor for performance enhancement. The finding is in connected with hypothesis 8, which states that a positive relationship existed between corporate culture and firm performance, and consistent with

contingency theory. The study confirmed that corporate culture is a contingent variable that would reflect the performance of the companies. Thus, companies that are looking for enhancing their performance must give proper attention to corporate culture to build and sustain a competitive advantage that will lead to better firm performance. Indeed, Iraqi firms should vest in corporate cultures that enhance their performance.

#### **5.9.9 The Relationship between Balanced Scorecard and Firm Performance (H9)**

Another objective of this study is to investigate the effect of use of BSC on firm performance in Iraqi manufacturing companies. To achieve this important objective, Hypothesis 9, which states that, “There is a positive relationship between BSC and firm performance”, was tested using the PLS-SEM bootstrapping approach. The results pointed out a positive and significant association between BSC and firm performance at ( $\beta = 0.289$ ,  $t = 5.273$ ,  $p < 0.000$ ), (See Table 5.20). Therefore, H9 was supported.

This result supports the findings of many previous studies such as Hoque and James (2000), Farooq and Hussain (2011) and Guidara and Khoufi (2014), which found that BSC positively affected firm performance. BSC has a positive effect on firm performance because it can provide continuous signals and motivate advanced improvements in critical activities in vital areas including product, process, customer and market development just like Kaplan and Norton (1993) found.

BSC enhances performance by continuously providing information about financial and non-financial measures necessary to achieve future success (Kaplan & Norton, 1992,

1996a). The information helps companies to recognize many relationships through improved decision-making regarding the solution of problems (Kaplan & Norton, 1992). Moreover, BSC measures help to combine outcomes with inputs (Olve, Roy, & Wetter, 2000) by mainly focusing on outcomes rather than procedures. Accordingly organization's strategy and vision become the core values for management to understand the divisional-level and corporate-level strategies necessary to create value for existing and prospective customers (Abugalia, 2011). However, more details about the use of BSC in Iraqi companies can be illustrated by the result of the descriptive analysis of the research variables.

Based on the forgoing, BSC has proven to be one factor that can influence firm performance as was confirmed by this current study as well as previous studies (Kaplan & Norton, 1992, 1996a; Banker et al., 2000; Jusoh, 2008; Mehralian et al., 2017).

This attention to BSC can be seen from the descriptive analysis of the research variable. Mean score of the BSC was 4.15 (See Table 5.4), which reflects the agreement level to the aspect of BSC in the Iraqi companies. However, more details about the BSC usage in Iraqi companies can be illustrated by reviewing the result of the descriptive analysis of the BSC items. For instance, managers of Iraqi companies believed that the customer satisfaction is vital for the company success which can increase the market share, so they give high attention to the items that concern customer response time and market share (item number one and two in the customer perspective). In addition, Iraqi companies are concerned with number of new patents that reflect the importance of the innovation

perspective of the BSC to the Iraqi companies. Furthermore, the analysis reveals that the Iraqi manufacturing companies give high attention to the manufacturing lead time/ cycle time which reflect the attention given to the internal business process. Therefore, Iraqi manufacturing companies that are facing a high level of environmental uncertainty should increase the use of BSC to deal effectively with surrounding uncertainty.

In conclusion, financial performance measures tend to focus on short-term profitability, non-financial performance measures focus on long-term profitability. As such, the combination of short-term and long-term measures provides more valid information that has the capacity to assist in making sound decisions to ensure the survival and growth of Iraqi companies.

The above finding is in line with hypothesis 9 which states that a positive relationship exists between BSC and firm performance and is consistent with contingency theory, it postulates that the BSC is a powerful contingent factor. The BSC enhances performance in supplying the information about financial and non-financial measures necessary to achieve future prosperity performance. Therefore, Iraqi companies have been shifting their methods of performance measurement towards complementing financial measures with a set of new non-financial measures.

## **5.10 Discussion of the Indirect Hypotheses (Mediation Relationship)**

This part discusses the mediating hypotheses. Discussions were made on the mediating role of BSC on the relationship between the exogenous variables and endogenous variable. The indirect hypotheses are discussed individually in line with Table 5.21.

### **5.10.1 The Mediating Effect of BSC on the Relationship between Political Turbulence and Firm Performance**

The fourth objective of this study is to examine the mediating role of BSC in the relationship between political turbulence and firm performance. To achieve that Hypothesis H10, which states that “The use of BSC mediates the relationship between political turbulence and firm performance”, was tested using PLS-SEM path modeling analysis. The finding indicates that BSC plays a partial mediating role between political turbulence and firm performance. This finding is expected, given the fact that all the mediating conditions were met by this relationship (Political turbulence  $\rightarrow$  BSC  $\rightarrow$  firm performance). The path was represented by the relationship between political turbulence, and BSC was significantly affected at ( $\beta = 0.198$ ,  $t = 3.91$ ,  $p < 0.000$ ), and path b represented by the relationship between BSC and firm performance was significantly affected ( $\beta = 0.288$ ,  $t = 5.56$ ,  $p < 0.000$ ).

Finally, the direct relationship between political turbulence and firm performance in the absence of BSC called path c was significant ( $\beta = -0.227$ ,  $t = 4.85$ ,  $p < 0.000$ ). When the mediator variable (BSC) was introduced, political turbulence directly influenced firm performance with a change from  $-0.227$  ( $t = 4.853$ ) to  $-0.101$  ( $t = 2.994$ ). Because the

direct effect was still significant, the study concluded that BSC partially mediates the effect of political turbulence on firm performance (See Table 5.21 and Figure 5.3).

Based on the empirical data of the current study, it was confirmed that BSC mediate the relationship between political turbulence and firm performance in the Iraqi manufacturing companies. The mediating role of the BSC between political turbulence (as an example of the PEU) and firm performance aligns with previous research grounded in contingency theory (Bastian & Muchlish, 2012; Jusoh, 2008). Undoubtedly, BSC usually revolves around environmental factors that include social, political and economic designations (Sharma, 2000). For this reason, Granlund (2001) and Haldma and Laats (2002) opined that a great deal of management accounting depends upon the environment in which it operates, and this often influences and dictates organizational change, such as utilizing the BSC.

Further still, the political environment has greatly influenced the firms and subsequently determined operations of management accounting and firm performance (Oakes & Miranti, 1996). Indeed, one external factor affecting firm performance is environmental uncertainty (Jusoh, 2008). In line with the literature, political turbulence is an important dimension of environmental uncertainty (Ghosh et al., 2014). Hence, when the environment becomes very dynamic, challenging and complex, traditional performance measurement systems become inadequate (Hwang, 2005). Chenhall (2007) described the external environment as the most hostile and turbulent environment, which, as a result, causes the top management to pay greater attention to modern performance measurement

systems like the BSC that was proven in the current study, which ultimately is used to enhance the performance of the firms. By implication, for organizations to survive in the ever-changing, instable, and volatile environment, managers of Iraqi companies must study and strategically plan towards reducing the negative consequences of their environment by applying new SMA techniques such as BSC, which, ultimately, will enhance performance.

Thus, based on the empirical result of the current study, the conclusion which can be made says that the more the environment becomes turbulent the more it positively influences the use of BSC. For example, multi-dimensional performance measurement, as well as the finding supports of the statement of hypothesis 10 that states that BSC plays a partial mediating role between political turbulence and firm performance, which is consistent with the contingency theory.

Accordingly, contingency theory on organisational effectiveness and function simultaneously determined contextual factors such as the external environment. This is because a company's BSC is affected by the circumstances faced by that company (Otley, 1980, 1999; Chenhall & Morris, 1986; Fisher, 1998; Haldma & Lääts, 2002; Chenhall, 2003; Maltz, Shenhar & Reilly, 2003; Henri, 2004; Paranjape et al., 2006). The above can enhance the performance of firms. Note that Iraqi companies facing a high level of political turbulence emphasises the use of BSC under the pressure of political turbulence to influence their performance positively.



### **5.10.2 The Mediating Effect of BSC on the Relationship between Intensity of Competition and Firm Performance**

To assess the mediation effect of BSC on the relationship between intensity of competition and firm performance, the mediation analysis utilized the bootstrapping techniques in PLS-SEM (Hair et al., 2016). BSC was posited to mediate the relationship between intensity of competition and firm performance. The mediation analysis demonstrated the impact of predictor variable (intensity of competition). First, it had a significant influence on the mediator (BSC) at ( $\beta = 0.235$ ,  $t = 3.69$ ,  $p < 0.000$ ). Second, the mediator (BSC) significantly influenced firm Performance with ( $\beta = 0.288$ ,  $t = 5.56$ ,  $p < 0.000$ ). Finally, the predictor (intensity of competition) had a significant influence on the endogenous variable (firm performance) in the absence of the mediators' influence at ( $\beta = 0.609$ ,  $t = 14.56$ ,  $p < 0.000$ ). (See Table 5.21)

To test the mediation effect, the model was estimated without the potential mediator variable of BSC. Then, the mediator variable BSC added to the model. When the mediator variable (BSC) was introduced, the direct effect of the predictor (intensity of competition) on the endogenous variable (firm performance) was reduced to 0.271 ( $t = 4.1499$ ). Because the direct effect remained significant, the study concluded that BSC partially mediated the effect of intensity of competition on firm performance.

Another key requirement is that the indirect effect of the predictor variable (intensity of competition) on the endogenous variable (firm performance) should be significant. The t-value of the indirect effect was used to assess the significance of the indirect effect. The

t-value should be more than 1.96 ( $p < 0.05$ ). In this study, the t-value was 3.060 ( $p < 0.05$ ). Based on the above results, BSC mediated the relationship between the intensity of competition and firm performance; thus, H11 was supported. These finding confirmed that BSC usage not only improves firm performance but also mediates the impact of intensity of competition on a firm's output. Hence, this result confirms earlier research like that of Guidara and Khoufi (2014); Bastian and Muchlish (2012); Mia and Clarke (1994); Hoque et al., (2001).

The result of the current study is in line with the available literature on management accounting and control that indicates the environment is a factor that can determine the fashioning of management accounting and control systems to enhance the success of an organization (Guidara & Khoufi, 2014; Bastian & Muchlish, 2012; Mia & Clarke, 1994; Hoque et al., 2001). Therefore, in providing internal and external broad-based information, the use of multiple performance measures that is provided by the BSC approach can play a significant role. Thus, the BSC “translates an organization's mission and strategy into a comprehensive set of performance measures that provides the framework for a strategic measurement and management system” (Kaplan & Norton, 1996, p. 2).

Accordingly, depending on the result of the current study, Iraqi manufacturing companies that face an increased level of intensity of competition use BSC to confront uncertainty as well as to enhance the performance. In other words, BSC can be used as a mediator variable to cope with uncertainty while enhancing performance. However, Waweru,

Hoque, and Uliana, (2004) argued that companies operating in developing countries now require quality and timely information to replace their current management accounting systems to cope with the intensity of competition. Hence, the mediating role of the BSC demonstrates the need to add to traditional performance systems that focus only on financial measures with non-financial information that is needed to make sound decisions.

In this regard, Chong and Chong (1997), Mia and Clarke (1999), and Widener (2006) have confirmed the role of BSC measures usage as a mediating variable; such studies provide evidence that, in part, a relationship exists between PEU as an example of intensity of competition and firm performance, and this has indirect effects to the extent to which an organization uses multiple performance measures to evaluate its performance through BSC measures.

In conclusion, the current study provides evidence to the previous literature that the more companies face an increased level of the intensity of competition the more emphasis will be placed on the use of BSC to ultimately enhance the performance which explained the mediating role of the BSC. Accordingly, companies use multi-dimensional performance measures such as BSC to effectively gather more information to cope with such uncertainty, which ultimately will enhance the performance. This is consistent with the assumptions of contingency theory. It would seem that the BSC is an important contingent factor for the performance.

### **5.10.3 The Mediating Effect of BSC on the Relationship between TQM and Firm Performance**

Just like the previous mediation hypothesis, BSC was proposed to mediate the relationship between TQM and firm performance. The bootstrapping technique was utilised using PLS-SEM in that regard. The result established several things. First, there was a significant influence of TQM on the mediator (BSC) at ( $\beta = 0.222$ ,  $t = 3.89$ ,  $p < 0.000$ ). Second, the mediator (BSC) significantly influenced firm performance at ( $\beta = 0.288$ ,  $t = 5.56$ ,  $p < 0.000$ ); and, finally, the predictor (TQM) significantly influenced firm performance without BSC at ( $\beta = 0.605$ ,  $t = 14.71$ ,  $p < 0.000$ ) (See Table 5.21).

In addition, when the mediator variable (BSC) was introduced, the predictor (TQM) relationship with firm performance was reduced to 0.263 ( $t = 4.642$ ). Because the direct effect remained significant, the study concluded that BSC mediated between TQM and firm performance. Therefore, BSC mediated the relationship between TQM and firm performance; thus, H12 was supported.

The current result is in line with the previous studies that confirmed the mediating role of BSC between TQM and firm performance (Mehralian et al., 2017 Ramezani & Beiglou, 2014; Sholihin, & Laksmi, 2009). This mediating role of the BSC might be due to increasing global competition, which influences companies to employ certain tactics to compete better in this competitive world. Accordingly, as TQM and BSC are the top-most techniques selected by the firms for managing their operations effectively, they ultimately have a positive influence on firm performance.

In this regard, the mediating role of the BSC in the Iraqi environment explained the importance of the SMA techniques to each other to enhance performance especially under the high level of the existing uncertainty. Based on that, Iraqi companies should focus their attention on the integration between different tactics such as BSC and TQM to enhance their performance, which once again was proven by the empirical analysis of the current study.

Hence, mediating role of the BSC between TQM and performance represents the integration between different SMA techniques that is required in today's business environment that dominated by uncertainty. In this regard, Otley (1999) stated that BSC strongly links performance measures with business unit strategy regardless to weaknesses attributed to its powerful potential to tackle the issue of effectively deploying the strategic intent of a company. Furthermore, Hoque (2003) agreed that TQM and BSC interact to influence firm performance. Despite some controversy in the literature, researchers have identified BSC as having the ability to mediate the relationship between TQM and firm performance (Kaynak, 2003; Chenhall, 1997; Chong & Rundus, 2004), which was confirmed by the current study. Accordingly, the result of the current study, is in line with suggestion and premise of contingency theory that the use of PMS is affected by the circumstances in which an organisation operates. This indicates the importance of contingent factors in explaining the motivation for designing and using performance measures.

In conclusion, TQM supports the use of multi-dimensional performance measure that represents BSC, which, in turn, positively influence the performance of the companies. This conclusion supports the contingency theory that claim different subunits within an organization may confront different external demands. Thus, companies must integrate SMA techniques such as BSC for a better influence on the performance.

#### **5.10.4 The Mediating Effect of BSC on the Relationship between Corporate Culture and Firm Performance**

BSC was posited to mediate the relationship between corporate culture and firm performance. To assess the mediation effect of BSC, the criteria for mediation analysis were examined using PLS-SEM. The result shows the impact of the predictor variable (corporate culture). First, corporate culture had a significant influence on the mediator (BSC) at ( $\beta = 0.193$ ,  $t = 3.65$ ,  $p < 0.000$ ). Second, BSC mediated firm performance with  $\beta = 0.288$ ,  $t = 5.56$ ,  $p < 0.000$ ; and, finally, corporate culture significantly influenced firm performance in the absence of the mediators' influence at ( $\beta = 0.442$ ,  $t = 9.19$ ,  $p < 0.000$ ) (See Table 5.21).

To test the mediation effect, the model was estimated without the potential mediator variable of BSC. Then, the mediator variable BSC was added to the model. When the mediator variable (BSC) was introduced between the corporate culture and firm performance, the correlation strength of the former on the latter was reduced to 0.138 ( $t = 2.916$ ). Because the direct effect remained significant, the study concluded that BSC mediates the effect of corporate culture on firm performance.

Another key requirement is that the indirect effect of predictor variable (corporate culture) on the endogenous variable (firm performance) should be significant. The t-value of the indirect effect was used to assess the significance of the indirect effect. The t-value should be more than 1.96 ( $p < 0.05$ ). In current study, the t-value of the indirect effect of (corporate culture) on the endogenous variable (firm performance) was 3.0427 ( $p < 0.01$ ). This showed that the indirect of (corporate culture) on (firm performance) was significant. Therefore, BSC mediates the relationship between corporate culture and firm performance; thus, H13 was supported.

This mediation result of BSC between corporate culture and firm performance is in line with previous studies that confirm the mediating role of BSC to enhance the performance (Eker & Eker, 2009; Ismail, 2007). The literature has demonstrated that the successful implementation of BSC is associated with corporate culture (Kaplan & Norton, 1996, 2001; Otley, 2003). In this concern, over time, BSC has demonstrated a positive relationship between corporate culture and firm performance. Basically, the reason behind this mediating relationship lies in the fact that, if a company has more supportive culture, it will adopt more advanced techniques of management accounting, like BSC. This was the case of the Iraqi manufacturing companies. Consequently, the success use of BSC is highly dependent on the corporate culture in which mission, vision, and objectives are translated into actions (Kaplan & Norton, 2004). On this issue, previous studies have shown that corporate culture has a direct influence on the BSC, as was shown in this research with respect to Iraq.

The result of the analysis in relation to the mediating role of BSC generally indicates that the advantages stemming from corporate culture would indirectly influence business performance due to the emphasis that is place on the usage of BSC. This is because once organizations build its corporate culture, BSC would be employed to assist in capturing the most relative information to assist in taking sound decisions. Thus, by providing valuable information and feedback on performance, that is intended to support the organization in effectively exploiting the strategic resource. Hence, this leads to performance improvement (Widener, 2006).

The findings are in accordance with previous studies which assume that, organizations are unable to realize their absolute advantage if their strategic intangible resources such as corporate culture are not appropriately managed. As indicated by Simons (2000), the BSC is seen as a powerful lever to support management of strategic resources. Kaplan and Norton (1996) posits that appropriate management and the measurement of the underlying critical success factors could positively influence firm performance. Therefore, managers ought to adopt a useful corporate culture in their companies that offer a motivated and supportive environment to enhance their performance.

In conclusion, the finding of hypothesis 13, which states that the use of BSC mediates the relationship between corporate culture and firm performance, is consistent with contingency theory. The contingency theory suggests that an organisation must align with its environment (such as corporate culture as an example of the internal environment) (Hayes, 1977). Iraqi company managers, for example, should do so to enhance their



performance. Attention to building a cooperative environment can influence multi-dimensional PMS such as BSC to ultimately enhance performance especially under the pressure of the current uncertainties that Iraqi companies face.

### 5.11 Hypotheses Summary

A summary of findings is presented in Table 5.22 indicating the relationship, hypothesis and the decisions.

Table 5.22  
*Summary of Findings*

Relationship	Hypothesis statement	Decision
H1: Political turbulence -> BSC	There is positive relationship between the political turbulence and the BSC.	Supported
H2: Competition -> BSC	There is positive relationship between the intensity of competition and the BSC.	Supported
H3: TQM -> BSC	There is positive relationship between the TQM and the BSC.	Supported
H4: Corporate culture -> BSC	There is positive relationship between the corporate culture and the BSC.	Supported
H5: Political turbulence -> FP	There is negative relationship between political turbulence and firm performance.	Supported
H6: Competition -> FP	There is positive relationship between intensity of competition and firm performance.	Supported
H7: TQM -> FP	There is positive relationship between TQM and firm performance.	Supported
H8: Corporate culture -> FP	There is positive relationship between corporate culture and firm performance.	Supported
H9: BSC -> FP	There is positive relationship between BSC and firm performance.	Supported
H10: Political turbulence →BSC→ FP	BSC mediates the relationship between political turbulence and firm performance.	Supported
H11: Competition→BSC→ FP	BSC mediate the relationship between intensity of competition and firm performance.	Supported
H12: TQM→BSC→ FP	BSC mediate the relationship between TQM and firm performance.	Supported
H13: Corporate Culture →BSC→ FP	The BSC mediate the relationship between corporate culture and firm performance.	Supported

The findings of this study are summarised in Table 5.22 above showing all the direct and indirect hypotheses. The study has nine direct hypotheses and four indirect hypotheses. The exogenous variables (political turbulence; Intensity of competition; corporate culture; TQM) had a significant effect on the endogenous variable (firm performance). The result also shows that the mediating variable (BSC) had a significant effect on the endogenous variable and mediates the relationship between all the exogenous variables and endogenous variable.

In conclusion, as indicated in the problem statement Iraqi manufacturing companies have faced a serious decline in revenue and consequent contribution to GDP right from the beginning of Iran-Iraq war then to the presence of US officials in Iraq in 2003 until the current date. Therefore, this study contributes to understand how Iraqi companies under this long term uncertainty behave and how they use their SMA techniques. Based on that the result will help Iraqi manufacturing firm to regain their performance by observing the effects and contribution of political turbulence; Intensity of competition, corporate culture, TQM and BSC.

## **5.12 Chapter Conclusion**

Based on the data from the Iraq listed firms, this study performed an analysis using both SPSS Version 22 and Smart-PLS Version 2. Descriptive analysis for current study was through SPSS and Smart-PLS and was applied to ascertain the reliability and validity of data to test the hypotheses. For that purpose, a two-stage of data analysis was conducted. The first stage was the measurement model that examined both convergent validity and

discriminant validity to assure the association between various constructs and their indicators, and, this analysis, confirmed the validity and the reliability of the study measurements.

The second stage was conducted by using the bootstrapping procedures on the structural model to test the extent to which the hypothesized relationships were supported. Nine main hypotheses (H1-H9) were significantly supported. In addition, the mediating role of the BSC between contingency factors and firm performance was also examined, and the findings supported the role of BSC as mediator for this study. All four mediating hypotheses, H10, H11, H10 and H13, were supported.



## **CHAPTER SIX**

### **CONCLUSION AND RECOMMENDATIONS**

#### **6.1 Introduction**

This chapter summarizes the study by discussing the findings, and highlighting the theoretical and managerial implications of the research. The chapter also presents limitations of the study as well as offering recommendations and future research. Finally, a conclusion ends the study.

#### **6.2 Summary of the Study**

The study is divided in to six chapters. The first is the introduction in which the motivation for this study was presented in the background and problem statements. The chapter highlighted the issues of low performance of Iraqi manufacturing companies and the recent decline of their contributions to GDP. Based on this critical issue and recommendations of the Iraqi authorities, this study was set with the main objective of examining the relationship between political turbulence; Intensity of competition, TQM, corporate culture and firm performance with the mediating role of BSC.

In accordance with this objective, a comprehensive review of the existing literature was made in Chapter Two, and the concept of the study variables (political turbulence, intensity of competition, TQM, corporate culture and BSC) were clarified alongside the current positions regarding the effect of such variables on firm performance in the current

literature. A theoretical background was pinned to the contingency theory as explained in the research framework.

Chapter Three discussed the research framework of the study, and the methodology of the research was presented in Chapter Four along with the operationalization of the variables and their measurement. This chapter also explained the process of data collection as the top management staff of the sampled Iraqi manufacturing firms comprised the respondents.

Chapter Five provided the analysis of the results and the findings of the study. The chapter provided a clear presentation of the preliminary analysis of the data measurement model and structural model using SmartPLS. Finally, Chapter Six highlighted the contributions of the study, articulated its limitations, and presented recommendations for future research and conclusions.

### **6.3 Recapitulation of the Main Findings**

The study examined the relationship between contingency factors, BSC and firm performance of the Iraqi manufacturing industry in 13 hypotheses as summarised below:

The first major finding was concerned with the relationship between contingency factors and BSC. This relationship was examined, and a positive association was found to exist in the context of Iraqi manufacturing companies. The hypotheses included H1, H2, H3,

and H4. They all provided a good beta value indicating proportionate contributions to BSC.

The second major finding concerned the associations between contingency factors and firm performance. This included H5, H6, H7 and H8. Except for H5, all the other hypotheses had a positive effect of firm performance. H5 indicated a negative relationship between political turbulence and performance, and it was clear that the higher the presence of turbulence the lower the performance would be for the companies.

This study also found a positive association between BSC and firm performance as indicated in H9. This was an implication that, when Iraqi manufacturing company adopt the use of BSC, they gain have useful information that can increase their performance.

The mediation effect of BSC on the relationship between contingency factors and firm performance was another important finding of this study. It was tested in H10, H11, H12 and H13. It was empirically proven that BSC mediates the relationship between contingency factors and firm performance with beta values that were more than 0.2 for all the tested hypotheses. The mediating variable as BSC plays an important role to reach the end purpose in this research which contributing in continuous improvement element to promote better strategic firm performance.

## **6.4 Contribution of the Study**

The current study has both theoretical and practical contributions as well. This section highlights and presents the contributions of this study theoretically, managerially and methodologically and as follows:

### **6.4.1 Theoretical Contributions**

Specifically, this study contributes to the body of knowledge in SMA by filling the gap in the literature based on suggestions from previous studies and does so by developing a new framework with empirical validation for contingency factors as exogenous variables, BSC as a mediating variable and firm performance as an endogenous variable.

The main theoretical contribution of this study is the extension of the contingency theory by adding empirical validation from large and medium-companies with respect to Iraq in the maximization of efficiency and effectiveness by using multi-dimensional performance measures. Contingency theory is an organizational theory that contends that no best way exists to organize a corporation, to principal a company, or to brand decisions. Instead, the best course of action is contingent (dependent) upon the interior and exterior situations (Otley 1980). Therefore, this study has further extended this theory in accordance with the contingent factors of political turbulence; Intensity of competition, TQM, corporate culture and BSC in manufacturing firm.

Second, this study also adds to the existing literature of strategic management accounting by investigating for the impact of several contingent factors including political

turbulence, intensity of competition, TQM and corporate culture on the use of BSC (financial and non-financial measures). The study also supports the assumption of contingency theory which indicates that the use of BSC is affected by the overall circumstances of an organisation. This also provides managers with a better understanding of the factors that affect the use of a BSC.

Third, the study has emerged the effect of political turbulence on firm performance. The empirical evidence proves that political turbulence has negative significant effect on firm performance (Boyne & Meier, 2009; Anderson & Tushman, 2001). Supporting this, Wheeler (1984) determined that political instability significantly and negatively affected average growth rates.

Fourth, the study empirically established a mediation effect of BSC on the relationship between political turbulence, intensity of competition, TQM, corporate culture and firm performance. The above recommendation comes to foster the validity of the BSC to the Iraqi case which has fit with the end purpose of this research focusing on the mandatory use of BSC to improve the relationships and impact mechanism of the research model and concept.

#### **6.4.2 Managerial Contributions**

Apart from the theoretical contributions, several managerial implications can be derived from the results of this study for practitioners and policy-makers. A few key implications about how Iraqi manufacturing companies could enhance their performance by



emphasising the use of SMA techniques with respect to an environment of high uncertainty. Accordingly, this study contributes to the medium and large companies of Iraq in several ways.

Firstly, the current findings will enhance the understanding of the Iraqi managers about the importance of SMA technique with an emphasis on the importance of BSC. Second, this study provides evidence to the managers about the importance of the contingency factors such as political turbulence; Intensity of competition, TQM, and corporate culture to the use of BSC to ultimately enhance the performance.

Third, this study has responded to the call of the Iraqi Federal Board of Supreme Audit (2014) to discuss the adoption of BSC approach among the Iraqi industrial companies by utilizing an effective methodology. This study described the BSC content for both researchers and managers and identified avenues for further research in Iraq and other developing countries in relationship to the BSC approach. This should encourage Iraqi companies to focus on firm performance of their companies.

In conclusion, large and medium Iraqi manufacturing companies can utilize contingency factors (political turbulence; Intensity of competition, TQM and corporate culture) to positively influence their BSC to enhance firm performance. For instance, evaluating the level of the existing uncertainties can assist in designing an efficient management control system that includes BSC that provides vital information to cope with uncertainty. Accordingly, if a company can effectively evaluate uncertainty, such company can deal

effectively with uncertainty and convert threat into opportunity. In addition, companies that give proper attention to their TQM and corporate culture can build a unique competitive advantage, which certainly can enhance the bottom line of the company.

## **6.5 Research Limitations**

Despite the several contributions of this research regarding BSC with respect to its antecedents and outcomes in the Iraqi manufacturing companies, the current study has limitations that must be reported for the benefit of future research. Thus, this study has a number of features that must be accounted for; therefore, care must be taken in the interpretation and generalization of this study's findings into other contexts.

The first limitation of this research concerns the context in which the research is conducted. This research sightsaw only Iraqi companies. It is possible that companies in other locations differ from their Iraqi complements. This may be so because of the size of the Iraqi economy, the politico-economic uncertainty, and nature of market competition, economic policies or structures, legal and regulatory constraints that might differ among other countries. These possible differences may restrict generalizing the result beyond the context of Iraq.

In addition, culture shapes the behaviour of people and also organizational dynamics (Hofstede et al., 2010), consequently; caution is counselled in the adoption of the findings from this study, as they may not fit well into other geographical contexts that do not share a similar cultural background with Iraq.

Furthermore, manufacture industry was enclosed in this study; maintenance must be taken in applying the results to other contexts that might not fit the industrial description covered in this study. Furthermore, the population of this study (large and medium manufacturing companies) might differ from the small companies and that may hinder the possibility of generalizing the results outside this study population.

Finally, while a complete method was adopted in this examination of the contingency perspective BSC usage in the Iraqi companies, it must be recognised that a numeral of other factors have not been comprised in the research framework for this study (e.g., organizational size, structure and strategy etc.), which future research may take into account as discussed in the next section.

## **6.6 Future Research**

This section presents possible areas for future research potentially emerging from the results and additional issues which were raised by this study. This study was confined to medium and large industrial companies in Iraq. This offers opportunities to study various other industries that would improve the generalization of the results and validate the research instrument. Additionally, the use of some relevant multiple measures among the small industrial companies may be investigated in further research. Comparable researches could also be carried out in other countries predominantly in developing countries in the Middle East and other areas.

This research utilized a cross-sectional design; therefore, it would be valued to have a more general longitudinal study using a mixed methodology approach to determine whether the variables in this study and the extent of BSC are consistent over time.

Future research could examine how users interact to the main conventions that are built into the knowledge of the relationship between the cause and the effect and performance measures linked to an overall strategy. Future studies may also achieve and examine differences existing between users and non-users of the BSC. In addition, future research could examine other potential factors that could affect the use of innovations such as the BSC accounting approach.

In addition to the selected contingent factors, the semi-structured interview outcomes identified many other contingent and institutional factors that could affect the extent of BSC in Iraq. Future researches might then use contingency theory in similar with institutional theory to advance a better consideration of the factors that influence the extent of BSC. Therefore, addition to further relevant descriptive variables could recover their clarification of the endogenous variable.

Finally, future research could use additional contextual factors such as business strategy, advanced manufacturing technology (AMT), workforce diversity and organisation size with respect to BSC.

## 6.7 Conclusion

Considering the continuous decline of revenue and GDP contributions by the manufacturing company of Iraq, this research was motivated to examine empirically thirteen hypotheses, which made theoretical and managerial contribution to the existing knowledge regarding contingency factors, BSC and firm performance in Iraqi manufacturing companies.

Specifically, the current study examined the relationship between external contingency factors, i.e., PEU (political turbulence, intensity of competition), internal contingency factors, i.e., TQM and corporate culture with the mediating role of BSC on firm performance in medium and large companies in Iraq. Drawing from the findings, the conclusion has been made and the objectives of this research have been achieved.

From the findings, the conclusion shows that intensity of competition; TQM and corporate culture have positive effects on the performance of medium and large companies in Iraq, whereas, political turbulence has a negative effect. The study also concluded that BSC has a positive effect on firm performance of medium and large companies in Iraq.

In addition, the current results concluded that the political turbulence; intensity of competition, TQM, corporate culture and BSC contributed significantly to overall firm performance. However, the results showed that using such tools and measures effectively is not a straightforward task. There are obstacles that limit the adoption of the SMA

technique. This study has made a contribution to knowledge in this field. Consequently, researchers and practitioners (especially in Iraq and other developing countries) should respond to, incorporate and build on the current findings.

On the final note, the results of the present study contribute in bridging the literature gap between developed and less developed countries as most previous BSC research has been conducted in the context of developed economy. Indeed, this study opens a path of hope to expand BSC research in the Arab world and looks to assist organizations in adapting SMA techniques such as BSC as a way of enhancing their performance with respect to the environment in which they will operate and function.



## REFERENCES

- Abdel-Kader, M., & Luther, R. (2008). The impact of firm characteristics on management accounting practices: A UK-based empirical analysis. *The British Accounting Review*, 40(1), 2-27.
- Abdel-Maksoud, A., Dugdale, D., & Luther, R. (2005). Non-financial performance measurement in manufacturing companies. *The British Accounting Review*, 37(3), 261-297.
- Abdul-Hamid, O., Agoawike, A., & Odulaja, A. (2013). The OPEC annual statistical bulletin. *OPEC, Vienna*.
- Abdullah, N. H., Shamsuddin, A., Wahab, E., & Hamid, N. A. A. (2014). The relationship between organizational culture and product innovativeness. *Procedia-Social and Behavioral Sciences*, 129, 140-147.
- Abernethy, M. & Stoelwinder, J. (1991). Budget use, task uncertainty, system goal orientation and subunit performance: A test of the 'fit' hypothesis in not-for-profit hospitals. *Accounting, Organizations and Society*, 16(2), 105-120.
- Abernethy, M. & Lillis, A. (1995). The impact of manufacturing flexibility on management control system design. *Accounting, Organizations and Society*, 20(4), 241-258.
- Abugalia, M. (2011). *The influence of business environment on the effectiveness of management accounting practices: Evidence from Libyan companies* (Unpublished doctoral dissertation). University of Huddersfield, Huddersfield, England. Retrieved from [http://eprints.hud.ac.uk/id/eprint/17509/1/Muftah\\_Abugalia\\_-\\_Final\\_Thesis.pdf](http://eprints.hud.ac.uk/id/eprint/17509/1/Muftah_Abugalia_-_Final_Thesis.pdf)

- Abu-Jarad, I. Y., Yusof, N., & Nikbin, D. (2010). A review paper on organizational culture and firm performance. *International Journal of Business and Social Science*, 1(3), 26-46.
- Abushaiba, I. A., & Zainuddin, Y. (2012). Performance measurement system design, competitive capability, and performance consequences-A conceptual like. *International Journal of Business and Social Science*, 3(11) 184-193.
- Acar, A. Z., & Acar, P. (2014). Organizational culture types and their effects on firm performance in Turkish hospitals. *Emerging Markets Journal*, 3(3), 18-31.
- Achrol, R. S., & Stern, L. W. (1988). Environmental determinants of decision-making uncertainty in marketing channels. *Journal of marketing research*, 36-50.
- Adomako, S., & Danso, A. (2014). Regulatory environment, environmental dynamism, political ties, and performance: Study of entrepreneurial firms in a developing economy. *Journal of Small Business and Enterprise Development*, 21(2), 212-230.
- Al-Akra, M., Ali, M. J., & Marashdeh, O. (2009). Development of accounting regulation in Jordan. *The International Journal of Accounting*, 44, 163-186.
- Al-Amal & Al-Iktissad (2015). *Iraqi National Business Council*, 5(2), 12-15
- Al-Dhaafri, H. S., Al-Swidi, A. K., & Yusoff, R. Z. B. (2016). The mediating role of total quality management between the entrepreneurial orientation and the organizational performance. *The TQM Journal*, 28(1), 89-111.
- Al-Fadhel, M. A. & Al-Chlaihawi, M. O., (2015). That is, very little attention has been paid by researchers in corporate culture in developing countries, including Arab



- and Middle Eastern countries, *Qadisiyah Journal of Administrative and Economic Sciences*, 17(2), 131-156.
- Ali, M. K., Christopher, A. A., & Nordin, M. Z. F. B. (2016). Linguistic legitimation of political events in newspaper discourse. *Advances in Language and Literary Studies*, 7(4), 76-83.
- Alkaraan, F., & Northcott, D. (2006). Strategic capital investment decision-making: A role for emergent analysis tools? A study of practice in large UK manufacturing companies. *The British Accounting Review*, 38(2), 149-173.
- Al-Khadash, H. A., & Feridun, M. (2006). Impact of strategic initiatives in management accounting on corporate financial performance: Evidence from Amman stock exchange. *Managing Global Transitions*, 4(4), 299-312.
- Al-Khalifa, N., & Aspinwall, E. M. (2000). The development of total quality management in Qatar. *TQM Magazine*, 12(3), 194-204.
- Al-Naser, K. & Mohamed, R. (2016). The mediating role of balance scorecard between contingent factors and firm performance: A proposed framework. *Australian Journal of Basic and Applied Sciences*, 10(15), 231-241
- Al-Rfou, A. N. (2012). Competition and organizational performance: Empirical evidence from Jordanian firms. *Electrical Appliances*, 3, 9-1.
- Al-Sawalqa, F., Holloway, D., & Alam, M. (2011). Balanced scorecard implementation in Jordan: An initial analysis. *IJEBM*, 9(3), 196-210.
- Al-Swidi, A. K., & Mahmood, R. (2012). Total quality management, entrepreneurial orientation and organizational performance: The role of organizational culture. *African Journal of Business Management*, 6(13), 4717.

- Al-Tameemi, K. S. A., & Alshawhi, M. (2014). The impact of organisational culture and leadership on performance improvement in Iraq. *The Built and Human Environment Review*, 7, 1-15.
- Anderson, P., & Tushman, M.L. (2001). Organizational environments and industry exit: The effects of uncertainty, munificence and complexity. *Industrial and Corporate Change*, 10(3), 671-711.
- Anderson, S. & Lanen, W. (1999). Economic transition, strategy and the evolution of management accounting practices: The case of India. *Accounting, Organizations and Society*, 24(5), 379-412.
- Anthony, R. N. (1965). *Planning and control systems: A framework for analysis*. Boston, Massachusetts: Graduate School of Business Administration, Harvard University.
- Anthony, R. N., & V. Govindarajan (2007). *Management control systems* (12<sup>th</sup> ed.). New York, New York: McGraw-Hill.
- Antony, J. P., & Bhattacharyya, S. (2010). Measuring firm performance and organizational excellence of SMEs - Part 1: A conceptual framework. *Measuring Business Excellence*, 14(2), 3-11.
- Appelbaum, S. H., Deguire, K. J., & Lay, M. (2005). The relationship of ethical climate to deviant workplace behaviour. *Corporate Governance: The International Journal of Business in Society*, 5(4), 43-55.
- Arumugam, V. C., Mojtahedzadeh, R., & Malarvizhi, C. A. (2011). Critical success factors of total quality management and their impact on performance of Iranian Automotive Industry. *International Conference on Innovation, Management and Service* 14(2), 312-316

- Asikhia, O., & Binuyo, O. (2012). Competitive intensity as a moderator in customer orientation–performance relationship in Nigeria. *International Journal of Economic and Management Sciences*, 2(3), 18-24.
- Assiri, A., Zairi, M., & Eid, R. (2006). How to profit from the balanced scorecard: An implementation roadmap. *Industrial Management & Data*, 106(1), 937-952.
- Atkinson, A., Balakrishnan, R., Booth, P., Jeans, M., Cote, T., Grout, T., Mali, H., Roberts, E., Ulan, & Wu. A. (1997). New directions in management accounting research. *Journal of Management Accounting Research*, 9, 80-108.
- Ayedh, A., & Eddine, H. (2015). The impact of advance management accounting techniques on performance: The case of Malaysia. *Middle East Journal of Business*, 10(2), 3-13.
- Bagozzi, R., Yi, Y., & Nassen, K. (1998). Representation of measurement error in marketing variables: Review of approaches and extension to three-facet designs. *Journal of Econometrics*, 89(1), 393-421.
- Baines, A., & Langfield-Smith, K. (2003). Antecedents to management accounting change: a structural equation approach. *Accounting, Organizations and Society*, 28(7), 675-698.
- Banker, R., Potter, G., & Srinivasan, D. (2000). An empirical investigation of an incentive plan that includes nonfinancial performance measures. *The Accounting Review*, 75(1), 65-92.
- Barnett, W. P., & McKendrick, D. G. (2004). Why are some organizations more competitive than others? Evidence from a changing global market. *Administrative Science Quarterly*, 49(4), 535-571.

- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Barney, J. B. (1986). Organizational culture (OC): Can it be a source of sustained competitive advantage? *Academy of Management Review*, 11(3), 656-665.
- Barney, J. B. (1997). *Gaining and sustaining competitive advantage*. Reading, Massachusetts: Addison–Wesley Publishing Company.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Bastian, E., & Muchlish, M. (2012). Perceived environment uncertainty, business strategy, performance measurement systems and organizational performance. *Procedia-Social and Behavioral Sciences*, 65, 787-792.
- Baum, J. R., & Wally, S. (2003). Strategic decision speed and firm performance. *Strategic Management Journal*, 24(11), 1107-1129.
- Beersma, B., Hollenbeck, J. R., Humphrey, S. E., Moon, H., Conlon, D. E., & Ilgen, D. R. (2003). Cooperation, competition, and team performance: Toward a contingency approach. *Academy of Management Journal*, 46(5), 572-590.
- Behn, R. D. (2003). Why measure performance? Different purposes require different measures. *Public Administration Review*, 63(5), 586-606.
- Berson, Y., Oreg, S., & Dvir, T. (2008). CEO values, organizational culture and firm outcomes. *Journal of Organizational Behavior*, 29(5), 615-633.
- between organizational culture and knowledge conversion on corporate performance. *Journal of knowledge management*, 14(2), 269-284.

- Bezrukova, K., Thatcher, S., Jehn, K. A., & Spell, C. S. (2012). The effects of alignments: Examining group fault lines, organizational cultures, and performance. *Journal of Applied Psychology*, 97(1), 77-92.
- Bhimani, A. (2003). A study of the emergence of management accounting system ethos and its influence on perceived system success. *Accounting, Organizations and Society*, 28(6), 523-548.
- Birley, S., & Westhead, P. (1990). Growth and performance contrasts between 'types' of small firms. *Strategic Management Journal*, 11(7), 535-557.
- Bititci, U. S., Mendibil, K., Nudurupati, S., Turner, T., & Garengo, P. (2004). The interplay between performance measurement, organizational culture and management styles. *Measuring Business Excellence*, 8(3), 28-41.
- Bititci, U., Mendibil, K., Nudurupati, S., Garengo, P., & Turner, T. (2006). Dynamics of performance measurement and organizational culture. *International Journal of Operations and Production Management*, 26(12), 1325-1350.
- Boaden, R. J. (1997). What is total quality management... and does it matter?. *Total Quality Management*, 8(4), 153-171.
- Bose, S., & Thomas, K. (2007). Applying the balanced scorecard for better performance of intellectual capital. *Journal of Intellectual Capital*, 8(4), 653-665.
- Bourgeois, L. J. (1985). Strategic goals, perceived uncertainty, and economic performance in volatile environments. *Academy of Management journal*, 28(3), 548-573.

- Bourne, M., Neely, A., Mills, J., & Platts, K. (2003). Implementing performance measurement systems: A literature review. *International Journal of Business Performance Management*, 5(1), 1-24.
- Boyne, G. A., & Meier, K. J. (2009). Environmental turbulence, organizational stability, and public service performance. *Administration & Society*, 40(8), 799-824.
- Boyne, G. A., & Walker, R. M. (2002). Total quality management and performance. An evaluation of the evidence and lessons for research on public organizations. *Public Performance & Management Review*, 26(2), 111-131.
- Branine, M. (2011). *Managing Across Culture – concepts, policies and practices*. Thousand Oaks, California: SAGE Publication Inc.
- Brignall, S. (2007). A financial perspective on performance management. *The Irish Accounting Review*, 14(1), 15-29.
- Bromwich, M. (1990). The case for strategic management accounting: the role of accounting information for strategy in competitive markets. *Accounting, Organizations and Society*, 15(1-2), 27-46.
- Bromwich, M., & Bhimani, A. (1994). *Management accounting: Pathways to progress*. London, England: Chartered Institute of Management Accountants.
- Brown, M. G. (2000). *Winning score: How to design and implement organizational scorecards*. New York, New York: Productivity Press.
- Bryman, A. (1984). The debate about qualitative and quantitative research. A question of methods or epistemology. *The British Journal of Sociology*, 35(1): 75-92.
- Bryman, A. (2001). *Social research methods*. Oxford, England: Oxford University Press.

- Bungay, S., & Goold, M. (1991). Creating a strategic control system. *Long Range Planning*, 24(3), 32-39.
- Bureihi, F. (2011). Iraqi economy ... Opportunities and challenges. *Baghdad College of Economic Sciences University Journal*, 27, 21-56.
- Burns, J., & Scapens, R. (2000). Conceptualizing management accounting change: An institutional framework. *Management Accounting Research*, 11(1), 3-25.
- Butler, A., Letza, S. R., & Neale, B. (1997). Linking the balanced scorecard to strategy. *Long Range Planning*, 30(2), 242-153.
- Byrne, B. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2<sup>nd</sup> ed.). New York, New York: Routledge Taylor and Francis Group
- Cameron K., & Quinn, R. E. (1999). *Diagnosing and changing organizational culture: Based on the competing values framework*. Readings, Massachusetts: Addison-Wesley.
- Campanale, C., Cinquini, L., & Tenucci, A. (2010). Do Management Accounting Systems Influence Organizational Change or Vice-Versa? Evidence from a Case of Constructive Research in the Healthcare Sector.
- Carmona, S., Iyer, G., & Reckers, P. M. (2011). The impact of strategy communications, incentives and national culture on balanced scorecard implementation. *Advances in Accounting*, 27(1), 62-74.
- Castillo, J. J. (2009). *Convenience sampling*. Retrieved from <https://explorable.com/convenience-sampling>

- Cavana, R., Delahaye, B., & Sekaran, U. (2001). *Applied business research: Qualitative and quantitative methods*. Richmond, Queensland: John Wiley & Sons Australia.
- Central Bank of Iraq, Annual Report (2013). Statistics & Research Department. Retrieved from <http://www.cbi.iq>
- Central Statistical Organization Iraq (2014). Report on medium industrial plants (Cumulative) for the year 2013. Retrieved from <http://www.cosit.gov.iq/ar/industrial/industrial-larg-mid>
- Chapman, C. (1997). Reflections on a contingent view of accounting. *Accounting, Organizations and Society*, 22(2), 189-205.
- Chapman, R., & Al-Khawaldeh, K. (2002). TQM and labour productivity in Jordanian industrial companies. *The TQM magazine*, 14(4), 248-262.
- Chenhall, R. (1997). Reliance on manufacturing performance measures, total quality management and firm performance. *Management Accounting Research*, 8(2), 187-206.
- Chenhall, R. (2003). Management control systems design within its organizational context: Findings from contingency-based research and directions for the future. *Accounting, Organization & Society*, 28(2), 127-168.
- Chenhall, R. H. (2007). Theorising contingencies in management control research. In C. S. Chapman, A. Hopwood & M. D. Shields (Eds.), *Handbook of management accounting research* (pp. 163-206). Oxford, England: Elsevier.
- Chenhall, R. H., & Langfield-Smith, K. (1998). The relationship between strategic priorities, management techniques and management accounting: an empirical



- investigation using a systems approach. *Accounting, Organizations and Society*, 23(3), 243-264.
- Chenhall, R. H., & Langfield-Smith, K. (2007). Multiple perspectives of performance measures. *European Management Journal*, 25(4), 266-282.
- Chenhall, R. H., & Morris, D. (1986). The impact of structure, environment, and interdependence on the perceived usefulness of management accounting systems. *The Accounting Review*, 61(1), 16-35.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern Methods for Business Research*, 295(2), 295-336.
- Chin, W. W. (2010). How to write up and report PLS analyses. In V.V. Esposito, W. Chin, J., Henseler., & H. Wang (Eds.) *Handbook of partial least squares* (pp. 655-690). Berlin, Germany: Springer Berlin Heidelberg.
- Chong, V. K., & Rundus, M. J. (2004). Total quality management, market competition and firm performance. *British Accounting Review*, 36(2), 155-172.
- Chong, V. K., Eggleton, I. R., & Leong, M. K. (2005). The impact of market competition and budgetary participation on performance and job satisfaction: a research note. *The British Accounting Review*, 37(1), 115-133.
- Chong, V., & Chong, K. (1997). Strategic choices, environmental uncertainty and SBU performance: A note on the intervening role of management accounting systems. *Accounting and Business Research*, 27(4), 268-276.
- Chow, C. W., & Van Der Stede, W. A. (2006). The use and usefulness of nonfinancial performance measures. *Management Accounting Quarterly*, 7(3), 1-8.

- Cingöz, A., & Akdoğan, A. A. (2013). Strategic flexibility, environmental dynamism, and innovation performance: An empirical study. *Procedia-Social and Behavioral Sciences*, 99, 582-589.
- Cobb, I., Helliard, C., & Innes, J. (1995). Management accounting change in a bank. *Management Accounting Research*, 6(2), 155-175.
- Cochran, W. G. (1977). *Sampling techniques* (3<sup>rd</sup> ed.). New York, New York: John Wiley & Sons.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2<sup>nd</sup> ed.). Hillsdale, New Jersey: Lawrence Erlbaum Associates
- Cooper, D. R., Schindler, P. S., & Sun, J. (2003). *Business research methods*. New York, New York: McGraw-Hill/Irwin.
- Cooper, R., & Slagmulder, R. (1998a). What is strategic cost management? *Strategic Finance*, 79(7), 14-16.
- Cooper, R., & Slagmulder, R. (1998b). Cost management beyond the boundaries of the firm. *Strategic Finance*, 79(9), 18-20.
- Coyne, K. (1986). Sustainable competitive advantage: What it is and what it isn't. *Business Horizons*, 29(1), 54-61.
- Creswell, J. W. & Poth, (2017). *Qualitative inquiry and research design: Choosing among five approaches* (4<sup>th</sup> ed.). Thousand Oaks, California.: SAGE Publications.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2<sup>nd</sup> ed.). Thousand Oaks, California: SAGE Publications.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative and mixed method approaches* (4<sup>th</sup> ed.). Thousand Oaks, California: SAGE Publications.

- Cross, K.F. and Lynch, R.L. (1992). For good measure. *Certified Management Accountants (CMA) Magazine*, 66 (3), 20-24.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. St. Leonards, New South Wales, Australia: Allen & Unwin.
- Curry, A., & Kadasah, N. (2002). Focusing on key elements of TQM-evaluation for sustainability. *The TQM magazine*, 14(4), 207-216.
- Daft, R. L., Sormunen, J., & Parks, D. (1988). Chief executive scanning, environmental characteristics, and company performance: An empirical study. *Strategic management journal*, 9(2), 123-139.
- Dale, B. G. (2003). *Managing Quality* (4<sup>th</sup> Ed.). Oxford, England: Blackwell Publishers.
- Davidson, M. G. (2003). *The relationship between organisational culture and financial performance in a South African investment bank* (Unpublished doctoral dissertation). University of South Africa, Pretoria, South Africa. Retrieved from <https://core.ac.uk/download/pdf/43164476.pdf>
- Davig, W., Elbert, N., & Brown, S. (2004). Implementing a strategic planning model for small manufacturing firms: an adaptation of the balanced scorecard. *SAM Advanced Management Journal*, 69(1), 18-24.
- Davis, D. (2000). *Business research for decision making*. Pacific Gove, California: Brooks-Cole Publishing.
- Dedhia, N. S. (2001). Global perspectives on quality. *Total Quality Management*, 12(6), 657-668.

- Deem, J., Barnes, B., Huizenga, H., Segal, S., & Preziosi, R. (2010). The relationship of organizational culture to balanced scorecard effectiveness. *SAM Advanced Management Journal*, 75(4), 31-39.
- DeGeuser, F., Mooraj, S., & Oyon, D. (2009). Does the balanced scorecard add value? Empirical evidence on its effect on performance. *European Accounting Review*, 18(1), 93-122.
- Demir, A., Özmen, Ö., & Rashid, A. (2014). An estimation of Turkey's export loss to Iraq. *Procedia-Social and Behavioral Sciences*, 150, 1240-1247.
- Demirbag, M., Tatoglu, E., Tekinkus, M., & Zaim, S. (2006). An analysis of the relationship between TQM implementation and firm performance: Evidence from Turkish SMEs. *Journal of Manufacturing Technology Management*, 17(6), 829-847.
- Denison, D. R. (1989). *Corporate culture and organizational effectiveness*. New York, New York: John Wiley & Sons
- Denison, D. R. (1990). *Corporate culture and organizational effectiveness*. New York, New York: John Wiley & Sons.
- Denison, D. R. (2000). Organizational culture (OC): Can it be a key lever for driving organizational change. In S. Cartwright & C. Cooper (Eds.), *The handbook of organizational culture (OC) and climate* (347-376). Chichester, England: Wiley.
- Denison, D. R., & Mishra, A. K. (1995). Toward a theory of organizational culture (OC) and effectiveness. *Organization Science*, 6(2), 204-223.

- Denison, D., Nieminen, L., & Kotrba, L. (2014). Diagnosing organizational cultures: A conceptual and empirical review of culture effectiveness surveys. *European Journal of Work and Organizational Psychology*, 23(1), 145-161.
- Deshpande, R., & Farley, J. (2004). Organizational culture (OC), market orientation, innovativeness, and firm performance: An international research odyssey. *International Journal of Research in Marketing*, 21, 3-22.
- Diamantopoulos, A., & Winklhofer, H. (2001). Index construction with formative indicators: An alternative to scale development. *Journal of Marketing Research*, 38(2), 269-277.
- Diamantopoulos, A., Riefler, P., & Roth, K. (2008). Advancing formative measurement models. *Journal of Business Research*, 61(12), 1203-1218.
- Dibb, S. (1996). The impact of the changing marketing environment in the Pacific Rim: Four case studies. *International Journal of Retail & Distribution Management*, 24(11), 16-30.
- Dik, R. (2011). *Arab management accounting systems under the influence of their culture* (Unpublished doctoral dissertation). Dortmund University of Technology, Dortmund Germany. Retrieved from <https://d-nb.info/1011569566/34>
- Dobbins, G. H., Cardy, R. L., & Platz-Vieno, S. J. (1990). A contingency approach to appraisal satisfaction: An initial investigation of the joint effects of organizational variables and appraisal characteristics. *Journal of Management*, 16(3), 619-632.
- Donaldson, L. (1995). *American anti-management theories of organization: A critique of paradigm proliferation*. Cambridge, England: Cambridge University Press.

- Donaldson, L. (2001). *The contingency theory of organizations*. Thousand Oaks, California: SAGE Publications.
- Duarte, P. A. O., & Raposo, M. L. B. (2010). A PLS model to study brand preference: An application to the mobile phone market. In *Handbook of partial least squares* (pp. 449-485). Springer, Berlin, Heidelberg.
- Duke II, J., & Edet, G. H. (2012). Organizational culture as a determinant of non-governmental organization performance: Primer evidence from Nigeria. *International Business and Management*, 4(1), 66-75.
- Duncan, R. B. (1972). Characteristics of organizational environments and perceived environmental uncertainty. *Administrative Science Quarterly*, 17(3), 313-327.
- Ebrahimi, B. (2000). Perceived strategic uncertainty and environmental scanning behavior of Hong Kong Chinese executives. *Journal of Business Research*, 49, 67-77.
- Eker, M., & Eker, S. (2009). An empirical analysis of the association between the organizational culture and performance measurement systems in the Turkish manufacturing sector. *Journal of Economic & Social Research*, 11(2), 43-76.
- El Sawah, S., Tharwat, A. A., & Rasmy, M. H. (2008). A quantitative model to predict the Egyptian ERP implementation success index. *Business Process Management Journal*, 14(3), 288-306.
- Elijido-Ten, E. (2010). Public disclosure of strategic performance measurement system: An Australian investigation. *International Handbook of Academic Research and Teaching*, 13, 38-48.

- Englund, H., & Gerdin, J. (2008). Structuration theory and mediating concepts: Pitfalls and implications for management accounting research. *Critical perspectives on accounting*, 19(8), 1122-1134.
- EQUIS. (2012). *European quality improvement system accreditation standards and criteria*. European Foundation for Management Development (EFMD). Retrieved from [www.efmd.org/images/stories/efmd/downloadables/EQUIS](http://www.efmd.org/images/stories/efmd/downloadables/EQUIS)
- Eriksson, H., & Hansson, J. (2003). The impact of TQM on financial performance. *Measuring Business Excellence*, 7(1), 36-50.
- Evans, J. R. (2004). An exploratory study of performance measurement systems and relationships with performance results. *Journal of Operations Management*, 22(3), 219-232.
- Fadaly, D (2008) *Contingent framework for management accounting practices in Egyptian pharmaceutical organizations* (Unpublished doctoral dissertation). De Montfort University, Leicester, United Kingdom.
- Farooq, A., & Hussain, Z. (2011). Balanced scorecard perspective on change and performance: A study of selected Indian companies. *Procedia-Social and Behavioral Sciences*, 24, 754-768.
- FBSA Journal of Auditor General, (2014). Republic of Iraq, Federal Board of Supreme Audit. Retrieved from [http://www.d-raqaba-m.iq/pdf/journalbsa\\_part1\\_4.pdf](http://www.d-raqaba-m.iq/pdf/journalbsa_part1_4.pdf)
- Fisher, J. (1998). Contingency theory, management control systems and firm outcomes: Past results and future directions. *Behavioral Research in Accounting*, 10, 47-64.

- Fisher, J. G. (1995a). Contingency-based research on management control systems: categorization by level of complexity, *Journal of Accounting Literature*, 14, 24-53.
- Flynn, B. B., Schroeder, R. G., & Sakakibara, S. (1994). A framework for quality management research and an associated measurement instrument. *Journal of Operations Management*, 11(4), 339-366.
- Fornell, C., & Bookstein, F. L. (1982). Two structural equation models: LISREL and PLS applied to consumer exit-voice theory. *Journal of Marketing Research*, 19(4), 440-452.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 18(4), 382-388.
- Foster, D. (1992). *Bargaining across borders: How to negotiate business successfully anywhere in the world*. New York, New York: McGraw-Hill.
- Franco-Santos, M. (2007). *The performance impact of using measurement diversity in executives' annual incentive systems* (Unpublished doctoral dissertation). Cranfield University, Cranfield, United Kingdom. Retrieved from <https://dspace.lib.cranfield.ac.uk/handle/1826/2305>
- Galbraith, J. (1973). *Designing complex organizations*. Reading, Massachusetts: Addison-Wesley.
- Garengo, P., & Bititci, U. (2007). Towards a contingency approach to performance measurement: an empirical study in Scottish SMEs. *International Journal of Operations & Production Management*, 27(8), 802-825.



- Garland, R. (1991). The mid-point on a rating scale: Is it desirable. *Marketing Bulletin*, 2(1), 66-70.
- Geisser, S. (1974). A predictive approach to the random effect model. *Biometrika*, 101-107.
- Gerdin, J. (2005). Management accounting system design in manufacturing departments: an empirical investigation using a multiple contingencies approach. *Accounting, Organizations and Society*, 30(2), 99-126.
- Gerdin, J., & Greve, J. (2004). Forms of contingency fit in management accounting research: A critical review. *Accounting, Organizations and Society*, 29(3-4), 303-326.
- Gerdin, J., & Greve, J. (2008). The appropriateness of statistical methods for testing contingency hypotheses in management accounting research. *Accounting, Organizations and Society*, 33(7), 995-1009.
- Gerloff, E., Muir, N. & Bodensteiner, W. (1991). Three components of perceived environmental uncertainty: An exploratory analysis of the effects of aggregation. *Journal of Management*, 17(4), 749-768.
- Gharakhani, D., Rahmati, H., Farrokhi, M. R., & Farahmandian, A. (2013). Total quality management and firm performance. *American Journal of Industrial Engineering*, 1(3), 46-50.
- Ghosh, S., Bhowmick, B., & Guin, K. (2014). Perceived environmental uncertainty for startups: A note on entrepreneurship research from an Indian perspective. *Technology Innovation Management Review*, 4(8), 27-35.

- Gordon, G., & DiTomaso, N. (1992). Predicting corporate performance form organizational culture. *Journal of Management Studies*, 29(6), 783-798.
- Gordon, L., & Narayanan, V. (1984). management accounting systems, perceived environmental uncertainty and organization structure: An empirical investigation. *Accounting, Organizations and Society*, 9(1), 33-47.
- Gosselin, M. (2005). An empirical study of performance measurement in manufacturing firms. *International Journal of Productivity and Performance Management*, 54(5/6), 419-437.
- Govindarajan, V. (1984). Appropriateness of accounting data in performance evaluation: An empirical examination of environmental uncertainty as an intervening variable. *Accounting, Organizations and Society*, 9(2), 125-135.
- Govindarajan, V. (1988). A contingency approach to strategy implementation at the business-unit level: integrating administrative mechanisms with strategy. *Academy of management Journal*, 31(4), 828-853.
- Govindarajan, V. (1988). A contingency approach to strategy implementation at the business-unit level: integrating administrative mechanisms with strategy. *Academy of management Journal*, 31(4), 828-853.
- Granlund, M. (2001). Towards explaining stability in and around management accounting systems. *Management Accounting Research*, 12(2), 141-166.
- Grundy, T. (1996). Cost is a strategic issue. *Long range planning*, 29(1), 58-68.
- Guidara, R., & Khoufi, W. (2014). Balanced scorecard and performance in a competitive environment. *International Journal of Accounting and Economics Studies*, 2(1), 40-45.

- Gul, F. (1991). The effects of management accounting systems and environmental uncertainty and decentralization on managerial performance. *Accounting and Business Research*, 21 (85), 57-61.
- Gul, F., & Chia, Y. (1994). The effects of management accounting systems, perceived environmental uncertainty and decentralization on managerial performance: A test of three-way interaction. *Accounting, Organizations and Society*, 19(4-5), 413-426.
- Gupta, K. M., & Gunasekaran, A. (2005). Costing in new enterprise environment: A challenge for managerial accounting researchers and practitioners. *Managerial Auditing Journal*, 20(4), 337-353.
- Haedr, A. R. and Mehafdi, M. (2017). Accounting for management control in large Libyan companies. *Athens Journal of Business & Economics*, 3(3), 279-303.
- Haenlein, M., & Kaplan, A. M. (2004). A beginner's guide to partial least squares analysis. *Understanding statistics*, 3(4), 283-297.
- Hair Jr, J, Hult, G., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. London, England: SAGE Publications.
- Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, 26(2), 106-121.
- Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2010). *Multivariate data analysis: A global perspective* (7<sup>th</sup> ed.) Upper Saddle River, New Jersey: Pearson Education.

- Hair, J. F., Wolfinbarger, M. F., Ortinau, D. J., & Bush, R. P. (2008). *Essentials of marketing research*. New York, New York: McGraw-Hill/Higher Education.
- Hair, J., Black, W., Babin, B., Anderson, R. & Tatham, R. (2006). *Multivariate data analysis* (6<sup>th</sup> ed.). Upper Saddle River, New Jersey: Pearson Prentice Hall.
- Hair, J., Black, W., Babin, B., Anderson, R., & Tatham, R. (1998). *Multivariate data analysis* (5<sup>th</sup> ed.). Upper Saddle River, New Jersey.
- Hair, J., Ringle, C., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-152.
- Hair, J., Sarstedt, M., Pieper, T., & Ringle, C. (2012b). The use of partial least squares structural equation modeling in strategic management research: a review of past practices and recommendations for future applications. *Long Range Planning*, 45(5), 320-340.
- Hair, J., Sarstedt, M., Ringle, C., & Mena, J. (2012a). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, 40(3), 414-433.
- Hajjawi, O. (2009). Reflection on the integration of ethics teaching into a Palestinian undergraduate management degree programme. *European Journal of Economics, Finance and Administrative Sciences*, (15), 163-173.
- Haldma, T., & Laats, K. (2002). Contingencies influencing the management accounting practices of Estonian manufacturing companies. *Management Accounting Research*, 13(4), 379-400.
- Hall, E. T. (1976). *Beyond culture*. New York, New York: Knopf Doubleday Publishing Group.

- Hall, E. T., & Hall, M. R. (1990). *Understanding cultural differences- German, French and American*. Yarmouth, Maine: Intercultural Press, Inc.
- Hall, R. W., Johnson, H. T., & Turney, P. B. (1991). *Measuring up: Charting pathways to manufacturing excellence*. Burr Ridge, Illinois: Irwin Professional Publishing.
- Hammad, S. A., Jusoh, R., & Ghazali, I. (2013). Decentralization, perceived environmental uncertainty, managerial performance and management accounting system information in Egyptian hospitals. *International Journal of Accounting and Information Management*, 21(4), 314-330.
- Hamza, M., & Al-Kassar, T. A. (2015). Studying the accounting information role for the industrial companies' attitudes towards the implementation of total quality management system (Syrian Case). *Accounting and Finance Research*, 4(2), 34-49.
- Hansen, D. R., Mowen, M. M., Senkow, D. W., & Pollanen, R. M. (2004). Strategic performance evaluation and management. In *Management Accounting* (6<sup>th</sup> Canadian ed.). Scarborough, Ontario: Nelson Thompson Learning.
- Harrison, G. L., & McKinnon, J. L. (1999). Cross-cultural research in management control systems design: a review of the current state. *Accounting, Organizations and Society*, 24(5), 483-506.
- Harrison, G. L., McKinnon, J. L., Panchapakesan, S., & Leung, M. (1994). The influence of culture on organizational design and planning and control in Australia and the United States compared with Singapore and Hong Kong. *Journal of International Financial Management & Accounting*, 5 (3), 242-261.

- Hayes, R. H., & Wheelwright, S. C. (1984). Restoring our competitive edge: Competing through manufacturing. *Administrative Science Quarterly*, 30(2), 307-307.
- Henri, J. F. (2006). Organizational culture and performance measurement systems. *Accounting, Organizations and Society*, 31(1), 77-103.
- Henseler, J., Ringle, C.M., & Sinkovics, R.R. (2009). The use of partial least squares path modeling in international marketing. In R. Rudolf, P. Sinkovics, P., & N. Ghauri (Eds.), *New challenges to international marketing: Advances in International Marketing*, 20 (pp. 277-319). Bingley, United Kingdom: Emerald Group Publishing Limited.
- Herath, T., Herath, H., & Bremser, W. G. (2010). Balanced scorecard implementation of security strategies: A framework for IT security performance management. *Information Systems Management*, 27(1), 72-81.
- Hertati, L., & Sumantri, R. (2016). Just in time, value chain, total quality management, part of technical strategic management Accounting. *International Journal of Technology Enhancements and Emerging Engineering Research*, 5(4), 180-191.
- Hertati, L., (2015). Total quality management as technics on strategic management accounting, *International Journal of Recent Advances in Multidisciplinary Research*, 2(11), 942-949.
- Heskett, J. L., & Kotter, J. P. (1992). Corporate culture and performance. *Business Review*. Vol, 2(5), 83-93.
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Washington: DC: SAGE Publications.

- Hofstede, G. (1982). Intercultural co-operation in organisations. *Management Decision*, 20(5), 53-67.
- Hofstede, G. (1988). The Confucius connection: From cultural roots to economic growth. *Organizational Dynamics*, 16(4), 4-22.
- Hofstede, G., & Bond, M. (1988). The Confucius connection: From cultural roots to economic growth. *Organizational Dynamics*, 16(4), 5-21.
- Hopwood, A. G. (1987). The archaeology of accounting systems. *Accounting, Organizations and Society*, 12(3), 207-234.
- Hoque, M. A. (2011). An optimal solution technique to the single-vendor multi-buyer integrated inventory supply chain by incorporating some realistic factors. *European Journal of Operational Research*, 215(1), 80-88.
- Hoque, Z. (2003). Total quality management and the balanced scorecard approach: A critical analysis of their potential relationships and directions for research. *Critical Perspectives on Accounting*, 14(5), 553-566.
- Hoque, Z. (2004). A contingency model of the association between strategy, environmental uncertainty and performance measurement: Impact on firm performance. *International Business Review*, 13(4), 485-502.
- Hoque, Z. (2005). Linking environmental uncertainty to non-financial performance measures and performance: A research note. *The British Accounting Review*, 37(4), 471-481.
- Hoque, Z. (2014). 20 years of studies on the balanced scorecard: Trends, accomplishments, gaps and opportunities for future research. *The British Accounting Review*, 46(1), 33-59.

- Hoque, Z., & Hopper, T. (1997). Political and industrial relations turbulence, competition and budgeting in the nationalized Jute Mills of Bangladesh. *Accounting and Business Research*, 27(2), 125-143.
- Hoque, Z., & James, W. (2000). Linking balanced scorecard measures to size and market factors: Impact on firm performance. *Journal of Management Accounting Research*, 12(1), 1-17.
- Hoque, Z., Mia, L., & Alam, M. (1997). *Competition, new manufacturing practices, changes in MAS and managerial choice of the balanced scorecard" approach to performance measures: An empirical investigation*. Paper presented at the 20<sup>th</sup> European Accounting Association Annual Congress, Graz, 23-25 April.
- Hoque, Z., Mia, L., & Alam, M. (2001). Market competition, computer-aided manufacturing and use of multiple performance measures: An empirical study. *British Accounting Review*, 33(1), 23-45.
- Horngren, C. T. (2009). *Cost accounting: A managerial emphasis* (13<sup>th</sup> ed.). New Delhi: Pearson Education India.
- Horngren, C., Foster, G., & Datar, S. (1994). *Cost accounting: A managerial emphasis* (8<sup>th</sup> ed.). Upper Saddle River, New Jersey: Prentice Hall.
- Housni, H. & El Abbadi, B., (2016). The balanced scorecard approach within Moroccan industrial firms: A contingency variables analysis. *Scholars Journal of Economics, Business and Management*, 3(9), 456-462
- Huang, C., Tayles, M., & Luther, R. (2010). Contingency factors influencing the availability of internal intellectual capital information. *Journal of Financial Reporting and Accounting*, 8(1), 4-21.



- Huang, H. C., Lai, M. C., & Lin, L. H. (2011). Developing strategic measurement and improvement for the biopharmaceutical firm: Using the BSC hierarchy. *Expert Systems with Applications*, 38(5), 4875-4881.
- Hulland, J., (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic Management Journal*, 20(2), 195–204.
- Hussain, M., & Gunasekaran, A. (2002). An institutional perspective of non-financial management accounting measures: A review of the financial services industry. *Managerial Auditing Journal*, 17(9), 518-536.
- Hussain, M., & Hoque, Z. (2002). Understanding non-financial performance measurement practices in Japanese banks: A new institutional sociology perspective. *Accounting, Auditing & Accountability Journal*, 15(2), 162-183.
- Hwang, Y. (2005). Investigating enterprise systems adoption: Uncertainty avoidance, intrinsic motivation, and the technology acceptance model. *European journal of information systems*, 14(2), 150-161.
- Ibrahim, S., Sukeri, S. & Abd-Rashid, M. (2014). Factors influencing the diffusion & implementation of management accounting innovations (MAIS), Malaysian manufacturing industries in Northern Region. *Advances in Environmental Biology*, 8(9), 504-512.
- Innes, J., & Mitchell, F. (1995). A survey of activity-based costing in the UK's largest companies. *Management Accounting Research*, 6(2), 137-153.
- Iraq News Network, 2015 <http://www.imn.iq/>
- Iraqi Central Statistical Organization, 2014 <http://cosit.gov.iq/ar/>

- Iselin, E. R., Mia, L., & Sands, J. (2008). The effects of the balanced scorecard on performance: The impact of the alignment of the strategic goals and performance reporting. *Journal of General Management*, 33(4), 71-85.
- Islam, M., & Kantor, J. (2005). The development of quality management accounting practices in China. *Managerial Auditing Journal*, 20(7), 707-724.
- Ismail, T. H. (2007). Performance evaluation measures in the private sector: Egyptian practice. *Managerial Auditing Journal*, 22(5), 503-513.
- Institute of Chartered Accountants in England and Wales. (2011). *Reporting business risks: Meeting expectations*. London: ICAEW.
- International Monetary Fund, & Baunsgaard, T. (2012). *Fiscal Frameworks for Resource Rich Developing Countries (IMF Staff Discussion Note)*. International Monetary Fund
- Ittner, C. D., & Larcker, D. F. (1998). Innovations in performance measurement: Trends and research implications. *Journal of Management Accounting Research*, 6, 205-238.
- Ittner, C. D., Larcker, D. F., & Rajan, M. V. (1997). The choice of performance measures in annual bonus contracts. *The Accounting Review*, 72(2), 231-255.
- Ittner, C. D., Larcker, D. F., & Randall, T. (2003). Performance implications of strategic performance measurement in financial services firms. *Accounting, Organizations and Society*, 28(7-8), 715-741.
- Jacobs, R., Mannion, R., Davies, H. T., Harrison, S., Konteh, F., & Walshe, K. (2013). The relationship between organizational culture and performance in acute hospitals. *Social Science & Medicine*, 76(1), 115-125.

- Jänkälä, S. (2007). Management control systems (MCS) in the small business context. Linking effects of contextual factors with MCS and financial performance of small firms.
- Johannessen, J. A., Olaisen, J., & Olsen, B. (1999). Strategic use of information technology for increased innovation and performance. *Information Management & Computer Security*, 7(1), 5-22.
- Johnson, H. T., & Kaplan, R. S. (1987). The rise and fall of management accounting. *IEEE Engineering Management Review*, 3(15), 36-44.
- Jusoh, R. (2008). Environmental uncertainty, performance, and the mediating role of balanced scorecard measures use: Evidence from Malaysia. *International Review of Business Research Papers*, 4(2), 116-135.
- Jusoh, R., Ibrahim, D., & Zainuddin, Y. (2008). The performance consequence of multiple performance measures usage: Evidence from the Malaysian manufacturers. *International Journal of Productivity and Performance Management*, 57(2), 119-136.
- Kalagnanam, S. S., & Lindsay, R. M. (1998). The use of organic models of control in JIT firms: Generalizing Woodward's findings to modern manufacturing practices. *Accounting, Organizations & Society*, 24(1), 1-30.
- Kaplan, R. (1984). The evolution of management accounting. *The Accounting Review*, 59(3), 390-418.
- Kaplan, R. S. (1983). Measurement Manufacturing Performance: A New Challenge for Management Accounting Research. *The Accounting Review*, 63, 156- 193.

- Kaplan, R. S., & Cooper, R. (1998). *Cost and effect: Using integrated cost systems to drive profitability and performance*. Boston, Massachusetts: Harvard Business School Press.
- Kaplan, R. S., & Norton, D. P. (1992). The balanced scorecard-measures that drive performance. *Harvard Business Review*, 70(1), 71-79.
- Kaplan, R. S., & Norton, D. P. (1993). Putting the balanced scorecard to work. *Harvard Business Review*, 71(5), 134-147.
- Kaplan, R. S., & Norton, D. P. (1996a). Linking the balanced scorecard to strategy. *California Management Review*, 39(1), 53-79.
- Kaplan, R. S., & Norton, D. P. (1996b). Using the balanced scorecard as a strategic management system. *Harvard Business Review*, 74(1), 75-85.
- Kaplan, R. S., & Norton, D. P. (2001). Transforming the balanced scorecard from performance measurement to strategic management: Part 1. *Accounting Horizons*, 15(1), 87-104.
- Kaplan, R. S., & Norton, D. P. (2001a). The strategy focused organization how balanced scorecard companies thrive in the new business environment. Boston, Massachusetts: Harvard Business School Press.
- Kaplan, R. S., & Norton, D. P. (2004). Measuring the strategic readiness of intangible assets. *Harvard Business Review*, 82(2), 52-63.
- Kaplan, R.S., & Norton, D.P. (1996). *The balanced scorecard: Translating strategy into action*. Boston, Massachusetts: Harvard Business School Press.
- Kaplan, R.S., & Norton, D.P. (2000), *The strategy-focused organization*. Boston, Massachusetts: Harvard Business School Press.

- Kaskey, V. L. (2008). *The balanced scorecard: A comparative study of accounting education and experience on common measure bias and trust in a balanced scorecard* (Unpublished doctoral dissertation). Capella University, Minneapolis, Minnesota.
- Kattan, F., Pike, R., & Tayles, M. (2007). Reliance of management accounting under environmental uncertainty: The case of Palestine. *Journal of Accounting and Organisational Change*, 3(3), 229-247.
- Kaynak, H. (2003). The relationship between total quality management practices and their effects on firm performance. *Journal of Operations Management*, 21, 405-435.
- Keim, G. D., & Zeithaml, C. P. (1986). Corporate political strategy and legislative decision making: A review and contingency approach. *Academy of management review*, 11(4), 828-843.
- Kerlinger, F. N. (1986). *Foundation of behavior research*. San Francisco, California: Holt, Rinehart and Winston.
- Khalaf, M. (2011). The application of quality principles in organizations to achieve competitive advantage An Empirical Study of the General Company for Electrical Industry. *Journal of Baghdad College of Economic Sciences*. 28, 167-190.
- Khan, H., Halabi, A. K., & Khan, R. (2011). Non-financial performance measures-organizational performance relationship in the Bangladeshi firms: the moderator role of environmental uncertainty and corporate culture. Working paper. <https://doi.org/10.2139/ssrn.1965612>

- Khandwalla, P. N. (1977). *Design of organizations*. New York, New York: Harcourt Brace Jovanovich.
- Khandwalla, P.N. (1972). The effect of different types of competition on the use of management controls. *Journal of Accounting Research*, 10, 275-285.
- Koseoglu, M. A., Topaloglu, C., Parnell, J. A., & Lester, D. L. (2013). Linkages among business strategy, uncertainty and performance in the hospitality industry: Evidence from an emerging economy. *International Journal of Hospitality Management*, 34, 81-91.
- Kreitner, R. (2001). *Management* (8<sup>th</sup> ed.). Boston, Massachusetts: Houghton Mifflin Harcourt.
- Krejcie, R., & Morgan, D. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- Kuivalainen, O., Sundqvist, S., Puumalainen, K., & Cadogan, J. (2004). The effect of environmental turbulence and leader characteristics on international performance: Are knowledge-based firms different? *Canadian Journal of Administrative Sciences*, 21(1), 35-50.
- Kumar, V., Choise, F., de Grosbois, D., & Kumar, U. (2009). Impact of TQM on company's performance. *International Journal of Quality & Reliability Management*, 26(1), 23-37.
- Kuratko, D. F., & Welsch, H. P. (2004). *Strategic entrepreneurial growth* (2<sup>nd</sup> ed.). Mason, Ohio: Thomson South-Western.

- Lallo, N., & Selamat, M. (2014). The impact of information technology knowledge components on accounting information system course development: The Iraqi perspective. *Research Journal of Finance and Accounting*, 5(1), 99-112.
- Langfield-Smith, K. (1997). Management control systems and strategy: A critical review. *Accounting, Organizations and Society*, 22(2), 207-232.
- Langfield-Smith, K. (2008). The relations between transactional characteristics, trust and risk in the start-up phase of a collaborative alliance. *Management Accounting Research*, 19(4), 344-364.
- Lawrence, P. R., & Lorsch, J. W. (1967). Differentiation and integration in complex organizations. *Administrative science quarterly*, 1-47.
- Lay, T., & Jusoh, R. (2012). Business strategy, strategic role of accountant, strategic management accounting and their links to firm performance: An exploratory study of manufacturing companies in Malaysia. *Asia-Pacific Management Accounting Journal*, 7(1), 59-94.
- Lee, C. L., & Yang, H. J. (2011). Organization structure, competition and performance measurement systems and their joint effects on performance. *Management Accounting Research*, 1(22), 84-104
- Lee, C., Folami, L. B., & Chung, Y. (2014). An Evaluation of the Impact of Strategic Linkage on BSC Usage and Performance. *Global Review of Accounting and Finance*. 5(2), 36-55
- Lee, L., Petter, S., Fayard, D., Robinson, S., 2011. On the use of partial least squares path modeling in accounting research, *International Journal of Accounting Information Systems* 12(4), 305-328.

- Lee, S.K.J., Yu, K., 2004. Corporate culture and organizational performance. *Journal of Management Psychology*, 19(4), 340–359.
- Lewis, B. P., Burge, C. B., & Bartel, D. P. (2005). Conserved seed pairing, often flanked by adenosines, indicates that thousands of human genes are microRNA targets. *cell*, 120(1), 15-20.
- Li, H., & Atuahene-Gima, K. (2001). Product innovation strategy and the performance of new product ventures in China. *Academy of Management Journal*, 44, 1123-1134.
- Libby, T., & Waterhouse, J. (1996). Predicting change in management accounting systems. *Journal of Management Accounting Research*, 8, 137-150.
- Limayem, M., Hirt, S., & Chin, W. (2001). *Intention does not always matter: the contingent role of habit on IT usage behavior*. Paper presented at Global Cooperation in the New Millennium, the 9th European Conference on Information Systems Bled, Slovenia, June 27-29. Retrieved from <https://pdfs.semanticscholar.org/bf0c/c6c3ee543068d99521627d2688e8c85e9cc1.pdf>
- Locke, E. A., & Schweiger, D. M. (1979). Participation in decision-making: One more look. *Research in Organizational Behavior*, 1(10), 265-339.
- Lord, B. R. (1996). Strategic management accounting: the emperor's new clothes? *Management Accounting Research*, 7(3), 347-366.
- Luther, R. G., & Longden, S. (2001). Management accounting in companies adapting to structural change and volatility in transition economies: A South African study. *Management Accounting Research*, 12(3), 299-320.



- Maiga, A. S., & Jacobs, F. A. (2003). Balanced scorecard, activity-based costing and company performance: an empirical analysis. *Journal of Managerial Issues*, 15(3), 283-301.
- Malleret, V., (2015). *Revisiting 30 years of SMA literature: A focus on cost, price and value*. Communication to the 38<sup>th</sup> EAA Annual Congress Glasgow 28-30.
- Maltz, A. C., Shenhar, A. J., & Reilly, R. R. (2003). Beyond the balanced scorecard: Refining the search for organizational success measures. *Long Range Planning*, 36(2), 187-204.
- Marane, B. M. O. (2012). *The influence of organizational culture, innovation drivers, and information technology capability on innovation capability of manufacturing firms in Iraq*. (Unpublished doctoral Dissertation). Universiti Utara Malaysia, Sintok, Malaysia.
- Marr, B., & Schiuma, G. (2003). Business performance measurement—past, present and future. *Management Decision*, 41(8), 680-687.
- Martins, E., & Terblanche, F. (2003). Building organizational culture that stimulates creativity and innovation. *European Journal of Innovation Management*, 6(1), 64-74.
- Maxwell, J. (2005). *Qualitative research design: An interactive approach* (2<sup>nd</sup> ed.). Thousand Oaks, California: SAGE Publications.
- Mazrui, A. A. (1999). Globalization and cross-cultural values: The politics of identity and judgment. *Arab Studies Quarterly*, 21(3), 97-109.

- Mehralian, G., Nazari, J. A., Nooriparto, G., & Rasekh, H. R. (2017). TQM and organizational performance using the balanced scorecard approach. *International Journal of Productivity and Performance Management*, 66(1), 111-125.
- Merchant, K. A. (1990). The effects of financial controls on data manipulation and management myopia. *Accounting, Organizations and Society*, 15(4), 297-313.
- Merchant, K. A., Chow, C. W., & Wu, A. (1995). Measurement, evaluation and reward of profit center managers: A cross-cultural field study. *Accounting, Organizations & Society*, 20(7), 619-638.
- Meyer, M. W. (2003). *Rethinking performance measurement: Beyond the balanced scorecard*. Cambridge: Cambridge University Press.
- Mia, L. (1993). The role of MAS information in organizations: An empirical study. *British Accounting Review*, 25(3), 269-285.
- Mia, L., & Clarke, B. (1999). Market competition, management accounting systems and business unit performance. *Management Accounting Research*, 10(2), 137-158.
- Mia, L., & Winata, L. (2008). Manufacturing strategy, broad scope MAS information and information and communication technology. *The British accounting review*, 40(2), 182-192.
- Michael, O. B. (2013). Strategic cost management as a recession survival tool in the Nigerian manufacturing and financial service industries. *Journal of Finance and Accounting*, 4(11), 71-81.
- Miculescu, C., & Miculescu, M. (2012). Strategic management of costs — The main tool of competitive advantage in the current economic environment. *Anale. Seria Științe Economice. Timișoara*, 18, 863-869.

- Miles, R. E., & Snow, C. C. (1978). *Organizational strategy. Structure and process*. New York, New York: McGraw-Hill.
- Miller, D. (1987). The structural and environmental correlates of business strategy. *Strategic Management Journal*, 8(1), 55-76.
- Miller, D. (1993). The simplicity of competitive repertoires: An empirical analysis. *Academy of Management Proceedings*, 1, 32-36.
- Miller, G. A., & Sharda, B. D. (2000). Organizational structure in the Middle East: A comparative analysis. *International Journal of Comparative Sociology*, 41(3), 315-329.
- Modell, S. (2012). Strategy, political regulation and management control in the public sector: institutional and critical perspectives. *Management Accounting Research*, 23(4), 278-295.
- Mohamed, R., Wee, S. H., Abdul Rahman, I. K., & Abdul Aziz, R. (2010). Strategic performance measurement system, organizational capabilities and competitive advantage. *Asian Journal of Accounting and Governance*, 7(1), 27-50.
- Mohammed, K. (2012). Impact of organizational culture in adopting the environmental management system: A practical study in the state company for glass and ceramic industry. *AL-Anbar University Journal of Economic and Administration Sciences*, 4(8), 204-240.
- Mushref, A. M. (2014). The moderator role of organizational culture between intellectual capital and business performance: An empirical study in Iraqi industry. *Net Journal of Social Sciences*, 2(3), 82-91.

- Nabiha, A. K., & Scapens, R. W. (2005). Stability and change: an institutionalist study of management accounting change. *Accounting, Auditing & Accountability Journal*, 18(1), 44-73.
- Nadkarni, S., & Narayanan, V. K. (2007). Strategic schemas, strategic flexibility, and firm performance: The moderating role of industry clockspeed. *Strategic management journal*, 28(3), 243-270.
- Nagar, V., & Rajan, M. V. (2001). The revenue implications of financial and operational measures of product quality. *The Accounting Review*, 76(4), 495-513.
- Naranjo-Valencia, J. C., Jiménez-Jiménez, D., & Sanz-Valle, R. (2016). Studying the links between organizational culture, innovation, and performance in Spanish companies. *Revista Latinoamericana de Psicología*, 48(1), 30-41.
- Neely, A. D. (1999). The performance measurement revolution: Why now and where next. *International Journal of Operations and Production Management* 19(2), 205-228.
- Neely, A. D., Mills, J., Platts, K., Gregory, M., & Richards, H. (1994). Realizing strategy through measurement. *International Journal of Operations & Production Management*, 14(3), 140-152.
- Neely, A., Adams, C., & Kennerley, M. (2002). *The performance prism: The scorecard for measuring and managing business success*. London, England: Financial Times-Prentice Hall.
- Neely, A., Gregory, M., & Platts, K. (2005). Performance measurement system design: A literature review and research agenda. *International journal of operations & production management*, 25(12), 1228-1263.

- Neuman, W. L., & Robson, K. (2012). *Basics of social research: Qualitative and quantitative approaches*. Toronto, Canada: Pearson.
- Nickell, S. (1995). *The performance of companies-the relationship between the external environment, management strategies and corporate performance*. Oxford, United Kingdom: Blackwell.
- Nitzl, C., Nitzl, C., Roldan, J., Roldan, J., Cepeda, G., & Cepeda, G. (2016). Mediation analysis in partial least squares path modeling: Helping researchers discuss more sophisticated models. *Industrial Management & Data Systems*, 116(9), 1849-1864.
- Niven, P. R. (2002). *Balanced scorecard step-by-step: Maximizing performance and maintaining results*. New York, New York: John Wiley & Sons.
- Niven, P. R. (2006). *Balanced scorecard step-by-step: Maximizing performance and maintaining results*. New York, New York: John Wiley & Sons.
- Norreklit, H. (2000). The balance on the balanced scorecard: A critical analysis of some of its assumptions. *Management Accounting Research*, 11(1), 65-88.
- Norreklit, H., Norreklit, L., Mitchell, F., & Bjornenak, T. (2012). The rise of the balanced scorecard! Relevance regained? *Journal of Accounting & Organizational Change*, 8(4), 490-510.
- Oakes, L. S., & Miranti, P. J. (1996). Louis D. Brandeis and standard cost accounting: A study of the construction of historical agency. *Accounting, Organizations and Society*, 21(6), 569-586.
- Obasan, K. (2012). Organizational culture and its corporate image: A model juxtaposition. *Business and Management Research*, 1(1), 121-132.

- O'Cass, A., & Weerawardena, J. (2010). The effects of perceived industry competitive intensity and marketing-related capabilities: Drivers of superior brand performance. *Industrial Marketing Management*, 39(4), 571-581.
- Ogbonna, E., & Harris, L. (2000). Leadership style, organizational culture (OC) and performance: Empirical evidence from UK companies. *International Journal of Human Resource Management*, 11(4), 766-788.
- Oghuvwu, M. E., & Omoye, A. S. (2016). Mergers, acquisitions and corporate performance: The balanced scorecard approach. *Accounting and Finance Research*, 5(4), 75-63
- Ojra, J. (2014). *Strategic management accounting practices in Palestinian companies: Application of contingency theory perspective* (Unpublished doctoral dissertation). University of East Anglia, Norwich, England.
- Olson, E., & Slater, S. (2002). The balanced scorecard, competitive strategy, and performance. *Business Horizons*, 45(3), 11-16.
- Olve, N., Roy, J., and Wetter, M. (2000). *Performance drivers: A practical guide to using the balanced scorecard*. Chichester, West Sussex: John Wiley & Sons, Ltd.
- Ong, T. S., & Teh, B. H. (2009). Factors influencing the design and use of performance measurement systems in the Malaysian electrical and electronics industry. *International Journal of Economics and Management*, 2(2), 437-457.
- Otley D. (2003). Management control and performance management: Whence and whither? *The British Accounting Review* 35(4), 309-326.
- Otley, D. (1980). The contingency theory of management accounting: Achievement and prognosis. *Accounting, Organizations and Society*, 5(4), 413-428.

- Otley, D. (1999). Performance management: A framework for management control systems research. *Management Accounting Research*, 10(4), 363-382.
- Otley, D. (2016). The contingency theory of management accounting and control: 1980–2014. *Management Accounting Research*, 31, 45-62.
- Otley, D. T. (1978). Budget use and managerial performance. *Journal of Accounting Research*, 16(1), 122-149.
- Otley, D.T., (2005). Performance management framework. In A. Berry, J. Broadbent, & D. Otley (Eds.), *Management control: Theories, issues and performance* (2<sup>nd</sup> ed.). New York, New York: Palgrave MacMillan.
- Özmen, O., Demir, A., & Celepli, M. (2013). An analysis of Iraq's pre-import inspection, testing & certification program: A SWOT analysis. *Procedia-Social and Behavioral Sciences*, 99, 85-93.
- Paranjape, B., Rossiter, M., & Pantano, V. (2006). Insights from the balanced scorecard performance measurement systems: Successes, failures and future — A review. *Measuring Business Excellence*, 10(3), 4-14.
- Peteraf, M. A. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic management journal*, 14(3), 179-191.
- Peters, L. H., Hartke, D. D., & Pohlmann, J. T. (1985). Fiedler's Contingency Theory of Leadership: An application of the meta-analysis procedures of Schmidt and Hunter. *Psychological Bulletin*, 97(2), 274.
- Phusavat, K., Anussornnitisarn, P., Helo, P., & Dwight, R. (2009). Performance measurement: Roles and challenges. *Industrial Management & Data Systems*, 109(5), 646-664.

- Pimentel, L., & Major, M. J. (2014). Quality management and a balanced scorecard as supporting frameworks for a new management model and organisational change. *Total Quality Management & Business Excellence*, 25(7-8), 763-775.
- Pollanen, R. M. (2001). *Management controls and their organizational and environmental context: A review with managerial emphasis*. Paper presented at the 5th International Management Control Systems Research Conference, London, United Kingdom, July 4-6.
- Porter, M. (1980). *Competitive strategy*. New York, New York: The Free Press.
- Porter, M. (2001). Strategy and the internet. *Harvard Business Review*, 79(3), 63-78.
- Porter, M. E. (1979). How competitive forces shape strategy. *Harvard Business Review* 57(2), 137-145.
- Powell, T. C. (1995). Total quality management as competitive advantage: A review and empirical study. *Strategic Management Journal*, 16(1), 15-37.
- Prajogo, D. I., & Brown, A. (2004). The relationship between TQM practices and quality performance and the role of formal TQM programs: An Australian empirical study. *The Quality Management Journal*, 11(4), 31-42.
- Preacher, K., & Hayes, A. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879-891.
- Psomas, E. L., & Jaca, C. (2016). The impact of total quality management on service company performance: Evidence from Spain. *International Journal of Quality & Reliability Management*, 33(3), 380-398.



- Rababah, A., & Bataineh, A. (2016). Factor's influencing balanced scorecard implementation. *Research Journal of Finance and Accounting*, 7(2), 204-212.
- Ramezani, A. R., & Beiglou, D. R. (2014). Balanced scorecards: comprehensive indicator of long term performance measurement. *Academic Journal of Research in Business & Accounting*, 2(7), 55-65.
- Ramljak, B., & Rogošić, A. (2012). Strategic management accounting practices in Croatia. *Journal of International Management Studies*, 7(2), 93-100.
- Reid, R. D., & Sanders, N. R. (2007). *Operation management*. Hoboken, New Jersey: John Wiley & Sons.
- Ringle CM, Wende S, Will A. (2005). SmartPLS 2.0 (M3) beta, Hamburg, <http://www.smartpls.de>.
- Ringle, C. M., Sarstedt, M., & Straub, D. W. (2012). Editor's Comments: A Critical Look at the Use of PLS-SEM in "MIS Quarterly". *MIS quarterly*, iii-xiv.
- Tseng, S. M. (2010). The
- Robbins, S., & Decenzo, D. (2001). *Fundamentals of management* (3<sup>rd</sup> ed.). Upper Saddle River, New Jersey: Prentice-Hall.
- Rodrik, D. (1991). Policy uncertainty and private investment in developing countries. *Journal of Development Economics*, 36(2), 229-242.
- Saizarbitoria, I. H. (2005). How quality management models influence company results – conclusions of an empirical study based on the Delphi method. *Total Quality Management & Business Excellence*, 17(6), 775-794.

- Salaheldin, S. (2009). Critical success factors for TQM implementation and their impact on performance of SMEs. *International Journal of Productivity and Performance Management*, 58(3), 215-237.
- Salaheldin, S. I. (2003). The implementation of TQM strategy in Egypt: A field-force analysis. *The TQM Magazine*, 15(4), 266-274.
- Samson, D., & Terziovski, M. (1999). The relationship between total quality management practices and operational performance. *Journal of Operations Management*, 17(4), 393-409.
- Sandström, J., & Toivanen, J. (2002). The problem of managing product development engineers: Can the balanced scorecard be an answer? *International Journal of Production Economics*, 78(1), 79-90.
- Schein, E. H. (1990). Organizational culture. *American Psychologist*, 45(2), 109-119.
- Schonberger, R. J. (1986), *World class manufacturing: The lessons of simplicity applied*. New York, New York: Free Press.
- Schreuder, H. T., Ernst, R., & Ramirez-Maldonado, H. (2004). *Statistical techniques for sampling and monitoring natural resources*. General Technical Report. RMRS-GTR-126. Fort Collins, Colorado: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Retrieved from [https://www.fs.fed.us/rm/pubs/rmrs\\_gtr126.pdf](https://www.fs.fed.us/rm/pubs/rmrs_gtr126.pdf)
- Schuler, R. S. (2000). The internationalization of human resource management. *Journal of International Management*, 6(3), 239-260.
- Schulz, A., Wu, A., & Chow, C. (2010). Environmental uncertainty, comprehensive performance measurement systems, performance-based compensation, and

- organizational performance. *Asia-Pacific Journal of Accounting & Economics*, 17(1), 17-40.
- Sekaran, U. (2003). *Research methods for business* (4<sup>th</sup> ed.). Hoboken, NJ: John Wiley & Sons.
- Sekaren, U., & Bougie, R. (2010). *Research methods for business* (5<sup>th</sup> ed.). Hoboken, New Jersey: John Wiley & Sons.
- Senge, P. M. (1990). *The fifth discipline. The art & practice of the learning organization*. New York, New York: Doubleday Currency.
- Shah, H., Malik, A., & Malik, M. (2011). Strategic management accounting — A Messiah for management accounting? *Australian Journal of Business and Management Research*, 1(4), 1-7.
- Shahzad, F., Luqman, R. A., Khan, A. R., & Shabbir, L. (2012). Impact of organizational culture on organizational performance: An overview. *Interdisciplinary Journal of Contemporary Research in Business*, 3(9), 975-985.
- Shank, J. K. (1989). Strategic cost management: New wine, or just new bottles? *Journal of Management Accounting Research*, 1(Fall), 47-65.
- Sharma, A. (2009). Implementing balance scorecard for performance measurement. *ICFAI University Journal of Business Strategy*, 6(1), 7-16.
- Sharma, S. (2000). Managerial interpretations and organizational context as predictors of corporate choice of environmental strategy. *Academy of Management journal*, 43(4), 681-697.
- Shea, J. E., & Kleinsorge, I. K. (1994). TQM: Are cost accountants meeting the challenge? *Strategic Finance*, 75(10), 65-67.

- Sholihin, M., & Laksmi, A. C. (2009). Total quality management, balanced scorecard and performance. *Journal Akuntansi dan Auditing Indonesia*, 13(1), 13-28.
- Shubik, M. (1983). *Game theory in the social sciences*. Cambridge, Massachusetts: MIT Press.
- Shurafa, R., & Mohamed, R. (2016) Management control system, organizational learning, and firm's performance: An empirical study from developing economy, *International Journal of Advanced and Applied Sciences*, 3(10) 2016, 79-88
- Sila, I. (2007). Examining the effects of contextual factors on TQM and performance through the lens of organizational theories: An empirical study. *Journal of Operations Management*, 25(1), 83-109.
- Sila, I., & Ebrahimpour, M. (2002). An investigation of the total quality management survey based research published between 1989 and 2000: A literature review. *International Journal of Quality & Reliability Management*, 19(7), 902-970.
- Sim, K. L., & Koh, H. C. (2001). Balanced scorecard: A rising trend in strategic performance measurement. *Measuring Business Excellence*, 5(2), 18-26.
- Simmonds, K. (1981). Strategic management accounting, *Management Accounting*, 59(4), 26-29
- Simons, R. (2000). *Performance measurement and control systems for implementing strategy*. Upper Saddle River, New Jersey: Prentice Hall.
- Simons, R. (2013). *Performance measurement and control systems for implementing strategy: Text and Cases: Pearson New International Edition*. Upper Saddle River, New Jersey: Pearson Higher Education.

- Smart, C., & Vertinsky, I. (1984). Strategy and the environment: A study of corporate responses to crises. *Strategic Management Journal*, 5(3), 199-213.
- Soheilirad, S., & Sofian, S. (2016). A proposed model of the mediating effect of strategic management accounting on the relationship between perceived environmental uncertainty and firm performance. *International Journal of Research–Granthaalayah*, 4(1), 231-239.
- Šoljaková, L. (2012). Strategic management accounting development during last 30 years. *European Financial and Accounting Journal*, 7(2), 24-35.
- Stone, M. (1974). Cross-validators choice and assessment of statistical predictions. *Journal of the Royal Statistical Society. Series B (Methodological)*, 111-147.
- Suh, W. (2016). National culture and management control systems: An explanatory study on the implementations of foreign MCS in Japan. *Asia-Pacific Management Accounting Journal*, 9(1), 25-44.
- Sureshchandar, G., Rajendran, C., & Anantharaman, R. (2001). A holistic model for total quality service. *International Journal of Service Industry Management*, 12(4), 378-412.
- Tenenhaus, M., Vinzi, V. E., Chatelin, Y. M., & Lauro, C. (2005). PLS path modeling. *Computational Statistics & Data Analysis*, 48(1), 159-205.
- Thompson, K. R., & Mathys, N. J. (2008). The aligned balanced scorecard: An improved tool for building high performance organizations. *Organizational Dynamics*, 37(4), 378-393.

- Ting, W. (1988). *Multinational risk assessment and management*. Westport, Connecticut: Greenwood Press.
- Trochim, W., & Donnelly, J. (2006). The research knowledge methods base. *Cincinnati, OH: Atomic Dog Publishing*.
- Tymon Jr, W. G., Stout, D. E., & Shaw, K. N. (1998). Critical analysis and recommendations regarding the role of perceived environmental uncertainty in behavioral accounting research. *Behavioral Research in Accounting*, 10, 23-46.
- UN Assistance Mission for Iraq (UNAMI) (2010). *The Iraq briefing book*. December 2010. Retrieved from <http://www.refworld.org/docid/4d4fc6c02.html>
- Uyar, A. (2010). Cost and management accounting practices: A survey of manufacturing companies. *Eurasian Journal of Business and Economics*, 3(6), 113-125.
- Van de Ven, A. H., & Drazin, R. (1984). The concept of fit in contingency theory. *Research in Organizational Behavior*, 7, 333-367.
- Van den Berg, P. T., & Wilderom, C. P. (2004). Defining, measuring, and comparing organisational cultures. *Applied Psychology*, 53(4), 570-582.
- Van der Stede, W., Young, S. M. & Chen, X. (2006). Doing Management Accounting Survey Research, In: C. S. Chapman, A. G. Hopwood & M. D. Shields (Eds), *Handbook of Management Accounting Research (Vol. 1)*. Oxford: Elsevier.
- Venkatraman, N. (1989). The concept of fit in strategy research: Toward verbal and statistical correspondence. *The Academy of Management Review*, 14(3), 423-444.
- Verma, S. (2016,). Management styles and effective organizational response to PEU during economic crisis in India. In *Academy of Management Proceedings*, 16(1). Available at <http://proceedings.aom.org/content/2016/1/17515.short>

- Walton, M. (1986). *The Deming management method*. London, England: Mercury.
- Wang, S. F., Jou, Y. J., Chang, K. C., & Wu, K. W. (2014). Industry Competition, Agency Problem, and Firm Performance. *Journal for Economic Forecasting*, (4), 76-93.
- Waterhouse, J., & Tiessen, P. (1978). A contingency framework for management accounting systems research. *Accounting, Organizations and Society*, 3(1), 65-76.
- Waweru, N. M., Hoque, Z., & Uliana, E. (2004). Management accounting change in South Africa: Case studies from retail services. *Accounting, Auditing & Accountability Journal*, 17(5), 675-704.
- Weber, K., Otto, B., & Österle, H. (2009). One size does not fit all---a contingency approach to data governance. *Journal of Data and Information Quality (JDIQ)*, 1(1), 4.
- Wei, Y. S., Samiee, S., & Lee, R. P. (2014). The influence of organic organizational cultures, market responsiveness, and product strategy on firm performance in an emerging market. *Journal of the Academy of Marketing Science*, 42(1), 49-70.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180.
- Wetzels, M., Odekerken-Schröder, G., & Van Oppen, C. (2009). Using PLS path modeling for assessing hierarchical construct models: Guidelines and empirical illustration. *MIS Quarterly*, 33(1), 177-195.
- Wheeler, D. (1984). Sources of stagnation in sub-Saharan Africa. *World development*, 12(1), 1-23.

- Widener, S. (2006). Associations between strategic resource importance and performance measure use: The impact on firm performance. *Management Accounting Research, 17*(4), 433-457.
- Wilkinson, A. (1998). Empowerment: theory and practice. *Personnel review, 27*(1), 40-56.
- Wilkinson, A., Marchington, M., Goodman, J., & Ackers, P. (1992). Total quality management and employee involvement. *Human Resource Management Journal, 2*(4), 1-20.
- Wilson, C., Hagarty, D., & Gauthier, J. (2004). Results using the balanced scorecard in the public sector. *Journal of Corporate Real Estate, 6*(1), 53-64.
- Woodley, P. M. (2006). *Culture management through the balanced scorecard: A case study* (Unpublished doctoral dissertation). Cranfield University, Cranfield, United Kingdom. Retrieved from <https://dspace.lib.cranfield.ac.uk/bitstream/handle/1826/2056/p%20m%20woodley%20phd%20thesis.pdf;jsessionid=1132107B32C8D47CC3697FF58B24AAD2?sequence=1>
- Worley, J. M., & Doolen, T. L. (2006). The role of communication and management support in a lean manufacturing implementation. *Management Decision, 44*(2), 228-245.
- Xenikou, A., & Simosi, M. (2006). Organizational culture and transformational leadership as predictors of business unit performance. *Journal of Managerial Psychology, 21*(6), 566-579.
- Yasai-Ardekani, M., & Haug, R. (1997). Contextual determinants of strategic planning processes. *Journal of Management Studies, 34*, 729-767.



- Yasir, S. (2015). The Political Economy of the budget in 2015 in Iraq, *Way of the people Journal*, 154(80). Retrieved from <http://www.iraqicp.com/index.php/sections/objekt/25848-2015-03-06-13-27-20>
- Yesil, S., & Kaya, A. (2013). The effect of organizational culture on firm financial performance: Evidence from a developing country. *Procedia-Social and Behavioral Sciences*, 81, 428-437.
- Yeung, C. L., & Chan, L. Y. (1998). Quality management system development: Some implications from case studies. *Computers & industrial engineering*, 35(1-2), 221-224.
- Young, S. M., & Selto, F. H. (1991). New manufacturing practices and cost management: a review of the literature and directions for research. *Journal of Accounting Literature*, 10(1), 265-298.
- Yusr, M. M. (2013). *The influence of TQM, K=knowledge management and innovation capability on innovation performance of Malaysian manufacturing companies* (Unpublished doctoral dissertation). Universiti Utara Malaysia, Sintok, Malaysia.
- Zainy, M. A. (2011). *Iraqi economic: Past, present and future options* (3<sup>rd</sup> ed.). London, England: Dar Almalak for Arts and Publishing.
- Zakari, M., Poku, K., & Owusu-Ansah, W. (2013). Organizational culture and organisational performance: Empirical evidence from the banking industry in Ghana. *International Journal of Business, Humanities and Technology*, 3(1), 95-107
- Zikmund, W. G. (2003). *Business research methods* (7<sup>th</sup> Ed.). Australia: South-Western.

Zuriekat, M. (2007). Total quality management, just in time production and non-financial performance measures: An empirical investigation. *The Scientific Journal of Faculty of Commerce, Assiut University Press*, 42, 1-25.

Zuriekat, M. I. K. (2005). *Performance measurement systems: An examination of the influence of the contextual factors and their impact on performance with a specific emphasis on the balanced scorecard approach* (Doctoral dissertation) University of Huddersfield.



## **APPENDICES**

### **APPENDIX 1**

#### **UNIVERSITI UTARA MALAYSIA**



**Othman Yeop Abdullah Graduate School of Business**

**Sintok- Malaysia**

**Survey**

#### **CONTINGENCY FACTORS, BALANCED SCORECARD AND FIRM PERFORMANCE: EVIDENCE FROM IRAQI MANUFACTURING INDUSTRIES**

Dear respondents, this questionnaire is a requirement for the PhD thesis and aims to determine the impact of situational factors of integration (environment of uncertainty, corporate culture, TQM) and strategic techniques of cost management on improving the performance of industrial enterprises. It is hoped that the results of this study will be useful in improving the performance of industrial firms in Iraq. Your answer definitely plays a significant role in the success of this study, in addition these data will be treated with confidentiality and for research purposes only. Your effort in filling this questionnaire is highly appreciated to achieve research quality.

For any inquiries about the study or any help in completing the questionnaire, please contact:

Khalkis Hasan Yousif Al-Naser  
Email: [alnaser7171@Yahoo.com](mailto:alnaser7171@Yahoo.com)  
Phone: 0060182865404  
Phone: 009647504936888

Thank you for your time and kind assistance  
Sincerely

## SECTION I

This section contains two parts. The first part contains information about the respondents, while the second part contains information about the company.

### Part I: Information about the respondents

Please tick (✓) where applicable

---

**1. Gender**

Male ( )

Female ( )

**2. Age**

21 – 30 ( ), 31 – 40 ( ), 41 – 50 ( ), 51 – 60 ( ), Above 60 ( )

**3. Occupation**

Chief Executive Officers ( ), Chief Financial Officers ( ), Chief Management Accountants ( ), Chief Controller ( ).

**4. Working experience in industry**

Less and equal to 5 years ( ), 6 -10 years ( ), 11-15 years ( ), 16-20 years ( )

( ) More than 20 years.

---

### Part II: Information about the company

---

**1. Types of company**

Food and beverage ( ), Textile and wearing apparel ( ), Wood and wood products ( ), Electrical and electronic ( ), Non-metallic mineral ( ), Paper and paper products ( ), Chemical products ( ), Plastic products ( ), Iron and steel ( ), Machinery products ( ), Others ( ). (please specify)

**2. The approximate number of employees in your company**

Less than 30 ( ), 30 – 100 ( ), 100-500 ( ), More than 500 ( )

**3. The total assets of your company (Iraqi Dinar)**

Less than 100 Million ( ), 100 Million -150 Million ( ), More than 150 Million ( ).

**4. The average annual revenue of company (Iraqi Dinar) for the past three years**

Less than or equal to 50 Million ( ), 51 Million – 250 Million ( ), 251 Million – 450 Million ( ), 451 Million – 650 Million ( ), More than 651 Million ( ).

---

## SECTION II

This section consists of five subsections. (A) Balanced scorecard; (B) performance of company; (C) environment of uncertainty, including: political turbulence and the intensity of competition; (D) corporate culture; and (E) total quality management (TQM).

### A: BALANCED SCORECARD (BSC)

This subsection contains questions related to the financial and non-financial performance measurement adopted by the company to evaluate its performance. Please refer to the usability of the mentioned measures by choosing 1 = not at all to 5 = to a greater extent.

	1	2	3	4	5
	Not at all	To a minimum extent	To some extent	To a large extent	To a greater extent

No.	Items	1	2	3	4	5
<b>Financial perspective</b>						
F1	Operating income	1	2	3	4	5
F2	Sales growth	1	2	3	4	5
F3	Cash flows	1	2	3	4	5
F4	Sales Revenue	1	2	3	4	5
<b>Customer perspective</b>						
C1	Market share	1	2	3	4	5
C2	On-time delivery	1	2	3	4	5
C3	Number of customer's complaint	1	2	3	4	5
C4	Survey of customer's satisfaction	1	2	3	4	5
C5	Customer's response time	1	2	3	4	5
C6	Cycle time from order to delivery	1	2	3	4	5
C7	Percent shipments returned due to poor quality	1	2	3	4	5
<b>Internal process perspective</b>						
IP1	Manufacturing lead time /cycle time	1	2	3	4	5
IP2	Rate of material scrap loss	1	2	3	4	5
IP3	Labor efficiency variance	1	2	3	4	5
IP4	Material efficiency variance	1	2	3	4	5
IP5	Ratio of good output to total output	1	2	3	4	5

<b>Innovation and learning perspective</b>						
IL1	Number of new patents	1	2	3	4	5
IL2	Number of new product launches	1	2	3	4	5
IL3	Time to market new products	1	2	3	4	5
IL4	Employee's satisfaction	1	2	3	4	5
IL5	Employee's training	1	2	3	4	5

## **B: PERCEIVED ENVIRONMENTAL UNCERTAINTY**

In this study, the environmental uncertainty is divided into two dimensions; the first one is the political turbulence and the other is the intensity of competition.

### **PART ONE: POLITICAL TURBULENCE**

In this part, we are interested in understanding the impact of political turbulence on the company in order to ensure the company's ability to implement its plans and achieve its objectives. Please choose (1 = very low influence to 5 = very high influence).

	1	2	3	4	5
	Very low influence	Low influence	Average influence	High influence	Very high influence
No.	Items				
PT1	The political instability in Iraq influences our business				
PT2	The interventions by national politicians interrupt our performance				
PT3	Our business can be greatly affected by trade union links with political parties				
PT4	Work stoppages and workers' violence are serious issues that influence the operation of business.				
PT5	Our work environment undergoes continuous change due to the political instability				

## PART TOW: INTENSITY OF COMPETITION

Please indicate the degree of your agreement with the following statements, which describe the company's competitive position compared with their counterparts in the Industrial sector.

Please choose (1 = strongly disagree to 5 = strongly agree).

	1	2	3	4	5
	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree
No.	Items				
C1	Our company faces high degree of price competition on products.				
C2	There is a high degree of market competition in the new products development faced by our company.				
C3	There is a high degree of competition in marketing the products that faced by our company.				
C4	Company faces a high degree of competition to gain market share in products.				
C5	Behaviours of competing companies are taking a great threat to our company.				
C6	The level of competition in the market for the major products of our company is extremely intense.				

## C: CORPORATE CULTURE

To what extent do the following statements apply to your company? Please indicate the validity of the following statements. Please choose (1 = strongly disagree to 5 = strongly agree).

	1	2	3	4	5
	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree
No.	Items				
OC1	In our company, most employees are highly involved in their work.				
OC2	Information in our company is widely shared so that everyone can get the information s/he needs when it is needed.				
OC3	Teams are the primary building blocks in our company.				
OC4	Work is organized so that each person can see the relationship between his/her job and the goal of our company.				
OC5	In our company, there is continuous investment in the skills of employees.				
OC6	In our company, the capabilities of people are viewed as an important source of competitive advantage.				
OC7	In our company, there is a clear and consistent set of values that governs the way we do business.				
OC8	In our company, there is a clear agreement about the right way and the wrong way to do things.				
OC9	In our company, there is a good alignment of goals across levels.				
OC10	In our company, we respond well to competitors and other changes in the business environment.				
OC11	Different parts of our company often cooperate to create change.				
OC12	In our company, customers' input directly influences our decisions.				
OC13	In our company, we encourage direct contact with customers by our people.				
OC14	In our company, we view failure as an opportunity for learning and improvement.				
OC15	In our company, innovation and risk taking are encouraged and rewarded.				
OC16	In our company, there is a clear mission that gives meaning and direction to our work.				
OC17	In our company, employees understand what needs to be done for us to succeed in the long run.				
OC18	Our vision creates excitement and motivation for our employees.				



#### **D: TOTAL QUALITY MANAGEMENT (TQM)**

Over the past three years, the extent to which your company has implemented programs to improve the quality of products and processes, improve efficiency, decrease waste and cost, involve employees in the philosophy of continuous improvement. (These programs are sometimes referred to as total quality management (TQM). Please indicate the degree of your agreement with the following quality activities carried out by the company. Please choose (1 = strongly disagree to 5 = strongly agree).

	1	2	3	4	5
	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree
<b>No.</b>	<b>Items</b>				
TQM1	Programs to improve the quality and reliable delivery of materials and components provided by suppliers.				1 2 3 4 5
TQM2	Programs to reduce waste or non-value-added activities throughout the production process				1 2 3 4 5
TQM3	Programs to reduce time delays in manufacturing and designing products (i. e. improve cycle time(				1 2 3 4 5
TQM4	Involvement of employees in quality improvement programs				1 2 3 4 5
TQM5	Involvement of functional personnel (manufacturing, marketing, R & D) in strategy formulation				1 2 3 4 5
TQM6	Developing close contact between manufacturing and customers				1 2 3 4 5
TQM7	Programs to co-ordinate quality improvements between parts of the organisation				1 2 3 4 5

#### **E: FIRM PERFORMANCE**

The following statements are to evaluate the company's performance in which you are working. Please evaluate the company's performance during the past three years and refer to data contained in the table by choosing (1 = strongly disagree to 5 = strongly agree).

	1	2	3	4	5
	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree
No.	Items				
P1	Our costs of production have reduced during the last 3 years				
P2	Our return on investment has improved during the last 3 years				
P3	We have received considerable cash flow from our operations during the last 3 years				
P4	During the last 3 years we have enjoyed sales growth rate				
P5	Our operating profits have increased during the last 3 years				
P6	Our waste costs reduced during the last 3 years				
P7	During the last 3 years we have enjoyed revenue growth rate				
P8	Net profits have increased during the past three years				
P9	Ratio of profit to total revenue has increased during the past three years				
P10	Return on assets has improved during the past three years				



**UUM**  
Universiti Utara Malaysia

**جامعة اوتارا الماليزية**



## استبيان طروحة دكتوراه

عريزي لالش ارغفي استبيان هذه استمارة موجهة لروح التفواهي هدف لاي تحدي بشر لتكاملهين لالعوامل  
الاممية للتحط فـ بـهـ عدم لتكبد بتفلة للشركات , ادارة لاجودة الشاملة (وتقنيات ادارة للغة استراتيجي في  
تحويل أداء الشركات للصناعة العراقية. من لأمول ان تكون نتاج لدراسة ذات فائدة لغيرهيت تحويل  
الشركات للصناعة العراقية في العراق. ان جوبل كويلعب دورا هامين جاح هذه الدراسة، فـ بل ان هذه لليليات هيتم للتعامل  
مع هلبسري قتامة و غراضبشي فقط، ج موكففي لمي استمارة مي موضعيق يري عال لى للباحث من أجل  
تتحقيق جودة للبحث .

بلفسار عن الدرلة أو اذا التبحر الى أي من اعددي لتكامل استبيان يرجى اتصال :

للإحاث : خلاص من نبي وسف للنصر

ایہیل: Alnaser7171@Yahoo.com

009647504936888 - 0060182865404 : مؤلف

شكرا لكم على تعاونكم

القسم ١ ول: -يضموي هذا القسم غري جزيين.يضموي الجزء ١ ول غري مغمومات عن الشخص الهمؤول عن تهيئة  
الستدارة بيمينم الجزء لثلييضموي غري مغمومات عن الشركة.

#### الجزء ١ ول

##### 1- الجنس

( فخر ) ( فخر )

##### 2- العمر

( 30 - 21 ) ( 40 - 31 ) ( 50 - 41 ) ( 60 - 51 ) ( فخر من 60 ) .

##### 3- الموقع الوظيفي ؟

مدير عام ) ( لاميير لمللي ) ( مدير حريبات ) ( ميري لوقيلة ) .

##### 4- عدد سنوات الخبرة في الموقع الوظيفي الحالي ؟

5 سنوات أو أقل ) ( 6 - 10 سنوات ) ( 11 - 15 سنة ) ( 16 - 20 سنة ) ( فخر من 20 سنة ) .

#### الجزء الثاني

##### 1- نوع الصناعة ؟

غنيية وشروبات ) ( لئسة وشروبات ) ( اشباب ) ( كميبيات والشروبات ) ( معادن ) ( لورق والشروبات الورقية ) ( شرابات لئلييائية ) ( شرابات سيئيائية ) ( لئدي والشراب ) ( شراب  
ات ومعدات ) ( اخرى ) .....يرجى للئدي .

##### 2- ما هو العدد التقريبي للموظفين في الشركة؟

( 29 - 10 ) ( 100 - 30 ) ( 100 - 500 ) ( فخر من 500 ) .

##### 3- ما هو مجموع ا صول في الشركة (دينار عراقي)؟

قل من 100 لليون ) ( ميين 100 لليون - 150 لليون ) ( فخر من 150 لليون ) .

##### 4- ما هو متوسط ا يراد السنوي للشركة (دينار عراقي) في السنوات الـ ث الماضية؟

قل اويساوي 50 لليون ) ( 51 لليون - 250 لليون ) ( 251 لليون - 450 لليون ) ( 451 لليون - 650 لليون ) ( فخر من 651 لليون ) .

القسم الثاني: يتكون هذا القسم من خمسة فئافرعجي. القسم (أ) بطاقة اء لئخوازن ميينم القسم (ب) يتلوق ببيئة  
عدم للئك و مييتلئون من جزيين )اضطربات الئرييائية و شدة لئفلسة ( القسم ج) يتلوق ببيئة الشركة ميينم  
القسم د) يتلوق ببيئة ادارة لئجودة الشائمة يتلوق القسم م) مبدءاء الشركة

القسم أ : بطاقة ١

يضيوي هذا القسم قوى الملوك فتتفوق بـ **فيليس** اء الملوكي وغير الملوكي التي تصعد هذا الشركة لتقيم اطاها. يرجى  
اشارة الى مدى لتخدم كل **فيليس** انواه من ل اعني ارك = 1 **فيليس** الى 5 الى حد اعني  
جدا

1	2	3	4	5
على ا ق	الى حد ضئيل	الى حد ما	الى حد كبير	الى حد كبير جدا
ت	البيان			
<b>المحور المالي</b>				
F1	الدخل للتشغيلي			
F2	نموذجيات			
F3	للفترات الزمنية			
F4	تغيرات التغيرات			
<b>محور الزبائن</b>				
C1	الحصة السوقية			
C2	التسليم في الوقت المحدد			
C3	عدد شكوى للعملاء			
C4	مستوى رضا العملاء			
C5	زمن استجابة للعملاء			
C6	الوقت المتغرق للتسليم للطاقة			
C7	نسبة إعادة الطلبات بسبب عيوب في التصنيع			
<b>محور العمليات الداخلية</b>				
IP1	الوقت المتغرق للتصنيع/ دورة الزمن			
IP2	نسبة تلف المواد			
IP3	تكاليف إفساء العمل			
IP4	تكاليف إفساء المواد			
IP5	نسبة إنتاج المحيد إلى إنتاج العميل			
<b>محور التعلم والنمو</b>				
IL1	عديرات الاقتراحات الجيدة			
IL2	عدد المنتجات الجيدة التي تم إطلاقها			
IL3	الوقت الذي مضى في المنتجات الجيدة			
IL4	رضا الموظفين			
IL5	تدريب الموظفين			

**القسم ب : بيئة عدم التأكد**

في هذه الدراسة تم تقسيم حيوة عدم التكادالى جزيئين، اول هو اضطرابات الليبرية، واخر هوشدة اليفلسة.

## الجزء ١ : ١ اضطرابات السياسية

في هذا القسم، نحن مقدمون فيف ممتثلي ا ض طرباات الاري لرية لى ش رافكك من اجل التاكك من قدره الشركة لى

فتنيد خطها وتخييق أهله الرجاء اختيار واحدة من (1=تفكير واطى جدألى 5=تفكير غلى جدا).

5					4					3					2					1					
تأثير عالي جدا					تأثير عالي					تأثير متوسط					تأثير واطئ					تأثير واطئ جدا					
5	4	3	2	1	البيان																				
					ت																				
5	4	3	2	1	1 اضطرابات وتقلبات اليربدي في العراق يثير غنى اداعش رلقتا																				PT1
5	4	3	2	1	تدخ اليربدي في العراق يثير اداعش رلقتا																				PT2
5	4	3	2	1	اداعش رلقتا يثير بشركل الخبر من خ ل ع قات قديبات ل عمل مع ا حزاب اليربدي																				PT3
5	4	3	2	1	للتوقف عن العمل وأعمال العنف ضد الاعاليين بسبب اضطرابات اليربدي مي القضي الا خطيرة للتي																				PT4
تؤثر غنى الاعاليات للش غلي																									
5	4	3	2	1	بسبب تقلبات اليربدي قتيه ا عم الدين في خض غلث غير لامتد																				PT5

## الجزء الثاني : شدة المنافسة

من فضلك، وضح مدى موافقتك للمعايير التالية والتي توضح الوضع التقني للشاركة مقارنة مع باقي القطاع

للصناعي، للرجاء اختيار واحدة من  $(1 = \text{أولقبشدة إلى } 5 = \text{أولقبشدة})$ .

1	2	3	4	5
اوافق بشدة	اوافق	اوافق الى حد ما	اوافق	اوافق بشدة
ت	البيان			
IC1	تواجه مشرر لفتنا درجة عليّة من لا يفلسه للسعي لفتح			
IC2	تواجه مشرر لفتنا درجة عليّة من لا يفلسه في تطوير لفتحات لخدمة			
IC3	تواجه مشرر لفتنا درجة عليّة من لا يفلسه في مج التسويق لفتحات			
IC4	تواجه مشرر لفتنا درجة عليّة من لا يفلسه في نصب جس فيسوف لفتحات			
IC5	البرلويات من الشركات لا يفلسه تشكّلت مبداء الخير الشراكة			
IC6	مبتوى لا يفلسه فيسوف لفتحات لا يهبط على الشركات في دغلة			

القسم ج : ثقافة الشركة

إلى أي درجة تنطبق العبارات التالية على شركتكم؟ يرجى الإشارة إلى مدى صحة العبارات التالية. الرجاء اختيار

واحدة من ) 1 = افلقبشدة إلى 5 = افلقبشدة (.

3 2 1  
جودة المنتجات والخدمات

پروپوزیشن ۱: اگر  $f: X \rightarrow Y$  یک تابع باشد، آنگاه  $f$  یک همومورفیسم است اگر و تنها اگر  $f$  یک تک‌به‌تک نگاشت باشد و  $f$  یک همومورفیسم باشد.

مقوِّب هذه الشركة: لارجاء احتيار واحدة من  $=1$  افلقبشدة لى  $5 =$  افلقبشدة(.

5	اوافق بشد		
3	2	1	
3	2	1	يؤيدون ابها

**القسم هـ : أداء الشركة**

البيانات التالية تقيّم أداء الشركة التي تمتع بمزايا يبرجي تقيّم أداء الشركة في السنوات الثلاث الماضية، وبلغت نسبة العائد على الاستثمار (ROI) 1 = أول قبشدة إلى 5 = أول قبشدة.

1	2	3	4	5	
وافق بشدة	وافق	وافق الى حد ما	وافق	وافق بشدة	
ت	البيان				
P1	أفضل تلخيص لتكاليف الإنتاج لـ				سنوات الماضية
P2	تجربتي على استخدام هذا النموذج				سنوات الماضية
P3	أعتقد أن هذا النموذج				سنوات الماضية
P4	في رأيي				سنوات الماضية
P5	زادت أرباح الشركة				سنوات الماضية
P6	أفضل تلخيص لتكاليف الإنتاج لـ				سنوات الماضية
P7	في رأيي				سنوات الماضية
P8	زاد صافي الربح				سنوات الماضية
P9	زاد نسبة الربح إلى إجمالي إيرادات				سنوات الماضية
P10	تجربتي على استخدام هذا النموذج				سنوات الماضية



### APPENDIX 3

#### *Outliers Results (Mahalanobis)*

ID	MAH	ID	MAH	ID	MAH	ID	MAH	ID	MAH	ID	MAH	ID	MAH
1	6.34	50	5.23	99	9.50	148	10.15	197	4.66	246	5.87	295	3.93
2	8.32	51	5.50	100	4.14	149	9.30	198	2.74	247	5.54	296	1.41
3	5.78	52	7.10	101	4.25	150	7.11	199	10.60	248	7.25	297	5.99
4	4.90	53	2.18	102	4.34	151	18.08	200	4.71	249	0.39	298	3.67
5	4.03	54	4.97	103	2.22	152	5.10	201	6.48	250	5.79	299	5.49
6	5.87	55	2.72	104	2.46	153	4.54	202	4.38	251	2.73	300	2.54
7	5.71	56	5.33	105	2.05	154	6.97	203	5.07	252	10.23	301	4.01
8	4.97	57	8.94	106	1.53	155	10.12	204	4.72	253	4.79	302	2.28
9	5.78	58	5.03	107	1.65	156	3.85	205	3.70	254	4.74	303	2.93
10	7.00	59	2.06	108	5.11	157	3.91	206	4.03	255	5.60		
11	5.69	60	4.38	109	2.90	158	6.83	207	5.49	256	4.96		
12	5.27	61	2.43	110	2.58	159	5.46	208	7.24	257	4.13		
13	4.37	62	9.32	111	1.66	160	5.50	209	4.12	258	7.42		
14	5.87	63	2.48	112	4.59	161	6.21	210	9.38	259	5.43		
15	15.08	64	2.69	113	2.58	162	7.10	211	8.26	260	3.18		
16	5.13	65	12.37	114	4.79	163	2.18	212	9.14	261	2.26		
17	2.50	66	2.54	115	2.56	164	2.72	213	13.56	262	2.64		
18	2.45	67	1.27	116	2.03	165	1.88	214	9.17	263	5.89		
19	6.04	68	1.18	117	3.54	166	8.15	215	7.05	264	1.85		
20	3.73	69	3.52	118	4.23	167	5.80	216	6.16	265	4.30		
21	4.65	70	11.19	119	2.43	168	8.14	217	3.23	266	2.52		
22	5.90	71	2.89	120	2.45	169	6.98	218	8.05	267	3.65		
23	4.82	72	3.77	121	7.60	170	2.09	219	4.49	268	2.45		
24	2.27	73	2.35	122	3.98	171	6.42	220	1.91	269	9.20		
25	7.46	74	2.38	123	9.12	172	1.94	221	5.97	270	8.08		
26	2.33	75	4.31	124	4.78	173	2.38	222	3.31	271	6.68		
27	3.52	76	2.52	125	3.69	174	2.53	223	2.19	272	2.88		
28	4.02	77	5.78	<b>126</b>	<b>21.60</b>	175	2.89	224	3.71	273	3.07		
29	4.35	78	3.29	127	1.62	176	6.73	225	2.31	274	4.61		
30	0.75	79	4.25	128	1.30	177	3.05	226	3.01	275	4.14		
31	6.58	80	2.57	129	6.81	178	1.60	227	2.40	276	6.10		
32	6.63	81	7.32	130	4.09	179	8.94	228	6.86	277	3.01		
33	5.06	82	2.82	131	2.80	180	3.31	229	4.41	278	1.34		
34	5.30	83	5.87	132	1.46	181	3.25	230	3.20	279	2.11		
35	1.89	84	2.10	133	5.97	182	8.15	231	8.26	280	4.35		

Appendix 3 (continued)

***Outliers Results (Mahalanobis)***

36	2.71	85	6.26	134	3.26	183	1.28	232	9.12	281	11.85
37	3.76	86	2.64	135	1.08	184	5.73	233	4.72	282	4.39
38	9.30	87	5.34	136	4.09	185	9.78	234	3.53	283	5.70
39	5.72	88	3.79	137	1.91	186	4.93	235	1.52	284	3.19
40	6.67	89	3.97	138	10.01	187	2.45	236	2.67	285	8.78
41	4.65	90	6.17	139	3.10	188	2.51	237	4.44	286	6.98
42	4.06	91	3.26	140	0.97	189	2.43	238	4.57	287	2.63
43	5.50	92	4.92	141	3.11	190	10.19	239	2.78	288	7.46
44	10.12	93	1.93	142	20.17	191	3.33	240	3.28	289	2.00
45	4.70	94	3.96	143	5.25	192	3.92	241	10.45	290	1.92
46	3.26	95	3.41	144	5.69	193	5.14	242	6.34	291	6.25
47	6.56	96	4.32	<b>145</b>	<b>28.94</b>	194	7.63	243	6.21	292	4.26
48	3.88	97	3.64	146	3.19	195	2.48	244	5.26	293	3.43
49	6.83	98	3.29	147	1.86	196	5.08	245	9.13	294	4.93



**UUM**  
Universiti Utara Malaysia