THE EFFECT OF CONTINGENCY FACTORS AND ABC IMPLEMENTATION SUCCESS ON ORGANIZATIONAL PERFORMANCE IN IRAQI MANUFACTURING SECTOR

FAEQ MALALLAH MAHMOOD ALBALAKI

DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
April 2019

THE EFFECT OF CONTINGENCY FACTORS AND ABC IMPLEMENTATION SUCCESS ON ORGANIZATIONAL PERFORMANCE IN IRAQI MANUFACTURING SECTOR

By
FAEQ MALALLAH MAHMOOD ALBALAKI

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)

FAEQ MALALLAH MAHMOOD

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):

THE EFFECT OF CONTINGENCY FACTORS AND ABC IMPLEMENTATION SUCCESS ON ORGANIZATIONAL PERFORMANCE IN IRAQI MANUFACTURING SECTOR

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:
29 Julai 2018.
(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:
29 July 2018.

Pengerusi Viva *(Chairman for Viva)*	: **Assoc. Prof. Dr. Siti Zabedah Hj. Saidin**	Tandatangan *(Signature)*	
Pemeriksa Luar *(External Examiner)*	: **Assoc. Prof. Dr. Sofiah Md. Auzair (UKM)**	Tandatangan *(Signature)*	
Pemeriksa Dalam *(External Examiner)*	: **Dr. Ahmadasri Alaudin**	Tandatangan *(Signature)*	

Tarikh: **29 July 2018**
(Date)

Nama Pelajar (Name of Student)	:	**Faeq Malallah Mahmood**
Tajuk Tesis / Disertasi *(Title of the Thesis / Dissertation)*	:	**THE EFFECT OF CONTINGENCY FACTORS AND ABC IMPLEMENTATION SUCCESS ON ORGANIZATIONAL PERFORMANCE IN IRAQI MANUFACTURING SECTOR**
Program Pengajian *(Programme of Study)*	:	**Doctor of Philosophy**
Nama Penyelia/Penyelia-penyelia *(Name of Supervisor/Supervisors)*	:	**Assoc. Prof. Dr. Zarifah Abdullah**
Nama Penyelia/Penyelia-penyelia *(Name of Supervisor/Supervisors)*	:	**Assoc. Prof. Dr. Hasnah Kamardin**

Tandatangan

Tandatangan

PERMISSION TO USE

In presenting this thesis in fulfillment of the requirements for a Post Graduate degree from 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 purpose may be granted by my supervisors 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 shall be given to me and to the Universiti Utara Malaysia (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

The factors responsible for the successful implementation of activity-based costing (ABC) systems are still not much known especially among the developing countries. Additionally, there are still rooms for investigation into how external, internal and technological factors enhance the implementation of ABC and organizational performance. As such, this study employs the contingency theory to examine the relationships between contingency factors, ABC implementation success (ABCIS) and organizational performance, and the mediating effect of ABCIS on the relationships between contingency factors and organizational performance. This study is based on a questionnaire survey conducted on 114 respondents consisting of accounting managers of manufacturing industry in Iraq. The data collected was analyzed using both SPSS and PLS3-SEM. The results reveal that environmental uncertainty, market orientation, cost-leadership strategy, vertical decentralization and information technology (IT) have significant and positive effects on ABCIS. Differentiation strategy and horizontal decentralization have significant but negative effect on ABCIS. The results also demonstrate that ABCIS, cost-leadership strategy, vertical decentralization and IT have significant and positive effects on organizational performance. Horizontal decentralization shows a negative and significant association with performance, but there is no significant effect of environmental uncertainty, market orientation and differentiation strategy on organizational performance. Also, this study shows that ABCIS significantly mediates the relationship between environmental uncertainty, market orientation, cost-leadership strategy, differentiation strategy, IT and organizational performance. Meanwhile, the mediating effect of ABCIS is not significant on the decentralized structure-performance relationship. The results also support the combined effects of contingency factors on ABCIS and organizational performance. Finally, the results show that different contingency factors are correlated with ABC at different levels of implementation. This study theoretically contributes to a growing body of knowledge on the fit between contingency factors, ABC systems and organizational performance. Practically, the findings explain how contingencies and ABC systems enhance the performance of manufacturing companies.

Keywords: activity-based costing implementation success, contingency factors, organizational performance, manufacturing companies, Iraq.

ABSTRAK

Faktor-faktor yang bertanggungjawab ke atas kejayaan pelaksanaan sistem pengekosan berasaskan aktiviti (ABC) masih banyak yang belum dikenal pasti, terutamanya di kebanyakan negara membangun. Tambahan lagi, masih terdapat ruang untuk kajian menyeluruh tentang bagaimana faktor luaran, dalaman dan teknologi boleh meningkatkan pelaksanaan ABC dan prestasi organisasi. Oleh yang demikian, kajian ini menggunakan teori luar jangka untuk mengkaji hubungan antara faktor luar jangka, kejayaan pelaksanaan ABC (ABCIS) dan prestasi organisasi, dan kesan perantaraan ABCIS terhadap hubungan antara faktor luar jangka dengan prestasi organisasi. Kajian ini dijalankan berdasarkan soal selidik tinjauan yang dijalankan terhadap 114 responden yang terdiri daripada pengurus perakaunan industri pembuatan di Iraq. Data yang dikumpulkan dianalisis menggunakan SPSS dan PLS3-SEM. Hasil kajian menunjukkan ketidaktentuan persekitaran, orientasi pasaran, strategi kepimpinan kos, disentralisasi menegak dan teknologi makumat (IT) mempunyai kesan signifikan yang positif terhadap ABCIS. Strategi pembezaan dan disentalisasi mendatar mempunyai kesan yang signifikan tetapi negatif terhadap ABCIS. Dapatan juga menunjukkan ABCIS, strategi kempimpinan kos, disentralisasi menegak dan IT mempunyai kesan yang signifikan dan positif terhadap prestasi organisasi. Disentralisasi mendatar menunjukkan perkaitan yang negatif dan signifikan dengan prestasi organisasi, tetapi ketidaktentuan persekitaran, orientasi pasaran dan strategi pembezaan tidak mempunyai kesan yang signifikan ke atas prestasi organisasi. Selain itu, kajian ini juga menunjukkan ABCIS mengantara secara signifikan hubungan antara ketidaktentuan persekitaran, orientasi pasaran, strategi kepimpinan kos, strategi pembezaan, IT dan prestasi organisasi. Manakala, kesan perantaraan ABCIS tidak signifikan terhadap hubungan struktur-struktur disentralisasi-prestasi. Hasil kajian juga menyokong kesan gabungan faktor luar jangka terhadap ABCIS dan prestasi organisasi. Akhir sekali, hasil kajian menunjukkan faktor luar jangka yang berbeza mempunyai perkaitan dengan ABC pada peringkat pelaksanaan yang berbeza-beza. Secara teori, kajian ini menyumbang kepada perkembangan ilmu pengetahuan mengenai faktor luar jangka, sistem ABC dan prestasi organisasi. Secara praktikalnya pula, hasil kajian menerangkan bagaimana faktor luar jangka dan sistem ABC meningkatkan prestasi syarikat pembuatan.

Kata kunci: kejayaan pelaksanaan pengekosan berasaskan aktiviti, faktor luar jangka, prestasi organisasi, syarikat pembuatan, Iraq.

ACKNOWLEDGEMENT

First and foremost, I am grateful to the Almighty Allah for giving me the opportunity to complete my PhD thesis.

Also, I would like to express my most profound appreciation to my main supervisor Associate Professor Dr. Zarifah Abdullah for her support and encouragement during this project. She assisted me immensely in focusing my thinking towards the right direction and gave me her valuable ideas, comments and suggestions. She is an inspiration; without which I wouldn't have completed this thesis.

I would also like to express my sincere gratitude to my co-supervisor Associate Professor Dr. Hasnah Kamardin for her guidance throughout the completion of this thesis. She has made valuable comments and suggestions at every stage of my learning process. Under her guidance I successfully overcame many difficulties and learnt a lot.

I am also indebted to Universiti Utara Malaysia and the Iraqi government. The former provided a conducive environment and numerous resources that are ideal for conducting quality research. Meanwhile, I thank the latter for their unwavering support. I am also thankful to all my colleagues and friends for their supportive roles.

I especially appreciate the support of my beloved wife. I would like to confess that without her by my side, it would have been impossible for me to complete this thesis. Finally, to my mother and my entire family, my heartiest thanks to all of them for their prayers.

May ALLAH S.W.T bless you all for your kindness.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

ABB	Activity-Based Budgeting
ABC	Activity Based Costing
ABCIS	ABC Implementation Success
ABM	Activity-Based Management
BSC	Balanced Scorecard
CBI	Central Bank of Iraq
CFO	Chief Finance Officers
CPA	Customer Profitability Analysis
CRM	Customer Relationship Management
CSO	Central Statistical Organization in Iraq
CSV	Comma Separated Files
ERP	Enterprise Resources Planning
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
HCM	Hierarchical Construct Model
HOC	Higher Order Construct
HOM	Higher-Order Model
IT	Information Technology
LOC	Lower Order Construct
MA	Management Accounting
MAS	Management Accounting System
PLS	Partial Least Squares
PMS	Performance Measurement System
ROI	Return On Investment
SEM	Structural Equation Model

CHAPTER ONE

INTRODUCTION

1.0 Preface

This chapter focuses mainly on the background, the problem statement, the research questions and the research objectives. This chapter entails the fundamental impetus for conducting this research. The problem statements which include both the theoretical gaps and the practical issues that motivate the surge of this research are also presented in this chapter. This chapter also presents the specific research questions and the research objectives. The scope of the study, the significance of the study, definition of key terms and organization of the thesis report are also discussed in this chapter.

1.1 Background of the Study

The quest of keeping abreast with globalization, intensive market competition and sundry of others are universally affecting the operations, orientations and structures of the manufacturing sectors (Gupta & Galloway, 2003; Qian & Ben-Arieh, 2008). The changes in the competitive environment, technology and organizational structure (which are otherwise referred as contingencies) affect the performance of organizations (Kalkan, Erdil, & Çetinkaya, 2011) and concurrently stimulate organizations to change its management accounting (MA) practices in order to achieve a better fit with these changes (Williams & Seaman, 2002). As such, the implementation of Activity Based Costing (ABC) system for generating accurate costing information and also for making effective decisions to improve organizational performance in today's advanced and highly competitive manufacturing environment

(Maiga and Jacobs, 2008) continues to receive momentous attentions from both practitioners and researchers (Askarany & Yazdifar, 2012; Zaman, 2009).

More specifically, ABC has gained more attention from researchers because of the increased challenges and competitiveness of the current business environment and the huge developments in the technological environment (Narayanan & Kaplan, 2001; Stapleton, Pati, Beach, & Julmanichoti, 2004). The ABC system was purposefully initiated to correct the deficiencies in the traditional costing systems (Charaf & Bescos, 2013; Gosselin, 2006), through the use of multiple cost drivers (Cooper & Kaplan, 1992). Therefore, ABC system helps to identify problems and opportunities and to formulate solutions to problems or proffer ways to take advantage of opportunities. It does so by providing financial and non-financial information about activities, cost objects and process control information (Gunasekaran, Williams, & McGaughey, 2005).

Some other researchers have discussed ABC as a sophisticated system for optimizing business practices and organizational performance (Abdul Majid & Sulaiman, 2008; Ittner, Lanen, & Larcker, 2002). Putting the argument of Gunasekaran et al. (2005) into perspective, it is conceived that measuring organizational performance is critical to the success of any profit making organization because it creates understanding, molds behavior and improves competitiveness. Meanwhile, studies have argued that ABC provides sophisticated cost information which have great impact on the measurement of firm performance (Tsai & Hung, 2009). These thoughts have boosted a growing number of companies to adopt and implement ABC system (Banker, Bardhan, & Chen, 2008).

Since the inception of ABC as a costing system, many studies have provided myriad of arguments on the conceptualization, implementation and effectiveness of ABC (Brierley, 2011; Stefano & Filho, 2013). In essence, researchers are currently motivated in determining factors that influence the successful implementation of ABC and the possible impact of implementing ABC on organizational performance (Agbejule, 2006; Al-Omiri & Drury, 2007). The conception of ABC implementation success (ABCIS) and the factors that are responsible for this success are still unknown perhaps because only a few researches (Elhamma and Zhang (2013: Fadzil & Rababah, 2012; Liu & Pan, 2007) on the implementation of ABC have evolved mainly in the context of developing countries, such as Iraq (Salman & Alwan, 2015).

Subsequently, researchers such as Al-Khalidy (2004) and Abdullah (2012) have reported that the implementation of ABC has improved the lingering challenges of high production costs facing the Iraqi manufacturing sector. Also, Al-Areda (2015) explained how the application of ABC in one of the manufacturing companies in Iraq has been impactful on the performance of this company. Nonetheless, the manufacturing sector in Iraq is yet to witness the complete output of implementing ABC (Salman and Alwan, 2015). Since there are a handful number (see Section 2.3.1) of manufacturing companies that are currently implementing ABC in Iraq (Albieaj and Alkraawi, 2014; Farhood, 2005), hence there is a domineering necessity to discern the success level of ABC implementation in the Iraqi manufacturing sector. In addition, understanding the factors that influence the successful implementation of ABC and the effects of the successful implementation of ABC on organizational performance among manufacturing companies is a serious question begging for answer especially in the context of Iraqi manufacturing sector.

Indeed, the suitability of implementing MA techniques like ABC may rely on the conditions surrounding the implementation of these sophisticated techniques. Hence, contingency theory perspective (Tillema, 2005), the effect of contingency variables on the implementation of ABC, as well as the output of the implementation on organizational performance, cannot be undermined (Anderson, 1995; Yapa & Kongchan, 2012). Also, Cooper and Zmud (1990) distinguished between different stages of ABC implementation (see Section 1.7.1). Gosselin (1997) and Krumwiede (1998) demonstrated that different contextual factors are responsible for the successful implementation of ABC across various stages. In the same light, Anderson and Young (1999) argued that failures of ABC implementation in organizations had instigated researchers to recommend contextual and process factors. Contextual environment (Malmi, 1997) or different contingency variables (Shields, 1995) faced by each organization can lead to the failure of ABC implementation (Zhang & Isa, 2010a). The lack of success to recognize the different levels of ABC implementation might also negatively affect the outcomes of contingency based studies (Baird, Harrison, & Reeve, 2004).

As such, some studies, for example, Bastian and Muchlish (2012), Hoque (2011), Ismail and Isa (2011), Muslichah (2013) and Soobaroyen and Poorundersing (2008) have examined contingency relationships between contingent factors, management accounting system (MAS) and performance. Gordon and Miller (1976) were among the first to encourage this trend of contingency-based inquiry when they postulated that decision-making style and MAS are related to certain contingency factors such as environmental and organizational structure. Chenhall (2003) has provided a systematic review of the findings of contingency-oriented MA research and offered some

propositions ranging from management control system to organizational context. Chenhall's (2003) study identified six contingency factors including environmental uncertainty, competitive strategies, organizational structures, information technology (IT), organizational culture and size. However, Chenhall (2003) claimed that researches focusing on changes in market positions have been rare in contingency-based MAS literature. Meanwhile, Cadez and Guilding (2008) asserted that market orientation has a contingency relationship with strategic MA including activity-based approach.

The successful implementation of ABC as a strategic costing system in manufacturing organizations is pertinent to the specific conditions of the factors above (Al-Omiri & Drury, 2007; Al-Sayed & Dugdale, 2015). In other words, these contingency factors are said to play an essential role in achieving successful implementation of ABC and determining the impact of ABC's success on improving performance (Cagwin & Bouwman, 2002). Undoubtedly, the level of performance is also affected by these contingencies (Otley, 1980). Therefore, the contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structures and IT) are understudied in the current research. Justifications for not taking the culture and size factors into consideration within the present study's variables have been discussed under the Contingency Factors Section (see Section 2.2).

In the theoretical perspective of contingency theorists, the particular feature of an appropriate cost accounting system depends on the specific circumstances within an organization (Langfield-Smith, 1997; Tillema, 2005). Hence, an effective cost system must have the ability to adapt to changes in external circumstances as well as internal

factors (Gliaubicas & Kanapickienė, 2015). For instance, studies in the realm of MAS literature have affirmed that environmental uncertainty is one of the contingency factors that can determine the success of MAS design used by an organization (Arnaboldi & Lapsley, 2005). It was asserted that high level of uncertainty increases the need for companies to incorporate more non-financial data into its accounting information system (Williams & Seaman, 2002) and adopt more sophisticated MA techniques to overcome issues of uncertainties and make decisions more appropriate (Muslichah, 2013; Chenhall & Morris, 1986).

In a similar context, researchers have suggested that customer orientation, competitor orientation and coordination of all company activities are the three focal components of market orientation that often have a differential effect on organizational performance (McManus, 2013). For instance, Narver and Slater (1990) asserted that market orientation could, in one way or the other, affect firms performance. Also, it has been argued that firms that are facing intensive market competition are expected to pay contemplated attention to the implementation of ABC considering its role in enhancing both the financial and non-financial performance of the organization (Hoque, 2011).

Also, the competitive strategy of an organization is also another essential contextual factor (Bhimani, Gosselin, & Ncube, 2005). To this effect, studies have argued that competitive strategies influence organizational performance (Allen & Helms, 2006). Also, competitive strategies have been explained to be complemented with different organizational factors including ABC (Alsoboa & Aldehayyat, 2013; Krumwiede & Charles, 2014).

Consistently, past studies have argued that organizational structure is one of the well-known contingency factor (Chia, 1995; Gosselin, 1997), that has an enormous effect on organizational performance (Csaszar, 2012; Farhanghi, Abbaspour, & Ghassemi, 2013). Other researchers have also argued that MAS depends hugely on decentralized organizational structure (Ajibolade, 2013b; Hammad, Jusoh, & Ghozali, 2013). Meanwhile, literature also indicates that IT is perceived as one of the major causes for the application of modern MA techniques such as ABC (Haldma & Laats, 2002; Waweru, Hoque, & Uliana, 2004). In addition, Choe (2004) stressed that IT as a contingency factor affects organizational performance through MA information systems, and contributes to gain a competitive advantage (Maiga, 2012).

Contingency theory has been a conventional theory used in the realm of MAS studies (Islam & Hu, 2012). Because it provides the understanding of the contextual factors that influence the success of ABC implementations and organizational performance (Luft & Shields, 2003). In essence, contingency theory assumes that no "universal" best model of MAS is generally applicable in every organization (Otley, 2016). Thus, higher performance is achieved through a good fit between MA practices, such as ABC, and contingencies (Tosi and Slocum, 1984; Donaldson, 2001; Mia & Clarke, 1999). This implies that the role of contingency factors such as environmental uncertainty, market orientation, competitive strategies, organizational structures and IT to enhance organizational performance are influenced by the implementation of sophisticated MA techniques such as ABC (Ahmad & Zabri, 2015; Al-Omiri & Drury, 2007; Gerdin, 2005a; Hoque, 2004; Uyar & Kuzey, 2016). However, limited studies have attempted to develop a validated model which incorporates these highlighted contingency factors in a single model.

A review of the previous MA literature (e.g. Cadez & Guilding, 2008; Chong & Chong, 1997; Hoque, 2011; Ismail & Isa, 2011; Mia & Clarke, 1999; McManus, 2013; Uyar & Kuzey, 2016) reveals that, despite the recognition of the mediating role of MAS or strategic MA techniques, there have been few studies that explicitly examine the mediating role of ABC systems on the relationship between contingency factors and organizational performance. In light of this existing gap in the MA literature, the current study empirically examines the effect of contingency factors on the performance of Iraqi manufacturing companies and whether the implementation of ABC mediates this relationship. A good match between contingency factors and ABC implementation is imperative to improve performance (Anderson & Young, 1999), and research towards this direction is essential. Especially, when the empirical research on ABC implementation and the performance of manufacturing companies in Iraq are not much (Al-Areda, 2015).

1.1.1 An Overview of the Iraqi Manufacturing Industry

The industrial sector in Iraq developed significantly during the 1970s (Al-Shawi & Mohamed, 2011). This was evident by the increased contribution of the industrial sector in Gross Domestic Product (GDP) from 9.7% in 1968 to 11.6% in 1975 (Mohamed, 2007). By the end of the 1970s, a new phase had begun, during which Iraq was exposed to four devastating wars and thirteen years of economic sanctions. The first war, which was tagged as the first Gulf War, began on September 1980 with Iran and ended in August 1988. Only three years later, the second Gulf War was started. This war was also followed by economic sanctions from 1991 to 2003, which ended with the occupation of Iraq by the United States of America on 9 April 2003. Finally,

Iraq entered into another serious war from 2014 to 2017 with the notorious terrorist groups called the Islamic State of Iraq and Syria (Kadhim, 2017; Al-Musawi, 2013).

Given the length of the economic embargo and the conditions of wars, the manufacturing industry in Iraq faced many obstacles and challenges that hampered the development of its performance. These challenges include weak infrastructure, inflation, technological obsolescence, low levels of investment, lack of production inputs, widespread of financial and administrative corruption, and the weakness of the state's role in supporting the industrial sector (Jasem and Zhou, 2014; Mohamed, 2007).

After 2003, Iraqi government developed some plans for the rehabilitation of industrial companies. During 2008-2011, six industrial cities in different provinces such as Baghdad, Dhi Qar, Basra, Mosul, Anbar and Kirkuk were established (Nasuri and Saher, 2014; Almaemuri, 2014). By 2009, foreign direct investment (FDI) totalled more than $ 3.8 billion in northern Iraq alone. More than 30% of this FDI was for the industry sector (Hama, 2017). These and many other indices had started showing that the Iraqi manufacturing sector is on the way to recovery. Recently, the Iraqi Council of Representatives in December 2016 issued a set of decisions, operational procedures and policies which could serve as a panacea against the challenges facing the manufacturing sector. The enactments included a reduction in fuel prices, tax breaks, adoption of the quality system, the priority of the national products and the involvement of the private sector in the processing of contracts for government offices. Further, new investment contracts were concluded with many foreign companies to support the development of the manufacturing industry (Almaemuri, 2014).

Nonetheless, the performance of industrial companies has not improved significantly due to high production costs, security instability, open importation and high level of competition (Hashem & Mahmood, 2014; Jasem and Zhou, 2014).

The challenges mentioned above have forced manufacturing companies to adopt new technologies, methods and strategies for their survival (Al-Najar & Kadhim, 2017; Almaemuri, 2014). In other words, the transition from a centrally planned economy to a market economy has changed the standards, policies and strategies under which the Iraqi manufacturing industry operates (Mahmood, 2013). Therefore, the advancement of the manufacturing industry in Iraq requires understanding all environmental variables (internal and external) that affect the development of the performance of the industrial sector (Al-Najar & Kadhim, 2017). The following section shed more lights on the issues that are pertinent to internal and external conditions of the Iraqi manufacturing sector.

1.1.2 Issues in the Iraqi Manufacturing Sector

Like in every other economy, the Iraqi manufacturing sector contributes immensely to the development and sustainability of the Iraqi economy (Al-Janabi, 2013). This is because the manufacturing sector does not only impact on economy through diversification and employment, but also has a ripple effect on the development of other sectors of the economy (Hashem and Mahmood, 2014). The report of Central Statistical Organization in Iraq (CSO) estimated that the added value to GDP of Iraq by the Iraqi manufacturing sector was 1964 billion Iraqi dinars in 2015 (CSO, 2015). Undeniably, the Iraqi economy has faced some downturn which was due to the inconsistency and the complexity in the industrial environment of Iraq (Al-Shawi &

Mohamed, 2011; Central Bank of Iraq (CBI), 2014). These complexity and inconsistency were detrimental to the development of the sector itself, regarding technological development and lack of competitive advantages (Kaabi & Mustafa, 2015).

Meanwhile, the entire Iraqi economy among other things were enormously affected by the military invasion and occupation of Iraq in 2003 (Almaemuri, 2014). It is no gainsaying that the invasion literally put the industrial development of Iraq into a complete standstill (Alazzawi, 2009). Subsequently, Iraq became a market for imported products and a source of raw materials at low prices. This severity of the invasion was also evident in the Iraqi manufacturing sector's downturn of production capabilities (Mohamed & Yacoub, 2012; Mohamed & Radi, 2013). This however, enforces numerous challenges which include the inability to compete with foreign goods, which is characterized by low costs and prices (Salman, 2012). Subsequently, such detriment resulted in the decline of industrial sector's contribution to GDP from 13.9 % in 1988 to 4.6 % in 2003, and further decrease to 2.9 % in 2014 at the growth rate of 20 % compared to 2013 (CBI, 2014). Some other authors, for example, Al-Shawi and Mohamed (2011) have argued that the decline in the GDP of the industrial sector can also be attributed to the growth of oil sector (46.4 %) in the composition of GDP. On the other hand, Al-Janabi (2013) holds that the Iraqi government is responsible for the downfall of the manufacturing sector because of the insufficient attention given to this sector. In other words, the later and former points of arguments are unanimous on the bone of contention, which is the decline of productivity and performance of the Iraqi manufacturing sector.

Following these setbacks, academicians have contributed by discussing the causes of the challenges. For instance, Hashem and Mahmood (2014) added that the problems of productivity and performance downturn faced by the Iraqi manufacturing sector could be attributed to the insufficient supply of production materials such as electrical power and natural gas. Also, the manufacturing industry in Iraq are faced with unsecured market and environment, technological obsolescence, external competition, high production costs and non-optimization of production capacities all of which have led to the current unimpressive performance of Iraqi manufacturing sector (Hashem and Mahmood, 2014). In addition, the poor performance of some Iraqi companies is attributed to the incompatibility of the organizational structure with the functions of performance evaluation (Ibrahim, 2014) and the lack of awareness among these companies of the importance of employing appropriate competitive strategies such as cost leadership and differentiation strategy (Jabr, Gulab, & Kazem, 2009). Al-Ghaban & Hussain (2009) added that the incompatibility of traditional MA techniques, that are still used by some of the Iraqi manufacturing companies, with the rapid changes in the Iraqi's competitive business environment was behind the failure of these companies to overcome the challenges that hindered the improvement of their performance.

However, the open importation of products into Iraq not only has resulted in some challenges to local products, but also has increased the intensity of competition in the manufacturing sector (Al-Shawi & Mohamed, 2011; Jaf, Sabr, & Nader, 2015). Furthermore, Hashem and Mahmood (2014) added that the challenge is evident by the inconsistent and insignificant contribution of the sector to the GDP with regards to the low capabilities and few investment made on the industry. In the light of this, Suroor and Omar (2013) and Salman (2012) have stressed that certain factors are responsible

for the cause of the current decline and those factors should be placed under serious scrutiny to ensure improvement in the efficacy and performance of the Iraqi manufacturing sector. Also, Al-Shabani and Al-Hadede (2010) have stressed that ignoring the aforementioned factors when designing cost systems, may impose severe obstacles to the success of the implementation of modern cost management strategies. In other words, it is a dominating fact for companies in the manufacturing sector in Iraq to focus on advanced MA techniques, market orientation, environmental uncertainty, organizational structure, strategies and IT that are responsible for improving their performance (Abdul Emam, 2006; Al-Ghaban & Hussain, 2009; Al-Lami & Ismael, 2011; Ibrahim, 2014; Jaf et al., 2015).

Also, the performance of the manufacturing sector cannot be discussed in separation with the type, function and sophistication of the MA techniques. This is because MA techniques are crucial for companies to cope with different challenges and also provide astute information that does not only help in overcoming the challenges of changes in business environment, in technology and structure of organization but also help in improving organizational performance (Jaf et al., 2015). In light of the challenges facing the Iraqi industrial companies, it is imperative to increase the level of attention exerted on the adoption of strategic MA techniques such as ABC, which is in line with the advanced manufacturing environment, which has proven its effectiveness in monitoring and evaluating non-financial as well as financial performance (Al-Areda, 2015; Radi & Ismail, 2011). Given the above issues, the present study discusses the following problem statements.

1.2 Problem Statement

Recently, many studies (e.g. Al-Shawi and Mohamed, 2011; Hashem and Mahmood, 2014) have highlighted issues of high production costs and low performance of Iraqi manufacturing companies due to the economic, political and security conditions of the country, especially after the 2003 military invasion, which caused many Iraqi manufacturing companies to stop operating and caused their liquidation. The remaining companies were reorganized, restructured and re-engineered (Al-Najar & Kadhim, 2017) mainly by introducing advanced manufacturing technologies, adopting product diversification and by re-strategizing to ensure survival in this turbulent environment (Wanas, 2017; Al-Ani & Abdullah, 2014). However, these advancements led to a complexity in the production process and changed the cost structure of the manufacturing companies to be more indirectly related to their activities (Albieaj and Alkraawi, 2014).

In the light of these changes, many companies recognized that traditional costing system could no more provide them accurate cost information, and working with this inaccurate information would result to a continuous decline in their performance (Al-Robaaiy, 2018; Radi & Ismail, 2011; Abdullah, 2012). Therefore, ABC system, being an advanced costing technique, was introduced to help Iraqi companies regain their competitive power under their current circumstances (Youssef & Al-Ani, 2016). Evidently, some studies (e.g. Hassouni, 2012; Jaf et al., 2015) have shown that the extent of ABC implementation is increasing (high extent, according to Wanas (2017)) among manufacturing companies. The results of these studies reported that ABC system provides the most accurate information on all organizational activities as

required, thus stand the chance to provide solutions to address problems of high production costs and low performance of the Iraqi manufacturing companies.

However, the prior ABC-based studies conducted in Iraq have five inherent limitations. First, some of the studies (e.g. Farhood 2005; Yaqoob and Bachay 2017) only concentrated on the early version of ABC as a full costing system. Subsequently, other levels and other potential benefits of the ABC system that could be developed in practice are largely ignored. Second, early surveys (e.g. Hassouni, 2012; Jaf et al., 2015) provided an unclear definition of the studied ABC system, so the terms could be misinterpreted. Third, most studies (e.g. Abdullah, 2012; Al-Area, 2015; Salman and Alwan, 2015; Al-Tumimi, 2006) employed a case study methodology to report on the implementation of ABC. However, the generalizability of the case study results with regard to the effectiveness of ABCIS is questionable. Fourth, inconsistent instruments have been adopted for measuring the implementation of ABC. For example, Albieaj and Alkraawi (2014) and Hassouni (2012) have employed instruments derived from limited questions for obtaining the data of ABC implementation rather than using a composite measure calculated from multiple items. Fifth, there has been a lack of investigation on the functionality and compatibility issues of ABC systems. For instance, quantitative studies (e.g. Anderson and Young, 1999; Al-Omiri and Drury, 2007; Jusoh and Miryazdi, 2015; Zhang, Hoque, and Isa, 2015) attempted to link contingency factors with ABC success, but evidence of this kind of research in Iraqi manufacturing companies is scarce.

Additionally, little attention has been paid to examining the levels of ABC implementation in the Iraqi literature. Most of these studies have not demonstrated that

ABC systems may be implemented at different levels. Even in developed countries, Baird, Harrison, and Reeve (2007) argued that the effect of contingency factors on the levels of ABC implementation is scarce in the literature. These shortcomings and limitations may be a hindrance to the successful implementation of ABC systems. Therefore, the current study seeks to address these limitations to allow for a better understanding of the full capability of ABC systems to improve the performance of Iraqi manufacturing companies.

As time progresses, the ABC system has become the basis and background for most of the modern MA techniques (Hoque, 2001). Hence, the ABC system has been prioritized over other MA techniques (Maiga & Jacobs, 2003). However, previous researchers who have examined the impact of implementing ABC on organizational performance (Zaman, 2009) affirmed that the body of knowledge had left a noticeable gap in measuring the perception of ABC and the impact of its implementation on overall performance. Besides, little studies have attempted to explain the impact of implementing ABC on improving firm's economic performance (Banker et al., 2008; Ittner et al., 2002) mainly from the perspective of the Arab corporate world including Iraq (Elhamma & Zhang, 2013; Talpe, 2014). Therefore, examining the impact of implementation of ABC on performance in the Iraqi manufacturing sector is needed more than elsewhere, particularly because improving the performance of manufacturing companies, regarding competitiveness and contribution to the composition of GDP is highly prioritized in Iraq.

To date, the question on how the contingency factors affect the implementation of ABC and the performance of manufacturing companies is not answered in the Iraqi

literature. Meanwhile, there is limited research on how the implementation of ABC and organizational performance are driven by the changes in the external environment, technological and organizational factors in developing economies (Mat & Smith, 2014). For instance, Chenhall (2003) explained that competitive strategy is critical to the efficiency of any MAS, including ABC. Hence, the implementation of ABC, is one of the highly popular MAS, can be affected by the types of competitive strategy such as cost leadership strategy and differentiation strategy (Frey & Gordon, 1999; Hoque, 2004). However, the influence of specific strategies on organizational performance and the mediating role of ABCIS have received little attention from past researchers in this realm (Krumwiede & Charles, 2014). In view of this, the current study considers examining the role of different competitive strategies on ABCIS and organizational performance.

Consistently, Lal and Hassel (1998) asserted that high level of uncertainty influences the implementation of MAS which subsequently has a ripple effect on managerial decisions and firm performance. Even so, previous studies have examined environmental uncertainty in the context of innovations and MAS other than ABC success (Elhamma, 2015). Therefore, it is essential to further empirical examination of the effect of environmental uncertainty on the success of ABC implementation and organizational performance.

Additionally, the successful adoption of innovations such as ABC (Liu & Pan, 2007) does not only offer organizations an edge in the competitive market, but also improves organizational performance (Mia & Clarke, 1999). However, Cadez and Guilding (2008) and Erdil, Erdil, and Keskin (2004) argued that the nexus between market

orientation, innovations (such as ABC implementation) and firm performance is yet to be affirmed in the literature. As such, examining the relations between market orientation, ABCIS and organizational performance is one of the focuses of this present study.

Notably, Pertusa-Ortega, Molina-Azorin, and Claver-Cortes (2010) asserted that other indirectly related factors could influence the effect of organizational structures on performance. However examining the indirect impact of the successful implementation of ABC, as a good accounting information system, on the connection between decentralized structures and performance is lacking in the current MA literature (Abernethy & Bouwens, 2005). Thus, the present study considers contributing to the current body of knowledge by investigating the effect of decentralized structures on ABCIS and organizational performance.

Furthermore, Anderson and Young (1999) have acknowledged that there are important linkages between perceived success of ABC implementation and advanced IT for manufacturing practices. However, the link between IT integration, ABCIS and manufacturing performance have received little attention from past researchers both empirically and theoretically (Maiga, Nilsson, and Jacobs, 2013). Therefore, it is crucial to further empirical examination on the effect of IT on ABCIS and organizational performance.

It is increasingly becoming notable in the MA literature that the most significant way to advance the current findings on ABC system is by determining the mediating role of activity-based approach, being one of the techniques of strategic MA, on the

relationship between contingency factors and organizational performance (Abdul Rasid, Abdul Rahman, Ismail, Osman, and Amin, 2010; Cadez and Guilding, 2008). Examining the mediating role of ABC is necessitated by the level of consistent findings on the significant relationship between contingency factors and activity-based approach (Arnaboldi and Lapsley, 2005; Askarany & Yazdifar, 2012; Shields, 1995; Liu & Pan, 2007). Also, researchers are considerably consistent on the significant relationship between activity-based approach and organizational performance (Zhang & Isa, 2011; Zaman, 2009). Against this backdrop and consistent with the argument proffered by Zhao, Lynch, & Chen (2010), the implementation of ABC is expected to play a mediating role between contingency factors and organizational performance.

However, much emphasis has not been laid on the mediating role of ABC, coupled with the fact that extant literatures have provided limited empirical evidence on the mediating effect of advanced MA practices such as ABC implementation on firm performance (Baines and Langfield-Smith, 2003; Ismail & Isa, 2011; Mat & Smith, 2014). Frazier, Tix, and Barron (2004) argued that a mediating variable is required to explain and enhance the relationship between the independent variable (contingency factors) and the dependent variable (organizational performance). In spite of this, evidence on how ABC implementation has contributed to the relationship between contingency factors and organizational performance are scarce in the developing countries. As such, this study considers examining the mediating role of ABCIS with regards to the effect of contingency factors and organizational performance.

Given the theoretical and practical gaps highlighted above, the current study focuses on the effect of a variety of contingency variables on ABCIS and the performance of

Iraqi industrial companies. Also, this current study aims at examining the mediating effect of ABCIS on the relationship between contingency factors and the financial and non-financial organizational performance of Iraqi industrial companies. The contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structure and IT) that are understudied in current research are considered relevant contingencies and circumstances affecting the performance of organizations in the Iraqi manufacturing sector with regards to their current challenges.

1.3 Research Questions

Given the gaps highlighted in the above section, this study raises a broad research question as follows: Does a fit exist between contingency factors, ABCIS and organizational performance in the Iraqi manufacturing sector? To address this question, the current study seeks to answer the following questions:

1. What is the level of ABC implementation among Iraqi manufacturing companies?
2. Do contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structure and IT) have significant effects on ABC implementation success in Iraqi manufacturing sector?
3. Does ABC implementation success have significant effects on organizational performance in Iraqi manufacturing sector?
4. Do contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structure and IT) have significant effects on organizational performance in Iraqi manufacturing sector?

5. Does ABC implementation success play a mediating role on the relationship between contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structure and IT) and organizational performance in Iraqi manufacturing sector?

1.4 Research Objectives

The study aims to examine ABCIS from a contingency theory perspective and discern the possible effect of the relationship between contingencies and ABCIS on improving the performance of Iraqi manufacturing companies. To achieve the research aim and to provide answers to the above research questions, the following objectives are set out for this study:

1. To determine the level of ABC implementation among Iraqi manufacturing companies.
2. To examine whether contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structure and IT) have significant effects on ABC implementation success in Iraqi manufacturing sector.
3. To examine whether ABC implementation success have significant effects on organizational performance in Iraqi manufacturing sector.
4. To examine whether contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structure and IT) have significant effects on organizational performance in Iraqi manufacturing sector.

5. To determine whether ABC implementation success plays a mediating role on the relationship between contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structure and IT) and organizational performance in Iraqi manufacturing sector.

1.5 Scope of the Study

Based on the theoretical gaps and practical issues as discussed in the problem statement, the focus of the current study is majorly to explore the levels of implementation of ABC in the manufacturing sector in Iraq. In addition, the current study examines the direct effect of contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structure and IT) on ABCIS. The current study also examines the direct effect of ABCIS and contingency factors on organizational performance. Further, this study examines the mediating effect of ABCIS on the relationship between contingency factors and organizational performance in the Iraqi manufacturing sector.

The present study chooses large manufacturing companies as the scope of study because ABC systems are mostly applied by large manufacturing companies (Wanas, 2017). Added to that, Iraqi manufacturing sector is one of the main pillars of Iraq's national economy and plays a crucial role in the economic development of other sectors such as agriculture and service. In line with the National Development Plan and the Industrial Strategy of Iraq, Iraq aimed at becoming a progressive and high-income nation by the year 2030. To achieve this, the country seeks to increase the contribution of manufacturing industry in the composition of GDP to 18%, adopt

industrial diversification, attract investment, improve the competitiveness and increase the proportion of industrial exports (Industrial Strategy in Iraq until 2030, 2013).

Along with the strategies set out in the national plan to attain sustainable industrial growth, it is essential to understand how Iraqi manufacturing companies could use strategic MA (e.g. ABC system) in an integrated manner with their internal and external environmental factors to improve their performance and competitiveness in the global market. More so, there is limited empirical studies on the relationships among contingency factors, ABCIS and organizational performance in Iraq.

The examination of the current contingency factors in this study is motivated by (1) the importance of market orientation to increase the market share of manufacturing companies and to improve their competitiveness, (2) the degree of environmental uncertainty is rated as high in the Iraqi environment, (3) the popularity of competitive strategies to motivate the implementation of ABC system and to improve performance, (3) the urgent need to understand the types of decentralized organizational structure through which it facilitates the implementation of ABC and the improvement of organizational performance, (4) the essential role of IT applications to achieve the competitive advantages (e.g. cost and quality) and (5) calls for empirical studies to fill the aforementioned gaps from both the practitioners and researchers.

The unit of analysis in this study is organization. This is because the present study focuses on issues related to organizations in Iraq, which include contingency factors, ABCIS and performance. That is, a survey questionnaire was employed as the instrument of data collection and was distributed to the accounting managers such as

Chief Finance Officers (CFOs). They were recruited because they have better knowledge of ABC implementation, company's performance and the contingency factors that may affect their organizations, than other operational managers (Zhang & Isa, 2011). The data collection continued for four months and one week starting from 1st of March until 7th of July. Subsequently, the data is analyzed using sophisticated statistical techniques such as descriptive statistics, multivariate statistics and inferential statistics in SPSS version 23 and Partial Least Squares (PLS3) version 3 path model.

1.6 Significance of the Study

The significance of this present study is explained under the three different subsections namely, theoretical significance, practical significance and methodological significance.

1.6.1 Theoretical Significance

The performance downturn of Iraqi manufacturing sector (CBI, 2014) has triggered the researcher's interest in investigating the informational role of ABC systems in improving organizational performance. To this end, the present study attempts to determine whether manufacturing companies in Iraq have used ABC systems for cost analysis and for decision-making process support, whether contingency factors can encourage higher usage of ABC systems, and whether the contingency factors and the successful implementation of ABC have contributed to improving the performance of Iraqi manufacturing companies. So far, the number of studies dealing with ABCIS is very limited in the Iraqi manufacturing sector. Therefore, the current study contributes

to the pool of previous contingency-based studies in providing useful findings on the importance of implementing ABC in the manufacturing sector of Iraq.

In essence, theorists have opined that ABC is a cost management tool, it has revolutionized costing systems (Zaman, 2009) and it is a fundamental part of strategic MA (Langfield-Smith, 2008; Cinquini & Tenucci, 2010). Therefore, the current study validates the discussion on the importance of ABC systems by examining the levels of its implementation in the Iraqi manufacturing sector and its effect on performance. In accordance to the fact that ABC is the modern costing approach, which is often a priority to most modern business management (Baykasoglu & Kaplanoglu, 2008), due to that ABC implementation could provide both strategic and operational benefits to ABC adopters (Schoute, 2009). Thus, the findings of this study is expected to provide valuable insights for researchers, practitioners, decision makers, ABC adopters and companies that are interested in adopting the ABC system to understand the significance of ABC implementation in improving firm performance and to better understand the best fit between contingency factors, ABCIS and organizational performance.

Beheshti (2004) asserted that it is currently imperative more than ever to expand the understanding of ABC especially given the present competitive global business environment. However, contingency-based studies have not paid attention to the market orientation and IT as a contingency factor. Abdel-Kader and Luther (2008) argued that market or customer orientation has not been widely studied and should be considered as an added contingency factor. Meanwhile, Maiga et al. (2013) bemoaned that empirical and theoretical studies on the relationship between IT, ABC

implementation and organizational performance are very limited. Further, there is only one study (Elhamma and Moalla, 2015) that have investigated the relationship between vertical and horizontal decentralized structure with ABC implementation.

In the same vein, previous studies have examined contingency factors in the context of innovations, MAS, financial and non-financial performance measures and strategic MA instead of the ABC system (Drury & Tayles, 2005). Elhamma (2015) reported that previous studies had tested environmental uncertainty in the context of innovativeness other than ABC system. In addition, Langfield-Smith (2006) concluded that the relationship between management control systems and competitive strategies is still somewhat limited. Meanwhile, Pavlatos (2010) suggested that there is a need for continuing empirical research on these topics (contingency factors and ABC systems). Therefore, consistent with the theoretical perspectives of contingency theory, the current research attempts to fill in these gaps through the development of a holistic theoretical framework that explains the effect of multi-contingency factors (external, internal and technological) on organizational performance as well as revealing the mediating role of ABCIS.

Previous studies (e.g. Abdel-Kader & Luther, 2008; Zaman, 2009; Ismail, Isa, & Mia, 2017; Maiga et al., 2013) have disregarded ABC system as a mediating variable. Thus, the current study differs from these studies as it is based on the Cartesian type of contingency approach (Gerdin & Greve, 2004) to develop a mediation model based on ABCIS. The current study employs this approach in accordance to the recommendations proffered by Gerdin (2005b), Tillema (2005) and Chenhall (2006b) to enhance the understanding of factors that motivate MA sophistication such as

activity based approach. Fisher (1995) and Otley (2016) suggested that the contingency-based research should be a comprehensive model that includes multiple contingency factors. In this regard, environmental uncertainty, market orientation, competitive strategies, organizational structure, IT and ABCIS are regarded as contingent circumstances towards improving the overall performance of manufacturing organizations in Iraq. Subsequently, the approach or the contingency model proposed in this study, which is in line with Fisher's suggestion and Gerdin & Greve's model, theoretically contributes in validating the theoretical perspective of contingency theory.

1.6.2 Practical Significance

At the practical level, the findings of this study notify the management of manufacturing companies in Iraq on the benefits of implementing ABC especially by presenting proofs on how the ABC implementation can help improve both their financial and non-financial performance. Further, the current political and economic crisis on-going in Iraq, which are among the apparent proofs of environmental uncertainty in Iraqi economic milieu, the findings of this study notify the management of manufacturing companies on how to mitigate the detriments of environmental uncertainty and external competition on their organizational performance through the benefits resulting from ABCIS such as improvements in the quality of decisions in their organizations.

Another important aspect of the practical contribution of this current study is in respect of the current economic challenges faced by all Iraqi enterprises. Additionally, globalization has also intensified the competitiveness in the world corporate

environments. These changes have strengthened firm performance to meet the market needs and to outperform their competitors (Helgesen, 2007; Jarvenpaa, 2009). Subsequently, discussing the mediating role of ABC implementation as a new MA tool on the relationship between contingency factors and organizational performance is practically imperative. Due to the accurate and reliable information resulting from ABC implementation, it is expected that ABC system will significantly help Iraqi industrial companies in determining the weaknesses in their performance and the possible ways for reforming the current unimpressive performance of these companies to improve their competitiveness and increase their contribution in the composition of GDP, thus enhancing the national economy of Iraq.

1.6.3 Methodological Significance

Considering the fact that far little studies on contingency factors, ABCIS and organizational performance that has been conducted from the Iraqi context and especially on the Iraqi manufacturing sector, this study provides a significant contribution in the course of contextualizing the implementation of ABC in Iraq. The instruments for measuring the current study's variables have been adopted from a different culture; precisely from the western economy, hence the current study offers a look into the Arab context of ABC implementation, contingency factors and organizational performance about the suitability of the measurement scales in the Arab-Iraqi context. During analyzing the data that was collected in this current study, a Confirmatory Factor Analysis was conducted during the specification of the measurement model of the proposed theoretical model. Therefore, the result of this study contributes by validating the adapted measures of the understudied variables.

1.7 Definition of Key Terms

1.7.1 ABC Implementation Success (ABCIS)

Activity Based Costing (ABC) is regarded as an approach to costing that itemizes activities as the significant objects of costing. This approach uses a cost driver as the basis for allocating cost to different cost objects such as products, services and customers (Askarany, 2011). According to Cooper and Zmud (1990), the implementation of ABC system includes six sequential stages which are, initiation, adoption, adaption, acceptance, reutilization and infusion or integration. According to Zhang & Isa (2011), the last three stages are considered ABC users. Consistent with prior ABC adoption researches (e.g. Anderson and Young, 1999; Byrne, 2011; Gosselin, 1997), the definition of the implementation of ABC in the present study refers to the operating units that are currently using ABC systems for cost analysis and decision-making process. While ABCIS refers to the perceptions of financial and non-financial benefits associated with ABC implementation along several dimensions; (1) impact on organizational process, (2) perceived usefulness, (3) technical characteristics, and (4) employee attitude (McGowan, 1998).

1.7.2 Environmental Uncertainty

Environmental uncertainty is referred to as the managerial perceptions of uncertainty which are identified by the predictability of the future changes and the conditions or different aspects in the organization's environment. Environmental uncertainty can be categorized in this study by government policies, globalization, economy, industry, resources and services used by the company, production and IT, product market and demand, and competition (Hoque, 2004).

1.7.3 Market Orientation

Market orientation is defined as the culture of an organization to implement marketing activities that requires customer satisfaction be put at the center of business operations and therefore produces superior value for customers better than competitors and outstanding performance for the organization (Erdil et al., 2004, Narver and Slater, 1990). The present study focuses on three facets of market orientation (Celuch, Kasouf, & Peruvemba, 2002) namely: (1) customer orientation, (2) competitor orientation and (3) inter functional coordination.

1.7.4 Competitive Strategies

Competitive strategy is one of the most studied contingency factors about organizational performance (Bhimani et al., 2005). Consistently, cost leadership strategy and differentiation strategy developed by Porter (1980) are the two types of competitive strategy that are prioritized in the current study. Cost leadership strategy implies obtaining the lowest cost compared to competitors. While differentiation strategy means providing products that are perceived by customers to be distinctive (Cinquini & Tenucci, 2010).

1.7.5 Organizational Structure

Chenhall and Morris (1986) defined organizational structure as the level of decentralized decision-making autonomy. The decentralized structure allows managers to know the performance and the employees' attitude in their subunits towards the implementation of ABC (Ajibolade, 2013a; Chia, 1995). The present study focuses on vertical and horizontal decentralized structure developed by Mintzberg

(1979) to study the division and the hierarchy of decision-making among manufacturing organizations.

1.7.6 Information Technology (IT)

In this study, IT refers to how organizations work to transform inputs into output with the use of hardware such as machines and tools, materials, people, software and knowledge (Chenhall, 2003). Therefore, the current study focuses on the application of IT for communications (Martínez-Lorente, Sánchez-Rodríguez, & Dewhurst, 2004), for decision-making process (Boyer, Leong, Ward, & Krajewski, 1997), for manufacturing activities and operations (Dedrick, Gurbaxani, & Kraemer, 2003) and finally, for office and administrative use (Martínez-Lorente et al., 2004).

1.7.7 Organizational Performance

Parnell, Lester, Long, and Koseoglu (2012) explained that there are different approaches to defining organizational performance. Ultimately, the measurement of organizational performance in this current study is captured by using both financial and non-financial measures. The financial performance is defined as the extent to which the organization has been able to achieve its financial goals at each activity such as the level of firm profitability and return on investment (ROI). While the non-financial performance is defined as the extent to which the organization has been able to achieve its strategic goals such as market share and customer loyalty (Hoque, 2004).

1.8 Organization of the Thesis

This study is presented in five chapters. The current Chapter entails discussion on the background of the study, the problem statement, research questions and research

objectives. The scope of the study which explains the focus of this research is presented in this chapter. The significance of the study is explained under three subsections namely the theoretical, practical and methodological significance. The definition of key terms is presented in last section of this chapter.

Chapter Two majorly focuses on the theoretical perspectives that guide the assumptions in the conceptual framework proposed in this study. The chapter also reports reviews of the previous empirical studies. The chapter ends with explanations of the underpinning theory adopted in this study.

The hypotheses development and the methodology are mainly discussed in Chapter Three. The chapter focuses on the approach of the study, the theoretical framework, the hypotheses development, the research design, the measurement of variables and instrumentation, the reliability and validity of the instrument, the population of the study, the sample size, including the sampling techniques. Chapter Three entails discussion on the procedure of data collection as well as the analytical methods that are employed in this study.

Chapter Four presents the findings of this research about the formulated hypotheses and highlighted research objectives. The results reported are in three phases. The first phase relates to the preliminary analysis where the data was cleaned and several statistical assumptions were tested. The second phase involves the description of the data and the respondents through descriptive analysis using central tendencies such as mean, standard deviations and frequencies. Finally, the inferential analysis is the final phase of the study. This is where the hypotheses were tested and were interpreted.

Chapter Five is the final chapter where the findings are discussed about the theory and previous studies. Implications of the results are also presented in this chapter. The chapter also presents limitations and recommendations of the research, and finally, conclusions were deduced from the findings reported in this study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a review of the fundamental explanation, measurement and empirical findings of the understudied variables as well as the theoretical justifications for proposing the theoretical framework in this study. This chapter is arranged in the following structure: Section 2.1 discusses the definitions and the different measurements of organizational performance. The section emphasizes on the importance of using both financial and non-financial measurements of organizational performance. Section 2.2 entails discussion on the contingency factors that are selected, the definitions and the justifications for selecting each factor as pertinent contingency to the implementation of ABC and enhancement of organizational performance. The contingency factors that are included in this literature review include: environmental uncertainty, market orientation, competitive strategies, organizational structure, and information technology (IT). Section 2.3 presents MAS and fundamental arguments on the implementation of ABC. Section 2.4 entails the discussion on the relationship between contingencies and the implementation of ABC. Section 2.5 discusses the relationship between ABC implementation and organizational performance. Section 2.6 presents the literature review on the contingencies-organizational performance relationship. Section 2.7 presents the discussion on mediating role of ABC implementation. Section 2.8 presents the contingency theory as the underpinning theory adopted in this study, while section 2.9 presents the research gaps for the literature. Finally, the summary of this chapter is presented in section 2.10.

2.1 Organizational Performance

Organizational performance is referred to as the level of efficiency and effectiveness in the organizational operations about consuming organizational resources in order to creating value and achieve organizational goals (Braz, Scavarda, & Martins, 2011; Neely, Gregory, & Platts, 1995). Organizational performance is explained as the establishment of strategies, initiatives and measures that help achieve the organizational goal (Otley, 1999). Sink and Tuttle (1989) opined that organizational performance is related to productivity, profitability, market growth, efficiency, quality, innovation and quality of life. The measurement of organizational performance and its definitions have generated a long-lasting argument in the literature. The enduring conclusion from all the argument is that researchers are still trying to determine the perspective for measuring and defining organizational performance (Jane, Justus, & Francis, 2014).

Meanwhile, even in the strategic MA realm, different measures and constructs have been adopted in defining and measuring organizational performance (Harris & Mongiello, 2001; Kaplan & Norton, 2005; Ottenbacher, 2007). For instance, a number of early studies on organizational performance have employed price, income and other business activities as separate measures of organizational performance (Chenhall, 1997; Maskell, 1991), before it was concluded that, combining both the financial and non-financial activities of an organization is best for the assessment of the organizational performance (Hoque & James, 2000; Hoque, Mia, & Alam, 2001; Ittner, Larcker, & Randall, 2003; Kaplan & Norton, 1996).

The conventional and traditional method of measuring organizational performance can be explained as the process of recognizing, gathering, measuring, interpreting and disseminating, the main purpose of which is to produce information about value creation and continuous improvement in the performances of the organization (Gímzauskiené & Kloviené, 2008). This traditional approach is often based on levers of traditional accounting system such as standard costing and ROI (Bititci, Garengo, Dörfler, & Nudurupati, 2012; Kennerley & Neely, 2003). However, the traditional measures of organizational performance do not extend to strategic and innovation performance of the organization (Bourne, Neely, Mills, & Platts, 2003; Kaplan, 1983; Kennerley & Neely, 2003). In view of several inventions and developments of new accounting systems and innovational developments such as ABC (Banker et al., 2008), new dimensions have been introduced to measure organizational performance especially the use of non-financial performance measures. These dimensions include quality, efficiency, time, flexibility, and customer satisfaction, to name a few (Bititci et al., 2012; Nudurupati, Bititci, Kumar, & Chan, 2011).

In addition, cost and MA innovations such as ABC have been argued to be one of the efficient methods of measuring the financial and non-financial performance, through providing information about cost objects and all activities (Chong & Cable, 2002; Gímzauskiené & Kloviené, 2008; James, 2013; Sohal & Chung, 1998). Previous researchers have demonstrated the conventional measures of organizational performance is not in tandem with the current emergence of advanced manufacturing technologies, competitive challenges, product diversity and especially the changes in consumer demands and the prevalence of sophisticated costing systems such as ABC (Al-Omiri & Drury, 2007; Askarany, 2011; Cardoş & Cardoş, 2012; Maiyaki, 2011).

Kaplan and Norton (1996) is one of the advocates of adopting multidimensional measures for assessing organizational performance. According to Kaplan and Norton (1996) the underlying argument behind the usage of multidimensional measures such as using both financial and non-financial performance measures is that this approach accommodate constant changes in business environment and understands the connection between organizational goals and the activities of the organization with regard to financial profitability, customer satisfaction, internal business processes and operations and understanding the different dimensions of growth. Jusoh (2010) added that the deficiency of using only the financial measures of organizational performance is apparent as its focus is on evaluating the past which sometimes might not be accurate with current dictates of the market. Therefore, the financial measures generate an erroneous basis for performance measurement.

Bourne, Mills, Wilcox, Neely, and Platts (2000) and Kaplan (2001) put forth the argument that, it is unanimously acceptable among strategic MA researchers to use both financial and non-financial constructs for measuring organizational performance. Evidently, many strategic MA studies have advanced the approach of assessing and measuring organizational performance with both financial and non-financial measures (Alsoboa and Aldehayyat, 2013; Zhang & Isa, 2011; Jusoh, 2008; Lee, Yen, Peng, & Wu, 2010; Mia & Clarke, 1999). Especially because non-financial measurement focuses on assessing the indicators of intangible assets and evaluate the major drivers of value as well as the predictors of financial achievements (Chenhall, 2006a; Ghalayini & Noble, 1996; Ittner & Larcker, 1998; Kaplan & Norton, 1996).

Baines and Langfield-Smith (2003) and Hoque et al. (2001) stressed that the benefit of combining financial and non-financial performance measurements is to concurrently assess organizational improvements in all the important area including product, operations, customers, and market growth. In other words, the combination of financial and non-financial performance measures entails the assessment of the current, the past and the future success of the organization (Atkinson, Balakrishnan, Booth, & Cote, 1997; Bititci et al., 2012; Busi & Bititci, 2006; Hoque & James, 2000; Melnyk, Bititci, Platts, Tobias, & Andersen, 2014; Nudurupati et al., 2011).

In Iraq, there is an urgent need to conduct studies to assess the financial and non-financial performance of manufacturing companies because they represent one of the main sectors of the Iraqi economy (Al-Ani & Abdullah, 2014). Nevertheless, a large number of Iraqi manufacturing companies still rely solely on financial measurements in the evaluation of performance. However, Al-Ghaban and Hussain (2009) suggested that the financial measurements are no longer sufficient to keep pace with rapid changes in the Iraqi business environment. On this basis, Allawi (2015) reported that developing the performance of Iraqi manufacturing companies necessitates reliance on advanced MA techniques that combine financial measurements as well as non-financial in the evaluation of performance.

2.2 Contingency Factors

The current research adopts the theoretical assumptions of contingency theory which suggested that organizational, technological and environmental factors dictate the circumstances surrounding the implementation of ABC (Gliaubicas & Kanapickienė, 2015) and the financial and non-financial performance of an organization (Deng &

Smyth, 2013; Tosi & Slocum, 1984). Contingencies are defined as the variables that are beyond the control of the organization, and the variables that are used as the criterion through which organizational effectiveness and operational efficiency are determined (Otley, 1980).

There has been a plethora of studies in the MA realm adopting the contingency theory perspective. These contingency-based studies focused on explaining how organizational strategic decisions, structure, organizational design and external environment factors affect the implementation of MAS as well as the organizational performance (Cadez and Guilding, 2008; Gerdin & Greve, 2004; Muslichah, 2013). The underlying premise of most contingency-based studies is that there are no universal or generalizable factors to determine the successful implementation of ABC or to enhance the organizational performance. Hence, different contextual factors play different roles in different circumstances (Emmanuel, Otley, & Merchant, 1990; Tosi & Slocum, 1984). The basis for studying certain contingency factors depends on their relevancy in the context of the study.

Drawing from the pool of studies adopting the contingency perspective, contingency factors of organizations can be categorized as environmental, organizational and technological (Ajibolade, 2013b; Haldma and Laats, 2002). The use of one-contingency factor model has been criticized because it might mean that other contingencies cannot be considered when implementing MAS (Gerdin, 2005b). In this regard, this present study focuses on contingency factors from the three categories which include external environmental factors (environmental uncertainty and market orientation), organizational factors (competitive strategy and organizational structure)

and technological factor (information technology application) in explaining the determinants of ABCIS and factors that influence the enhancement of organizational performance among manufacturing companies in Iraq. Therefore, other contingency factors such as organizational culture and size are not included among the understudied variables of present study.

The majority of MA contingency researches, for instance, Chenhall and Morris (1986), Baines and Langfield-Smith (2003), Tillema (2005) and Abdel-Kader and Luther (2008) revealed no impact of culture on MA techniques and organizational performance, because most of these studies were conducted in one country where the culture of the organizations are often uniform (Harrison & McKinnon, 1999). In fact, Granlund and Lukka (1998) supported this notion claiming that MA practices are similar among organizations from different countries, despite their cultural differences. For instance, the findings presented in Al-Zaidy (2010) stressed that the culture in the context of Iraqi manufacturing sector at different levels does not represent an impediment to the implementation of MA techniques including ABC. This is because all those companies are subject to the same laws, regulations and domestic competitive circumstances. In addition, Chenhall (2003) mentioned that culture may not have effects to all aspect (macro level) of an organizational MAS, but only at the micro level of MA practices, where the behavioral patterns and styles become important (Williams & Seaman, 2002).

Meanwhile, Innes and Mitchell (1995) and Kallunki and Silvola (2008) confirmed that big companies have the potentials to adopt ABC systems. Therefore, the present study focuses on large manufacturing companies. Since the present study focuses on the

large manufacturing companies, thus the size is not considered important as a contingency factor due to the similarity of size among the surveyed organizations in the present study. In the main, researchers that have examined organizational size in their study have considered its effects together with other contingencies such as technology (Chenhall, 2003). In essence, Gliaubicas and Kanapickienė (2015) and Baird et al. (2004) have empirically revealed that size is not associated with ABC implementation levels and the function of ABC. The following sections present detail explanation and justifications of studying the aforementioned contingency variables in this study.

2.2.1 Environmental Uncertainty

Researchers explained the concept of environmental uncertainty as the assessment of the variability in the environment of an organization and of the perceptual phenomenon, a peculiarity of organization managers (Downey, Hellriegel, & Slocum, 1975; Milliken, 1987). In other words, Tung (1979) argued that environmental uncertainty relates to the perceptions of instability that are prompted by changes related to technology, political, legal and demographics of the external environment of an organization. Buchko (1994) defined environmental uncertainty as the inability of an individual to predict an organization's environment accurately because of a lack of information or an inability to discriminate between relevant or irrelevant data.

Initially, environmental uncertainty was conceptualized in the literature with two dimensions namely, complexity and dynamism (Buchko, 1994). In recent time, environmental uncertainty is evaluated with more diverse dimensions which include domain consensus, heterogeneity, capacity, complexity and dynamism (Aharonson,

Baum, & Feldman, 2007; Jane et al., 2014). Other researchers determined environmental uncertainty with attributes such as intense competition, instability and unpredictability (Alcouffe, 2002; Dekker & Smidt, 2003). The implications of these attributes of environments on managers are enormous. In an uncertain environment, managers are faced with the perception of tight decision opportunity; they perceive the market as fragmented, faced with increased resource specialization and inability to predict resource need and lack of total long-term control (Buchko, 1994; Davis, Morris, & Allen, 1991; Miles, Arnold, & Thompson, 1993).

Researchers have argued that perceived environmental uncertainty is one of the major contingency factors for organizations (Gilley, McGee, & Rasheed, 2004; Tosi & Slocum, 1984). It is believed that the attributes of the external environment of an organization determines the availability of resources and by extension, the general business operations of the organization (Jane et al., 2014). This is so, because when there are political uncertainties, economic meltdown or poor macroeconomic policies, unavailable or deteriorated infrastructures such as electricity, roads and technology and other external issues can preclude organizations from executing their operations efficiently (Lusthaus, 2002).

Priem, Rasheed, and Kotulic (1995) and Elenkov (1997) added that different attributes of the external environment including political, legal, economic policies, competition and culture can lead to environmental uncertainties. These uncertain attributes do not only impede the improvement in the effectiveness, efficiency and relevancy of organizational performance, but also preclude the organization from adopting innovative strategies (Yang, Hong, and Modi, 2011). This is because environmental

uncertainties prevent organizations from reviewing their performance and from making viable decisions capable of improving their performance (Eisenhardt, 1989).

The importance of business environments on both the financial and non-financial performances of organizations cannot be over emphasized (Jane et al., 2014; Soheilirad & Sofian, 2016). In fact, the advancement and complexity of many business environments is precluding the competitiveness of many organizations (Aragon-Correa & Sharma, 2003; Choe, 2003). Hence, environmental uncertainty remains in the top ranking of relevant contingency factors that determine business success and survival (Chenhall, 2003; Kaplan & Norton, 2001). This is why both theorists and practitioners are currently paying serious attention to perceived environmental uncertainty and also included as one of the cure factors of decision making processes in order to make effective decisions (Chapman, 1997; Gerdin & Greve, 2004; Gul & Chia, 1994; Jusoh, 2008). This can be practically proven especially because the higher the uncertainty in an environment, the lesser the confidence of managers in making strategic decisions (Bstieler, 2005). In other words, the fear of making fallacious decisions due to the uncertainty perceived from business environment.

In addition, Hoque (2005) and Ismail and King (2005) argued that external environment influences the effectiveness of internal strategies such as MAS and determines organizational performance. In other words, environmental uncertainty has been widely studied among contingency-based researchers as one of the important contingency factors that affect organizational performance and strategic MAS such as ABC (Ax, Greve, & Nilsson, 2008; Chenhall, 2003; Chenhall & Morris, 1986; Fisher, 1996; Gul, 1991; Johnson, Scholes, & Whittington, 2008; Muslichah, 2013).

In the same vein, it is no gainsaying that the current global environments continue to increase in complexity and dynamism, hence uncertainty. Studies have argued that environmental uncertainty does not semantically refer to the physical properties of the environment but rather explains the implication of the complexity of business environment (Soheilirad & Sofian, 2016). In other words, the surge of different technological advancements, the increasing changes of consumers' demand, market deregulation and constant elimination of trade barriers are some of the reasons responsible for the increase in business environmental uncertainty (Mia & Clarke, 1999). The conglomerate of these factors determines the external environment of a business and form the basis for managers to suggest relevant strategies for their business survival (Soheilirad & Sofian, 2016).

2.2.2 Market Orientation

Studying market orientation is motivated by the increasing complexity of competition in the manufacturing and other sectors (Flohr, Bukh, & Mols, 2000). Enormous analytical and conceptual efforts have been exerted into explaining the concept of market orientation since the 1980s (Deng & Dart, 1994; Piercy, Harris, & Lane, 2002). Market orientation is often studied from two different perspectives, namely behavioral or cultural perspective (O'Cass & Viet Ngo, 2007). The two major perspectives to defining market orientation are, the information-based definition by Kohli and Jaworski (1990) and the culture-based conceptualization propounded by Narver and Slater (1990).

Studies that subscribed to the behavioral perspective explained market orientation as a set of market oriented behaviors (Baker & Sinkula, 1999; Hunt & Morgan, 1995;

Jaworski & Kohli, 1993). Meanwhile, those that see market orientation as a subset of organizational culture opined that market orientation is a manifestation of market-driven attributes of an organization (Day, 1994; Narver & Slater, 1990). In another words, market-orientation is one of the many routes organizations navigate to achieve their organizations' goal or rather, to maintain superiority in their performance against their competitors (O'Cass & Viet Ngo, 2007). The scholarly work of Jaworski and Kohli (1993) is one the studies among the proponents of behavioral perspectives to market orientation. They listed three categories to market orientation as follows:

1) Generating market information and intelligence which are relevant to present and future customer demands,
2) Disseminating these intelligence across the departments in the organization, and
3) An organization-wide reaction to the generated intelligence.

These categories revolve around embracing a systematic culture of gathering information and intelligence in relation with market, customers and competitors and sharing the information among and between departments with the purpose of coordinating collective activities towards responding to the generated information (Martin & Grbac, 2003). Hunt and Morgan (1995) corroborated that market orientation is the behavioral process of referring to the market as an intangible source of intelligence that are parenting to customers' demand and competitors operations, generating, analyzing and responding to the generated intelligence to improve the effectiveness and efficiency of organizational performance. Atuahene-Gima (1995) and Liu, Luo, & Shi (2002) opined that market orientation demonstrates the

importance of embracing a proactive culture in the business operations and organizational performance in order to respond to market demand and expectations.

Market orientation is the manifestation of a type of organizational culture that prioritize on market competitiveness and organizational performance superiority (O'Cass & Viet Ngo, 2007; Slater & Narver, 1996). Hence, a market-driven behavioral process which results in numerous comparative benefits (Day, 1994). In essence, the ulterior motive of establishing a market-orientation is to attain and maintain superior performance and add value to business operations (Pelham & Wilson, 1995). Erdil et al. (2004) supported subscription to cultural perspective of defining market orientation, asserting that market orientation is a culture that is reflected through behavioral process of communicating, analyzing and devolving market related information across the units of an organization.

Gray and Hooley (2002) gave a definition that lumps both the behavioral and cultural perspectives of market orientation by claiming that, market orientation is a type of organizational philosophy or culture which promotes behaviors and activities that focus on gathering, devolving, analyzing and responding to market-based information especially parenting to customers and competitors. Bennett (2005) and Kohli and Jaworski (1990) explained that organizations that pay attention to the demands and preferences of customers can be regarded as market-oriented organizations. While Leisen, Lilly, and Winsor (2002) argued that organizational culture and market-orientation cannot be separated. In the sense that, market orientation is a market-driven type of organizational culture. In other words, one of the highlights of market orientation for market-oriented organizations either as a culture or behavior is the

possibilities of outdoing their competitors and gaining market superiority through improvement of their organizational performance (Dawes, 2000; Dobni & Luffman, 2000; O'Cass & Viet Ngo, 2007; Verhees & Meulenberg, 2004).

In addition, the findings and arguments of most of these prior researchers are unanimous in spite of their different perspectives in defining and measuring market orientation. Their findings mostly pointed out that a market-oriented organization has a strong potential of improving its organizational performance (Udegbe & Udegbe, 2013). In other words, when there are improvements in organizational performance, it leads to higher value to shareholders, increase in market share and profitability (Low, Chapman, and Sloan, 2007).

Notably, market orientation has become more important to the manufacturing and service sector recently (Kohli & Jaworski, 1990; Pelham, 1999) because customer demands and expectations are more complex in the global market than before (Jaworski & Kohli, 1993). In view of the increasingly changing market expectations and complexity, a proactive manufacturing company to improve market activities, business operations and organizational performance in order to meet the demands, customer satisfaction and especially cultivates behavioral process that embrace the culture of market orientation (Erdil et al., 2004).

Market orientation represents a very important external contingency factor (Cadez and Guilding, 2008; Slater & Narver, 1994). Guilding and McManus (2002) confirmed the importance of market orientation as a contingency factor which reflects the plans of organizations for delivering superior customer value. Furthermore, Abdel-Kader and

Luther (2008) viewed that organizations facing higher level of customer power or influence may have more motives to adopting a sophisticated MA practices or performance measurement system (PMS) putting together all non- financial aspects as well as financial, to improve their plan, control and decision-making to help manage and meet the demands of customers.

There are different approaches to market orientation (Celuch et al., 2002; Low et al., 2007; Kohli & Jaworski, 1990). In other words, three approaches were adopted to measure market orientation (Narver & Slater, 1990): customers, competitors and inter-functional orientation. Meanwhile, there are no distinctive differences between these approaches in the sense that all approaches highlight the essence of gathering, disseminating, and analyzing market-related information and behaviorally inculcating the ability to respond to the information (Baker & Sinkula, 1999). Consistently, Bennett (2005) explained that customer orientation is a strategy that revolves around meeting customer needs and demands vis-à-vis the organizational competence and capabilities. In other words, customer orientation is deployed to understand target buyers through customer analysis and customer responsiveness (Dawes, 2000) in order to satisfy them (Narver & Slater 1990).

In the same context, managers develop competitor-oriented objectives to match, if not exceed, competitors' strengths (Olson, Slater, & Hult, 2005). Indeed, this orientation places a priority on the following questions (Narver and Slater, 1990):

(1) Who are targeted competitors?

(2) What strategies, resources, and capabilities do they offer?

(3) Do they represent a priority from the point of view of target customers?

Overall, competitor orientation requires enterprise-wide collecting and disseminating intelligence on these three questions (Day and Wensley 1988). Meanwhile, Inter-functional coordination (also called market information sharing) is referred to as the dissemination of market-related information (customer and competitor) across the units and departments of the organizations (Kohli and Jaworski 1990). In order to achieve internal coordination, Narver and Slater (1990) stressed the integration of organizational operations with those of marketing. This coordinated effort among various functions could pay off in terms of sales outcomes or profit outcomes (Dawes, 2000).

Notably, when market orientation activities are deployed individually, they are more likely to be less effective (Han, Kim, Srivastava, 1998). Therefore, when organization relies exclusively on customer orientation, this can result into imbalance of strategy which leaves the organization to be reactive rather than proactive towards competitors' strategies. Similarly, when organizations focus more on their competitors, they can end up neglecting their valuable customers (Day and Wensley 1988). Resultantly, Narver and Slater (1990) proposed a balance deployment of market strategies between customers' and competitors' orientations. Therefore, this current research would also consider both customer orientation and competitor orientation as well as inter-functional coordination as the measures of market orientation.

2.2.3 Competitive Strategy

Langfield-Smith (2006) defined strategy as a pattern of decisions or actions about the organization's future. In other words, business or competitive strategy refers to the exploitation of resources in a consistent manner to increase efficiency in performance, profitability and value production (Acquaah & Yasai-Ardekani, 2008; Agyapong & Boamah, 2013). According to Porter (1980), competitive strategies are defined as the establishment of activities and courses or assigning resources in relation with the defined long-term goals and visions of organizations. The bottom-line of competitive strategy is the ability to maintain consistency in creating superior performance, maintaining quality and value and increasing performance efficiency in order to gain competitive advantages (Allen & Helms, 2006).

In this regard, Porter (1980) and Miles and Snow (1978) developed two different but supplementary strategic typologies in describing organizations to determine different types of strategies. Porter (1980) categorized organizational strategies into cost leadership strategy, differentiation strategy, and focus strategy. Whilst, Miles and Snow (1978) developed a generic strategy typology and categorized competitive strategies into four different types including Prospectors, Defenders, Analyzers and Reactors. Miler and Snow's typologies are quite similar to Porter's strategies (Hambrick, 1983; Kumar & Subramanian, 1997). For instance, prospector firms pursue Porter's differentiation strategy and similarly, defender firms tend to follow Porter's cost-leadership strategy (Bhimani et al., 2005; Govindarajan, 1986; Teeratansirikool, Siengthai, Badir, & Charoenngam, 2013).

Porter's (1980) typology of generic competitive strategies seems to be the most popular among critiques and researchers (Acquaah & Yasai-Ardekani, 2008; Agyapong & Boamah, 2013; Auzair, 2015; Jusoh & Parnell, 2008). Not only because the Porter's generic strategies enhance competitive advantage, but also the strategies ensure long-term profitability and performance efficiency (Leitner & Güldenberg, 2010). In addition, Porter strategies have been linked to many internal, external, and performance-related variables (Dess & Davis, 1984). Amoako-Gyampah and Acquaah (2008) argued that both cost leadership and differentiation strategy are the most popularly discussed and studied strategies in the literature. Meanwhile, researchers have not considered to examine focus strategy in their studies (Auzair, Amiruddin, Abdul Majid, & Maelah, 2013; Tsamenyi, Sahadev, & Qiao, 2011). This is because organization pursuing focused strategy in order to achieve either cost leadership strategy, or differentiation strategy, or both strategies (Frey & Gordon, 1999). In addition, within focused cost-leadership or differentiation strategy, the company could concentrate either on a better provision of a particular target of the market or on a fewer expenses in serving this specific target (Porter, 1980; Teeratansirikool et al., 2013). Therefore, the current study also focuses on both cost leadership and differentiation strategy.

Consistently, according to Porter (1980), cost leadership strategy is the ability to produce and sell products at lower prices compared to the competitors. Low cost strategy, in other words, is referred as cost-leadership (Jusoh & Parnell, 2008; Ormanidhi & Stringa, 2008) or cost-efficiency (Leitner & Güldenberg, 2010). Invariably, low cost strategy is employed by having a low-cost leadership strategy which can be executed by maintaining lowest price in order to gain competitive

advantage (Bauer & Colgan, 2001). In other words, cost leadership strategy is achieved through a very stringent development of facilities and scale for efficiency evaluation, total control of overhead cost and aggressive minimization of cost in the overall production activities (Auzair & Langfield-Smith, 2005; Acquaah & Yasai-Ardekani, 2008). This is to say that the management of an organization must be ready to put to a halt any business operations or production activities that they do not have control over the cost and consider outsourcing the activities in order to reduce cost and increase competitive advantage (Allen & Helms, 2006).

Porter (1998) highlighted the importance of large market share for any organization that is interested in adopting the cost leadership strategy. This is because the cost leadership strategy is most suitable for big firms especially organizations with mass production, mass distribution activities, access to superior technology and raw materials, learning curve benefits, economics of scale and innovations (Allen & Helms, 2006). Hence, the reason why many smaller organizations do not always employ cost leadership strategy. Sometimes, in a whole industry, cost leadership is employed by only one organization to establish the only difference between one organization and other competitors (Miller, 1986).

Bauer and Colgan (2001) added that the effectiveness of implementing the cost leadership strategy is apparent on product and business designs, efficiency in production and market and comparatively lower product price which often lead to gaining bigger market share. Consistently, Helms, Dibrell, and Wright (1997) argued that the benefit of being a low cost leader in a market is to increase product demand and gaining higher market share. Gaining higher market share denotes the essence of

the cost leadership strategy, because an organization that has the higher market share controls the market and makes it difficult for new competitors to emerge in the same market (Miller, 1986).

On the other hand, differentiation is the second type of the Porter's competitive strategies. Differentiation strategy is the production and marketing of superior products and services that are different from that of the competitors (Hoque, 2004). The essence of the differentiation strategy is the ability of an organization to produce or deliver service that are different or unique as compared to other competitors in order to gain higher loyalty of customers (Bauer & Colgan, 2001). Organizations that employed differentiation strategy emphasize on customers' needs and satisfactions which allow them to increase price and invariably increase their market share (Allen & Helms, 2006). Sashi and Stern (1995) explained that organizations that subscribe to the differentiation strategy implement it by developing a positive, strong and superior perception of their products and services in the minds of customers, making the customers believe that their product is superior in quality, image, reputation, value and both the hedonic and functional attributes as compared to those of their competitors.

Hence, the differentiation strategy is implemented through the development of attractive product appearances, quality of services, distribution channels or delivery systems and brand equity development (Allen & Helms, 2006). In other words, the unique, sophisticated and differentiated attributes of the product or services attract interested customers and result in their willingness to pay higher price for the products or services (Chi, 2010). This is why a company that employs the differentiation strategy adopts an aggressive marketing campaign, consistent advertisement and other

marketing gimmicks to promote the uniqueness and the differential qualities of their products and services to achieve a competitive advantage over their competitors (Acquaah & Yasai-Ardekani, 2008). In other words, the organizations that are interested in implementing a differentiation strategy must first of all determine the uniqueness of their company, product or service and then must adopt an effective way of impacting such uniqueness in the minds of their customers (Boehe & Cruz, 2010).

In addition, it is important for organizations using differentiation as their competitive strategy to charge highest price for their product and service (Das & Joshi, 2007). This is because, if their message of uniqueness and superiority is effective and such perception is impacted on customers, customers will not mind to pay for higher price for their product (Chenhall, Kallunki, & Silvola, 2011; Leitner & Güldenberg, 2010). Allen and Helms (2006) argued that there are other important key factors for implementing the differentiation strategy, this include good marketing strategy, well written newsletters on the organization's challenges and overcoming them, developing successful brand equity for the organization, showing differences in product distribution channel or service delivery, dramatic or artistic in the physical layout of stores and offices, transparency and easy accessibility to product and company's information and access to superior technology (Auzair & Langfield-Smith, 2005; Chi, 2010).

Both cost leadership and differentiation serve as basic competitive strategies for organizations to identify suitable strategy to gain superiority in different market or industry (Desarbo & Grewal, 2008; Leitner & Güldenberg, 2010). Although researchers have not ceased to assess, critique and question the suitability of the

typologies of strategies advanced by Porter (1980) and Miles and Snow (1978), but a significant number of researchers have affirmed the applicability of the generic strategies over and across different industries and organizations (Chi, 2010; Garrigós-Simón, Palacios Marqués, & Narangajavana, 2005; Gladson Nwokah, 2008; Kim & Mauborgne, 2005; Parnell, 2011).

The underlying interpretations of both cost leadership strategy and differentiation strategy is that organizations gain superiority among competitors by either sailing the lower cost route or the differentiation path (Leitner & Güldenberg, 2010; Porter, 1998). Although some researchers have argued that organizations can combine the two strategies (Powers & Hahn, 2004) depending on what suit the organizations' market and industry (Acquaah & Yasai-Ardekani, 2008; Hill, 1988; Parnell, 1997; Parnell et al., 2012) and because the combination of the two strategies offers better competitive advantages (Allen & Helms, 2006), however, other researchers are insisting that combining both cost leadership and differentiation strategies often leaves the organization in a limbo (Jusoh & Parnell, 2008). The arguments on either to select between the generic strategies or combining the two are still ongoing in the literature (Agyapong & Boamah, 2013; Allen & Helms, 2006).

Indeed, Porter (1980) contends that the assumptions and principles associated with cost leadership strategy and differentiation strategy are incompatible. His notions have received considerable support by researchers in this area (e.g. Auzair et al., 2013; Cinquini & Tenucci, 2010; Hambrick, 1983; Robinson & Pearce, 1988). These studies postulated that companies attempting to combine the two strategies will end up "stuck in the middle". Further, prior studies (e.g. Muslichah, 2013; Abernethy and Guthrie,

1994) have indicated that defenders (cost leadership strategy) and prospectors (differentiation strategy) require very different internal structures and administrative processes. In other words, for an organization to achieve higher performance and outperform its competitors, a clear choice must be made by an organization between cost leadership and differentiation strategy to prevent variations of these strategies (Porter, 1998). Consequently, the current study adopts Porter strategies individually.

As a matter of emphasis, numerous previous researchers that adopted the contingency theory have integrated strategy as an important contingency factor (Auzair et al., 2013; Dent, 1990; Gupta, 1987; Samson, Langfield-Smith, & McBride, 1991). Frey and Gordon (1999) and Shields (1995) strongly opined that the benefits derived from implementing an activity-based approach are contingent to the business strategies in use by an organization. Contingency theory argues that the correlation between strategy and appropriate management control system practices will bring about an optimal performance outcome (Gerdin & Greve, 2004). Interestingly, manufacturing companies in Iraq are moving in the global trend of improving competitive strategies through the adoption of various innovative competitive strategies such as cost leadership strategy and differentiation strategy (Kadhim, 2007) to improve their organizational performance (Al-Kubaisi & Dawood, 2015).

2.2.4 Organizational Structure

Gosselin (1997) defined organizational structure as the explicit and implicit rules, policies and procedures that are enacted to provide structure, coordination and control over work responsibilities. Organizational structure refers to the division and coordination of tasks within an organization (Malone, 1987; Mintzberg, 1980). The

structure of an organization clarifies the responsibilities of every member comprising the organization for better understanding of the tasks to perform (Dalton, Todor, Spendolini, Fielding, & Porter, 1980). A well-defined organizational structure is said to enhance a collaborative action in an organization (Alaudin, Abdullah, & Ibrahim, 2017; Florin, Mitchell, & Stevenson, 1993).

In the implementation of a project, a flexible or good organizational structure improves problem identification and resolution, promotes information sharing and enhances organizational performance, including retention and satisfaction of the organizational members (Maffei & Meredith, 1995). The overall understanding from the literature is that organizational structure is pivotal to achieving organization's objectives, enhancing organizational performance and implementing operational strategies (Covin & Slevin, 1990; Germain, 1996; Lunenburg, 2012; Tavitiyaman, Zhang, & Qu, 2012).

Farhanghi et al. (2013) defined organizational structure as the type of centralization, integration and formalization of authority across the horizontal and vertical hierarchy of the organization. Meanwhile, according to Zhang et al. (2015) the structure of an organization can either be centralization or formalization structure. However, Damanpour (1991) explained organization structure with different dimensions including; role and responsibility dispersion, centralization, decentralization, formalization, standardization, complexity and collaboration.

Among the different dimensions offered by Damanpour (1991), decentralized structure has been the most popular dimension in the literature of organizational structure (Chia, 1995). Specifically, complex and large organizations typically prefer

decentralized structuring of organizational activities (Lal and Hassel, 1998). Decentralized structure offers managers the authority of making important decisions that affect the performance of their subunits, divisions or departments (Abernethy & Bouwens, 2005). Also, it offers access to information that might not be accessible to board of directors or general managers (Chenhall and Morris, 1986; Enz, 2008). Chia (1995) explained that decentralized structure is a type of organizational structure which articulates the division and participation of decision making among managers in the organization. In essence, decentralized structure implies the impossibility of an individual to make the entire decision in the organization (Subramaniam & Mia, 2001). For instance, a decentralized structure permits the division of authority of making decision over the implementation of ABC across the organizational hierarchy, which as a result, have the tendency of affecting the functionalities and performance of ABC as a costing system (Abernethy & Bouwens, 2005).

Decentralized structure is explained as the vertical and horizontal hierarchy of authority in making decisions in the organization (Day, 1999; Mintzberg, 1979; Tushman, 1979). In other words, decentralized structure is said to be dual-faceted namely, vertical and horizontal decentralized structure (Čudanov, Jaško, & Jevtić, 2009; Elhamma & Moalla, 2015). Vertical decentralized structure is defined as the dispersion of decision-making responsibilities from the top management to medium and unit managers (Lunenburg, 2012; Mintzberg, 1979). This structure allows both the top and down of the organizational hierarchy to get involved in decision making process (Mintzberg, 1980). Meanwhile, horizontal decentralized structure involves the division of decision-making control with individuals outside the organizational hierarchy (Hudson & Bielefeld, 1997). Elhamma and Moalla (2015) elaborated that

vertical decentralized structure entails formal division and dispersion of authority while horizontal is the informal dispersion of decision-making authority.

In the same vein, organizational structure deals with formal dispersion of roles and responsibility across divisions and departments of the organization (Chenhall, 2006b). It has been found that decentralized structure as an important contingent factors (Gul & Chia, 1994) offers departmental or division managers the decision-making rights and ability which consequently impact on the level of compliance of the subunit to new systems and innovations as well as their performance (Abernethy & Bouwens, 2005; Hammad et al., 2013). This is because decentralized structure allows subunit managers to create the culture and conditions that facilitate and encourage employees to be receptive of new systems. In that regard, decentralized structure is a crucial organizational structure that affects the implementation of ABC and organizational performance (Sisaye & Birnberg, 2010; Zimmerman, 2011). Contingency-based studies have unanimously suggested that organizational structure especially decentralization plays significant role on the performance of MAS (Ajibolade, 2013b). In addition, high organizational performance can be considered as one of the ripple effects of contingency factors such as organizational structure (Govindarajan, 1988).

Previous MAS studies, such as, Abdel-Kader and Luther (2008), Abernethy and Bouwens (2005), Gerdin (2005b) and Gordon and Narayanan (1984) have not distinguish among the decentralized structure dimensions (horizontal and vertical). Even though the decentralized structure (horizontal or vertical) was not exclusively mentioned, the analysis of the instruments used by the aforementioned researchers revealed that decentralized structure was measured based on the vertical case

(Elhamma and Moalla, 2015). Less attention has been given to the case of horizontal decentralized structure. Not only vertical decentralized structure facilitates the successful implementation of innovation and leads to higher organizational performance, horizontal decentralized structure also has the same features in cases where the workers are well trained, they have a broad understanding of the organization's goals and they have the ability to properly handle with information intensive intellectual work (Nahm, Vonderembse, and Koufteros, 2003).

Consistently, Elhamma and Moalla (2015) asserted that the importance, nature and locus of decision-making typically vary between vertical and horizontal decentralized structure. Nahm et al. (2003) added that the knowledge, skills and experience are usually different between managers and workers. Therefore, it seems reasonable to examine the both dimensions of decentralized structure to achieve better results in the current research.

2.2.5 Information Technology (IT)

The importance of IT application is enormous. The impact of IT includes flawless connection between activities, accessing real time information and improving customer relationship management (CRM) (Hyvonen, 2007). It is the organization's knowledge of describing a task and how it should be executed (Chenhall, 2003). Prior researchers have taken four approaches to approach the application of IT in the organization. The four different type of IT application in the organization are discussed as follow:

1. IT for Communications: This refers to the type of technology organizations adopts for the purpose of disseminating information among departments. These types of technologies include email, fax, telephone lines, internet connections, and local access networks for the transactions of technical information (Keramati, 2007).
2. IT to aid Decisions: the application of information technology has a huge implication for decision making and aiding management and managerial activities in the organizations. These types of IT include applications such as decision support systems (DSS), data analysis software and prognostic software (Boyer et al., 1997).
3. IT application for manufacturing and operations: there are certain information technologies that are applied in the manufacturing process which are sometimes referred to as computer-assisted technologies. These are the types of technologies that facilitate, control, detect errors and monitor the overall manufacturing processes.
4. IT application for office and administrative use: These are the types of technologies that are used for office and administrative works in the organization for organizing, arranging and sorting documents. These types of technologies include hardware and software such as, computer, printer, scanner and Microsoft Excel (Granlund & Mouritsen, 2003; Martínez-Lorente et al., 2004).

The recent intense modernization of IT increases the importance of IT in organizations across industries (Berry, Coad, Harris, Otley, & Stringer, 2009). In addition, the quest for synergizing between different organization's units also raises the attention that has

been given to IT. For instance, there were numerous indications on how IT units must be united with accounting departments and accounting operations (Hunton, 2002). However, the integration of IT and understanding the role of IT is still under theoretical development (Granlund & Mouritsen, 2003; Maiga et al., 2013).

An example of an evolving concept for studying the accessibility and the availability of IT is termed as Enterprise Resource Planning (ERP) (Hunton, Lippincott, & Reck, 2003), otherwise known as "enterprise wide packages that tightly integrate business functions into a single system with a shared database" (Chapman & Kihn, 2009; Newell, Huang, Galliers, & Pan, 2003; Quattrone & Hopper, 2005). ERP implies thus, the availability of sophisticated IT to create a corporate environment that provides a degree of interoperability which stand-alone "componentized" systems fail to achieve (Hunton et al., 2003).

In other words, IT automates and integrates the organization's operations as well as gives the capacity to reduce costs and provides accurate and timely organization-wide information, resulting in improved efficiencies, decision-making and organizational performance (Hitt & DJ Wu, 2002; Poston & Grabski, 2001). Though integrated IT systems are usually made and introduced by technicians, but it is strongly related to the accounting applications (Chapman, 2005) and management control (Dechow, Granlund, & Mouritsen, 2006). The invention of modernized IT has fundamentally changed the way of business operations and accounting practices (Hunton, 2002). Sadagopan (2003) added that the adoption of IT are directly useful to perform accounting processes, including, for example, general ledger, accounts receivable and payable, profitability analysis, cost of goods sold, and performance analysis.

In the same vein, Anderson (1995) asserted that the availability of sophisticated IT determines the success of the implementation of ABC. Also, it was argued that, IT systems are important factors in the process of implementing ABC system (Krumwiede, 1998). In addition to its crucial influence in aiding the accomplishment of various strategic priorities including minimizing costs of operations, customer service management, maintaining quality and flexibility and enhancing organizational revenues and profits (Huo, 1998; Theodorou & Florou, 2008).

Consistently, Reid and Smith (2000) and Haldma and Laats (2002) suggested that the application of IT is considered an important contingency factor, that has great importance in adopting PMSs in organizations (Ong & Teh, 2008). Among other things, the results of Mat and Smith (2014) demonstrated that outstanding performance is contingent on a good match between IT and MA techniques such as ABC.

As such, the accessibility and availability of IT affect employees' attitude and readiness to adapting with new innovations in organizations (Rockart, Earl, & Ross, 1996), particularly when the current innovation is technologically inclined such as ABC (Askarany, Smith, & Yazdifar, 2007b; Lee et al., 2010). An organization with an advanced level of IT integration would be able to transmit, consolidate, and manage information across different departments. Hence, it will be easy for such company to operate and share information among different internal sub-systems and to use these information for decision support (Barua, Konana, Whinston, & Yin, 2004; Maiga et al., 2013). Finally, Integrated IT is a powerful tool (Moorthy, Voon, Samsuri, Gopalan, & Yew, 2012) that can provide more sophisticated and flexible forms of analysis

leading to reductions in cost, improvements in revenue and enhancements in performance (Chapman & Kihn, 2009; Poston & Grabski, 2001).

Consistently, Bharadwaj (2000) examines the impact of IT integration on the organizational performance. It was revealed that IT improves the performance of the organization. Meanwhile, another studies conducted by Poston and Grabski (2001) and Grabski, Leech, and Schmidt (2011) found that the adoption of ERP has no significant impact on organizational performance. Such inconsistency necessitates further study on the impact of IT on organizational performance. However, there have been far little empirical studies on the influence of mediating factors in this regard (Albadvi, Keramati, & Razmi, 2007).

2.3 Management Accounting System

Management accounting system (MAS) refers to "the systematic use of management accounting (MA) practices to achieve some goals". MA refers to "a collection of practices such as budgeting or product costing" (Chenhall, 2003). More broadly, management control systems employ both MA and MAS tools to establish an effective control system in achieving the organizational goals (Hared, Abdullah, and Huque, 2013; Chenhall, 2003). According to Abdel-Kader and Luther (2006) there are five different categories of MAS which are costing system, budgeting system, performance evaluation systems, information for decision-making system and strategic analysis system. Meanwhile, Nimtrakoon and Tayles (2010) based their classification into two groups of traditional MAS and contemporary MAS.

The main objective of traditional MAS includes the provision information related to financial, quantitative, internal and historical, which is often insufficient to plan, control, evaluate performance, strategic benefits and decision-making in today's advanced manufacturing environments (Bruggeman & Slagmulder, 1995; Hoque, 2011). Numerous arguments have been put forth that the traditional MAS (such as cost variance analysis and profit-based performance measures) provides information that is not timely enough, too aggregated and misleading to be relevant for supporting managers' planning and control decisions (Ajibolade, 2013b; Chenhall & Langfield-Smith, 1998b; Smith, Abdullah, & Abdul Razak, 2008).

Consistently, experts opined that new evolving manufacturing environment requires broad scope of information including non- financial and future-orientated, which are in a timely, less aggregated and are more reflective of organizations strategies and goals (Bouwens & Abernethy, 2000; Bromwich, 1990; Chenhall & Morris, 1986; Smith et al., 2008). Thus, the need to address the shortcomings of traditional MAS gave birth to the emergence of contemporary MA practices which includes activity based costing (ABC), activity-based management (ABM), activity-based budgeting (ABB), attribute costing, balanced scorecard (BSC), quality costing, target costing, kaizen costing, competitor cost assessment, value chain costing, lifecycle costing, non-financial performance measures, customer profitability analysis (CPA), benchmarking and economic value analysis (Cadez & Guilding, 2008; Chenhall & Langfield-Smith, 1998a; Guilding, Cravens, & Tayles, 2000). These contemporary techniques have been recommended as an improvement to solve the distortions in product cost and performance information given by the traditional MAS (Ajibolade, 2013b).

Undisputedly, ABC is currently receiving significant attentions of researchers in the area of MAS (Cinquini & Tenucci, 2010). The researchers' attention is instigated with the fact that practitioners are faced with series of issues arising from the pitfalls of using the conventional costing systems in today's advanced manufacturing environment (Kumar & Mahto, 2013). In view of this, management accountants are now expected to advance their practices in areas such as product development, cost and revenue analyses, continuous improvement, and the evaluation of overall organizational performance (Stefano & Filho, 2013) with regard to the ABC implementation. For example, Askarany, Smith, and Yazdifar (2007a) held the view that there are convincing supports that traditional techniques of MA are based on inconsistent assumptions. Hence, ABC can advance the deficiencies of traditional costing techniques, by specifying how overheads different with respect to a wide range of cost drivers. Amir, Auzair, Maelah, and Ahmad (2012) added that ABC, as an effective cost management system, is important not only to facilitate planning and control decision, but also as a communication, motivational and evaluation tool.

Meanwhile, Gupta and Galloway (2003) saw that ABC illustrates a shift from a strictly financial perspective to a "wholesystem" perspective because they incorporate both financial and non-financial data in its reporting. This is as a result of the fact that ABC is considered one of the most important innovations in MA of the twentieth century. Also, ABC represents the background for numerous other MA techniques and the successful outcome of these techniques relies solely on ABC system (Innes & Mitchell, 1995). For example, ABM, ABB (Emblemsvåg, 2003), supply chain management (Askarany, Yazdifar, & Askary, 2010) and benchmarking fall back on ABC system as its major source of information (Kennedy & Affleck-Graves, 2001).

In addition, ABC is an inseparable part of the BSC. ABC gives quantified vision of what is truly driving cost from both inside and outside the organization, thereby supporting all BSC dimensions (Maiga & Jacobs, 2003). Similarly, Filomena, Neto, and Duffey (2009) highlighted that target costing would be more effective if the organization had an ABC system.

In Iraq, there is currently a financial and non-financial information gap in the assessment of the performance of manufacturing companies (Al-Ghaban & Hussain 2009). In view of the importance and the essentiality attached to the Iraqi industrial sector and with the aim of alleviating the current challenges faced by this sector (Al-Ani & Abdullah, 2014), ABC can be used to discern non-value adding activities and remove them with the goal of improving the performance of the manufacturing sector (Gunasekaran & Sarhadi, 1998). Subsequently, the modern MA techniques such as ABC system are being implemented by the Iraqi manufacturing companies in order to enhance the financial and non-financial performance and for many other purposes such as reducing production costs, improving products quality and supporting decision-making process.

2.3.1 ABC System Implementation

ABC has been in the process of conceptualization and operationalization since the late 1980s (Cooper & Kaplan, 1988). The conception of ABC is said to borne out of overcoming the pitfalls in the traditional costing system (Abdul Majid & Sulaiman, 2008; Norris, 1994) which is volume-based as against the activity-based method of ABC. Operationally, ABC assigns overhead cost to products or customers base on multiple cost drivers of individual activities (Cooper & Kaplan, 1992). Thus, ABC

provides more detailed and accurate costing information (Banker et al., 2008; Cardoş & Pete, 2011; Charles & Hansen, 2008; Innes, Mitchell, & Sinclair, 2000; Liu & Pan, 2007; Nassar, Al-Khadash, Sangster, & Mah'd, 2013; Shields, 1995). In fact, a study conducted by McGowan (1998) juxtaposed the functions of both traditional cost management methods and ABC systems and revealed that the use of ABC leads to a significant increase in the accessibility, accuracy, and relevancy of costing information as compared to traditional cost management methods. Beheshti (2004) added that the implementation of ABC helps managers in calculating costs more accurately and in detecting methods of cost reductions.

ABC implementation is all about separately identifying activities that an organization undertook in the course of manufacturing or delivering a product or a service to customers (Ittner et al., 1999). Meanwhile, Horngren, Datar, and Foster (2003) opined that activities are either "event, task, or unit of work" that are conducted in the process of designing products, setting up machines, operating machines and distributing the manufactured product. Thus, the implementation of ABC requires management to analyze these activities and how they relate to one another (Angelis & Lee, 1996).

Invariably, ABC is a strategic costing tool (Amir et al., 2012) which calculates costs based on the individual activities that are executed in the course of manufacturing a product or delivering a service (Raz & Elnathan, 1999). Agndal and Nilsson (2007) added that ABC assigns overhead cost to production activities separately. Subsequently, the ABC system allows managers to reduce costs by designing products and processes that consume fewer activity resources. It basically aims to provide detailed information on the value-added and non-value added activities performed in

a company, the cost of these activities and the drivers of activity costs (Gupta & Galloway, 2003). Ittner et al. (1999) added that such useful information would then allow managers to eliminate activities that do not add value to customers and increase the efficiency of value-added activities.

As such, the implementation of ABC implies managing the expenses and the costing of different activities based on their drivers (Banker & Potter, 1993; Cooper & Kaplan, 1991). In other words, those activities are regarded as the main causes of indirect costs (Cinquini & Tenucci, 2010). In essence, ABC is a costing system that traces costs of activities according to cause-effect drivers or based on resources consumed in order to control it, and uses volume and non-volume based drivers as the basis for assigning cost to cost objects (Banker & Potter, 1993; Chan, 1993; Duh, Lin, Wang, & Huang, 2009). Thus, ABC has sheer edge over traditional (absorption) costing system by offering managers a more structured method of evaluating the expenses that are associated with every activity separately (Baykasoglu & Kaplanoglu, 2008). Hence, ABC is an accurate cost management system that focuses on measuring the cost and performance of cost objects such as activities, products, customers and so on (Tsai, 1998). Also, ABC is a system that takes charge of the relationship between cost drivers and manufacturing activities (Gunasekaran & Sarhadi, 1998; Tsai, Lai, Tseng, & Chou, 2008).

In another perspective, ABC is defined as a cost management system that manages the concurrence between activities and cost objects (Gosselin, 2006; Soin, Seal, & Cullen, 2002). The bottom-line to these different definitions of ABC is that ABC is MA tool that tends to outperform traditional cost accounting methods in terms of recognizing

cost drivers, assign cost based on the number of activities and resources consumed within the manufacturing and distribution processes of a product, service or customer (Kaplan, 1991). Hence, ABC clarifies the relationship between cost and the activities of organizations (Chan, 1993; Tsai & Kuo, 2004).

It was noted that the structure of product costs in many contemporary manufacturing companies had changed substantially with overhead costs (production and non-production) growing in relative size and importance (Fadzil & Rababah, 2012; Maelah & Ibrahim, 2007). Moreover, direct labor had shrunk dramatically due to increased automation (Maelah & Ibrahim, 2007). In spite of these, traditional or absorption costing method has remained unaltered throughout the period (Hussain & Gunasekaran, 2001; Sohal & Chung, 1998). More so, the frequent attachment of indirect costs to final products in proportion to their total production cost remains a widely used allocation method (Maelah & Ibrahim, 2007). The rationality of this traditional method is questionable (Chan, 1993; Malik & Sullivan, 1995), as indirect costs incurrence may often bear no close relationship to production cost (Maelah & Ibrahim, 2007). In contrast, ABC approach is more efficient and adequate which reflects the causal relationship between products and the consumption of the resources that have been acquired by the organization through overhead expenditure (Gosselin, 2006; Hussain & Gunasekaran, 2001). Subsequently, ABC emerged as a panacea to these pitfalls in production costing to ensure that overhead cost utilization is achieved in such manner (Goebel, Marshall, & Locander, 1998; Maelah & Ibrahim, 2007). Consistently, ABC is reported in extant literature as a more functional cost system that provide detailed information, better classification of costs according to behavior, report cost information incessantly, provide accurate cost data to a great extent and

help in processing more variances (Stevenson, Barnes, & Stevenson, 1993; Pizzini, 2006).

Arguably, there has not been any incongruity with regard to the understanding of what ABC is all about (Askarany & Yazdifar, 2012). Studies have presented different findings on the importance of implementing ABC. Some researchers suggested that ABC integrates non-financial as well as financial information in the reports (Maelah & Ibrahim, 2006). Other researchers revealed that ABC is important because it helps to understand the nitty-gritty of the entire finances and expenses of product manufacturing in a more accurate manner than the traditional cost management systems by providing a more reliable and detailed costing information (Cooper & Kaplan, 1991; Ittner, 1999). Meanwhile, ABC is a system that helps in making appropriate strategic decisions with regard to product mix, outsourcing, pricing and assessment of production processes and performance (Angelis & Lee, 1996; Banker et al., 2008).

There has been a consensus with regards to the definition of ABC among theorists (Rbaba'h, 2013) and most of the definitions that have been presented by prior researchers are unanimously pointing at the strength of ABC in overcoming the innate flaws in traditional cost management methods in the execution of overhead costs (Huynh, Gong, & Huynh, 2014; Needy, Bidanda, & Gulsen, 2000). Baxendale (2001) added that the strength of activity-based approach, as a sophisticated costing system, lies at the application of accounting information generated with accounting standards to prepare product profitability or CPA, eradicates unnecessary cost information for

managerial planning and strategic decision making process, and reevaluates product pricing.

Some other studies demonstrated that the importance of implementing ABC goes beyond operational benefits and also leads to organizational internal strategic effectiveness (Anderson, Hesford, & Young, 2002; Cooper & Kaplan, 1991; Schoute, 2009). For instance, ABC is seemingly an apt strategic MA tool with an inherent aptitude for improving cost efficiency without any negative impact on the quality of the provided services, provide the proper information to the management and eventually to continue improve the quality of operations across the organization (Hardan & Shatnawi, 2013). In addition, it is unarguable that decisions cannot be made without the support of reliable and accurate cost information, hence the calculated product costs through ABC improves performance of manufacturing firms (Stefano & Filho, 2013). Researchers also demonstrated that the importance of implementing ABC provides better understanding into business process and cost drivers and also helps managers to realize less important activities and ultimately improves organizational performance (Gordon & Silvester, 1999; Ittner, 1999; McGowan, 1998).

One of the strongest points that researchers have employed to justify the strength of ABC over traditional costing systems is that, the adoption of ABC proffers numerous advantages that is borne out of the transparency and the accuracy of information that are provided by ABC (Cagwin & Bouwman, 2002). Meanwhile, there have been different interpretations as well as different approaches to understanding the impact of ABC implementation. Some of the approaches documented in literature with regard to

understanding the impact of ABC implementation includes, the financial and nonfinancial benefit of ABC implementation, satisfaction with the implementation of ABC, CPA, inventory valuation and the role of ABC information in pricing, marketing and production decision-making process (Al-Basteki & Ramadan, 1998; Innes & Mitchell, 1995; Karakas, Koyuncu, Erol, & Kokangul, 2010; Lukka & Granlund, 1996; Tsai et al., 2008). In view of these methodological differences, scores of studies continued to evolve with different level of truism with regards to the exact effect of ABC implementation in organizations and especially in the manufacturing industry (Gordon & Silvester, 1999).

Furthermore, the effectiveness of adopting ABC system in an organization can be guaranteed under certain conditions (Noreen, 1991). These conditions are in other words referred to as contextual factors in many contingency based-studies. For instance, ABC is an indispensable, flexible, and cost-effective tool for manufacturing excellence and continuous improvement that is tailored to the needs of their competitive and manufacturing conditions (Turney, 1989). Chenhall (2003) argued that contingency approach has been the most popular approach for studying the implementation of ABC. The findings of previous studies have demonstrated that the importance of ABC implementation in any organization is determined by the level of certain contextual variables such as environmental uncertainty, market orientation, competitive strategies, organizational structure and IT (Ahmad & Zabri, 2015; Anderson et al., 2002; Pavlatos, 2010).

Consistently, there are momentous findings from prior studies on the impact of ABC implementation on organization performance (Askarany & Yazdifar, 2012;

Baykasoglu & Kaplanoglu, 2008; Qian & Ben-Arieh, 2008; Chea, 2011; Zaman, 2009; Singer & Donoso, 2008). Most of the constructive findings are hitherto excessively from developed nations and few from developing and Arab countries (Abdul Majid & Sulaiman, 2008; Al-Basteki & Ramadan, 1998; Ali, Malo-Alain, & Haque, 2013). Numerous facts have been presented from these studies with regard to the performance and the functionalities of ABC. For instance, Ittner et al. (2002) found that the implementation of ABC significantly leads to reduction of cost among manufacturing companies in the United States. Also, Cotton, Jackman, and Brown (2003) revealed that the use of ABC yields accurate profitability analysis of customers, output decisions and new product or service design in New Zealand. In addition, the work of Innes et al. (2000) conducted in U.K, demonstrated that ABC success is an important MA innovation and it is very significant with cost modelling, cost reduction, cost management and activity performance measurement and improvement. It was also revealed in a study conducted in Australia that ABC implementation has a direct impact on organizations' overall performance (Zaman, 2009).

In Iraq, for instance, Jaf et al. (2015) collected 50 questionnaires among seven Iraqi manufacturing companies to measure the impact of MA techniques on achieving competitive advantage. They found that ABC system is widely used among these companies to achieve competitive advantages. In other survey study conducted by Hassouni (2012) found that 75 % of respondents (45 individuals) in seven companies used ABC to accurately determine production costs. In addition, Abdullah (2012) and Abdullah (2013) concluded that all the basic requirements for implementing ABC are available in many organizations in Iraq. They provided practical evidence of the importance of ABC system in cost analysis, cost control and cost reduction. More

recently, Wanas (2017) used data from 100 manufacturing companies that are presently uses ABC system to examine the beneficial effect of the time-driven activity based costing system. Wanas (2017) concluded that the complexity and diversity in the production process within those companies supported the need to apply time-driven activity based costing system. Wanas proved that this system is economically beneficial for those companies.

In the same context, Radi & Ismail (2011) provided an empirical evidence that the products diversity and the complexity of production processes are the main drivers of the shift from traditional cost systems to the ABC systems. This was supported by the results reported by Youssef and Oudah (2014). They further argued that the ABC is essential for management to provide relevant data for decisions-making, especially in the light to the intensive competition facing the Iraqi manufacturing companies.

On the other hand, Al-Robaaiy (2018) argued that IT and customer orientation are the main drivers to the implementation of the ABC system in the Iraqi manufacturing sector. Salman and Alwan (2015) pointed that the implementation of ABC system has an important role in improving the products quality, confirming that the system reduces the costs of quality activities such as the activity of processing errors production and the activity of re-test of products. Youssef and Al-Ani (2016) stressed that the ABC system provides accurate, timely and appropriate information, which in turn improves the decision-making process in the organization. However, the above literature was limited as it mainly examined ABC as a full costing system, neglecting the levels of ABC implementation and other potential benefits that may result in the

practical implementation of ABC. Also, very little empirical research exists on the effect of contingency factors on ABCIS in the Iraqi context.

2.3.2 Research on ABC Implementation Stages

The implementation of ABC refers to the execution of ABC system as a method of costing and MA in an organization (Agbejule, 2006) consistent with the objective of ABC conception (Kaplan & Cooper, 1998). In previous ABC adoption research, researchers such as Anderson & Young (1999), Clarke, Hill, & Stevens (1999), Byrne (2011), Brown, Booth, & Giacobbe (2004), Gosselin (2006) and Schoute (2004) have made specific assumptions about how to define ABC adoption. According to these studies, the most appropriate definition of the adoption of ABC are those operating units that are currently using ABC (Brierley, 2011). Hence, using two-step method (Anderson, 1995; Angelis & Lee, 1996) to assign cost namely, aggregating cost of activities into a number cost pools, and the second step is using cost drivers to assign activities costs on cost objects (Gosselin, 2006). The ulterior motive behind the two-step method of cost allocation allows an easy assessment of cost placed on cost objects based on the individual activities conducted in its manufacturing process (Angelis & Lee, 1996).

Meanwhile, the process of ABC implementation involves a number of different stages. Anderson (1995) used the first four stages of ABC implementation, developed by Cooper and Zmud (1990) six-stage model including initiation, adoption, adaptation, acceptance, reutilization and infusion or integration. Meanwhile, Gosselin (1997) has separated the implementation of ABC only into two stages, adoption and implementation. The adoption stage encompasses the initiation, adoption, adaptation

and acceptance stages. Whereas, the implementation stage is considered as the finalization stage which include the reutilization and infusion stages (Agbejule, 2006).

This categorization by Gosselin (1997) has received substantial attention from previous studies and many of these studies, for instance, Brown et al. (2004), Maelah and Ibrahim (2007) and Innes and Mitchell (1995) focused on the adoption stages of ABC. However, a very few researches have been conducted at the implementation stage (Zhang & Isa, 2010b). In addition, there has been a little knowledge on how ABC implementation is attained at the final stages especially with regard to the reutilization and infusion stages (Agbejule, 2006; Byrne, 2011; Yapa & Kongchan, 2012). Later, Arnaboldi and Lapsley (2005) provided four stages of ABC implementation including initiation and adoption, design, implementation, and use of information, and found that the existence of competitive environments influenced the use of ABC information. Yapa and Kongchan (2012) mentioned that previous researches have not paid adequate attention to the use of ABC information.

Consistently, Byrne (2011) used the final two stages of Cooper and Zmud's (1990) six-stage model, and classified them together as the "mature" stage, adding that this advanced stage of ABC implementation is the most important and less ambiguous stage. Concurrently, Fadzil and Rababah (2012) also employed "mature" stage, and separated the implementation of ABC into following levels, non-adoption, adoption, abandonment, implementation and usage stage. The maturity stage of ABC system is also used by Anderson & Young (1999), Zhang and Isa (2011), Krumwiede (1998), and Zhang et al. (2015). In the same context, Zhang et al. (2017) focused on the last three main stages of Cooper and Zmud's (1990) model (acceptance, routinization and

integration). Zhang et al. (2017) classified these stages into two categories: ABC initial users and ABC mature users. However, Guenther & Gaebler (2014) suggested that a differentiation of stages 3 to 6 of Cooper and Zmud's six-stage model seemed not convenient. They further argued that Cooper and Zmud's adaption stage, acceptance stage (minimal use), routinization stage (increase of frequency in use) and system integration stage are all effective during the same stage, that is the use of a selected cost management method.

In addition, some studies for example, Brown et al. (2004) and Charaf and Bescos (2013) have examined the relationship between ABC adoption and technical and/or behavioral factors. More so, a large number of contingency-based studies such as Tillema (2005), Muslichah (2013) and McManus (2013) have been conducted in the field of MAS. Maelah and Ibrahim (2006) examined ABC adoption from the perspective of organizational change theory. However, little attention has been given to determining the contingency factors that affect the success of ABC implementation (Al-Omiri & Drury, 2007). In addition, most studies on ABC implementation stages, e.g. Anderson (1995) and Arnaboldi and Lapsley (2005) arrived to inconclusive, different and mixed results (Fadzil & Rababah, 2012).

More recently, Al-Sayed and Dugdale (2016) have used three major phases of implementation: 1) "Initiation", which has two stages, awareness and interest. 2) "Implementation", also has two stages, set-up and implementation. 3) "Integration", this phase has three stages, ramp-up, reutilization and infusion. However, some previous researches, such as, Brierley (2009), Shields (1995) and Foster and Swenson (1997) ignored the adoption or implementation stage in their studies. Also, previous

studies examining ABC implementation relies almost exclusively on perceptual outcome of the executions of ABC in the organization (Yapa & Kongchan, 2012). According to Elhamma and Zhang (2013), it is impossible to distinctively pinpoint the performance of ABC as one of the strategies employed in organizations from other strategies. Hence, prior studies resort to examining the contribution of ABC on organizational performance based on their respondents' perceptions.

There have been significant levels of achievements from different researchers in establishing and articulating the contribution and benefits of ABC implementation on different levels of organizational performance. For instance, Innes et al. (2000) demonstrated that the implementation of ABC benefits organizations with increments of profit. Cooper and Kaplan (1992) argued that, helping organizations to increase profit is one of the significant contributions of implementing ABC in organizations. This notion is hard to reject especially because there have been a load of empirical evidences from prior studies on the strong relationship between ABC implementation and improved organizational performance (Abdul Majid & Sulaiman, 2008; Chenhall and Langfield-Smith, 1998b). In addition, Narayanan and Sarkar (1999) implied that ABC contributions to organizations also include strategic benefits which are evident by significantly influencing strategic managerial decisions. The contribution of the implementation of ABC in organization also extends to improving operational benefits (Schoute, 2009). Especially, because ABC provides detailed analysis that help in making value added decisions and value-based reporting (Cokins, 1997; Gupta & Galloway, 2003).

As such, the level of implementation of the ABC system has also been examined based on the purpose for which it was used (Angelis & Lee, 1996; Cotton et al., 2003; Kallunki and Silvola, 2008). It was asserted that the reasons for using ABC systems in different organizations should reflect the differences in the managerial need for using it in each organization (Kallunki and Silvola, 2008). For instance, Gosselin and Mévellec (2003) interviewed managers from 42 companies which used or implemented ABC system in Canada and in France. They concluded that none of the 42 models implemented were similar. Further, Turney (1989) added that the benefits of ABC systems are achieved without designing a system that is more complex than necessary. For instance, an ABC system for a simple manufacturing setting will be a simple system. Accordingly, Kallunki and Silvola (2008) argued that there are two reasons for using ABC systems, namely a need to reduce and control the costs, and a need to improve and modernize decision-making. Similarly, Gosselin (1997) classified the use of ABC systems into two levels, namely pilot ABC and full ABC. This distinction, depending on intended purposes of ABC, is important in order to be optimal (Schoute, 2009).

The pilot level of ABC usage is the first level in an ABC implementation process but may be an end in itself (Gosselin, 2006). This level of usage requires the completion of the activity analysis and activity cost analysis (Gosselin, 1997). According to Gosselin (2006), most of the organizations, if not all, that have adopted ABC have limited themselves to activity cost analysis level. In the pilot ABC or activity cost analysis level, organization has the opportunity to identify the costs of each activity, cost drivers and the factors that cause them to vary (Thomas Johnson, 1991). These steps may enable managers to better understand how they perform a task and how to

control operating activities (Baird et al., 2007). Also, it may help managers find new procedures, activities, and processes to improve quality, reduce costs (Baird et al., 2004) and improve productivity (Thomas Johnson, 1991; Schoute, 2009). Nanni, Dixon, & Vollmann (1992) suggested that many companies do not make it to the full level of ABC implementation especially because they are mostly interested in the identification and the analysis of cost drivers (as cited in Gosselin, 2006). On the other hand, the full ABC is the ultimate level in the implementation of an ABC system (Gosselin, 2006; Zhang et al., 2017). This level consists of a cost information system which values all products and services based on the outputs of the full level of ABC system. Further, the information of the full ABC level is also used for financial reporting and for managerial purposes such as decision-making processes, performance measurement, and strategic cost management (Thomas Johnson, 1991; Kaplan & Anderson, 2003).

The purposes of use of the cost system, or ABC system, were also explained by Schoute (2009). He classified the use of cost system into two purposes; cost system usage for product planning and cost system usage for cost management. However, it has been ascertained by previous researchers that cost systems can be implemented to complement each of the two purposes (Chenhall, 2004; Kaplan & Cooper, 1998). Besides, many companies are found to have only a single cost system (Drury and Tayles, 2005). This suggests that many companies' cost systems compromise on the optimal level of complexity in order to provide both product planning and cost management (Schoute, 2009).

Consistently, Langfield-Smith (2008) claimed that researchers have failed to address the question of what ABC system is actually used for in organizations? Corroboratively, Schoute (2009) argued that, a contextual factor that has not yet been examined is the purposes for which the cost system is used. In addition, criticism of past research raised by Krumwiede (1998) maintained that studies failing to identify the different stages of ABC will promote heterogeneity within the sample and leads to contradictory research results. Krumwiede (1998) put forward the idea that the acceptance, use and net benefits of an ABC systems would differ significantly at the various stages. Interestingly, evidence exists to suggest that adopters of an ABC systems are unable to judge the success of the ABC system especially in the early stages of adoption (Byrne, 2011; Pavlatos, 2010). As such, previous ABC research (e.g. Anderson & Young 1999; Ittner et al., 2002; Shields, 1995; Foster and Swenson, 1997; Liu & Pan, 2007; McGowan, 1998; Pavlatos, 2010; Schoute, 2009; Zhang et al., 2015) tended to concentrate on the implementation stage of ABC. In a nutshell, Sohal and Chung (1998) and Rahmouni and Charaf (2010) pointed out two aspects of successful implementation of ABC: first, critical factors that lead to success. Second, the objectives of ABC system must be clear, simple and understandable by all members of the organization.

2.3.3 ABC Implementation Success

There has been a plethora of empirical research on the effectiveness of ABC (Anderson, 1995; Anderson & Young, 1999; Brown et al., 2004; Foster & Swenson, 1997; Gosselin, 1997; Shields, 1995), but these studies majorly focused on identifying success of ABC system and on modeling the factors that lead to this success (Maelah & Ibrahim, 2006). These studies have employed different approach to defining ABC

success. Cooper and Kaplan (1992), for instance, defined ABC failure as a lack of actions based on ABC information. Also, success has been defined as: the use of ABC information for decision-making process (Innes & Mitchell, 1995), overall use and accuracy (Anderson and Young, 1999), usage satisfaction (McGowan & Klammer, 1997; Shields, 1995), level of usage (Baird et al., 2004; Gosselin, 1997), perceived financial benefit (Shields, 1995), allocate costs to discrete cost objects (Yapa and Kongchan, 2012), increase in company's value (financial benefits) (Kennedy & Affleck-Graves, 2001) and financial and non-financial benefits (McGowan, 1998).

The measurement of increase in company's value used by Kennedy & Affleck-Graves (2001) to measure ABC success has been criticized by Byrne, Stower, & Torry (2009), because of its excessive reliance on confounding variables that are extremely difficult to control. Malmi (1997), however, has criticized the decision-making perspective for assessing the success of ABC. The case study of Malmi (1997) shows, in the context of strategic decision making, the success of ABC system cannot depend on whether its implementation results require any decisions or actions to be taken, but on its ability to make a correct diagnosis of the situation. Consequently, some of the so-called ABC failures may not be failures at all. Alternatively, these explanations of "failure" might merely reflect a limited appreciation of the uses to which MA techniques are put in practice.

Therefore, Anderson and Young (1999) identified three criteria for the evaluation of ABC implementation based on analysis of interviews that were held with 236 employees in two American manufacturing companies: (1) whether ABC outcome is used for cost reduction; (2) whether ABC outcome is used for process improvements;

and (3) whether ABC outcome is more accurate than outcome from traditional cost system. The study of Anderson and Young (1999) shows that production employees mainly evaluate ABC system based on the last two criterions, whereas supporting or administrative employees mainly evaluate the same ABC system based on the first criterion. They found that these differences in respondents' evaluation of ABC were due to their different usage of ABC data in the maturity stage. Cotton et al. (2003) and Moisello (2012) pointed out that previous studies have used different concepts of ABC success in different context which is the reason for the level of inconsistency in the literature of ABC. Overall, previous studies imply that ABC success is a dynamic, multidimensional concept, which is hard to measure objectively, and of which the dimensions are still somewhat ambiguous (Cinquini & Mitchell, 2005).

In this regard, four dimensions were often adopted in the measurement of ABCIS namely, (1) use of ABC information, (2) decisions and actions taken with ABC information, (3) management evaluations of overall ABC implementation, and (4) perceived financial improvements from ABC implementation (Foster & Swenson, 1997). In 166 sites of 132 companies, Foster and Swenson (1997) employed different attributes to measure the level of success, that required respondents to evaluate the overall success of ABC. Nonetheless, Foster and Swenson (1997) did not place ABC measurement in relation to the level and objective of use (Baird et al., 2007; Moisello, 2012).

McGowan (1998) extents Foster and Swenson's (1997) study by focusing on the critical characteristics and influences of ABC implementation that may lead to increased decision-making utility and competitive advantages. McGowan (1998) used

four dimensions to measure the success of ABC: impact on organizational process, perceived usefulness, technical characteristics and attitudinal. McGowan (1998) posited that "measures that describe the users' reactions to the innovation, such as attitudes and satisfaction, are appropriate surrogates for assessing the success of an information system". According to Byrne et al. (2009), the latter case of assessing the success has provided the most robust basis for the measurement of ABC success in research to date. In the McGowan's (1998) measurement, companies can pursue different objectives and choose different levels of implementation, which is in line with Gosselin's (1997) approach, and therefore not evaluate success on the basis of the stage reached but in relation to a set of criteria which are consistent with the chosen level (Moisello, 2012).

Rahmouni and Charaf (2010) argued that only a few studies (e.g. Byrne, 2011; Zhang et al., 2015) have examined the success of ABC. Langfield-Smith (2008) called to examine how ABC system is used or implemented to cost activities and to cost products. Meanwhile, Maelah & Ibrahim (2006) claimed that a comprehensive study on ABC systems among Asian region is limited. Shields (1995) opined that the successful adoption of a technique in one country does not necessarily mean it also guarantees its success when implemented in another country, due to the fact that the ABCIS is contingent on certain contextual factors in developed countries. Meanwhile, Kaplan & Cooper (1998) advocated that ABC systems have special significance for developing economies because it provides a uniform approach to cost management.

In the context of the Iraqi environment, the majority of studies (e.g. Farhood, 2005; Radi & Ismail, 2011; Salman & Alwan, 2015) have examined the importance of ABC

system in cost reduction, decision making and improved organizational performance. Other studies (e.g. Abdullah, 2013; Saleh, 2013) focused on methodological problems and difficulties in implementing the ABC system. However, a very few researches that have reported the stages of ABC implementation and factors influencing ABC success in Iraqi manufacturing sector. Therefore, it is important to examine the level of ABC implementation and whether contingency factors could be influencing ABC success in Iraq. As such, the current study would concentrate on the implementation stage and the financial and non-financial benefits to defining ABC success is developed by McGowan (1998). This is because McGowan's measurement combines all the success measures into a composite measure. Hence, it avoids the measurement bias that may appear in the use of a single dimension or issue (Rahmouni & Charaf, 2010).

2.4 The Relationship between Contingency Factors and ABC Implementation

The contingency argument related to the design and use of accounting systems has a long tradition in accounting research (Gordon & Miller, 1976; Gordon & Narayanan, 1984; Mia, 1993; Otley, 1980; Simons, 1987; Waterhouse & Tiessen, 1978). Major studies in contingency-based research, for instance, Albu & Albu (2012), Garengo & Bititci (2007), Haldma & Laats (2002), Kattan, Pike, & Tayles (2007), Löfsten & Lindelöf (2005) and O'Connor, Chow, & Wu (2004) have stressed the importance of external, internal and technological factors as explanatory variables when examining the development of MA practices (Ahmad & Zabri, 2015). The external and technological factors have been a key variable in contingency-based MA research, with the majority of previous studies supporting the notion that environmental uncertainty, market orientation and IT do affect the use of MA practices such as ABC (Abdel-Maksoud, Dugdale, & Luther, 2005; Anderson & Young, 1999; Bruns &

Kaplan, 1987; Luther & Longden, 2001; Szychta, 2002; Tayles & Drury, 1994; Waweru et al., 2004). Also, different internal factors have been found to influence the (re)design and use of MA practices such as competitive strategies and organizational structures (Auzair, 2011; Chenhall, 2003; Dropulić, 2013; Gliaubicas & Kanapickienė, 2015; Gosselin, 1997; Langfield-Smith, 1997; Ong & Teh, 2008; Tillema, 2005; Zhang et al., 2015). The success of the ABC implementation is largely subject to these factors in each company, the decision to implement ABC without considering the implementation factors often ends up in its abandonment (Fortin, Haffaf, & Viger, 2007; Gosselin, 2006; Rahmouni & Charaf, 2010). The following subsections present the review of previous studies on the impact of contingency factors on ABC implementation.

2.4.1 Environmental Uncertainty and ABC Implementation

As far back as 1970s and particularly before the conceptualization of ABC as one of the systems of MA practices, empirical studies have been documenting the relationship between environmental uncertainties and MA practices (Gordon & Miller, 1976; Lawrence & Lorsch,1967). More recently, the role of environmental uncertainty and strategic MA or ABC implementation is increasingly evolving (Bastian and Muchlish, 2012; Kattan et al., 2007; Soheilirad & Sofian, 2016). Jusoh and Miryazdi (2015) argued that the prior contingency studies such as Chenhall and Morris (1986) and Anderson (1995) have provided conflicting evidences on the condition of external environments affecting MAS, particularly the implementation of ABC in organizations.

In addition, Elhamma (2015) bemoaned that many researchers have not really explored the impact of environmental uncertainty on the ABC implementation. Meanwhile, the results of the few emergent studies are inconclusive. This justifies why it is important to further delve on the relationship between environmental uncertainty and ABC implementation. For instance, Ax et al. (2008) revealed in their study conducted among industrial companies in Sweden that there is no direct relationship between perceived environmental uncertainty and the adoption of target costing, a typifying system of MA. Consistent with Ax et al. (2008), the study conducted in France by Alcouffe (2002) demonstrated that attributes of environment such as competitive, stability and predictability do not affect the adoption of ABC. In contrast, Elhamma (2015) surveyed 62 manufacturing companies comprising of companies that have adopted ABC and those that are yet to adopt ABC in Morocco. Elhamma (2015) found that perceived environmental uncertainty has a significant and positive impact on the use of ABC system.

An earlier review of contingency-based MAS research, Gordon and Narayanan (1984), Mia (1993) and Chong and Chong (1997) revealed that environmental uncertainty has a significant and positive relationship with MAS information. Lal and Hassel (1998) surveyed 64 managers of New Zealand manufacturing companies and conducted a hierarchical multiple regression analysis to establish the effect of environmental uncertainty on sophisticated MAS information. The results demonstrated that when environmental uncertainty is high, managers of large organizations that tolerate ambiguity perceive additional MAS information to be most useful to cope with the uncertainties.

In the same vein, Anderson and Young (1999) found that ABCIS is positively influenced by the contextual environment. Innes and Mitchell (1990) also demonstrated in a case study research how changes in business environment motivate the implementation of ABC. In addition, Guenther and Gaebler (2014) found that uncertainty has a positive and significant relationship with the success of implementation of cost management methods. Concerning the role of ABC systems in evaluating the profitability of new markets and products under environmental changes and uncertainty problems, Arnaboldi and Lapsley (2005) in a case study approach affirmed that managers in their organizations provided evidence of this use of ABC systems. In specific, ABC information enabled managers to determine the profitability status of products, and to separate the profitable customers from the unprofitable ones in an uncertain environment.

Consistent with the above, McManus (2013) argued that, detailed information on the complexity of business external environments is paramount to the successful implementation of sophisticated MA systems. Furthermore, Arnaboldi and Lapsley (2005) hold that the more information at the disposal of an organization on the condition of its external environment, the more accurate their cost information, which by extension, improves the accuracy of the organizations' cost management system. In addition, Muslichah (2013) and Bastian and Muchlish (2012) reported a significant positive correlation between perceived environmental uncertainty and the use of PMSs such as ABC systems.

Similarly, Dekker and Smidt (2003) reported that the adoption of costing practices is determined by the predictability of the environment among Dutch companies. Further

review of the contingency-based literature, Naranjo-Gil (2009) conducted a study in Spain and the findings revealed that there is a positive relationship between technical innovations and environmental uncertainty. Meanwhile, Ajibolade (2013a) revealed that perceived environmental uncertainty is very significant because a higher level of uncertainty increases companies' need to get more information, including cost information with emphasis on advanced costing system.

Consistent with that, Jusoh (2008) surveyed 120 manufacturing companies in Malaysia. The data collected was analyzed using multiple regression and correlation. The findings provide statistical evidence on the impact of external environment on the use of MAS (BSC). In the same sample, Jusoh (2010) suggested that perceived environmental uncertainty negatively influences the extent of use of financial and internal processes measures, even though the MAS examined in both Jusoh (2008) and Jusoh (2010) is not ABC. A few years later, another study conducted among manufacturing companies in Iran by Jusoh and Miryazdi (2015) revealed that perceived environmental uncertainty has a significant negative relationship to higher diffusion of ABC in organization. This implies that, when there is high environmental uncertainty the diffusion of ABC is low in the organization. However, Ahmad and Zabri (2015) found that costing systems, among others, are positively and significantly affected by contingent factors which are size, market competition and environment dynamic within Malaysian medium-sized firms in the manufacturing sector.

Consistent with the above studies, environmental uncertainty is expected to change the way managers use MAS information. In other words, when the environment is uncertain, the implementation of ABC will be successful. However, the extant

literature reveals that there is a dearth of researches examining the relationship between environmental uncertainty and ABCIS. Hence, this research attempts to fill this gap by examining the relationship between environmental uncertainty and ABCIS.

2.4.2 Market Orientation and ABC Implementation

The debate on whether market orientation is a contingency factor to the strategic MA or implementation of ABC being an innovative strategy is still ongoing in the literature (Cadez & Guilding, 2008; Naranjo-Gil, 2009). One of the most constantly raised questions is whether market-oriented organizations are influenced by this orientation (such as customer focus) to implement MA techniques. The current intense competition in the modern and globalized business environment has heightened the importance of customers and the importance of having accurate information about customers (Bromwich, 1990; Howell & Soucy, 1990). Hence, there is a need to understand the significance of market orientation on the implementation of ABC (Abdel-Kader & Luther, 2008; Waweru et al., 2004; Naranjo-Gil, 2009).

Consistently, ABC provides the ability to cover the existing gap information between accounting and marketing, to avail the capabilities of a market oriented organization by promoting inter functional decision making, and to provide a sound financial basis on which to identify customers who deserve the full extent of an organization's relationship-building efforts (Goebel et al., 1998). From the mid-1980s, CPA technique (Bellis-Jones, 1989; Kuchta & Troska, 2007; Noone & Griffin, 1999) was widely adopted. It had precursors in the marketing accounting literature, and in relation with the broader ABC philosophy, provided the means of extending a customer costs

management or strategic cost reduction emphasis, such as acquisition costs, to the sales and marketing function (Roslender & Hart, 2003).

Notably, marketing orientation may provide the motivation for ABC usage (Thomas Johnson, 1991; Stevenson et al., 1993; Waweru et al., 2004). For instance, Bromwich (1990) reported that one of the strong reasons that urged organizations to increase the adoption of strategic MA techniques such as ABC, is market orientation. Meanwhile, Yapa and Kongchan (2012) in his interview with one of the respondents explain that this company expected to use ABC information that could support the launch of its new products in order to respond to the customer's immediate demands, and also to maintain product quality. Yapa and Kongchan (2012) found that the changes in customer behavior due to pricing competition, has a considerable influence on ABC implementation. Another study conducted in a large Chinese manufacturing company by Liu and Pan (2007) revealed that market and customer orientations produced successive changes in activities and cost drivers which have led to the adoption ABC system to meet customers' needs and to overcome competition.

Little attention has been given to the market orientation (Cadez & Guilding, 2008) as a critical factor that may influence ABC implementation stages (Liu & Pan, 2007). The influence of market competition on ABC systems has been earlier examined by Bjørnenak (1997) and Malmi (1999). The outcome of Bjørnenak (1997) showed a lower level of market competition and a lower level of competitors for the adopters of ABC than that of the non-adopters, although either effect is not statistically significant. In comparison, the outcome of Malmi (1999) are consistent with the results presented by Schoute (2004): both the percentage market competition and the perceived change

in competitors were found to be significantly higher for the adopters of ABC than that of the non-adopters. More so, literature mirrored that the majority of previous ABC research such as Brierley (2009) and Schoute (2004) examined competitor focus, whilst very little attention has been given to the customer focus.

Abdel-Kader and Luther (2008) asserted that customer power is a critical contingency factor. The result of their study found that differences in sophisticated MA are significantly explained by customer orientation and some other contingency factors such as environmental uncertainty and decentralized structure. Furthermore, using survey data from a sample of 124 Australian listed companies, Guilding and McManus (2002) found from their contingency-based MA study that customer orientation is significantly and positively associated to the use and perceived merit of customer accounting practices, including ABC. In this vein, Naranjo-Gil (2009) found a positive and significant relationship between market concentration and activity based innovation in Spanish Public Hospitals using PLS model.

Gliaubicas and Kanapickienė (2015) found that market competition is an important contingency factor in the usage of strategic cost management techniques, especially ABC system. In another contingency-based accounting research, an empirical study by Hoque (2011) from a sample of Australian strategic business units found that increased market competition is positively correlated (t-value = 2.376, p = 0.024) with a greater number of changes in MA and control systems. In addition, Bruns and Kaplan (1987) also pointed out that companies facing fierce market should redesign their costing systems and implement more sophisticated systems such as ABC, as highly competitive market competitors are likely to take advantage of any costing errors.

On the other hand, Anderson (1995) found that competition has no impact on ABC implementation, but she also found that it has a positive impact on ABC adoption. However, Brierley (2009) found that there is no significant effect of competition (competitor focus) on the level of ABC consideration. Meanwhile, Baines and Langfield-Smith (2003) argued that the relationship between changes in the actions of competitors and in the needs of customers and the increased use of modern MA techniques is indirect. Meanwhile, Cadez and Guilding (2008) proposed a contingency-based model to examine the mediating effect of strategic MA practices on the relationship between market orientation and organizational performance. Although the quantitative results supported the market orientation-performance relationship, the association between market orientation being a contingency factor and strategic MA practices including ABC was not supported. While the qualitative data collected from interviews confirmed the previous relationship (market orientation and MA practices).

Evidently, there is little work in the area of market orientation and ABCIS in the literature. Subsequently, this study aims to discern exactly how market orientation, as one of the external contingency factors, affects the success of ABC implementations. Such objective is accommodated under the premise of contingency theory; thus the implementation of ABC is contingent to the culture of market orientation.

2.4.3 Competitive Strategies and ABC Implementation

Significant numbers of researchers have reported that the implementation of MAS such as ABC is influenced by the information generated and the culture implemented through different types of competitive strategies under a contingency theory field

(Chenhall & Langfield-Smith, 1998b; Chong & Chong, 1997; Govindarajan, 1988; Krumwiede & Charles, 2014; Langfield-Smith, 1997; Dropulić, 2013). Based on a survey of 143 companies, Shields (1995) found a high level of difference among companies in terms of the benefits derived from ABC success. Shields empirically identified some of the factors which are associated with ABC success. One factor Shields found to be significantly associated with successful ABC implementation is the linkage of ABC to the generic issue of competitive strategy (although no specific approach to strategy was considered). This finding seems to be particularly noteworthy in light of the recent emphasis on the proactive use of cost management systems to facilitate a company's competitive strategies.

Notably, the use of strategic MA such as cost accounting, competitor accounting and customer accounting, differs with different strategic priorities (Auzair et al., 2013). A contingency-based study conducted in Singapore by Seaman (2006) investigated the relationship between MA and control system changes and organizational performance under different strategies. The findings showed differences in the costing systems (such as ABC) in organizations with different strategies. These results are consistent with Gosselin's (1997) study which was conducted in Canada. Gosselin (1997) found that prospector organizations showed more interest in adopting and implementing ABC than organizations with other business strategy. Similarly in another study conducted in France by Alcouffe (2002) demonstrated that the implementation of ABC among "prospector" and "analyzer" is higher compared to organizations with other types of business strategies. The underlying conclusions of these studies are that the strategies an organization decides to employ affect the implementation of ABC in their company.

However, the findings presented by Malmi (1999) is contrary to Gosselin's (1997) findings which found no significant relationship between competitive strategy and the implementation of ABC. In contrast, the findings of Gosselin (1997) is supported by that of Pavlatos (2010) which found that companies following a differentiation strategy use more ABC than companies following a cost-leadership strategy.

In the same context, the findings of Abdel-Kader and Luther (2008) reveal a disparity with that of Cinquini and Tenucci (2010). Abdel-Kader and Luther (2008) gave a hypothesis that the companies following a differentiation strategy need more advanced MA techniques than those following a cost leadership strategy. However, Cinquini and Tenucci (2010) found a significant results for the association between cost leadership strategy followers and the use of advanced MA techniques. In Teeratansirikool et al.'s (2013) study of strategy-PMSs relationship, cost leadership strategy, differentiation strategy and combination strategies are found to have significant impact on PMSs. Consistent with previous researchers, in a survey and interview conducted among business unit researchers, Jermias and Gani (2004) in their contingency-based study found, among other things, that the priority on business strategies affect the usage of strategic MA techniques.

Nonetheless, there have been contradictory findings from prior researchers with regards to the effect of competitive strategy on the implementation or the use of ABC in organization (Baird et al., 2004; Bhimani et al., 2005; Hyvonen, 2007; Krumwiede & Charles, 2014). For instance, Bhimani et al. (2005) demonstrated from their contingency-based study that defender firms (following cost leadership strategy) perceived the success of ABC to be higher than that of analyzer and prospector firms,

but strategy type does not seem to affect the decision nor the extent of implementing ABC. Auzair (2011) found that cost leadership strategy is positively associated with formal and informal form of management control systems. While the result of a logistic regression conducted by Elhamma and Zhang (2013) revealed that both the defender (cost leadership) strategy and prospector (differentiation) strategy do not have a significant impact on the adoption of ABC among Moroccan enterprises. The findings of Elhamma and Zhang (2013) is supported by that of Baines and Langfield-Smith (2003) and Abdel-Kader and Luther (2008). They found, among other things, that business strategy does not have a direct impact on the usage of MA practices.

In fact, the findings presented by Al-Omiri and Drury (2007) are more instructive which found that strategy influences ABC infusion where ABC infusion is higher for defenders than prospector firms. To put it another way, it has been argued that highly sophisticated systems (such as ABC) are appropriate for firms that embrace cost leadership strategy (Chenhall & Langfield-Smith, 1998b). Pavlatos and Paggios (2009) have also stressed that the level of cost system functionality is positively associated with the cost leadership strategy, while Alsoboa and Aldehayyat (2013) found the use of ABC is positively connected with both differentiation and cost leadership strategies. According to Chenhall (2003), the type of generic strategy which has been established by an organization can lead to greater impact on the effectiveness and efficiency of any MAS.

Based on the conclusions arrived at in these previous studies, the success of ABC implementation could be affected by the types of strategy. This relationship is in line with the theoretical perspective of contingency theory. Nonetheless, empirical

evidence on the linkage between competitive strategies and ABC success is lacking in the Iraqi manufacturing environment. As such, one of the motivation of this study is to delve on the differential effects of both cost leadership strategy and differentiation strategy on the success of ABC implementation.

2.4.4 Organizational Structure and ABC Implementation

Zhang et al. (2015) claimed that little studies have been directed to examine the relationship between organizational structure and the success of ABC implementations. In other words, arguments on the relationship between organizational structure and the success of ABC implementations are still on-going in the literature. The arguments have yielded series of instructive findings. Some of which defies the association between organizational structure and the implementation of ABC and some other studies insist that the implementation of ABC has a significant impact on organizational structure. For instance, even though, the study conducted by Chongruksut and Brooks (2005) employed a non-parametric statistical method to examine the differences in the organizational structure of adopters and non-adopters of ABC, the study revealed no statistical significance between the three dimensions of organizational structure (centralization, vertical differentiation and formalization) of both adopters and non-adopters of ABC. Hence, the study of Chongruksut and Brooks (2005) could not establish any relationship between organizational structure and ABC implementation which is in contrast to the findings of Gosselin (1997).

Gosselin (1997) is one of the early studies on empirical developments with regard to the association between organizational structure and the implementation of ABC. In other words, the study reported that centralized structure positively influences the

adoption of ABC than the decentralized structure. This is because, the centralized structure offers top managers the authority of making decisions regarding the adoption of ABC and divisional or middle-level managers have no other options than to follow the decisions of top managers. Meanwhile, the adoption of ABC in a decentralized structure might require additional or complex process, as divisional managers have the power to make decisions over the adoption of ABC. In the case whereby, ABC usage is not perceived useful or important to certain department, the decision of such departments can be unfavorable to the adoption of ABC in the entire organization (Zhang et al., 2015). Zhang et al. (2015) adopted both centralization and formalization as the two types of organizational structure in their study conducted among manufacturing companies. Their findings demonstrated that only formalization structure has a significant influence on the success of the ABC implementation. In other words, there was no statistical evidence on the connection between centralized structure and the implementation of ABC.

Drawing on MAS contingency-based literature, Chenhall and Morris (1986), Gerdin (2005b) and Gul & Chia (1994) explicitly posited that as organizations become larger and more complex, the more they tend to be decentralized in structure and implement a more sophisticated cost control system. An earlier review of contingency-based MAS research, Gordon and Narayanan (1984) revealed a positive relationship between decentralized structure and sophisticated MA practices. These results refer to the fact that decentralized choice supports MA innovations. For instance, Chia (1995) revealed from a contingency-based study conducted in Singapore that there is a positive relationship between decentralized organizational structure and the use of strategic MA. The implication of Chia's result is that when the level of decentralized structure

is high, the organizations implement a sophisticated MAS. Decentralized structure enhances the accessibility of relevant information and by extension, the quality of decisions.

In the same vein, Nahm et al. (2003) found that the horizontal decentralized structure has a significant and positive effect on innovation. Mat and Smith (2014) analyzed 212 companies from the manufacturing industry in Malaysia using structural equation modelling (SEM). The researchers defined several dimensions of horizontal decentralized structure in their study such as multi-skilling of workforce, worker training, establishing participative culture and employee empowerment. In connection with these dimensions, Mat and Smith (2014) found a positive and significant relationship between decentralized structure and MA practices including ABC system, confirming that the changes in organizational structure dimensions have caused changes in MA practices.

More recently, a contingency based study conducted by Elhamma and Moalla (2015) surveyed 62 companies in Morocco to examine how the structure of the organization affect the use of ABC. The study reported that the connection between organizational structure and ABC usage varies with regards to the type of organizational structure. For instance, no significant relationship was found between ABC use and organizations with horizontal decentralized structure. Meanwhile, there is a significant high usage of ABC among organizations with vertical decentralized structure as compared with organizations with vertical centralized structure. Pertinent with the findings of Elhamma and Moalla (2015), the result of the study conducted by Abdel-Kader and Luther (2008) among industrial companies in the United Kingdom also

establish the importance of strategic MA for organizations with decentralized structure in accessing timely and accurate information that will enhance productive decisions and managerial plans.

In Iraq, the result of the study conducted by Abdullah (2012) using a case study in one manufacturing company, revealed that decentralized structures and more investment in IT were the main drivers of the adoption of the ABC system in this company.

In another recent study, Ngoc Phi Anh (2016) corroborated that decentralized structure is an important contingency factor and found that it has a positive effect on the implementation of MA practices such as ABC system in an organization. The findings of Ngoc Phi Anh (2016) is in line with the report presented by Liu and Pan (2007) from an action research conducted in a Chinese cultural and organizational backdrop. Liu and Pan (2007) demonstrated that hierarchical command and communication structure (vertical decentralized structure) and active participation of high numbers of committed professionals (horizontal decentralized structure) have significant impact in enhancing the success and diffusion of ABC implementation. Similarly, Ajibolade (2013b) also found a positive relationship between decentralized structure and MAS designs.

More specifically, the level of MA sophistication is significantly explained by decentralized structure (Hammad et al., 2013; Abdel-Kader & Luther, 2008). Damanpour (1991) stated that a decentralized structure has a significant impact on the implementation of innovation. Consistent with that notion proffered by Damanpour (1991) and the analysis presented by Abernethy and Bouwens (2005), the findings

reported by Abernethy and Bouwens (2005) demonstrated that a decentralized structure has a significant and positive (coefficient = 0.367, p< 0.00) impact on the success of ABC system being a MAS innovation.

In line with the findings of previous studies reviewed above, it is fair to summarize that organizational structure have an important role on the operations of MAS. Following the approach of previous contingency-based studies, organizational structure has been one of the widely studied contingency factor. Nonetheless, little is known about how vertical and horizontal decentralized structure can affect the success of ABC implementations. Therefore, this study considers the relationship between both vertical and horizontal decentralized structure and the success of ABC implementations.

2.4.5 Information Technology and ABC Implementation

Numerous studies are evolving on testing the effect of IT on ABC implementation in organizations across different sectors (Anderson and Young,1999; Abdel-Maksoud et al., 2005; James, 2013; Schoute, 2011). The motivation for such researches is that modern MA practices, such as ABC, require formalized systems for gathering data, disseminating and reporting information, and establish a common language with which employees of the enterprise can communicate (Maiga et al., 2013; Wouters & Verdaasdonk, 2002). Hence, there are implications of the level of technology utilized by organizations on the type and amount of information provided by the MA information systems (such as planning and control information) (Choe, 2004). Thus, an organization with advanced IT requires a different kind of MAS such as ABC (Hoque, 2000) and requires a large amount of accounting information (Bruggeman &

Slagmulder, 1995) to facilitate operations, and to be more successful (Baines & Langfield-Smith, 2003).

In line with claims that ABC success is more applicable and more beneficial in advanced manufacturing environments, researchers using perceptual measures of ABC success, such as Anderson and Young (1999), who found a positive relationship between the perceived success of ABC implementation and the adoption of advanced IT for manufacturing practices. Krumwiede (1998) claimed that continuous process factories are more likely to make extensive use of ABC than that of discrete processes. Likewise, Ittner et al. (2002) found that extensive use of ABC is positively correlated with advanced IT for manufacturing practices. They proved that ABC implementation is slightly higher in factories with more recent products introductions and in factories with high product mix. According to Cooper and Kaplan (1988), the implementation of ABC is important with regards to maximizing data collection and data processing through sophisticated IT. In that regard, Cooper and Zmud (1990) suggests that the implementation of ABC system can be pre-determined with the availability of sophisticated IT.

The study of James (2013) is one of the few studies that have addressed the influence of IT on the adoption of ABC among financial sector. The finding of the study conducted in Jamaica demonstrated that IT among other factors is an important factor in influencing the ABC adoption decision in banks sector. Correspondingly, based on the data collected from 565 Turkish non-financial companies by questionnaire survey, Kuzey, Uyar, and Delen (2018) found that IT plays a very important role for the success of cost system functionality practices. In a manufacturing context, the study

conducted by Ajibolade (2013a) corroborated that IT is an important contingency factor. The study also found that the more complex the production process, the more will be the significance of the technologies on the implementation of sophisticated MAS such as ABC. Similarly, Ismail (2010) opined that the availability of IT in an organization expands the practicability of the ABC system in the organization.

Waweru et al. (2004) found that the changes in technology is one of the main contingent factors, affecting MA change. Maiga et al. (2013) opined that successful outcome of MAS, such as ABC, may be contingent upon the implementation of new manufacturing techniques. It follows that strategies of accurate indirect cost allocation to cost objects through the implementation of ABC can be expected when there is increased use of automation (Hoque, 2000). The level of IT may limit, or affect, the design and implementation of ABC system (Al-Omiri & Drury, 2007; Anderson, 1995). However, very little studies have been done regarding the adoption and implementation of MA techniques such as ABC and IT in developing country (Ismail, 2007). More so, Shields (1995) and Maelah and Ibrahim (2007) found that there is no significant relationship between IT and ABC adoption or success. In the same vein, the study by Askarany et al. (2007b) showed that the implementation of technological changes in manufacturing practices, such as computer aided design and just in time, is associated with the diffusion of ABC. However, the implementation of ABC is not associated with the level of satisfaction of ABC's users. The findings of their study indicated that there is no evidence to support the perception that the implementation of technological changes lead to a reshape of the cost structure of products and therefore ABC or more accurate costing techniques are needed.

Meanwhile, a cross sectional survey conducted by Isa and Foong (2005) among 110 manufacturing companies in Malaysia revealed that advanced manufacturing technology adoption such as just-in-time and ERP resulted in changes in cost structures and the amount of information needs by the decision makers. Their study found that these changes have extensively led to a higher adoption of ABC system and a greater emphasis on non-financial indicators. In the same vein, another study conducted among manufacturing companies in Malaysia by Ismail and Isa (2011), revealed that the relationship between advanced manufacturing technology and broad scope of MAS information is positive and significant.

In summary, the review of extant studies suggests that IT for manufacturing practices and ABC system exhibit crucial linkages. However, little attention has been given to the effect of other dimensions of IT, such as IT for decision support and IT for administration, on the success of ABC implementations. This therefore requires advancing the literature with regard to the role of integrated IT in implementing ABC. Therefore, this study employs the theoretical argument of contingency theory to examine the relationship between integrated IT and ABCIS among manufacturing companies in Iraq.

2.5 ABC Implementation and Organizational Performance

Findings are evolving on the significant impact of ABC implementation on organizational performance particularly in the realm of manufacturing sector (Qian & Ben-Arieh, 2008; Singer & Donoso, 2008; Tsai & Hung, 2009). Contingency theory assumes that organizational goals is contingent on the information that is provided by MAS to decision-makers (Haldma & Laats, 2002). In other words, MA information

should promote rationality in decision making (Covaleski, Dirsmith, and Samuel, 1996). In the same light, Abernethy and Bouwens (2005) demonstrated that the essence of adopting strategic MAS innovation is to influence the level of satisfaction with the information provided to the managerial decision making process which in turn improves organizational performance. This notion is consistent with so many other contingency-based studies. For instance, Chenhall (2003) argued that one of the advantages of sophisticated MA systems is their great ability in improving organizational performance. Prior researchers such as Chenhall and Langfield-Smith (1998b) have revealed the empirical connection between strategic MA techniques and organizational performance.

Scores of researchers have linked the implementation of ABC to different phases of organizational performance (Fortin et al., 2007; Jänkälä & Silvola, 2012; Maiga & Jacobs, 2003). For instance, with a sample of 691 manufacturing plants, Maiga and Jacobs (2008) indicated that ABC is a strategic innovation with functionalities that improves cost, quality and cycle time, which in turn, improve profitability. Meanwhile, Salem-Mhamdia and Ghadhab (2011) revealed that the higher usage of ABC helps in quality management and analyze customer satisfaction which are another indications of organizational performance. While the empirical results from 100 responses in Taiwan collected by Lee et al. (2010) demonstrated that the level of ABC usage is significantly correlated with financial and non-financial performance improvement. One year later, Lee and Yang (2011) surveyed 168 Taiwanese companies. Although they used a different instrument to measure organizational performance, but the results did not differ. They found that the significant and positive effect of PMSs on

organizational performance was caused by the ability of PMSs in providing relevant information and help organizations to gain competitive advantages.

Furthermore, the findings of McGowan and Klammer (1997) corroborated the findings of Shields (1995). Shields (1995), in a survey study conducted in the United States among organizations that have implemented ABC, revealed that, 75% believed the implementation of ABC improves the financial performance of their organization and 25% observed the opposite. Also, Elhamma (2015) demonstrated that the use of ABC information among Moroccan enterprises has a high contribution on competitiveness and profitability. In other words, the implications of these studies are unanimous as they all indicate the various phases of influences that the execution of ABC in organizations have on organizational performance.

The findings of Zhang and Isa (2011) are somewhat consistent with earlier findings reported on the association between ABC use and improving organizational performance. In addition, a cross sectional survey was conducted by Ittner et al. (2002) among 2,789 manufacturing companies in the United States and they conducted a logistic regression to establish the effect of ABC execution on manufacturing performance. Their results demonstrated that there is a significant correlation between the implementation of ABC and higher quality levels, increment in cycle time and improvements in quality. Also, ABC used was proven to have an indirect impact on manufacturing cost reduction. Although their study demonstrated that there is no significant relationship between ABC and return on asset, overall, the findings of their study indicated the relationship between ABC and organizational performance.

The result presented by Ittner et al. (2002) is consistent with the findings from another cross sectional study conducted by Cagwin and Bouwman (2002). Cagwin and Bouwman (2002) surveyed 210 internal auditors in the United States. The findings of the study showed a strong relationship between ABC success and overall improvement of organizational financial performance. Meanwhile, Jänkälä and Silvola (2012) surveyed 154 small companies and adopted a SEM to examine the influence of the extent of ABC usage on organizational performance. Though the statistical method employed by Jänkälä and Silvola (2012) is different from that of Ittner et al. (2002), but both studies demonstrated that an extensive use of ABC for over five years leads to a significant enhancement of financial performance especially in terms of ROI.

The study of Abdul Majid and Sulaiman (2008) is methodologically distinctive from that of Cagwin and Bouwman (2002). Abdul Majid and Sulaiman (2008) established the connection between ABC adoption and organizational performance using a case study of two multinational companies in Malaysia. It was reported that even though ABC was not widely adopted by the two companies, but ABC was a successful. Abdul Majid and Sulaiman (2008) found that ABC implementation contributes to the improvement of their overall organizational performance by reducing cost and improving process.

In an event-study, Kennedy and Affleck-Graves (2001) compared between 37 ABC implementing and non-implementing companies in the United Kingdom during 1988 to 1996. The buy-and-hold returns of these two set of companies were the point of comparison among the two set of companies. The result revealed that companies that implemented ABC recorded 61% as compared to 34% of ROI from non-ABC

implementing companies. Also, the findings revealed a significant difference between the measures of financial performance such as return on shareholder equity and assets employed. Conclusively, the study indicated that the implementation of ABC is significantly associated with financial performance improvement.

A similar finding was reported from an explanatory study conducted by Zaman (2009) in Australia. ABC was measured with perception on overall performance, strategic cost allocation method, increased efficiency and increased effectiveness. A regression analysis revealed that the perception of ABC executions in the aforementioned areas has a significant impact on organizational performance. Kennedy and Affleck-Graves (2001) reported a similar findings. Firms that adopt ABC recorded 27% increments in their market-based-performance measurement ahead of the firms that are non-adopters of ABC. Kennedy and Affleck-Graves (2001) concluded that the use of ABC contributes to the improvement of firm's value, cost control, asset utilization and better usage of financial leverage.

In Iraq, the implementation of ABC by manufacturing companies is motivated by the imprecision in determining costs, control pitfalls and lack of rationalizing the decisions resulting from the use of traditional cost systems. In addition, the results of traditional systems impacted negatively on the performance of Iraqi manufacturing companies (Youssef & Oudah, 2014). Consistently, Hassouni (2012) conducted a questionnaire survey research distributed to 45 individuals in 7 enterprises. 73 % of respondents stated that ABC information has been used to improve the organizational performance. Similarly, Allawi (2009) in his case study found that ABC implementation has contributed in providing information to manage the company's activities and evaluate

the performance of cost centers based on both financial and non-financial indicators. Meanwhile, Farhood (2005) revealed that ABC contributed to improving the overall performance of production and non-production activities. In other case study in Iraq, recently, the findings presented by Youssef and Oudah (2014) suggested that ABC was widely adopted by the understudied company since 2008. The results confirmed that ABC has contributed to improving the profitability and the performance of activities, by excluding activities that do not add value.

As for the Arab region, in a study on Bahrain, Al-Basteki and Ramadan (1998) provided evidence that ABC implementation is not limited to developed countries. They found that although few in number (26%) but Bahraini firms (as a developing country) have started adopting ABC owing to increased competition and improved IT. Similarly, Ali et al. (2013) found a very high usage of ABC among private companies in Riyadh, Saudi Arabia. In the same vein, Hardan and Shatnawi (2013) demonstrated that the implementation of ABC among Jordanian companies has a direct relationship with financial organizational performance. While Alsoboa and Aldehayyat (2013) found that ABC, among other strategic costing techniques, has a significant positive effect on overall performance (financial and market) of Jordanian listed manufacturing companies. In addition, Elhamma and Zhang (2013) conducted a survey research among 62 enterprises in Morocco. 12.9% of their respondents were adopters of ABC as a MAS. Logistic regression was employed for analysis and the findings revealed that the use of ABC improves the competitiveness, profitability and overall performance of the companies. These studies do not just indicate the evolving usage of ABC implementation in the developing world and especially the Arab, but also indicated that the usage of ABC significantly enhances organizational performance.

The majority of prior studies have reported significant and positive relationship between activity-based approach and performance (Charles & Hansen, 2008; Dehayes & Lovrinic, 1994; Kim, Park, & Yoon, 1997; Turney, 2010; Whicker, Bernon, Templar, & Mena, 2009). Yet, there are still a handful of researchers that holds that the truism about the implementation of ABC and its impact on organizational performance is murky (Askarany, 2011). Jänkälä and Silvola (2012) claimed that only a few studies have provided empirical evidence of the use of ABC to improve financial performance. For instance, while empirical findings by Plowman (1997) suggested that there is a strong relationship between ABC implementation and profitability, many other studies found otherwise (Gordon & Silvester, 1999; Innes & Mitchell, 1995; Ittner et al., 2002; Maiga & Jacobs, 2008; Pokorná, 2016). Thus, the reason why a number of companies in the United Kingdom abandon the use of ABC few years after its implementation (Innes et al., 2000).

For instance, Banker et al. (2008) conducted a cross-sectional research among a large number of manufacturing firms in the United States. Their study examined the relationship between ABC, world-class manufacturing practices and plant performance. It was revealed that ABC has only an indirect significant impact on plant performance. Bergeron and Bélaïd (2006) added that the relationship between the implementation of ABC and organizational performance cannot be confirmed empirically. Furthermore, prior studies, such as Al-Hroot, Mssadeh, and Amireh (2015), Askarany and Yazdifar (2012), Innes and Mitchell (1995) and Banker et al. (2008) have revealed a mixed result with regards to the connection between the implementation of ABC and organizational performance.

In the same vein, different approaches have been employed by these studies, among which is exploring the opinion of managers on the effect of ABC implementation on organizational performance. However, Jamil and Mohamed (2013) pointed out that these contradictory findings of past studies may be attributed to the different setting examined. Therefore, Zhang, Namazi, and Isa (2017) and Maiga (2014) suggested that in view of the mismatching findings that are currently found in extant literature, further investigation on the relationship between ABCIS and organizational performance is warranted.

2.6 The Relationship between Contingency Factors and Organizational Performance

Contingency theory hypothesizes that the level of organizational performance is influenced by contingency factors (Hayes, 1977; Otley, 1980). Previous studies such as Uyar and Kuzey (2016) and Kalkan et al. (2011) have demonstrated that organizational performance is affected by contingencies. The following sections illustrate the effect that contingency variables may have on organizational performance.

2.6.1 Environmental Uncertainty and Organizational Performance

The dynamics and the complexity of organizational environment are central to the improvement of every organizational performance (Dess & Beard, 1984; Wang, Chen, & Chen, 2012). This is because the survival of every organization is determined by how perfectly the management of the organizations can cope with environmental uncertainties (Soheilirad & Sofian, 2016). In fact, it is believed that successful organizations often blend their organizational performance and operations to suit the dictates of their organizations especially when competition from their external

environments become intensive (Gosselin & Bauwen, 2006; Hoque et al., 2001). Yang et al. (2011) added that environmental uncertainty often place serious challenges on organizational performance. Thus the reason why significant empirical attention have been exerted on examining the impact of environmental uncertainty on organizational performance (Rumelt, 1991; Wagner, Van Phu, Azomahou, & Wehrmeyer, 2002).

There have been numerous empirical submissions appending that environmental uncertainties affect different levels of organizational performance. For instance, the findings reported by Davidsson, Delmar, and Wiklund (2006) revealed that environmental uncertainty affects organizational performance, strategies and all aspect of business operations. Jusoh (2008) revealed that the performance of manufacturing organizations is susceptible to environmental uncertainty. Zahra (1993) also found uncertainty as one of the significant environmental factors that affects organizational performance. The findings presented by Wagner et al. (2002) indicated that organizations need to pay significant attention to environmental uncertainty in order to improve their organizational performance. Their findings are consistent with the conclusion presented by Kotha and Nair (1995) with regards to the significant impact of environmental uncertainty on firm's profitability.

Ax et al. (2008) mentioned that environmental uncertainty and market competition are two different concepts and their effects are completely different on organization's decisions. For instance, Isabella and Waddock (1994) revealed that there is a positive relationship between environmental uncertainty and organizational performance. However, the measure that used in their study deals with competitive conditions. Similarly, the instrument used by Ogunsiji and Akanbi (2013) also adopted perceived

market turbulence and competitive intensity as the dimensions for environmental uncertainty. Their study confirmed a positive relationship between perceived environmental uncertainty and organizational performance. Jane et al. (2014) surveyed 163 non-profit organizations in Nairobi, Kenya and employed complexity, dynamism, heterogeneity, capacity and domain consensus as the dimensions of external environmental. The findings of the study revealed that external environmental has a positive and significant impact ($p = 0.000$) on effectiveness, efficiency and financial viability.

In that regard, empirical studies have not ceased to delve at grasping the exact relationship that exists between the current environmental uncertainty and organizational performance. For instance, Yang et al. (2011) demonstrated that the relationship between environmental uncertainty and organizational performance (financial and market) is negative. In other words, better performance appears to result from a less uncertain environment (Raymond, Paré, & Bergeron, 1995). The findings of Lawrence and Lorsch (1967) and Khandwalla (1972) are supported by that of Jusoh (2008). Jusoh (2008) found a significant and negative relationship between environmental uncertainty and organizational performance. The implication of their findings is that when there is high environmental uncertainty, organizational performance is significantly affected. Similarly, Brännlund, Färe, and Grosskopf (1995) found a strong negative relationship between environmental uncertainty and economic performance.

By contrast, other studies have revealed that environmental uncertainties have no significant impact on organizational performance (Pagell & Krause, 1999; Parnell,

Lester, & Menefee, 2000; Pelham, 1999; Rivard, Raymond, & Verreault, 2006). For instance, Köseoglu, Topaloglu, Parnell, and Lester (2013) found in the hoteling industry in Turkey, that environmental uncertainty (technology and competitive uncertainty) has a partial significance on organizational performance, meanwhile market uncertainty has no significant correlation with organizational performance. In another MAS contingency-based model, Mia (1993) and Hoque (2004) revealed that there is no association between environmental uncertainty and organizational performance. The results indicated that MAS mediates this relationship. Mia (1993) claimed that the strong positive effect of MAS information has exceeded the negative effect of environmental uncertainty on firm performance.

Finally, the results presented by Al-Lami and Ismael (2011) suggested that Iraqi manufacturing companies operate in an environment characterized by complexity and uncertainty; it has a significant impact on organizational performance. In their study that involve 26 companies, Al-Lami and Ismael (2011) found that the adoption of competitive strategies and market orientation strategy have a significant role to reduce uncertainty and ensure strategic performance of organizations.

In view of the inconsistent findings in the current literature, this study is therefore motivated to examine environmental uncertainty-organizational performance relationship. In line with the theoretical argument of contingency theory, a negative effect is expected to exist between environmental uncertainty and organizational performance.

2.6.2 Market Orientation and Organizational Performance

Numerous researchers have attempted to establish the various levels of relationship that connect market orientation and organizational performance (Baker & Sinkula, 1999; Jaworski & Kohli, 1993; McManus, 2013; Matsuno & Mentzer, 2000; Slater & Narver, 1996; Verhees & Meulenberg, 2004). Meanwhile, far little studies have been able to provide statistical or rather empirical evidence as to how market orientation leads to improvement in organizational performance (Hunt & Lambe, 2000; Noble, Sinha, & Kumar, 2002). For instance, O'Cass and Viet Ngo (2007) conducted a cross sectional study whereby 180 marketing executives were surveyed. They employed a SEM approach to statistically test the relationship between market orientation and brand performance. Their findings statistically demonstrated that market orientation is a subset of organizational culture that leads to improvement in brand performance.

The findings of O'Cass and Viet Ngo (2007) are similar to the result of a correlational analysis conducted by Low et al. (2007) on the survey of 73 manufacturing companies in Australia. Their study measured market orientation with three constructs namely customer orientation, competitor orientation and inter-functional coordination. It was reported that the three constructs of market orientation is significantly and positively related to organizational performance. The interpretation of these findings is that market orientation is a type of organizational culture that then leads to improvement in organizational performance. It goes without saying that all organizational performance variables are strongly influenced by market orientation (Wang et al., 2012; Pelham, 1999). To put it another way, the findings of a survey of 165 Australian hotel managers conducted by McManus (2013) revealed a significant positive

relationship between market orientation and both financial and non-financial performance.

The common ground among these studies is the establishment of the relationship between market orientation and organizational performance. Hence, there is a consensus in the body of literature that a market-oriented organization gain superiority in their performance (Piercy et al., 2002; Slater & Narver, 1994). The study of Kohli and Jaworski (1990) affirmed that the more market orientation is established in an organization, the greater the overall performance of the organization. According to Erdil et al. (2004), this notion can be practically justified in the sense that, market orientation depicts the establishment of a market focused strategy for generating market-based knowledge which is harmonized with inter-functional efforts to improve business operations and performance. In other words, understanding the market conditions, demands and expectations and consolidating it with suitable product and service is what is meant by market orientation (Liu et al., 2002).

In the same vein, the contingency-based study conducted by Cadez and Guilding (2008) among 388 largest Slovenian companies revealed an affirmative findings with regard to the relationship between market orientation and organizational performance. Cadez and Guilding (2008), in their study adopted a seven-point Likert scale from Guilding and McManus (2002) to measure market orientation. The measurement enquired the opinion of the respondents on their companies; understanding of customers, development of superior value to customers, developing services (product) based on market demands and finally, the presence of strong market orientation.

However, the result presented by Johnson, Dibrell, and Hansen (2009) seems somewhat different from the result of Cadez and Guilding (2008). Johnson et al. (2009) employed a Likert-scale measurement which entails the three dimensions of the market orientation (customer orientation, competitor orientation and inter-functional coordination). With regards to the three dimensions of market orientation, the findings of Johnson et al. (2009) revealed that the inter-functional coordination dimension has more impact than both competitor and customer orientation dimensions on firm performance among food companies.

Consistently, Dawes (2000) presents a summary of 36 studies, and reported that 30 of these studies have found a positive relationship between market orientation and performance. However, other studies reported that MAS information, business environmental conditions, innovations, competitive advantage, profitability and learning significantly influence the market orientation-performance relationship (Baker & Sinkula, 1999; Noble et al., 2002; Atuahene-Gima, 1995; Jaworski & Kohli, 1993; Martin & Grbac, 2003; Narver & Slater, 1990: 2000; Zhou, Brown, & Dev, 2009). In view of the mixed (inconclusive) findings in the current literature, this study is therefore motivated to re-examine the relationship between market orientation and organizational performance.

2.6.3 Competitive Strategies and Organizational Performance

There have been enormous emphases and evidences in the body of knowledge on the importance of competitive or business strategy in improving organizational performance (Acquaah & Yasai-Ardekani, 2008; Allen & Helms, 2006; Chi, 2010; Spanos, Zaralis, & Lioukas, 2004). The underlying argument from the literature is that

organizations must establish one competitive strategy or a combination of competitive strategies to improve their performance and profitability (Allen & Helms, 2006; Chi, 2010). While some other studies demonstrated that there is a risk of being "stalk in the middle" or low-performance for organizations that combine between strategies (Chi, 2010; Johnson et al., 2008; Jusoh & Parnell, 2008). Allen and Helms (2006) and Agyapong and Boamah (2013) asserted that the arguments on the relationship between competitive strategies and organizational performance are still unclear and therefore call for further academic contributions.

Allen and Helms (2006) adopted the generic Porter's strategies, both cost-leadership and differentiation strategies, and examined how these strategies affect organizational performance. It was revealed that the Porters' generic strategies have significant impact in improving organizational performance using a regression analysis. Similarly, a study that was conducted among 50 family hotel managers in Ghana, Agyapong and Boamah (2013) employed both Pearson-Correlation and Regression as the statistical analysis and found that both differentiation and cost-leadership strategies lead to significant increment of performance among family hotels in Ghana. However, the viability of combination strategy may be temporary (Parnell, 1997) and organizations may end up "stuck in the middle" if they fail to create internal consistency between these strategies (Dess and Davis, 1984). These notions are consistent with the results of the studies of Acquaah and Yasai-Ardekani (2008) and Spanos et al. (2004). For instance, when it comes to organizations that pursue the stuck-in-the-middle strategy, Acquaah and Yasai-Ardekani (2008) provided empirical evidence that it yields poor performance.

In another study, Chi (2010) adopted four constructs namely, low cost, quality, delivery performance and flexibility as the latent variable for measuring competitive strategy among 202 textile manufacturing companies in the United States. The study employed the SEM as the statistical method for validating the constructs and for hypotheses testing. The findings of the study demonstrated that high-performance organization employs quality and delivery performance to establish the differentiation strategy while low-performance organization exert similar weight of attention to the four different constructs. The findings of the study also, implied the importance of competitive strategy on organizational performance by demonstrating that the lack of definitive competitive strategy leads to low-performance. From 97 companies in various manufacturing industries in the US, Robinson and Pearce (1988) found that organizations pursuing either cost-leadership strategy or differentiation strategy outperform those without a clear strategic orientation.

Leitner and Güldenberg (2010) employed a longitudinal method to survey the opinion of general managers of small and medium manufacturing companies on the impact of Porter's generic strategies on their performance from 1992 to 2002. The study revealed various instructive findings which include that many organizations establish a particular strategy for more than 10 years. It was also revealed that there is no significant difference in the performance of organizations that employed one particular strategy and those that combines between strategies. The findings of the study demonstrated that the combination of strategies yield superior performance as compared to differentiation strategy. The overall implication of the study is that the establishment of a generic strategy and the combination between strategies have a long-term impact on the performance of manufacturing companies.

The findings of Leitner and Güldenberg (2010) are similar to the findings revealed by Pertusa-Ortega, Molina-Azorín, and Claver-Cortés (2009). Pertusa-Ortega et al. (2009) surveyed 164 managers from different sectors of companies in Spain. Their result instructively demonstrates that different types of hybrid strategies are correlated with higher levels of performance. Porter (1980) opines that an organization can attain a superior performance if it pursued one of the two core strategies (cost leadership or differentiation). Hambrick (1985) affirmed that different strategies produce different types of performance. For instance, Cadez and Guilding (2008) and Parnell (2011) found that only cost leadership strategy is strongly associated with high organizational performance.

In addition, Powers and Hahn (2004) found a consistent truism of previous researchers in the banking industry. Their findings present statistical evidence on the positive and significant relationship between both cost leadership and differentiation strategies and organizational performance. It was elaborated further that cost leadership offers a higher advantage in organizational performance than the differentiation strategy which is more difficult to be implemented in the banking industry. Meanwhile, Yaşar (2010) found in a case study conducted in the Carpeting sector that both cost leadership and differentiation strategy are evenly important to improve organizational performance. However, It was noted by Fleming, Chow, and Chen (2009) that strategy does not independently influence strategic performance. Similarly, Teeratansirikool et al. (2013) in a study conducted in Thailand found that only a differentiation strategy is directly and indirectly associated with organizational performance. While cost based strategy does so only indirectly.

The general position in the literature is that a differentiation strategy leads to improved organizational performance. However, some studies (e.g. Ittner and Larcker, 1997; Joiner, Spencer, & Salmon, 2009; Perera, Harrison, and Poole, 1997; Spencer, Joiner, and Salmon, 2009; Chong and Chong, 1997) argued that a differentiation strategy may have a strong or weak effect on organizational performance, depending on the extent to which performance measures are used. For instance, from a survey of 84 large manufacturing companies in Australia, Spencer et al. (2009) demonstrated that, a strategic emphasis on differentiation is not, of itself, related to higher organizational performance; the financial and non-financial performance is only affected through the appropriate design and use of PMSs. Likewise, Chong and Chong (1997) were unable to confirmed a direct and significant relationship between differentiation strategy and business unit performance. In addition, Amoako-Gyampah and Acquaah (2008) in a study conducted among 250 large and medium sized manufacturing and service companies in Ghana revealed that both cost leadership and differentiation strategy have only an indirect positive significant relationship with organizational performance. The study emphasized that quality is a type of manufacturing strategy that mediates the relationship between competitive strategies and organizational performance. The direct relationship between cost leadership, differentiation strategy and organizational performance is found to be insignificant.

In summary, the review of extant studies reveals inconsistent and inconclusive findings with regard to the effect of competitive strategies on organizational performance. Meanwhile, both strategies (cost leadership and differentiation) are well established by contingency-based theorists as contingency variables which in practice influence the performance of an organization. Therefore, this present study is motivated to

discern the effect of competitive strategies of manufacturing companies in Iraq on their organizational performance.

2.6.4 Organizational Structure and Organizational Performance

Many literatures have highlighted the significant relationship between organizational structure and organizational performance (Csaszar, 2012; Maduenyi, Oke, Fadeyi, & Ajagbe, 2015; Maffei and Meredith, 1995; Qunhui & Yang, 2011; Tran & Tian, 2013). Meanwhile, Tavitiyaman et al. (2012) reviewed that the relationship between organizational structure and organizational performance is yet to be exhaustively studied. Qunhui and Yang (2011) determined the relationships among the six dimensions of organizational structure and performance of firms in the Chinese automobile industry and found a significant effect of the six dimension of organizational structure on time-based performance of the Chinese automobile organizations. Farhanghi et al. (2013) in a study that involve 242 engineers of consultant firms in Iran found that there is a significant relationship between the performance of organizations and the structure in which an organization implements.

Meijaard, Brand, and Mosselman (2005) surveyed Dutch managers of 1,411 small organizations. The study employed both centralization and specialization as the dimensions of organizational structure. The findings of the study imply that, different types of structure lead to different performance in the organization. Hence, there is a significant and positive relationship between organizational structures and the performance of organization. The findings of Meijaard et al. (2005) complements the report presented by Hao, Kasper, and Muehlbacher (2012) which demonstrated that organizational structures have a significant impact on the performance of organization.

According to Maduenyi et al. (2015), for an organization to improve its performance, a well-defined organizational structure should be put in place in an organization in order to achieve organizational objectives. Csaszar (2012) tested a model of how organizational structure affects organizational performance. The author adopted both centralization and decentralization as the two types of organizational structure. Csaszar (2012) found organizational structure as a relevant factor in predicting and affecting a wide range of organizational performance. Also, the findings empirically demonstrated that only decentralized structure has a significant influence on performance.

Contingency theory supporters have discussed the reasons why large organizations need to choose a decentralized structure to enhance their performance. Chia (1995) concludes that the relevance of decentralized organizational structures is not only to enable the large organizations to provide its decision makers with greater responsibility, but also control over its activities and greater access to the required type of information. Obviously, Chen and Huang (2007) used regression analysis in 146 large companies in Taiwan, and their findings concluded that decentralized structure leads to higher performance compared to other dimensions of organizational structure.

In organizations where the degree of decentralization is high, sub-unit managers are provided with greater decision making autonomy for planning and control (Gordon & Narayanan, 1984; Subramaniam & Mia, 2001). Enz (2008) reported that decentralized organizational structure facilitates a quick decision-making process, assists in staff training, enhances supplier relationships and reduces costs. Empirical findings by Hoque (2011) indicated that increased delegation of authority (more decentralized

structure) have direct positive effect on both financial and nonfinancial performance. Similarly, Morris and Steers (1980) found positive relationships between decentralized structure and achieving organizational goals. Whereas, Mat & Smith (2014) found a positive and significant association between horizontal decentralized structure and organizational performance.

In a very recent contingency based study, Uyar and Kuzey (2016) employed a covariance-based SEM techniques to analyze the survey conducted among Turkish companies. Their findings demonstrated that organizational performance is significantly influenced by the decentralized structure of an organization. In contrast to the above findings, Pertusa-Ortega et al. (2010) conducted a study among 250 organizations in Spain. A partial least square (PLS) technique was employed for the statistical analysis in their study. Their findings defy the notion that organizational structure has positive impact on organizational performance. Rather, it was reported in their study that organizational structure only has an indirect influence on organizational performance through competitive strategy.

Meanwhile, Jogaratnam and Tse (2006) demonstrated that mechanistic organizational structure (highly formalized and tightly controlled) and organic structure (informality and decentralization of authority) have positive and negative effect on hotel performance respectively. The findings also revealed that the mechanistic structures in the Asian working environment may be more dominant and effective as compared to that of the organic structures. However, Dalton et al. (1980) asserted that the mechanistic structure is negatively associated with financial performance. In addition,

they suggested the future investigations using other performance measures such as gross profit and efficiency.

Putting the above review into perspective, the stance of previous studies on the relationship between organizational structure and organizational performance is inconsistent. Therefore, this calls for additional investigation especially from the contexts which have not really enjoyed much focus from previous researchers such as Iraq. This study therefore aims at advancing the budding literature in this regards, by examining the effect of decentralized organizational structure on organizational performance.

2.6.5 Information Technology and Organizational Performance

MA researchers have examined the relationship between IT and different aspects of organizational performance. These types of studies have evolved across industries including manufacturing (Barua, Kriebel, & Mukhopadhyay, 1995), hospital (Devaraj & Kohli, 2003; Watcharasriroj & Tang, 2004) and banking (Shaukat, Zafarullah, & Wajid, 2009). It was unanimously revealed that the investment made on the integration of IT has a momentous implication on the performance of organizations (Alshbiel, 2017; Kohli & Grover, 2008; Theodorou & Florou, 2008; Melville, Kraemer, & Gurbaxani, 2004).

The literature is replete with studies on the importance of IT in enhancing organizational performance. It is argued that, previous researchers are motivated to delve into the connection between IT and organization performance due to the surge of investment made on IT (Bharadwaj, 2000; Hyvonen, 2007; Santhanam & Hartono,

2003). However, the findings of these studies are mixed or somewhat contradictory (Chen & Zhu, 2004; Ismail et al., 2017; Osei-Bryson & Ko, 2004). Some studies have shown that IT has a significant and positive relationship with organizational performance (Bharadwaj, 2000; Raymond et al., 1995). Meanwhile, some other studies maintained that even though the application of IT is practically linked to improvement in productivity, there is no statistical evidence to show the significance of IT on performance (Brynjolfsson & Hitt, 1998; Chae, Koh, & Prybutok, 2014). For instance, Chapman and Kihn (2009) and Poston and Grabski (2001) have pointed two conflicting results regarding the IT-performance relationship. In one hand, it was demonstrated that investments in IT lead to improved organizational performance. While on the other hand, IT does not demonstrate a favorable connection with organizational performance.

Meanwhile, Menon, Lee, and Eldenburg (2000) and Davern and Kauffman (2000) demonstrated that investing on IT has a positive effect on organizational performance. Similarly, the results presented by Shaukat et al. (2009) reported that there is a significant link between IT implementation and performance in both financial and manufacturing sectors. Notably though, Chae et al. (2014) did not observe this same relationship between IT and performance. Nevertheless, Albadvi et al. (2007) in an empirical work conducted among 112 car part manufacturers in Iran revealed that IT usage is positive ($\beta = 0.540$) and significant ($p < 0.000$) contributor to improving performance. Likewise, Banker, Chang, & Kao (2002) found that IT is an invaluable tool for improving organizational productivity. While Farhanghi et al. (2013) confirmed that advanced IT has contributed to improving the profitability and the

efficiency of an organization. Their findings also demonstrated that the higher utilization of IT has a significant impact on customer satisfaction.

The study conducted by Maiga (2012) surveyed a cross section of U.S. manufacturing managers. The author examined the impact of IT integration on financial performance. Based on the type of costing system used, the sample of 518 plants was split into two subsamples: 272 for the ABC adopters and 246 for the non-ABC adopters. The results showed a positive and significant relationship between IT integration and manufacturing financial performance in the ABC subgroup. However, this relationship was negative and non-significant for the non-ABC subgroup. Furthermore, an IT integration may enable organizations to reach out to new markets. Also it can allow managers to gain exclusive access to customer information (Straub and Watson 2001). For instance, the study based on 125 questionnaires in Isparta, Turkey by Kalkan et al. (2011) revealed that IT has been used for gaining a competitive advantage and meet customer demands. Hence, there is a positive (Beta = 0.270) and significant (p = 0.009) connection between IT and firm performance.

In Iraq, Hazaimeh, Alani, and Jawad (2013) in a study that involve 188 managers found that there is a significant relationship between IT and the performance of organizations (competitive advantages). Al-Khafaji and Al-Azzawi (2015) revealed that competitive superiority is significantly influenced by IT. Likewise, Al-Janabi and Al-Nuaimi (2014) surveyed 60 managers from different sectors of companies. Their result demonstrated that IT is significantly correlated with higher levels of performance.

Obviously, the body of literature is somewhat divided with regard to the relationship between IT and organizational performance. In addition, most studies (e.g. Al-Khafaji and Al-Azzawi, 2015; Albadvi et al., 2007; Farhanghi et al., 2013; Maiga, 2012) were not based on any supporting theory when examining the relationship between IT and organizational performance. In view of this, there is a need to empirically examine the relationship between IT and organizational performance from the perspective of contingency theory.

2.7 Contingency Factors, ABC Implementation and Organizational Performance

Though past studies have exerted significant effort in understanding the direct relationship between activity-based approach and organizational performance, few studies such as Frey and Gordon (1999) and Ittner et al. (2002) have considered the mediating role of activity-based approach on the relationship between contextual factors and performance. Gerdin and Greve (2004) suggested that the impact of contingency factor on organizational performance operates through MA techniques. Understanding such indirect relationship is the right direction towards advancing the discussion on understanding the benefits of implementing ABC among manufacturing companies (Bromwich & Hong, 1999; Chenhall & Langfield-Smith, 1998b). Besides these past studies, Jänkälä and Silvola, (2012) stressed that further examinations are needed to investigate how contingency factors affect the use of ABC and the subsequent emergence of performance.

Cadez and Guilding (2008) examined the mediating effect of strategic MA on organizational performance using a comprehensive contingent model. They found that the strategic MA techniques do not necessarily lead to superior performance. Instead,

superior performance is a product of a good match between contingencies (such as, business strategy and size) and strategic MA techniques. Notably, they were unable to support the mediating effect of strategic MA usage on the relationship between market orientation and organizational performance. Correspondingly, Han et al. (1998) empirically demonstrated that market orientation facilitates innovations, such as ABC, in organizations, which in turn, positively influences their business performance. According to Homburg, Krohmer, and Workman (2004), market orientation has been discovered to be an important factor that plays significant role not just on organizational performance but also on the adoption of innovations in organizations.

In the same vein, from a survey of 90 Australian manufacturing companies, Mia and Clarke (1999) found that MAS plays a mediating role between the intensity of market competition and business unit performance. Meanwhile, Chong and Chong (1997) conducted a study among 62 managers in manufacturing companies in Western Australia. Their findings demonstrated that significant indirect effect of strategy and environmental uncertainty on performance through MAS information. Non-financial as well as financial performance measures such as ABC is also found to have an indirect relationship between competitive strategy and organizational performance (Spencer et al., 2009). Similarly, Hyvonen (2007) reported that the "fit" between customer-focused strategy and financial performance measures positively influences customer performance. However, Hyvonen also found that the "fit" between customer-focused or differentiation strategy and contemporary performance measures do not help to achieve high customer performance.

Soobaroyen and Poorundersing (2008) employed a regression-path analysis to analyze the survey conducted in an African developing country context. Their findings empirically demonstrated that (1) decentralized structure has a beneficial effect on the quality of MA information and (2) the relationship between decentralized structure and performance is mediated by MA information. In the same context, Hoque (2004) investigated the mediating effect of performance measures such as ABC between competitive strategy, environmental uncertainty and organizational performance in 100 New Zealand manufacturers and found a significant and positive correlation between competitive strategy and performance through high use of non-financial measures. However, their findings found no evidence of a mediating role of non-financial performance measures between environmental uncertainty and performance.

Meanwhile, from a survey of 42 managers of light engineering manufacturing firms in Australia, Gul (1991) reported that organizations operating in high levels of uncertainty tend to have a greater number of sophisticated MAS in use to produce a positive impact on organizational performance. Furthermore, Mia (1993) discovered that environmental uncertainty is a determinant of the use of MAS information, which in turn, is a determinant of organizational performance. According to Mat & Smith (2014) and Baines & Langfield-Smith, (2003), higher organizational performance is contingent on a positive alignment among external environmental factors and organizational factors with MA practices including ABC system. Likewise, Muslichah (2013) used a SEM techniques to analyze data collected from 110 managers in East Java large manufacturing companies. The empirical results indicated that MAS characteristics act as a mediator in the relationship between IT, environmental

uncertainty, decentralized structure and managerial performance. However, competitive strategy is found to be not important when designing MAS.

In addition, Abdul Rasid et al. (2010) reported that MAS mediates the relationships between contingencies (competition intensity, innovativeness, technological advancement) and organizational performance. In a similar context, Choe (2004) and Ismail and Isa (2011) examined the mediating role of MA systems, including ABC, between advanced manufacturing system and performance and found that the relationship is mediated by MAS information. Likewise, from a survey conducted among 310 Malaysian manufacturing companies, Ismail (2007) found that MA information mediates the relationship between IT sophistication and firm performance. Recently, the findings presented by Ismail et al. (2017) confirmed that there are significant influence of integrated manufacturing practices on the managerial use of MAS information, which in turn, is positively associated with organizational performance.

Based on the above arguments, the indirect effect of the success of ABC implementations on the relationship between environmental uncertainty, market orientation, competitive strategies, decentralized organizational structures, IT and organizational performance could be proposed. For instance, the study by Cagwin and Bouwman (2002) found that IT and competitive environment influence the efficacy of ABC system, when ABC is implemented to improve the financial performance. In addition, Krumwiede and Charles (2014) found that ABC has a significant mediational effect on the competitive strategy-organizational performance relationship. However, an empirical study by Frey and Gordon (1999), based on a survey of 123

manufacturing companies, found a positive association between the use of ABC and business unit performance (or ROI), the benefits of the use of ABC system are contingent on surrounding circumstances such as competitive strategies used by an organization and finally, the use of ABC is associated with better performance only among companies following a differentiation strategy but there is no evidence on those following a cost-leadership strategy.

The results presented by Frey and Gordon (1999) are consistent with the findings from another cross sectional study conducted by Lay and Jusoh, (2012). Lay and Jusoh, (2012) surveyed 103 manufacturing companies in Malaysia. The results of PLS revealed that differentiation strategy, cost leadership strategy and strategic MA usage are significantly and positively associated with organizational performance. However, cost leadership strategy is negatively associated with strategic MA usage. Meanwhile, differentiation strategy is positively associated with strategic MA usage. The authors also found that strategic MA usage plays a significant mediating role on the relationship between differentiation strategy and organizational performance.

Consistently, the study conducted by Elhamma (2015) found that the adoption of ABC system leads to a better profitability and competitiveness for enterprises operating in an uncertain and dynamic environments but it does not lead to a better productivity. Meanwhile, Ittner et al. (2002) found weak proof that the relation between the use of ABC and financial performance is subject to the nature of the manufacturing process. In addition, a significant and positive association between environmental competition and organizational performance (Beta= 0.392, t-value= 2.575) with the significant mediating (intervening) effect of MA systems change including ABC system was

presented by Hoque (2011). However, in Hoque's (2011) study, decentralized structure does not support the change to contemporary MA systems. In contrast, Abdel-Kader & Luther (2008) demostrated that the use of sophisticated MA such as activity-based techniques are significantly predicted by decentralized structure, uncertainty and customer orientation. They further argued that sophisticated MA practices eventually lead to accurate information for managing, planning and decision making. Nonetheless, they were unable to confirm that the sophistication of costing systems is contingent on the differentiation strategy.

As for the Arab region, Alshbiel (2017) employed a PLS path modeling to analyze the survey conducted in Jordanian financial companies. The findings empirically demonstrated that PMSs mediate the relationship between IT, perceived environment uncertainty and organizational performance. In the context of the Iraqi environment, Albieaj and Alkraawi (2014) found that customer orientation, fierce market competition and IT were the main motivation to adopt advanced costing systems. They also found that the integration between IT and ABC implementation has contributed to improved operating performance and increased production capacity. In addition, Al-fadhel and Al-Chlaihawi (2015) reported a positive and significant relationship between contingency factors (environmental uncertainty and IT) and PMS. However, the study overlooked the effect on organizational performance. On the other hand, Saad and Al-Musawi (2005) found no evidence on the significant relationship between contingency factors (environmental uncertainty, decentralization IT) and ABC implementations. Recently, from a questionnaire survey of 150 chief accountants of Iraqi banks, Al-Nuaimi, Mohamed, and Alekam (2017) examined the indirect effect of ABC implementation on the nexus between IT and performance using SPSS

program. Although the instrument used to measure IT is limited to five items, the findings revealed that ABC implementation partially mediates this relationship.

Additionally, most of the above mentioned studies have not considered the effect of all the dimensions of contingent factors simultaneously. Exceptionally, Auzair (2015) adopted a configuration approach of contingency theory to examine the relationships between multiple contingent variables (service process type, business strategy, external environment and organizational life cycle) simultaneously, management control systems and performance in Malaysian service organizations. She provided empirical evidence that different complementarities of contingent variables and management control system exist that enhance performance. Furthermore, the findings of King, Clarkson and Wallace (2010) presented statistical evidence on the positive and significant association between organizational performance and the "fit" between multiple contingency factors (cost leadership strategy, decentralized organizational structure and low environmental uncertainty) and the extent of MA practice use in the Australian primary healthcare setting.

These arguments are in line with the theoretical perspectives of contingency theory which advocates that high organizational performance requires fit between the use of MAS information and contingencies (Chenhall, 2003; Gul, 1991; Haldma & Laats, 2002; Hoque, 2004; Muslichah, 2013; Morton & Hu, 2008; Abdul Rasid et al., 2010; Spencer et al., 2009). However, the previous studies have three limitations. Firstly, these studies considered only a limited number of contingency factors (Tillema, 2005). Secondly, they typically focused on the indirect effect of MAS while little attention has been given to the indirect effect of ABCIS. Thirdly, the previous studies do not

pay adequate attention to the question of whether the certain combinations between certain contextual variables and certain level of ABC implementation also results in better organizational performance.

In a nutshell, there is little systematic empirical examination of the relationships among contingency factors, ABCIS and organizational performance. Evidently, Teeratansirikool et al. (2013) argued that there is inconclusive evidence of the relationships between competitive strategic priorities, the use of PMS like ABC and organizational performance, specifically in the Asian context. Therefore, it is important to further investigations on the effect of contingency factors on ABCIS and organizational performance.

2.8 Theoretical Perspective

2.8.1 The Contingency Theory

Contingency theory have started emerging since the 1960s as an important perspective of typical organizational theory (Perrow, 1967; Waterhouse & Tiessen, 1978; Lawrence & Lorsch, 1967). Otley (1980) opined that researchers in this period believed that changes in contextual environment is important for organizations to develop appropriate operational and strategic responses. For instance, Lawrence & Lorsch (1967) have argued that an efficient organization structure is contingent on the organization's context.

Contingency theory is "an effort to determine through research which managerial practices and techniques are appropriate in specific situation" (Kreitner, 2009). Meanwhile, Covaleski et al. (1996) defined contingency theory as "a theoretical perspective of organizational behavior that emphasizes how contingent factors, such

as technology and the task environment affected the design and functioning of the organizations". The contingency theory has been the most popular theories in the realm of studying the connection between contextual factors, MA practices and organization performance (Gerdin & Greve, 2004; Sisaye & Birnberg, 2010). The popularity of this theory is referred to its relevance and its ability to provide the predictive capacity of contingency variables as well as their consequence on organizational performance (Deng & Smyth, 2013; Gerdin & Greve, 2004). Contingency theory adopts the concept of "unifinality" which explains the structural design that is suitable for the expectation of the implementation of ABC as a strategy and how it leads to an increase in performance (Al-Omiri & Drury, 2007; Gerdin & Greve, 2004).

Contingency theory has been a very popular theory since the 1970s to discuss organizational behavior and explain how to use MAS to control requirements of the situation (Covaleski et at., 1996; Otley, 1980). The contingency approach to the design and use of MAS is premised upon the notion that there is no "universal best" PMS equally applicable to all organizations in all situations (Emmanuel et al., 1990; Gordon & Miller, 1976; Jones, 1985). Rather it is suggested that the best design of MAS is dependent on the company's environmental factors of where an organization operates (Hirst, 1981). It was asserted that the contingency variables, such as environmental uncertainty and information technology, have clarified why MAS have been different from one situation to another (Covaleski et al., 1996; Hirst, 1981; Otley, 1980).

At the same time, contingency theory assumes that contingency factors are the major predictors of organizational performance or effectiveness (Hayes, 1977; Tosi & Slocum, 1984). Furthermore, the theory proposes that the performance of an

organization is also contingent upon the use of MAS information. If a MAS is found to be appropriate, then it is likely to provide accurate information and then can be used to make improved decisions to enhance organizational goals (Haldma and Laats, 2002). In addition, the contingency approach suggests that organizational performance is a consequence of the fit between the design of management control systems and several contingencies (Janudin & Maelah, 2016). As such, when the compatibility between the MAS and contingency factors increases, the performance of organization will also increase (Donaldson, 2001; Drazin & Van de Ven, 1985).

Gordon and Miller (1976), as the primary supporters of contingency theory, created a contingency framework to examine the complex relationship between environmental factors, organizational structures, accounting information system and decision-making style. They found that (1) environment conditions and organizational structures directly impact the accounting information system, and decision-making style, and (2) accounting information system mediates the relationships between both the organizational structures and environment conditions, and decision-making style.

Meanwhile, Otley (1980) proposed a comprehensive theoretical contingency model, and produced few significant new results of the contingency approach to MA. Among other things, Otley (1980) explained how organizational effectiveness or performance and accounting information systems are influenced by various contingent variables such as external environment, technology, strategy and structure, and how organizational effectiveness is affected by accounting information systems. However, Chenhall (2003) suggested several contingency factors that have been accepted as having a significant impact on MAS and organizational performance. Chenhall (2003)

identified six contingency factors including environmental uncertainty, competitive strategies, organizational structure, information technology, organizational culture and size. Slater & Narver (1994) added a seventh contingency factor to include market orientation.

Specifically, contingency theory involves taking special steps to make sure that all components of an organization fit with each other if an organization is to perform optimally (Donaldson, 2001; Perrow, 1967). Chenhall (2003) reviews the literature from contingency-based research and notes that the "conventional, functionalist contingency-based approach to research" assumes that MAS are adopted to assist managers achieve some desired organizational outcomes or goals. Chenhall (2003) suggests that one of the most important recent additions to this literature is the role of strategy. Other important factors cited included the role of contemporary MA practices (e.g., ABC). He calls for research on the links between different types of controls for operational, managerial, and strategic decisions and the relationship with organizational performance.

Studies are unanimous on the application of contingency theory to determine the relation between internal, external and technological contextual variables otherwise known as contingency factors and the performance of organization (Deng & Smyth, 2013; Islam & Hu, 2012). However, few other studies have questioned the applicability of contingency theory, questioning the fit between contextual variables and the performance of organizations (Kraft, Puia, & Hage, 1995; Schoonhoven, 1981). These arguments have been evident in the number of inconsistencies recorded from many previous studies on contingency studies (Drazin & Van de Ven, 1985; Kraft

et al., 1995). Following the argument of Tosi and Slocum (1984), the inconsistencies reported in many empirical findings of most contingency-based studies are driven by the misunderstanding of the underlying theoretical perspectives of the contingency theory.

To put it clearly, both fit and organizational performance are the two major concerns of contingency-based researchers (Gerdin & Greve, 2008; Tosi & Slocum, 1984). This is because the contingency approach maintains that the fit between one or more contingency factors (such as, environmental uncertainty, market orientation, competitive strategy, organizational structure and IT) and the characteristic of structural factors (e.g. ABC system) can lead to improved organizational performance (Baines & Langfield-Smith, 2003; Mat & Smith, 2014). As such, the best configuration of each organization should be different responding to different contexts to achieve an enhanced performance. In contrast, when there is a misfit, there would be lack of communication and coordination, and consequently, there would be poor performance (Haldma & Laats, 2002; Selto, Renner, & Young, 1995).

The application of fit in contingency theory is the main theoretical perspective of the contingency theory in many areas of research including MA research (Fry & Smith, 1987). In furtherance, Drazin and Van de Ven (1985) contested that fit is the underlying theoretical notion of contingency theory. The concept of fit does not only affect the formulation of hypothesis when adopting the contingency theory but also the collection of data and the statistical technique employed. Thus, without understanding the concept of fit, the relationship between contextual or contingency variables,

structural factor such as ABC and organizational performance cannot be understood (Drazin & Van de Ven, 1985; Selto et al., 1995).

In view of the importance of fit, it is important to define fit. However, experts have maintained that fit does not have a clear and direct definition and it is even more a complicated task to determine whether an organization has a fit or not (Venkatraman, 1989). This is the reason why researchers distinguished between the different types of fit that can be used, with regard to the implications of the type of fit used on their choice on theory models (Gerdin & Greve, 2004). Consistently, Selto et al. (1995) supported that there are many types of fit useful in different types of theoretical buildings and testing. According to Donaldson (2001) and Gerdin & Greve (2004) studies, there are two different types of fits in the contingency-based studies namely, a Cartesian type and a Configuration type. In addition, the Cartesian approach can be bifurcated into the congruence approach and the contingency approach.

In details, the configuration type holds the holistic school of thought believing that the relationships between structure and contextual variables can only be internalized if many contextual and structural variables are analyzed together (simultaneously) (Drazin & Van de Ven, 1985). In this school of thought, there is no limit to the number of relationships and interactions that can be examined. Meanwhile in theory, there is a limit to the set of system states (configurations) that can be assigned in an organization (Miller & Friesen, 1984). Therefore, the configuration cum the holistic approach is to determine the possible structures and processes that can be implemented in different configurations and settings (Drazin & Van de Ven, 1985).

On the other hand, the Cartesian approach determines the individual effect of contextual factors on structural variables and how both contextual and structural variables collectively influence organizational performance (Drazin & Van de Ven, 1985). This approach assumes that there is a limit to how structure variable can explain the entire organizational performance. Donaldson (2001) put it more lucidly, that the Cartesian approach is applicable to many different organizational settings. In addition, Donaldson (2001) argued that both contextual and structural variables are measured as continuous variables hence, the fit of the relationship between the context and the structure of an organization is continuous. In essence, this kind of fit will help organizations to continually adapt and respond to any kind of change in structure and context variables, rather than few fits or the infrequent quantum jumps postulated by configuration type (Gerdin & Greve, 2004).

According to the congruence approach of Cartesian type, the attributes of the contextual factors of an organization must be considered when considering the desgin of MA systems in the organization. Understandably, the purpose of the congruence approach is to determine the effect of contextual factors on organizational structure, and to explore the character of the relationship between contextual and structural factors without examining whether the organizational performance has been influenced (Drazin & Van de Ven, 1985). Many previous studies such as Ajibolade (2013a), Auzair (2011) and Gliaubicas & Kanapickienė (2015) have employed this approach to employing the contingency theory due to its simplicity. However, many other researchers are of the opinion that, the pitfalls of this approach is lack of establishing the influence of context and structure variables on performance (Gerdin & Greve, 2004). Otley (1980) opined that contingency model does not include

outcomes is weak. On this basis, the contingency approach of Cartesian type is developed.

In other words, the contingency approach assumes that there are several levels of fit; this fit is thus understood as a positive effect on organizational performance due to interaction between contingency or contextual factors and structural factors (Deng & Smyth, 2013). The contingency approach helps the management of an organization to adopt, design and implement a MAS (including cost accounting) that ensures accurate information on management and improvement of organizational performance (Haldma & Laats, 2002; Otley, 1980). Therefore, it is important to determine how every contextual and structural factors affect the performance of an organization. If the interaction effects between the context and structure have a positive fit, the performance will be enhanced and vice versa (Chenhall, 2003).

In addition, the Cartesian-type relationships between context and structure variables can be modeled in a number of ways. In the MA contingency-based studies, the two most commonly adopted types of relationship are the mediation and moderation approaches (Gerdin & Greve, 2004). These approaches assume that the relationship between independent variables and dependent variable can be fortified with a third variable which can be either moderator or mediator variable (Ismail et al. (2017). For example, a structure variable such as ABC, can mediate the relationship between contextual variables and the performance of an organization. In contrast to a moderation model, The mediation model of fit in the contingency context offers the explanation of an indirect effect of an independent variable on a dependent variable through a third variable, called the mediation variable. Therefore, fit occurs when the

influence of contingency factors on performance operates through structure variable, in this case, ABC implementation (Gerdin, 2005a; Gerdin & Greve, 2004).

In comparison, the main difference between the Cartesian and Configuration types of fit can be seen in their approach of enquiry (Meyer, Tsui, & Hinings, 1993). For instance, the Cartesian-based approach is often tagged as the reductionism whereas the Configuration-based approach is otherwise known as the comprehensive view. The argument proffered by Drazin and Van de Ven (1985) supported the both approaches by stating that, examining different types of fit in different conditions are essential for translating the inconsistent findings of contingency theory.

Otely (2016) supported by recommending the employment of both the Cartesian and Configuration types as against using only one approach in examining fits to allow a comparative assessment of these fits and to arrive at emphatic and complementary results on the relationship among contingencies, MAS and organizational performance. For instance, if the outcome of the Configuration approach are found to be significant, while they are found to be insignificant by the Cartesian approach, this means that fit arises at deviation level from many factors instead of any single factor alone (Selto et al., 1995). Govindarajan (1988) is one of the renowned contingency-based studies which employed the two different approaches to research fit by examining the bivariate as well as the systemic interactions between the contextual and structural variables. The study of Govindarajan yielded a complementary result as congruence with that of Drazin, and Van de Ven (1985) which similarly agreed to use the two approaches will provide both unique and supplementary information.

Therefore, relying on one particular approach could be a delimitation of findings and a loss of valuable details.

In summary, the current study adopts a Cartesian type with a mediation model under contingency approach. Gerdin and Greve (2004) explained that the focus of Cartesian approach should be as to how contextual factors (environmental uncertainty, market orientation, compitive strategy, organizational structure and IT) affect structural attributes such as the implementation of ABC and how these contextual-structural pairs affect organizational performance. The purpose of employing the contingency approach and precisely the mediation model is to determine the equal influence of contextual variables and structural variables on improving and enhancing organizational performance among manufacturing companies in Iraq. Additionally, this study also adopts a holistic or Configuration approach which examines the relationship among multiple contingent factors, ABCIS and organisational performance.

Consistently, Notably, Kald, Nilsson, & Rapp (2000) claimed that extant literature is not exhustive on the effect of contingency factors on management control system (e.g. ABC system) because many studies do not examine multiple dimensions and the findings of other studies are inconsistent. Otley (2016) affirmed that one of the major limitations of previous contingency-based studies is considering only one contingency factor and one control aspect at a time. In other words, Auzair (2015) argued that there is a paucity of MA research that uses the Configuration approach. Furthermore, there is still a paucity of the accounts of contingency factors in the body of knowledge on the influence on MAS from the developing countries (Hopper, Tsamenyi, Uddin, &

Wickramasinghe, 2009; Joshi, 2001). Subsequently, the current study is designed to fill the above gaps, thereby, it is expected to contribute significantly to the body of contingency theory by employing both the Cartesian and Configuration appraoches to examine the fit between contengencies, ABCIS and organizational perfromance in the Iraqi manufacturing sector.

2.9 Research Gaps for the Literature

This chapter has reviewed the extant literatures with a particular emphasis on the effect of environmental uncertainty, market orientation, competitive strategies, organizational structures and IT on the implementation of ABC in enhancing organizational performance. The above issues have been investigated from a contingency theory perspective, which suggested that the implementation of ABC within individual organizations is dependent on contextual factors which subsequently influence organizational performance. This chapter reviews a series of five contingent factors mentioned above and their relationship with ABC implementation. The review appears to be supportive of the impact of these factors on the implementation of ABC. There is a strong evidence which argues that ABC system has similar characteristics of any information system, it will be useful for companies when the level of environmental uncertainty is high (Anderson & Young, 1999), the level of market orientation is high (Naranjo-Gil, 2009), the organizational structure is more decentralized (Abdel-Kader and Luther, 2008) and IT is more sophisticated (Maiga et al., 2013). With respect to the competitive strategies, the findings of previous studies report that ABCIS is likely to be achieved by both cost-leadership strategy and differentiation strategy (Teeratansirikool et al., 2013) to a similar degree, and it is

likely that the way in which ABC is utilized to gain a competitive advantage is more important.

However, some other studies have also indicated contradictory results in relation to the contingency factors and ABC implementation. These contradictory results may be because of different concepts of ABC were used in different context, different dimensions of each contingency variable, different models of fit, different research setting and different methodology. Hence, it seems that contradictory or supportive results require investigating again and needing to be re-explained.

For instance, although competitive strategies can be examined by many different dimensions, some studies have been done with only one dimension (e.g. Hoque, 2004) or with no dimensions (e.g. Shields, 1995). Also, the number of studies that have focused on the relationship between IT applications and ABCIS have been very limited both empirically and theoretically (Pavlatos, 2010; Maiga et al., 2013). With the exception of the recent studies by Cadez and Guilding (2008) and Liu and Pan (2007), there is an absence of empirical research in the literature about how marketing orientation affects the implementation of MA techniques. In addition, with the exception of Elhamma and Moalla's (2015) study which examined the impact of both vertical and horizontal decentralized structure, other studies were only concerned with the influence of vertical decentralized structure on MA techniques. Also, majority of the studies in the literature (e.g. Abdel-Kader & Luther, 2008; Al-Omiri and Drury, 2007; Al-Sayed and Dugdale, 2015; Jusoh and Miryazdi, 2015; Gosselin, 1997) devoted their attention to the impact of contingencies on ABC systems, while disregarding the influence of such relationship on organizational performance.

In furtherance, researchers argued that there is inconclusive results for the direct relationship between contingencies and organizational performance (Ismail et al., 2017; Han et al., 1998; Zhou et al., 2009). According to Ismail and Isa (2011), one of the possible explanations for these inconclusive results is that managers' use of MAS information may mediate this relationship. This suggests that, in contrast to the moderation model, the mediation model (Soobaroyen & Poorundersing, 2008) permits ABCIS to be contributors to the organizational performance, as well as possibly for the ABCIS to be dependent on contingency factors. In view of this, the current research adopts a mediating model, whereby ABCIS is a mediating variable between a number of contingencies and organizational performance.

While prior studies (e.g. Zhang & Isa, 2011; Elhamma, 2015; Zaman, 2009; Lee & Yang, 2011) provide useful insight into the implementation of ABC and organizational performance, the empirical assessment on whether an implementation of ABC at different levels is influenced by different contingency factors is very limited. However, few studies (Gosselin, 1997; Bhimani et al. 2005; Baird et al., 2007) that have focused on the different levels of ABC implementation have reported inconclusive findings. In addition, although numerous studies have been undertaken regarding strategic MA, performance measures, innovations, dimensions of MAS information and MA techniques (for example Cadez and Guilding 2008; Chia 1995; Chong and Chong 1997; Han et al., 1998; Homburg et al., 2004; Hoque 2004; Hoque 2011; Hyvonen 2007; Ismail 2007; Ismail and Isa 2011; King et al., 2010; Mia & Clarke 1999; Abdul Rasid et al., 2010; Soobaroyen and Poorundersing, 2008; Spencer et al., 2009), none of these has specifically examined the indirect effect ABCIS on the relationships between contingency factors and organizational performance.

Furthermore, a very limited studies have so far delved on how environment uncertainty, market orientation, competitive strategy, organizational structure and IT have influenced the implementation of ABC and organizational performance into a single research project. These types of studies are far more limited in the context of developing countries, except the study conducted by Auzair (2015) in the Malaysian service organization context.

Additionally, majority of the previous contingency-based studies have been based on either the Configuration approach or the Cartesian approach. Many of these studies are limited to selecting between these approaches mainly because of the statistical techniques available to them. For instance, many of them employ a systematic statistical technique in SPSS to examine the individual effect of contingency variables. The few other researchers who have attempted to employ the two different approaches towards examining the fit between contextual variables, structural variables and organizational performance have also been limited to using different statistical techniques in SPSS such as bivariate and linear regression. Thus, achieving a complementary result of the two approaches could only be done in two different models. However, very few attempts have been made to examine the fit between contextual variables, structural variable and organizational performance by using a multivariate and second generation statistical techniques such as the PLS-SEM which can explain both the individual and holistic fits between contextual variables, structural variables and organizational performance in one model.

Majority of the studies (e.g. Al-Areda, 2015; Salman and Alwan, 2015; Albieaj and Alkraawi, 2014; Farhood, 2005) focusing on ABC system in the Iraqi environment

have mainly employed qualitative or case study methods which limit them to examine the factors that contribute to the successful implementation of ABC system especially among the manufacturing companies. Also, few quantitative based studies have some limitations. For instance, Jaf et al. (2015) have only examined the direct relationship between ABC system and competitive strategies leaving out organizational performance in their model. In the case of Hassouni (2012) and Saleh (2013) studies, they only examined the benefits and the barriers of implementing strategic MA techniques including ABC system without revealing the effects of contingency factors on ABC system.

Given the number of critical gaps summarized above, this study attempts to bridge these apparent gaps and contribute to the literature of contingency-based studies by examining the fit between contingency factors, ABCIS and organizational performance in the Iraqi manufacturing sector.

2.10 Summary of the Chapter

This chapter has extensively discussed the relevant literatures related to this study. The chapter discussed the concept of organizational performance, environmental uncertainty, market orientation, competitive strategies, decentralized organizational structure, IT and the success of ABC implementations. Further, the chapter presents the discussion of the contingency theory, which was adopted as the theory that underpins the study and served as the basis upon which the hypotheses of this current study were developed. Also, the chapter discussed the relevant previous relationship among the variables of this research. The findings from prior empirical studies and theoretical perspectives were used as a basis to derive the hypothesis and present the

framework for the present study. Thus, the next chapter presents the research framework and hypotheses development of this study together with the research methodology.

CHAPTER THREE

RESEARCH FRAMEWORK, HYPOTHESIS DEVELOPMENT AND METHODOLOGY

3.0 Introduction

This chapter presents the entire methodology adopted in this research. The chapter starts with the theoretical framework proposed in this study and ends with the presentation of instrument for data collection. This chapter is arranged in the following manner: Section 3.1 focuses on Theoretical Framework, Section 3.2 discusses Hypotheses Development, Section 3.3 presents Research Design, Section 3.4 focuses on Measurement of Variables, Section 3.5 discusses the Reliability and Validity of Instrument, Section 3.6 discusses the Population of the Study, Section 3.7 entails Sample Size, Section 3.8 explains the Unit of Analysis, Section 3.9 focuses on Method of Data Analysis, Section 3.10 focuses on Direct and Indirect Effects and finally, Section 3.11 explains the Summary of the Chapter.

3.1 Theoretical Framework

The proposed theoretical framework is presented below. The current study adopts the theoretical assumptions of the contingency-based MA researchers (Abdel-Kader & Luther, 2008; Chenhall, 2003; Cadez & Guilding, 2008; Chong and Chong, 1997; Hoque, 2011; Frey & Gordon, 1999) in proposing the presented framework. It is depicted in the theoretical framework presented in Figure 3.1 that contingency factors (environmental uncertainty, market orientation, competitive strategies (cost leadership and differentiation), organizational structures (vertical and horizontal) and IT) have direct relationship with ABCIS and organizational performance. The theoretical framework also presents a direct relationship between ABCIS and organizational

performance. In addition, the framework presents the mediation role of ABCIS on the relationship between each factor of contingency factors in this research and organizational performance. Basically, ABCIS, being a surrogate of other MAS, in this study is depicted to have mediating impact on the association between each factor of contingency factors and organizational performance as well as the direct influence. The relationships presented in the theoretical framework represent the hypotheses proposed in this research.

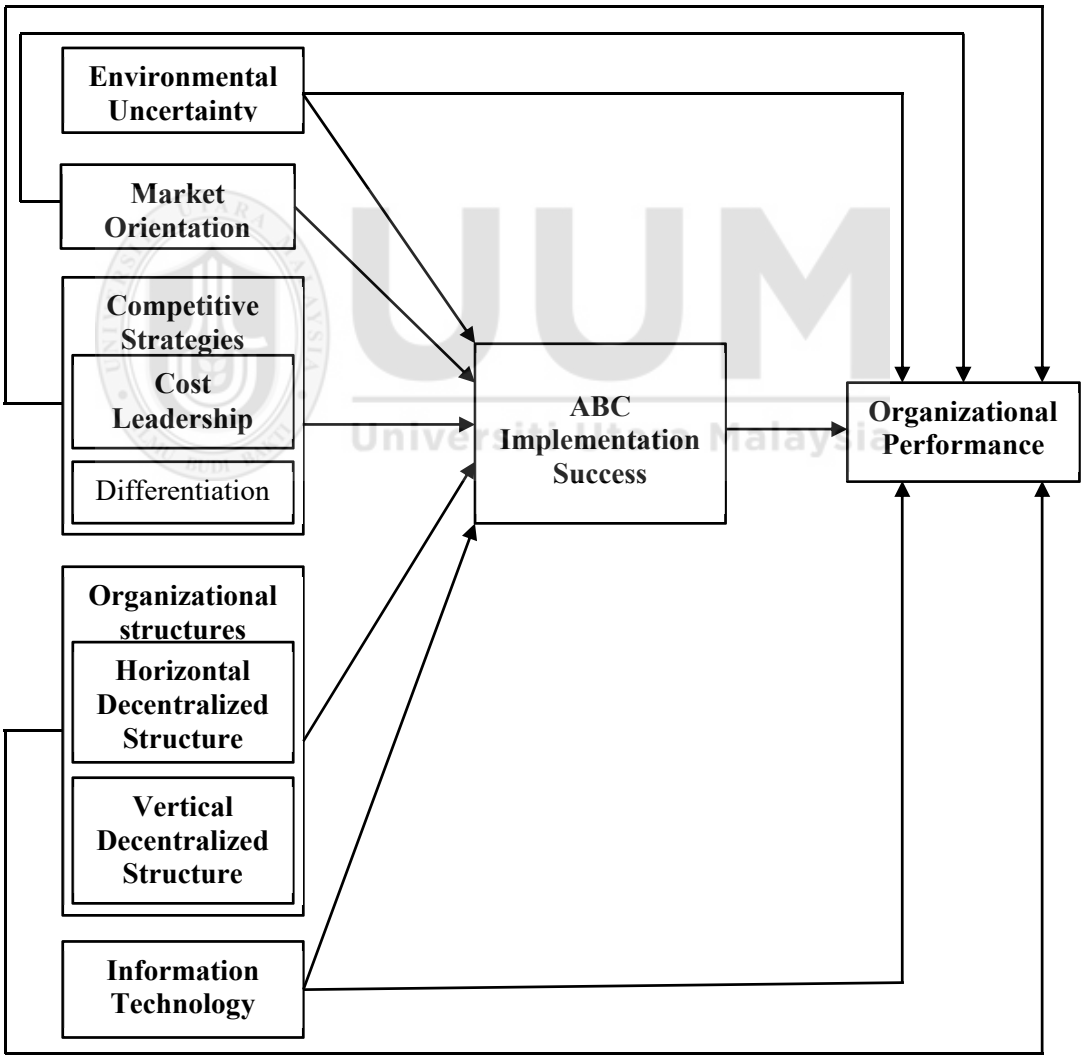


Figure 3.1
Theoretical Framework

3.2 Hypotheses Development

This section presents the hypotheses that are proposed based on the arguments presented in chapter two and as represented in the theoretical framework. The hypotheses formulated in this study consist of direct (the relationship between each factor of contingency factors and ABCIS, and organizational performance) and indirect relationships (the mediating role of ABCIS on the contingency factors-organizational performance relationship). The arguments that justify the bases for the development of hypotheses in this study are presented as follow.

3.2.1 Direct Relationship between Contingency Factors and ABC Implementation Success

The pool of contingency-based studies has delved on the relationships between contingency variables and ABCIS. The underlying essence of such relationships is that certain contingency factors affect the structure of organizations in terms of the design and functionality of ABC systems. In fact, a considerable number of empirical efforts have been exerted to affirm this claim. Therefore, the direct relationship between contingency factors and ABCIS are discussed in the following sections.

3.2.1.1 Environmental Uncertainty and ABC Implementation Success

Based on the study conducted by Govindarajan (1984), a contingency-based model is proposed that greater emphasis on sophisticated MA techniques is associated with organizations facing high uncertainty. In congruence, Russell and Russell (1992) argued that a sophisticated MAS is often unnecessary in a certain or predictable environment. Consistent with the above, a handful number of contingency theorists have proven that environmental uncertainty (Ajibolade, 2013a; Anderson and Young, 1999; Arnaboldi & Lapsley, 2005; Chenhall & Morris, 1986; Chong and Chong, 1997;

Gordon and Narayanan, 1984; Elhamma, 2015; Innes and Mitchell, 1990; McManus, 2013; Mia, 1993) is positively linked to MAS or ABCIS. In other words, the greater the unpredictability of future events, the greater the amount of information that must be processed among managers or decision makers to optimize resource allocation during operations execution (Chenhall, 2003). Hence, the unpredictability often necessitates a sophisticated MAS such as ABC. Therefore, ABCIS is expected to provide the information required to facilitate decision-making in an uncertain environment, which in turn, minimize the degree of environmental uncertainty. In the light of this fact, and particularly in the wake of the persistent political and economic uncertainties currently in Iraq, the present study formulates the following hypothesis:

H1: *Environmental uncertainty has a positive and significant effect on ABC implementation success.*

3.2.1.2 Market Orientation and ABC Implementation Success

Contingency theory assumes that strategic MA system, or adoption of innovation such as ABC, is a function of environmental factors including market orientation (Cadez & Guilding, 2008; Naranjo-Gil, 2009). Contingency-based studies demonstrated that there is a strong positive association between market orientation and MA techniques or ABC implementation (Abdel-Kader & Luther, 2008; Gliaubicas & Kanapickienė, 2015; Guilding and McManus, 2002; Hoque, 2011; Liu & Pan, 2007; Yapa and Kongchan, 2012). In a market-orientated organization, cost information for customers, competitors, functions and activities are required to better meet customer needs, outperform the competitors and to ensure the optimal utilization of organizational resources (Narver & Slater, 1990). In consequence, the need for accurate information on the customers' and competitors' activities may necessitate the implementation of

ABC system (Waweru et al., 2004). In other words, the use of ABC system is expected to provide more accurate information about activities, customers and competitors to improve the marketing decision making. In the course of reviewing the contingency-based literature, it is apparent that the relationship between market orientation and ABC success has not been examined in saturation. As such, this study presents the following hypothesis:

H2: *Market orientation has a positive and significant effect on ABC implementation success.*

3.2.1.3 Competitive Strategies and ABC Implementation Success

Contingency theory suggests that a particular strategy of the organization dictates its choice of a MAS (Chenhall, 2003). Researchers have indicated that competitive strategies influence the structure of organization including the implementation of sophisticated system such as the ABC system. In the same vein, accounting researches have delved into the effect of cost leadership strategy and differentiation strategy on the success of implementing ABC and reported that there is a significant positive association between competitive strategies and the success of ABC implementations (Alsoboa & Aldehayyat, 2013; Al-Omiri & Drury, 2007; Auzair, 2011; Chenhall & Langfield-Smith, 1998b; Cinquini & Tenucci, 2010; Jermias & Gani, 2004; Gosselin, 1997; Pavlatos & Paggios, 2009; Seaman, 2006; Shields, 1995).

However, Porter (1980) argued that the fundamental principles of implementing both cost leadership and differentiation strategies are distinctive. Hence, suggesting a differential outcome from implementing the two strategies. In the contingency-based literature, it is justified that differentiation strategy and cost leadership strategy are

implemented in an opposite direction (Auzair & Langfield-Smith, 2005). For instance, Cinquini and Tenucci (2010) hypothesized that strategic "MA (costing) usage rate is higher in cost leaders than in differentiators". Also, a contingency-based study conducted by Bhimani et al. (2005) supported the hypothesis that "among organizations that implement ABC, the perceived success of ABC implementation will be higher for defenders than for prospectors". This is because that in cost leader organizations more accurate cost information is needed to enhance the effectiveness of cost allocation and to price the products (Bhimani et al., 2005; Langfield-Smith, 1997). Meanwhile, the opposite is true of differentiator organizations (Bhimani et al., 2005). Thus, the success of the ABC implementation is expected to positively associated with cost leadership strategy and negatively associated with the differentiation strategy.

H3a: *Cost leadership strategy has a positive and significant effect on ABC implementation success.*

H3b: *Differentiation strategy has a negative and significant effect on ABC implementation success*.

3.2.1.4 Decentralized Structures and ABC Implementation Success

The purpose of studying the relationship between organizational structure and ABCIS is to explain how the disparity of authority, autonomy and responsibility affect the functionality and the successful implementation of ABC. Contingency theory hypothesizes that under decentralized structure, more sensitive and sophisticated accounting information system is needed (Gordon & Miller, 1976). Gosselin (1997) and Lee and Yang (2011) have pointed two conflicting results regarding the relationship between decentralized structure and ABC implementation. However,

most of the contingency-based studies reported a positive association between decentralized structure and ABC implementation (Abernethy & Bouwens, 2005; Abdel-Kader & Luther, 2008; Chenhall & Morris, 1986; Chia, 1995; Elhamma & Moalla, 2015; Hammad et al., 2013; Liu & Pan, 2007; Nahm et al., 2003; Mat and Smith, 2014).

More specifically, the higher the degree of vertical decentralization, the greater the need for a more sophisticated MAS to provide different types of information to decision makers to meet their different needs (Chia, 1995). In contrast, Aiken and Hage (1971) and Elhamma and Moalla (2015) elaborated that the higher the degree of horizontal decentralization, the lesser the need for ABC implementation. In the Iraqi manufacturing sector, evidence exists to suggest that employees who are non-managers are not eligible to participate in decision-making especially in the implementation of new innovation decisions. This is because of the fact that the workforce in Iraqi manufacturing companies is characterized by being less professional (Hashem & Mahmood, 2014). As a result of the above illustration, it is expected that ABC system facilitates the provision of different types of information only in a vertical decentralized organizational structure and therefore may enable the managers to decide effectively. Therefore, the following hypotheses are reported:

H4a: *Vertical decentralized structure has a positive and significant effect on ABC implementation success.*

H4b: *Horizontal decentralized structure has a negative and significant effect on ABC implementation success.*

3.2.1.5 Information Technology and ABC Implementation Success

Contingency theory assumes that IT has an important effect on the type of MA information that is provided by cost systems such as ABC (Hoque, 2000; Otley, 1980). IT application leads to a change in cost structures and thus it is considered one of the main motivators for ABC implementation (Waweru et al., 2004; Haldma & Laats, 2002). Contingency-based studies (Ajibolade, 2013a; Anderson and Young, 1999; Al-Omiri & Drury, 2007; Isa and Foong, 2005; Ismail, 2010; Ismail and Isa, 2011; Ittner et al., 2002; Krumwiede, 1998; Kuzey et al., 2018) found a positive effect of IT on ABC implementation. Consistent with the above literature, when the level of IT for manufacturing practices increases, the necessary amount of MA information also increases (Innes & Mitchell, 1990; Choe, 2004). Similarly, Waweru et al. (2004) found that the availability of IT for communications and decision support enable the organization to report MA information to all managers and subsequently improve the quality of the decision-making process and the interactions between organizations and customers (Granlund & Mouritsen, 2003).

In the same vein, Sadagopan (2003) added that the adoption of IT for administration is essential to the effectiveness of accounting processes, which include, for example, customer order and cost of sale accounting, profitability analysis and PMS. To put it simply, if technological conditions of an organization change, new decision making and control processes problems may emerge. Thus, to address new emerging decisions and control activities in advanced technological environment, new (or adjusted) MA system is needed, and different amounts and kinds of cost information are required (Choe, 2004; Bruggeman & Slagmulder, 1995). As such, the use of ABC system is expected to address changes in the information needs of decision makers in

organizations with advanced technological applications. In line with the above argument, this study formulates the following hypothesis:

H5: *Information technology has a positive and significant effect on ABC implementation success.*

3.2.2 Direct Relationship between ABC Implementation Success and Organizational Performance

Researchers argued that the implementation of ABC across organization is primarily to perfect cost analysis and to influence decision-making process with the view of enhancing and improving organizational performance (Elhamma & Moalla, 2015; Qian & Ben-Arieh, 2008; Tsai & Hung, 2009). Contingency theory of MA research reports that the use of modern MA such as ABC system can enhance organizational performance (Mia and Clarke, 1999; Hoque, 2011). Based on previous contingency-based studies, there is a significant positive and strong correlation between ABCIS and organizational performance (Abernethy & Bouwens, 2005; Cagwin and Bouwman, 2002; Elhamma, 2015; Zhang & Isa, 2011; Hardan and Shatnawi,2013; Ittner et al., 2002; Kennedy and Affleck-Graves, 2001; Kim et al., 1997; Maiga & Jacobs, 2003; Shields, 1995; Zaman, 2009).

Having an advanced costing system such as ABC to provide accurate information on product cost is extremely important for managers to measure resources used, cost control and improve organizational performance (Pizzini, 2006; Cinquini & Tenucci, 2010; Lee et al., 2010). In the light of the above literature, and particularly in the light of the current unimpressive performance of Iraqi manufacturing companies which was caused by the high production costs and the unstable environment (Youssef & Al-Ani, 2016; CBI, 2014), it is predicted in this study that the successful implementation of

ABC will enhance the performance of Iraqi manufacturing companies. Accordingly, the following hypothesis is proposed:

H6: *ABC implementation success has a positive and significant effect on organizational performance.*

3.2.3 Direct Relationship between Contingency Factors and Organizational Performance

The quest of improving performance is a typical managerial priority. In view of this, studying the influence of contingency factors on organizational performance help to isolate the circumstances and factors that impede or enhance organizational performance in terms of financial and non-financial indicators (Elhamma & Zhang, 2013; Soheilirad & Sofian, 2016). Hence, the survival of every organization is determined by how perfectly the management of the organizations copes with internal and external environmental and technological factors. Therefore, the direct relationships between contingency factors and organizational performance are discussed below.

3.2.3.1 Environmental Uncertainty and Organizational Performance

A plethora of management and organizational behavioral studies have relied on the theoretical perspectives of contingency theory to prove the relationships between contingency factors including environmental uncertainty and organizational performance. In essence, contingency theorists predict a negative (an inverse) relationship between environmental uncertainty and organizational performance (Lawrence & Lorsch, 1967; Mia, 1993). Hence, when the environment becomes highly uncertain it limits the preparation and execution of organizations and subsequently affects organizational performance (Hayes, 1977; Govindarajan, 1984). Prior studies

are unanimous on the significant and negative relationship between environmental uncertainty and organizational performance (Jusoh, 2008; Khandwalla, 1972; Brännlund et al., 1995; Yang et al., 2011). However, some other studies have reported a positive association between environmental uncertainty and organizational performance (Uyar & Kuzey, 2016). Meanwhile, no association between environmental uncertainty and organizational performance is also documented (Houqe, 2004). In view of the mixed findings in the current literature, this study is therefore motivated to re-examine the relationship between environmental uncertainty and organizational performance. Against this backdrop, the following hypothesis is postulated:

H7: *Environmental uncertainty has a negative and significant effect on organizational performance.*

3.2.3.2 Market Orientation and Organizational Performance

Market-oriented organizations who continuously assess the customer needs and the competitors' position are said to outperform others who are less market-oriented (Narver & Slater, 1990). In other words, contingency theory assumes that the greater an organization's market orientation, the greater the performance of organization will be (O'Cass & Viet Ngo, 2007). In addition, the results of previous researchers (Dawes, 2000; Cadez & Guilding, 2008; McManus, 2013; O'Cass and Viet Ngo, 2007; Pelham, 1999; Piercy et al., 2002; Slater & Narver, 2000; Wang et al., 2012) showed a strong positive relationship between market orientation as a contingency factor and organizational performance. However, Iraqi manufacturing companies have less market skill compared to those of western countries (Kadhim, 2017). Therefore,

market orientation is extremely important to enhance the performance of Iraqi manufacturing companies. As such, the present study posits that:

H8: *Market orientation has a positive and significant effect on organizational performance.*

3.2.3.3 Competitive Strategies and Organizational Performance

Depending on contingency theory perspectives, researchers have paid more attention to the competitive strategies (Hambrick, 1985), especially when its significance for superior performance has been acknowledged (Govindarajan, 1988). The findings of contingency-oriented MA research, presented statistical evidence on the positive and significant relationship between competitive strategies (cost leadership and differentiation) and organizational performance (Acquaah & Yasai-Ardekani, 2008; Agyapong and Boamah, 2013; Allen & Helms, 2006; Leitner and Güldenberg, 2010; Lay and Jusoh, 2012; Pertusa-Ortega et al., 2009; Spanos et al., 2004). Nevertheless, Chi (2010) reported that the lack of clear emphasis on competitive strategies might be one of the reasons for a relatively low organizational performance. Also, Hambrick (1985) affirmed that different strategies have very different effects on organizational performance.

For instance, Cadez and Guilding (2008) found that only cost leadership strategy is positively associated with organizational performance. The core of cost-leadership strategy is to gain a higher market share and a lower-cost position (Porter, 1980). With these objectives, cost-leadership strategy goes in line with the plans of the Iraqi manufacturing sector, which aim to increase its market share and reduce its production costs (Hashem & Mahmood, 2014). In contrast, previous studies (e.g. Joiner et al.,

2009; Perera et al., 1997) suggested that a differentiation strategy may have a strong or weak effect on organizational performance, depending on the extent to which performance measures are used. The current study, therefore, proposes that the cost leadership strategy would be positively and significantly related the performance of Iraqi manufacturing companies and the differentiation strategy would be significantly related with organizational performance. H9a and H9b are therefore hypothesized as follows:

H9a: *Cost leadership strategy has a positive and significant effect on organizational performance.*

H9b: *Differentiation strategy has a significant effect on organizational performance.*

3.2.3.4 Decentralized Structures and Organizational Performance

Organizational structures are one of the most studied contingency factors. The original idea in contingency theory suggests that different organizational structures produce different types of organizational performance (Kraft et al., 1995). For instance, decentralized structure has been found to have a positive effect on organizational performance (Chen and Huang, 2007; Chia., 1995; Gul & Chia, 1994; Hao et al., 2012; Hoque, 2011; Uyar and Kuzey, 2016; Csaszar, 2012). Although numerous studies have been undertaken on the relationship between organizational structure and organizational performance, very few studies have specifically examined the effect of vertical and horizontal decentralized structures on organizational performance.

Uyar and Kuzey (2016) reported an empirical evidence indicating that the vertical decentralized structure improves organizational performance. In addition, Nahm et al. (2003) argued that horizontal decentralized structure is more suitable to small

companies while vertical decentralized structure is more suitable in managing large companies because of their large number of hierarchical layers. Unlike the Western context, the increasing participation of the workforce in decision-making (e.g. horizontal decentralized structure) negatively effects on organizational performance in the Asia context (Jogaratnam & Tse, 2006). Similarly, in the Iraqi context, Mohamed and Yacoub (2012) reported a negative association between the increasing participation of the workforce in decision-making and manufacturing performance. Thus, the current research proposes that horizontal decentralized structure would not enhance organizational performance. Instead, it is anticipated that Iraqi manufacturing companies which are highly vertical decentralized structure enhances the performance of these companies. Based on the reviews of literature on organizational structure, this study hypothesizes the following:

H10a: *Vertical decentralized structure has a positive and significant effect on organizational performance.*

H10b: *Horizontal decentralized structure has a negative and significant effect on organizational performance.*

3.2.3.5 Information Technology and Organizational Performance

Based on the contingency theory perspective, Raymond et al. (1995) suggested that greater sophistication in the use of IT is significantly associated to high performance. In addition, previous studies have found that there is a positive and significant relationship between IT and organizational performance (Albadvi et al., 2007; Alshbiel, 2017, Banker et al., 2002; Davern & Kauffman, 2000; Kalkan et al., 2011; Maiga, 2012; Straub and Watson, 2001; Shaukat et al., 2009). However, Osei-Bryson & Ko (2004) pointed out that the IT-performance relationship can be much more

complex than that found in the literature. Meanwhile, there was a conflicting evidence about the effect of IT on the organizational performance. For instance, the reports from Chapman and Kihn (2009) and Poston and Grabski (2001) are two examples of conflicting results regarding the IT-organizational performance relationship. In light of the above contradictions, this present study hypothesizes that:

H11: *Information technology has a positive and significant effect on organizational performance.*

3.2.4 Mediating Effect of ABC Implementation Success on the Relationship between Contingency Factors and Organizational Performance

According to Frazier et al. (2004), a mediator variable explains the relationship between independent variable and dependent variable. However, Zhao et al. (2010) laid two certain conditions that must be met before considering a mediation analysis. The first condition is that, there must be a significant relationship between the independent variable and the mediator variable. Secondly, there must be a significant relationship between the mediator variable and the dependent variable. Based on the study conducted by Gerdin and Grave (2004), a contingency-based "mediation" model proposed that the use of MAS information (ABC information) plays a significant mediating role between contingency factors (environmental uncertainty, market orientation, competitive strategies, decentralized structures and IT) and organizational performance. However, it was noted that very little studies (Frey and Gordon, 1999; Ittner et al., 2002) have explored the mediating effect of ABC system or ABCIS on the contingency factors-organizational performance relationship. In particular, there is inconclusive evidence of the mediating effect of ABCIS in Iraqi manufacturing companies. Most studies in Iraqi environment context (e.g. Farhood, 2005; Youssef and Oudah, 2014) considered only the direct relationship between ABC system and

organizational performance. Therefore, it is logically expected to further this longstanding argument, by examining the mediating effect of ABC success on the relationship between each factor of contingency factors and organizational performance. Following these arguments, this study discusses the mediating effect of ABCIS below.

3.2.4.1 Mediating Role of ABC Implementation Success on the Relationship between Environmental Uncertainty and Organizational Performance

Contingency-based studies have suggested that more effective performance is achieved if organizations implement and use MAS that suit their activities and environmental situations (Chenhall, 2003; Kasim, Amiruddin, & Auzair, 2012; Otley,1980). Following the arguments presented above, researchers have demonstrated that there is a significant relationship between environmental uncertainty and the success of ABC implementation (Anderson and Young, 1999; Arnaboldi & Lapsley, 2005). Also, studies have shown that there is a significant relationship between environmental uncertainty and organizational performance (Brännlund et al., 1995; Yang et al., 2011). However, in view of the massive proofs on the significant role of ABC implementation on organizational performance (Maiga & Jacobs, 2003; Shields, 1995; Zaman, 2009), it is therefore expected that ABCIS mediates the environmental uncertainty-organizational performance relationship. Invariably, the current study hypothesizes as follows:

H12: *ABC implementation success mediates the relationship between environmental uncertainty and organizational performance.*

3.2.4.2 Mediating Role of ABC Implementation Success on the Relationship between Market Orientation and Organizational Performance

Based on the premises of contingency theory, Guilding and McManus (2002) suggested that organizations with a high market orientation are expected to become more interested in implementing a sophisticated customer accounting tools, which in turn, improves their market performance. Previous MA studies have revealed that there is a significant and positive relationship between market orientation and MA techniques such as ABC implementation (Abdel-Kader & Luther, 2008; Gliaubicas & Kanapickienė, 2015; Hoque, 2011). Similarly, studies have found that there is a positive and significant relationship between market orientation and organizational performance (Guilding and McManus, 2002; Pelham, 1999). Meanwhile, studies have also indicated that the success of ABC implementation is strongly associated with organizational performance (Lee et al., 2010; Low et al., 2007; Zaman, 2009). In view of this, the successful implementation of ABC is expected to become a mediating variable on the market orientation-organizational performance relationship. Therefore, the current study formulates the following hypothesis:

H13: *ABC implementation success mediates the relationship between market orientation and organizational performance.*

3.2.4.3 Mediating Role of ABC Implementation Success on the Relationship between Competitive Strategies and Organizational Performance

Contingency theory has been a commonplace theory used by MA researchers to examine the relationship between competitive strategies and MA techniques and how this relationship influences organizational performance (Abernethy & Guthrie, 1994; Krumwiede and Charles, 2014; Langfield-Smith, 1997). Drawing from the propositions of Mia and Clarke (1999) and Preacher and Hayes (2008), if ABC implementation is associated with organizational performance (H6) and competitive

strategies are positively linked to ABC implementation (H3a and H3b), it is posited that ABCIS can play a mediating role on competitive strategies-organizational performance relationship. On this basis, the following hypotheses are presented:

H14a: *ABC implementation success mediates the relationship between cost leadership strategy and organizational performance.*

H14b: *ABC implementation success mediates the relationship between differentiation strategy and organizational performance.*

3.2.4.4 Mediating Role of ABC Implementation Success on the Relationship between Organizational Structures and Organizational Performance

Contingency theory assumes that effective organizational performance is achieved by matching decentralized structure to MAS (Gordon & Miller, 1976). Soobaroyen and Poorundersing (2008) revealed that MA information has a significant mediating effect on the decentralized structure-organizational performance relationship. Similarly, the current study hypothesizes the following to determine mediating effect of ABC success on the relationship between both types of decentralized structures and organizational performance of Iraqi manufacturing companies.

H15a: *ABC implementation success mediates the relationship between vertical decentralized structure and organizational performance*.

H15b: *ABC implementation success mediates the relationship between horizontal decentralized structure and organizational performance*.

3.2.4.5 Mediating Role of ABC Implementation Success on the Relationship between Information Technology and Organizational Performance

This subsection presents the literature support for the role of ABC implementation as a mediator on the IT-performance relationship. Ismail and Isa (2011) suggested that the contingency theory is relevant in discussing the relationships among technological

applications, MAS and performance. Contingency-based MAS studies (Baines and Langfield-Smith, 2003; Maiga et al., 2013) revealed that there is a positive and significant relationship between IT, MA practices and organizational performance. If H5 which hypothesizes that IT and ABCIS are positively associated, and H6 which hypothesizes that ABCIS has a positive effect on organizational performance, are supported, based on the propositions of Gerdin and Greve (2004) and Jamil and Mohamed (2013), it may be concluded that ABCIS plays a mediation role on the relationship between IT and organizational performance.

H16: *ABC implementation success mediates the relationship between information technology and organizational performance.*

In general, the formulated hypotheses mentioned above were based on the outcome of previous contingency-based studies. It is expected that the results of these hypotheses will contribute significantly to the current literature this is because that the current study is one of the very few studies that have examined the fit between contingency factors, ABC systems and organizational performance in the Iraqi manufacturing sector.

3.3 Research Design

The quantitative research method is considered apt for this study as it allows the researcher to examine the structural relationships between the variables of this study. The nature of the problem statements is the major determinant of employing a quantitative research approach (Creswell, 2009). Justifiably, quantitative research approach is considered germane for this present study because it offers comfortable opportunity to investigate large number of sample size in a considerable time frame

and with an affordable cost. Also, the quantitative research approach is employed in this study by focusing on the descriptive and the hypothesis testing with regards to the research objectives, which is to investigate and validate the relationships among the variables understudied in this study.

Furthermore, this study adopts a cross-sectional research design whereby data was collected and analyzed once during the study. Chapman (1997) has noted that contingency-based studies have come to be seen as large scale, and cross sectional questionnaire based research, which test the interaction effects of a limited number, or pairs, of variables on organizational performance. Findings, interpretations and conclusions were drawn from the analysis of data collected to make inferences on the study population on a one-time basis. The cross-sectional design is considered appropriate over the longitudinal research design because of resource, time and financial constraints (Sekaran, 2003; Zikmund, Babin, Carr, & Griffin, 2009).

Finally, the survey method was employed in this study and a hand-delivered approach was used for the administration of questionnaire in this study. This approach provides the researcher the opportunity to briefly introduce the research idea and its objectives to the respondents to clarify any ambiguous questions and to improve the response rate. This approach was also chosen because of a lack of reliable postal services in Iraq, which makes it impossible to use a courier service for the administration of the survey questionnaire. The survey method is justifiably most appropriate research design for this kind of study especially because it enables data to be collected from large sample size. Also, the survey research design is one of the most commonly used research design among MA research and organizational researchers (Druckman,

2005). A questionnaire was distributed to the CFOs or their representatives such as finance managers or finance controllers. It was believed that they are able to provide valid and comprehensive information requested in the questionnaire. The instrument for data collection used in this study is described in the following sections.

3.4 Measurement of Variables and Instrumentation

According to the explanation presented above, questionnaire was employed as the main instrument for data collection in this study. The survey instruments were designed based on the research questions, research objectives and variables covered in the theoretical framework model. The questionnaire consists of eight sections. Section one consists of items that measure the level of ABC implementation and ABCIS. Section two consists of items that measure organizational performance. Section three consists of items that measure environmental uncertainty. Section four presents items that measure market orientation. Section five entails items that measure competitive strategies. Section six comprises of items for measuring organizational structures. Section seven consists of items that measure information technology. Finally, section eight comprises of demographic questions and organizational information.

3.4.1 Measurement of Level of ABC Implementation

Krumwiede (1998) suggests that ABC system can be delimited by the needs of the organization and its adoption lies on a continuum between the acceptance, reutilization and integration stages. As such, the implementation stage refers to the final stages of using ABC system in organizations (Byrne et al., 2009). Gosselin (1997) classified the use of ABC into two basic levels: the pilot level of ABC usage and the full usage of ABC. Hence, the pilot level is by using ABC for activity cost analysis while full ABC

is the overall implementation across divisions to accurately measure product cost and to support decision-making process. This classification is in line with the recognition that individual firms have different needs (Schoute, 2009), resources and approaches towards the use of ABC (Byrne et al., 2009; Kallunki and Silvola, 2008). Accordingly, four questions were adapted, as presented in Table 3.1 below, to distinguish between ABC implementer group and non- implementer group. The four questions, aimed at dividing the respondents into four different levels, namely: not implemented at all, planning to implement, ABC is used for cost analysis and ABC is used for measuring product cost and decision-making process. For the purposes of this study, the adopters must be using the ABC information in their organization. Consistent with earlier surveys on the use of ABC (Chenhall and Langfield-Smith, 1998b), respondents are expected to give a Yes/No answer for the questions in this section.

Table 3.1
Measurement of Level of ABC Implementation

Construct	Code	Items	Sources
Extent of ABC Implementation	LABC1	ABC is not implemented at all	Gosselin (1997)
	LABC2	We are planning to implement ABC.	
	LABC3	ABC is used for activity cost analysis.	
	LABC4	ABC is used across departments for measuring product cost and to support decision-making process.	

3.4.2 Measurement of ABC Implementation Success

Pertinent to the definition of ABCIS given in Chapter One, this study measures the respondents' experience, knowledge and attitude towards the implementation of ABC. As such, this study examines the experiences of respondents or implementers on the dimensions of ABC success. Nineteen (19) items for measuring ABC success were adopted and modified based on the published items of McGowan (1998). The

dimensions used in the current study are the same as those used by McGowan. But, McGowan's study is based on preparers' and users' perceptions of ABC implementation. Nevertheless, the results of McGowan's (1998: 46) study affirmed that preparers (or designers) and users mostly "view the implementation of ABC similarly because the designers of the system key very strongly on how successful they believe users perceive the project to be". The items focus on four groups of dimensions of ABCIS namely, perceived organizational changes resulting from ABC implementation (impact on organizational process) is measured with 6 items, perceived usefulness of ABC is measured with 5 items, technical characteristics of ABC is measured with 4 items and employee attitude is measured with 4 items.

Table 3. 2
Measurement of ABC Implementation Success

Construct	Code	Items	Sources
Impact on Organizational Process	ABC1	Quality of decision	McGowan (1998).
	ABC2	Efficiency and waste reduction	
	ABC3	Innovation	
	ABC4	Relationship across functions in the organization	
	ABC5	Communication across functions in the organization	
	ABC6	Overall goal of the organization	
Perceived Usefulness of ABC	ABC7	Operations control	
	ABC8	Accomplishment of task more quickly	
	ABC9	Enhancement of effectiveness	
	ABC10	Making job more easier	
	ABC11	Usefulness on my job entirely	
Technical Characteristics	ABC12	Accurate information	
	ABC13	Accessible information	
	ABC14	Reliable information	
	ABC15	Timeliness information	
Employee Attitude	ABC16	Favorable attitude	
	ABC17	Embrace ABC system	
	ABC18	Willingness to use ABC system	
	ABC19	Easy to incorporate ABC system	

Respondents are requested to rate the existing ABC system on a seven – point score ranging from 1= "strongly disagree" to 7 = "strongly agree". This is because a 7-point scales are a little better than a 5-point scale (Nunnally & Bernstein, 1994). Sekaran (2003) demonstrated that a 7-point scale is more sensitive than the other-point scale in eliciting unbiased responses. Table 3.2 presents the summary of the items for measuring ABCIS.

3.4.3 Measurement of Organizational Performance

This study adopts both financial and non-financial measures of organizational performance. According to Lee and Yang (2011) the financial and non-financial performance may help managers to have a broad understanding of the performance information in their departments, which aids determining and achieving the organization's financial and strategic goals and assessing and controlling operations at each activity. In addition, it may help managers to be aware of changes in the external environment (Hoque, 2004). In other words, this study employs the perceptual approach to measuring organizational performance. Eight (8) items for measuring both financial and non-financial performance were adapted from Hoque (2011). The items required respondents to rate both the financial and non-financial performance of their organizations as compared to their industry in the past three years. Previous studies have shown that, the implication and dividend of implementing MAS techniques would be noticeable in three years (Jusoh, 2008). Financial performance is measured with four items and non-financial performance is measured with four items as well. A seven-point score was employed to rate performance. The scale rates from "1= very low" to "7 = very high". Table 3.3 presents the summary of the items for measuring organizational performance.

Table 3. 3
Measurement of Organizational Performance

Construct	Code	Items	Source
Financial	OP1	Level of firm profitability	Hoque (2011)
	OP2	Sales and revenues	
	OP3	Return on investment	
	OP4	Operational and cost efficiency	
Non-Financial	OP5	Market share	
	OP6	Customer loyalty	
	OP7	Employee satisfaction	
	OP8	Research and development activities	

3.4.4 Measurement of Environmental Uncertainty

Environmental uncertainty in this study refers to the perception of predictability of future behavior and the stability in different aspects of organizational environment (Chong & Chong, 1997). In that regard, eight items were adapted from Hoque (2004) for measuring environmental uncertainty in the current study. A seven-point scale was employed to score respondents' perception on the predictability of the dynamism of the organizational environment. The scale ranges from 1 = "Very Unpredictable" to 7 = "Very Predictable". Table 3.4 below presents the summary of the items adapted for measuring environmental uncertainty.

Table 3. 4
Measurement of Environmental Uncertainty

Construct	Code	Items	Source
Environmental Uncertainty	EU1	Suppliers' actions	Hoque (2004)
	EU2	Customer demands, tastes and preferences	
	EU3	Market activities of competitors	
	EU4	Government regulation and policies.	
	EU5	Economic environment	
	EU6	Production and information technologies	
	EU7	Stability of environment	
	EU8	Industrial relations	

3.4.5 Measurement of Market Orientation

Market orientation is measured in this study with respondents' perception on the willingness and readiness of their organizations towards gathering market information and developing and implementation of market-oriented strategies. Fifteen (15) items were mainly adapted from the research work of Narver & Slater (1990) for measuring market orientation in the current study, with three dimensions namely customer orientation measured with six items, competitor orientation measured with four items and inter-functional coordination measured with five items. A seven-point scale was employed ranging from 1 = "Strongly Disagree" to 7 = "Strongly Agree". Table 3.5 presents a summary of the items adapted for measuring market orientation.

Table 3. 5
Measurement of Market Orientation

Construct	Code	Items	Source
Customer Orientation	MO1	Create customer value.	Narver and Slater (1990)
	MO2	Information about customers is freely communicated.	
	MO3	Understanding customers' needs.	
	MO4	Customer satisfaction.	
	MO5	Measuring customer satisfaction.	
	MO6	After-sales service	
Competitor Orientation	MO7	Top management regularly discusses competitors' strength and weaknesses.	
	MO8	Competitive advantage is based on understanding target opportunities.	
	MO9	Rapidly respond to competitive actions.	
	MO10	Salespeople share about competitor information.	
Inter-functional Coordination	MO11	Business functions are integrated to serve the target market needs.	
	MO12	Managers understand how employees can contribute to value of customers.	
	MO13	Inter-functional customer calls	
	MO14	Information shared among functions	
	MO15	Share resources with other business units.	

3.4.6 Measurement of Competitive Strategies

In this study, the generic typology of strategy by Porter (1980) is adopted for measuring competitive strategies. Subsequently, 11 items were adapted from Narver and Slater (1990) for measuring competitive strategies. The items cover the two generic dimensions of competitive strategy, namely: cost leadership strategy which is measured by five items and differentiation strategy which is measured by six items. A seven-point scale was employed for respondents to rate their perception on the extent to which their organizations exert attention and effort to implement the itemized strategies. The scale ranges from 1 = "much less than competitors" to 7 = "much more than competitors". Table 3.6 presents a sample of the measurement of competitive strategies adapted in this study.

Table 3. 6
Measurement of Competitive Strategy

Construct	Code	Items	Source
Cost leadership strategy	CS1	Optimizing capacity utilization.	Narver and Slater (1990).
	CS2	Negotiating the best price when buying raw materials.	
	CS3	Emphasizing competitive pricing.	
	CS4	Improving manufacturing productivity system.	
	CS5	Lowering manufacturing costs.	
Differentiation Strategy	CS6	Providing extensive services before and after sale.	
	CS7	Adopting new marketing technique.	
	CS8	Offering differentiated products.	
	CS9	Supporting advertising expenditure.	
	CS10	Emphasizing company's brands.	
	CS11	Offering high quality products.	

3.4.7 Measurement of Organizational Structure

The current study adopts the decentralized structure. Abernethy and Bouwens (2005) argued that decentralized structures are immensely important for the effective and successful implementation of MAS innovations. Decentralized structure is measured

by both vertical and horizontal decentralization (Minzberg, 1979). Subsequently, five items for measuring vertical decentralization and four items for measuring horizontal decentralization were adapted from the research work of Elhamma and Moalla (2015). For vertical decentralized structure, respondents were asked to rate the level at which their organizations dispersed different types of decisions using a seven-point score scale. For horizontal decentralized structure, a seven-point score scale was also employed to rate respondents' agreement or disagreement with participation in decision making. The scale range from 1 = "Strongly Disagree" to 7 = "Strongly Agree". Table 3.7 presents a sample of organizational structure measurement.

Table 3. 7
Measurement of Organizational Structure

Construct	Code	Items	Source
Vertical Decentralized Structure	OS1	Recruitment/Dismissal	Elhamma and Moalla (2015)
	OS2	Launching of a new product	
	OS3	Choice of suppliers/customers	
	OS4	Pricing sale	
	OS5	Operational reorganization	
Horizontal Decentralized Structure	OS6	Involved in all types of decisions	
	OS7	Consulting coworkers	
	OS8	Consulted by coworkers	
	OS9	Involved employees in decisions	

3.4.8 Measurement of Information Technology (IT)

The measurement of IT in this study focuses on the application of IT in four different aspects of the organization namely, communication, production and operations, administration and decision making support. Subsequently, 27 items were adapted from instrument employed by Albadvi et al. (2007) for measuring IT, which can be categorized into four dimensions. IT application for communication is measured by four items. IT application for production and operation is measured by nine items. IT application for decision support is measured by four items. Finally, IT application for

administration is measured by ten items. Respondents were required to rate the extent of the application of different IT in their organizations using a seven-point score scale ranging from 1 = "Not at all" to 7 = "Very much applied". Table 3.8 below presents the sample of measurement for information technology.

Table 3. 8
Measurement of Information Technology

Construct	Code	Items	Source
IT for Communication	IT1	E-mail	Albadvi et al. (2007)
	IT2	Internet	
	IT3	Web site for advertisement	
	IT4	Local Area Network	
IT for Production and Operation	IT5	Automatic warehousing	
	IT6	Software for project management	
	IT7	CAPP: Computer Aided Production Planning	
	IT8	MRP: Manufacturing Requirement Planning	
	IT9	CAD: Computer Aided Design	
	IT10	CAM: Computer Aided Manufacturing	
	IT11	CNC: Computer Numerical Control	
	IT12	Final product quality control	
	IT13	Process quality control	
IT for Decision Support	IT14	Data analysis software	
	IT15	Graphical data presentation tools	
	IT16	DSS: Decision Support Systems	
	IT17	SIS: Strategic Information Systems	
IT for Administration	IT18	Databases	
	IT19	Spread sheets	
	IT20	Word Possessors	
	IT21	Workflow management system	
	IT22	Internet recruitment	
	IT23	Training system	
	IT24	Performance analysis system	
	IT25	Payroll system	
	IT26	Invoice system	
	IT27	Financial system	

3.4.9 Demographic Information

Respondents' demographic information such as job rank, age, educational qualifications and job tenure were also incorporated into the questionnaire. The answers given to these questions have helped the researcher to describe the

respondents and their responses. Respondents were asked to write down their job rank, age and their job tenure. The participants were also asked to indicate their educational qualification. As such, educational qualification was coded with "1" = Diploma, "2" = Bachelor's Degree, and "3" = Postgraduate Degree. Brief information of their organization was also requested. Respondents were asked about the number of employees in their organization, age of their organization and the product/industry type of their organization. See Appendix A for the sample of the questionnaire.

3.5 Reliability and Validity of Instrument

The measurements of variables in this study were adopted from previous studies. The decision to use these particular instruments are based on their reliability and validity as documented by previous studies (Van der Stede, Young, & Chen, 2005). Despite evidence of reliability and validity of the instruments in previous studies, each instrument adopted was reexamined for reliability and validity in the context of the Iraqi manufacturing industry. However, Ismail (2007) has used three stages to refine the instrument: pre-testing by academics, pre-testing by practitioners and pilot testing. This study ensures that all the three stages would be undergone in the current study before proceeding to the main data collection stage.

3.5.1 Measurement of Instruments' Validity

In the present study, validity is ensured by subjecting the instrument to an in-depth review by experts in the field of Management Accounting and Quantitative Methodology (Creswell, 2009). These experts were recruited for making necessary corrections to the draft survey instrument based on their experiences.

The validation process involves six (6) experts, according to the recommendation proffered by Olson (2010). Three (3) among the experts are academicians who are senior lecturers in the accounting department in the Universiti Utara Malaysia and are experts in the field of strategic cost management or management accounting. The remaining three (3) practitioners are selected from the Iraqi manufacturing companies. By and large, all of the experts concluded that the measures employed are valid for this study. Additionally, their comments and feedbacks yielded some amendments and improvements to the draft survey instrument. For instance, some changes were made to the measures of information technology. Also several additional questions were added to reflect the demographic information of the respondents. Finally, the comments of the experts improved the instruments in many ways such as avoidance of ambiguity, reduction of double barreled questions and the usage of a more appropriate words. The result of this process are impacted in the final research instrument, which were used in collecting data for the main study.

3.5.2 Measurement of Instruments' Reliability

This section presents the result of the reliability analysis. The assessment of reliability revealed how reliable and how internally consistent a measurement is (Van der Stede et al., 2005). Cronbach's Alpha is the commonly used statistical method for determining the reliability of measurement (Hair, Hult, Ringle, & Sarstedt, 2016). According to Hair et al. (2016), a Cronbach's Alpha value of 0.7 and above is considered meritorious while 0.6 is considered acceptable. As such, a pilot study was conducted to ascertain the reliability of measures. The pilot study was also conducted in order to determine the applicability of the adopted items in the chosen context of this current study, namely, the Iraqi manufacturing sector. This is considered necessary

because the original scales that have been adapted in the present study were developed mainly from different cultures, industries and contexts (Creswell, 2009; Sekaran, 2003).

In the present study, the pilot test was conducted at two governorates in the North of Iraq, to confirm the reliability of the questionnaire instruments. The questionnaires were distributed at the Erbil City and Kirkuk City. Out of 40 questionnaires distributed, only 30 were returned and later used for a reliability test. The 30 returned questionnaires were coded and analyzed with SPSS Version 23.0 and the reliability of the instrument was tested.

Table 3.9
Reliability Analysis for Measurements of Variables

Constructs	**Number of Items**	**Cronbach's Alpha**
ABC Implementation Success	19	0.932
Organizational Performance	8	0.915
Environmental Uncertainty	8	0.830
Market Orientation	15	0.916
Competitive Strategy	11	0.890
Organizational Structure	9	0.781
Information Technology	27	0.918

As presented in Table 3.9, the Cronbach's Alpha coefficients for all variables are at the meritorious level, thus acceptable level of consistency. The entire values of the Cronbach's Alpha presented in Table 3.9 are above 0.70, ranging from 0.781 to 0.932, which inform considering the measurements adapted in this study as reliable according to Nunnally and Beinetein (1994). Consequently, the questionnaires were distributed to the remaining manufacturing companies in Iraq.

3.6 Population of Study

Population of the study refers to the collection of a clearly defined elements (e.g., people, places, objects and cases) about which a researcher wishes to make some inferences (Cooper, Schindler, & Sun, 2014). Population is the entire group of people that a researcher aims at investigating (Bernard, 2006) . Population entails a set of units of analysis. In other words, population is the entire group of people that a study wishes to explore (Sekaran, 2003). It is regarded as one of the crucial research fundamentals that comprise common characteristics of all the individuals in the group. As such, population is the context and the target of a study. Target population is the group of people in which a study wishes to generalize and contextualize its findings and conclusions. The sample size is drawn from the population.

Accordingly, the population of this study is the manufacturing companies in Iraq. Brierley (2008) affirmed that the manufacturing companies are relatively homogeneous group, while the nonmanufacturing sector is a heterogeneous pool. For instance, educations are different from hospitals, which are different from banks. In addition, Fadzil & Rababah (2012) asserted that the lack of separation between the different sectors may lead to ambiguous results regarding the implementation of ABC. As such, the present study focuses on large manufacturing companies in Iraq. Research and surveys have also shown that the adoption and implementation of ABC tends to be more frequent within large companies (Gosselin, 2006). Large manufacturing companies in Iraq can be defined as those companies with 30 or more workers (CSO, 2015). According to CSO (2015), there are 707 large industrial manufacturing companies in Iraq.

3.7 Sample Size

In a survey research, determining an appropriate sample size is essential (Barlett, Kotrlik, & Higgins, 2001). An appropriate sample size is needed in order to minimize the total cost of sampling error. Following this line of argument, the present study adopts the Krejcie and Morgan's (1970) sample size determination criteria. Most importantly, Krejcie and Morgan's (1970) sample size determination criteria was used to determine the representative sample size for this study because it has taken into account the level of confidence and precision, ensuring that sampling error is minimized. As mentioned earlier, there are 707 large industrial manufacturing companies in Iraq (CSO, 2015). Subsequently, the sample size table generated by Krejcie and Morgan (1970), for a given population of 700 and above, a sample size of 248 would be required to represent the population of this study. Finally, this study surveys the chief accounting officers of 248 manufacturing companies in Iraq.

Previous studies on ABC conducted in Iraq have recorded quite a high level of response rate. For instance, 78 % response rate was recorded in the study conducted by Jaf et al. (2015), 84.44 % in the study conducted by Al-Zaidy (2010) and 73.53 % in the study conducted by Saleh (2013). On this basis, the current study requires distribution of around 305 forms in order to obtain the required sample size that represented 248 respondents.

3.7.1 Sampling Technique

In this study, the sample technique adopted for selecting sample size from the population is a simple random sampling method. This process involves randomly selecting the companies from the list of manufacturing companies listed in the CSO

(2015) of Iraq. The advantage of this sample method is to ensure that all the population has an equal chance of being selected and guides the researcher from bias against another (Babbie, 2015; Bernard, 2006). Bernard (2006) asserts that probabilistic sampling technique allows for generalizability of the research findings. Therefore, this study draws its samples from the list of manufacturing companies of Iraq using a random sampling technique.

3.7.2 Data Collection Procedures

As discussed above, the data in this study was collected using a hand-delivered administration approach for distributing the questionnaires to managers in manufacturing companies in Iraq. The aim of the survey was to collect the information on the usage of ABC systems in the Iraqi manufacturing environment. The questionnaire was appended with an introductory letter of the researcher and a brief explanation of the research objective (See Appendix A, for a sample of the Introduction letter). Specifically, the questionnaire package includes the instructions on completing the questionnaires, the purpose of the study, the identity of the respondents, the nature of confidentiality of the data, the importance to get the participation from the respondents and a copy of the survey questionnaire.

As part of a strategy to develop an accurate mailing list and secure a high response rate, phone call was made to the companies to reserve an appointment with the appropriate person, to fill out the questionnaire, which were mainly the accounting managers such as CFOs. However, the respondents (CFOs) were asked whether anybody else (e.g. financial controller) was appropriate to fill in this questionnaire, in which case it could be passed to them. The CFOs are considered appropriate to answer

the research questionnaire because they have clear knowledge, expertise and knowledge of implementing ABC and the circumstances in terms of contextual factors that might be affecting the implementation of ABC (Zhang et al., 2015) and overall performance (Lee and Yang, 2011). However, Zhang et al. (2015) assumed that for companies without a CFO or financial controller, finance manager would be the appropriate respondents.

In addition, the researcher adopted the use of a hand-delivering survey instrument that was used by the researcher or a hired research assistant to the office of the respondents. The researcher booked immediate appointment to pick-up the completed questionnaire from the respondents. This was followed by phone calls to the participants who did not complete the survey. A large number of them expressed that they are very busy and some did not wish to fill out the questionnaires because it contravenes the company policy. However, others decided to fill out the form instantly. The choice of data collection is considered because it can cover a wide geographical area and the provision for the respondents to complete the questionnaires at their convenience time.

Even though Iraq consists of 18 provinces, the questionnaires were only distributed in 14 provinces. The provinces of Mosul, Anbar, Diyala and Salah Uddin were excluded mainly because of the destruction of companies in these provinces due to the circumstances of the last war with the Islamic State in Iraq and Syria from 2014 to 2017. The manufacturing companies are grouped in most provinces (e.g. Baghdad, Basra, Erbil, Kirkuk, Dhi Qar and Dohuk) in one area or industrial city. The fact that the companies are located in an industrial area simplifies the distribution of the questionnaires for the researcher.

3.8 Unit of Analysis

The unit of analysis in this study is based on manufacturing organizations. This choice follows the argument of del Brío, Fernandez, and Junquera (2007) who posited in contrast to the assertion of Delmas (2001) that researcher should focus on a single set of source for information gathering rather than facing the challenges of gathering information from multiple source as argued by Delmas (2001). As such, this study chose the manufacturing organizations as a unit of analysis.

3.9 Method of Data Analysis

There are two main objectives of data analysis (Sekaran, 2003): testing the goodness of data, and testing the hypotheses. Data collected using the questionnaire was coded and keyed using SPSS version 23.0 for windows. Then, the data was analyzed using the combinations of both descriptive and inferential statistics. The descriptive analysis was conducted using SPSS program for windows and the inferential aspect of the statistics was done using the smart-PLS 3.0 software (Henseler, Ringle, & Sinkovics, 2009). Meanwhile, before diving into the inferential statistics, a few preliminary analysis was conducted using SPSS version 23.0 for windows. The main purpose of the preliminary analysis is to get the collected data ready for inferential statistics (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). The two major types of data analysis are discussed in details below.

3.9.1 Descriptive Analysis

Descriptive analysis was conducted in this study to describe the data and the respondents in this study (Sekaran, 2003). Descriptive analysis in this study includes the frequency of occurrence, average score, or central tendency (such as mean value)

and the measure of dispersion (such as standard deviation) of the variables understudied in this research. SPSS was also used to effectuate the preliminary analysis including descriptive statistics, response bias, missing data, normality, linearity, outlier, homoscedasticity and multicollinearity (Pallant, 2005).

3.9.2 Partial Least Squares (PLS) Technique

PLS path modelling, which is a type of SEM, offers researchers the opportunity to examine relationship among variables and to determine pathways among variables (Hair et al., 2014). Auzair (2015) argued that most empirical MA contingency-based studies (e.g. Cadez & Guilding, 2008; Bastian and Muchlish, 2012; Lee and Yang, 2011; Lay and Jusoh, 2012), which adopt "Cartesian" approach to define fit, tend to use multivariate techniques, such as SEM, to examine specific relationships between input variables (e.g. organizational context) and outcome variables (e.g. MAS effectiveness and organizational performance). PLS (also called PLS-SEM) was employed in this study because of its statistical estimations and its statistical power in determining the specific relationship significance among variables (Hair et al., 2014; Reinartz, Haenlein, & Henseler, 2009). This study considers the use of Smart-PLS3 software in establishing the measurement and the structural models (Wetzels, Odekerken-Schröder, & Oppen, 2009). The measurement model (outer model) is responsible for providing an explanation on the assessment of the reliability and the validity of the constructs of the study, while the structural model (inner model) is responsible for establishing the correlation and the relationship effect among the constructs regression analysis (See Section 4.6.1 and Section 4.6.2) (Hulland, 1999). In addition, using the bootstrapping in PLS helps analyzing the hypotheses of this

study and establishing the effect size of individual exogenous variables as well as the predictive relevance of the endogenous variables (Hair et al., 2014).

In addition, PLS is considered appropriate for this study because it is a non-parametric (Henseler, Ringle & Sarstedt, 2015) regression-based test (Hair, Ringle, & Sarstedt, 2011) that mirrors traditional regression technique. Hence, it was used to analyze both the structural and measurement models. The application of PLS3 path modelling, or components-based SEM, in a MAS research involves (Hair et al., 2014): assessing the reliability and validity of measures, determining the relationships between measures and constructs, and interpreting path coefficients. PLS path modeling can also be used to estimate Hierarchical Construct Models (HCM) (Henseler et al., 2015). HCM can be defined as constructs involving more than one dimension (Lohmöller, 1989). Wetzels et al. (2009) suggested that the use of HCM allows for more theoretical parsimony and reduce the complexity of model. The path weighing scheme can be applied to HCM (Henseler et al., 2015) which are present in this study. Thus, it was used to investigate models with a higher level of abstractions (Lohmöller, 1989) for the multidimensional constructs in this study by forming a HCM. Hence, PLS helps model the connection between dimensions and the constructs, and the relationship among constructs (Hair et al., 2014).

3.10 Direct Effects and Indirect Effects

Following the discussion presented in the theoretical underpinning of this study, the current study adopts the contingency approach and specifically the mediation model to examine the fit between each factor of contingency factors in this research and the implementation of ABC on organizational performance. With regard to the adoption

of mediation model, a significant relationship must be established between contingency factors and ABC implementation. Also, a significant relationship must be established between ABC implementation and organizational performance. If otherwise, there will be no statistical basis to establish mediation effect of ABC implementation.

In addition, the proposed theoretical framework in this study is developed using a PLS3 approach. The PLS3 analysis was used to test the hypotheses including the direct relationships between each factor of contingency factors and ABCIS, the direct relationship between ABCIS and organizational performance, and the direct relationship between each factor of contingency factors and organizational performance. Furthermore, the approach was used to test the indirect relationship between each contingency factor in this research and organizational performance through ABCIS. Specifically, the Ordinary Least Squares (OLS) regression-based method was employed as estimation procedure in order to minimize error in the analysis. PLS uses OLS regressions to estimate the model's partial regression relationships (Hair et al., 2014). Consequently, to model the relationships between contingencies, ABC success and performance, the path model for the proposed theoretical model was developed.

3.11 Summary of the Chapter

This chapter has presented the methodology of this study consisting of the research framework, hypotheses development, the research design, the data collection instrument and the measurement of the understudied variables. This chapter also entails explanation of the sampling method, sampling techniques and the sample size.

Procedures on data collection and data analysis are also discussed in details in this chapter. In the following Chapter, the research presents the descriptive statistics of all variables generated by SPSS 23.0 program and the test of hypotheses using Partial Least Squares (PLS3) followed by analysis.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.0 Introduction

This chapter presents the data analysis and findings of this study. The chapter starts with the presentation of response rate where the number of respondents, the retained, and the unused were broken-down. This is followed by demographic profile of the respondents entailing the position held by the respondents, age, highest level of qualification, years of working experience and types of industry. Additionally, this chapter presents the response bias result. Following this, a series of pre-requisite statistical assumptions were presented as the basis for conducting inferential analysis. Finally, this study presents the findings from Partial Least Squares Structural Equation Modeling (PLS-SEM) and presents both the measurement model, structural model and the hypotheses testing procedures, the mediating effects, variance explained R^2, effect size and predictive relevance.

4.1 Survey Response Rate

Prior to delving into the main analysis, the researcher took a series of steps to ensure the accuracy and adequacy of the data collected. This is in line with the suggestion proffered by Cooper and Schindler (2014). Therefore, as discussed under the sampling section in the previous chapter, the researcher hand-delivered the survey questionnaire to 305 manufacturing companies in Iraq. The data collection lasted for 4 months and one week, starting from 1st of March 2017 until 7th of July, 2017 and the researcher obtained 239 completed questionnaires. This yields 78% response rate. The suggestion

of Creswell (2012) confirmed that a response rate of 50% or above is adequate for surveys.

However, considering the specificity of this research context with regard to the level of ABC implementation, the researcher had included four questions at the beginning of the questionnaire to distinguish between ABC implementer group and non-implementer group. In other words, these set of questions allow the researcher to separate the respondents from companies that have implemented ABC from those respondents that are from companies that have not implemented ABC at all or just planning to implement ABC. Van Nguyen and Brooks (1997) demonstrated that it is inappropriate to compare between companies that are using ABC system with those that are not using it. This is because the non-adopters, which consist of those that plan to implement ABC and those that do not plan to adopt it, may not belong to a homogeneous group (Brierley, 2011). Therefore, the response rate for the present study is determined by the respondents that have used ABC in their organizations.

Table 4.1 presents the descriptive analysis of the four levels of ABC implementation in the current study. Subsequently, the descriptive analysis of the first question revealed that 141 respondents are from the organizations which have implemented ABC. The 141 respondents are retained for the current study and the remaining 98 respondents who are from organizations that are yet to implement or just planning to adopt ABC are excluded from the present study. However, 23 respondents gave contradictory answers by indicating that ABC is implemented in their organization while they are as well indicating that ABC is not used for any level of implementation in their organizations. By eradicating the contradictory answers from the study, only

118 (141-23) respondents were retained for this study. In other words, out of the 29 respondents (question 3 in Table 4.1), 23 respondents indicated that ABC system is not used for cost analysis, but the remaining, six respondents claimed that ABC system is frequently used for measuring product cost and decision making process (question 4 in Table 4.1) instead of its use for cost analysis level.

Table 4.1
Distribution of Level of ABC Implementation

Level of ABC Implementation		**Frequency**	**Percent (%)**
Not implemented ABC at all	YES	98	41.0
	NO	141	59.0
	Total	**239**	**100.0**
Planning to implement ABC	YES	73	74.5
	NO	25	25.5
	Total	**98**	**100.0**
ABC is used for cost analysis	YES	112	79.4
	NO	29	20.6
	Total	**141**	**100.0**
ABC is used for measuring product cost and decision-making process	YES	77	54.6
	NO	64	45.4
	Total	**141**	**100.0**

To put it simply, the descriptive analysis of the third and fourth question revealed that 118 respondents are from the organizations which have implemented ABC systems for the cost analysis level, or for measuring product cost and decision-making process level or for both levels. In details, 71 respondents are from the organizations which have implemented ABC for both cost analysis, and measuring product cost and decision-making process level. 41 respondents (112 – 71) are from the organizations which have implemented ABC for cost analysis level only. This means that out of the 112 companies which have implemented ABC for cost analysis level, 71 of them also used the ABC to measure product cost and decision-making process. Finally, six (77 – 71) respondents are from the organizations which have implemented ABC for

measuring product cost and decision-making process level only. Again, out of the 77 companies, 71 of them also used the ABC for cost analysis level.

However, 4 respondents were deleted during the assessments of outliers. Therefore, the study is left with 114 usable questionnaires for the analysis. The retained questionnaires and the classification of the levels of the implementation of ABC are presented in Table 4.2. The remaining number of respondents is considered acceptable as it is in consonance with recent management accounting system (MAS) studies (Chenhall et al., 2011; Abernethy and Bouwens, 2005) that employed PLS for developing model with 100 and 83 sample size respectively. The following section presents the demographic distribution of the respondents.

Table 4.2
Retained Questionnaires and Classification of the levels of the Implementation of ABC

Items	**Frequency**
Retained Questionnaires	118
Deleted Questionnaires	4
Valid Questionnaires	114
Cost analysis level	39 (41-2 outliers)
Measuring products cost and decision-making process level	6
Both levels	69 (71-2 outliers)
Total	114

4.2 Demographic Distribution of the Respondents

This section presents the descriptive analysis of the demographic information of the respondents in this study. The demographic information of the respondents is presented in Table 4.3 which entails the position, age, highest educational qualification and respondent's years of working in their organization. Following that, the information of the respondent's organizations is presented in Table 4.4 which includes

number of employees, age of organization and type of the industry in which the respondents' organizations operate.

Table 4.3 reveals that, majority of the respondents in this study are chief financial officers 60 (52.6%). This is followed by 26 (22.8%) financial managers and 18 (15.8%) financial controllers. 8.8% (10) are others, who are holding the positions either related to cost or management accounting. In all, it is fair to say this study revolves around financial officers which is in accordance with the design of this study as, financial officers are the rightful representatives of organizations who can give accurate information about contingency factors, MAS and organizational performance.

Additionally, the distribution of the age of respondents as depicted in Table 4.3 reveals that, majority of the respondents 43 (37.7%) in this study are between the ages of 29 and 39 years old. This is followed by 42 (36.9%) respondents who are aged between 40 to 49 years old. In addition, 18 (15.8%) respondents revealed that, they are between 50 and 59 years old while the remaining 6 (5.2%) respondents are 60 years and above. In summary, majority of the respondents are below 50 years old. Only few respondents are very old above 60 years old.

With regard to the level of educational qualification of the respondents, the demographic information presented in Table 4.3 reveals that, 72 (63.2%) respondents have bachelor's degree as their highest educational qualification. 28 (24.5%) respondents have a postgraduate degree in either masters or PhD level. Finally, 13

(11.4%) of the respondents have a diploma certificate which is the lowest educational qualification as recorded by the respondents.

Table 4.3 also shows that majority of the respondents 53 (46.4%) have worked in their current organization for more than 12 years. This is expected as the respondents in this study are highly ranked managers and officers. 34 (29.9%) respondents have 4 to 8 years working experience with their current organization. Meanwhile, 6 (5.2%) respondents have the lowest working experience in the range of less than 4 years. It is also observed that 17 (15%) of the respondents have 9 to 12 years of working experience with their organizations.

Table 4.3
Demographic Information of the Respondents

Demographic Variables	**Category**	**Frequency**	**Percent (%)**
Position	Chief Financial Officer	60	52.6
	Financial Manager	26	22.8
	Financial Controller	18	15.8
	Others	10	8.8
Age	Below 40	43	37.7
	40-49	42	36.9
	50-59	18	15.8
	60 and Above	6	5.2
	Missing	5	4.4
Highest Education Qualification	Diploma	13	11.4
	Bachelor's Degree	72	63.2
	Postgraduate Degree (Masters/PhD)	28	24.5
	Missing	1	0.9
Years of Working in the Organization	Below 5 years	6	5.2
	5-8 years	34	29.9
	9-12 years	17	15.0
	Above 12 years	53	46.4
	Missing	4	3.5

n = 114

Table 4.4 presents information about the respondents' organizations. Starting from the number of employees, it is revealed that, 68 (59.6%) respondents are from organizations with less than 100 employees. This is followed 28 (24.6%) organizations have between 100 and 499 number of employees. Seven (6.1%) organizations have more than 1000 employees and 6 (5.3%) organizations have between 500 and 999 employees.

Table 4.4
Demographic Information of the Respondents' Organization

Demographic Variables	**Category**	**Frequency**	**Percent**
Number of Employees	Less than 100	68	59.6
	100 - 499	28	24.6
	500 - 999	6	5.3
	1000 and above	7	6.1
	Missing	5	4.4
Age of organization	3 – 6 years	12	10.5
	More than 6 years	101	88.6
	Missing	1	0.9
Type of Industry	Food and Beverages	30	26.3
	Textiles and Apparel	15	13.2
	Printing and Publishing	2	1.8
	Coal and Petroleum	2	1.8
	Chemicals	15	13.2
	Rubber-based products	9	7.9
	Metal products	19	16.6
	Electricals and electronics	8	7.0
	Furniture	5	4.3
	Pharmaceutical and Toiletries	7	6.1
	Missing	2	1.8

n = 114

Additionally, Table 4.4 also reveals that 101 (88.6%) respondents are from organizations that have been established for more than 6 years. Also, 12 (10.5%) respondents are from manufacturing organizations founded between 3 to 6 years. Finally, there is no organizations founded under less than 3 years. These distributions suggest that majority of the respondents are from organizations which have been

established for more than three years which is enough time to reflect on the performance of their organizations. Finally, the respondents in the study work across different types of industries which in a descending order include food and beverages (26.3%), metal products (16.6%), chemicals and textiles and apparel (13.2%) respectively, rubber-based products (7.9%), electrical and electronics (7%), pharmaceuticals and toiletries (6.1%), furniture (4.3%), printing and publishing and coal and petroleum (1.8%) respectively. Notably, this study was limited to the local industrial companies, and the researcher was based on SCO (2015) report to classify the type of industry.

4.3 Test of Response Bias

In order to examine non-response bias among the respondents, an independent sample t-test is conducted to compare between two different groups of responses (Maelah & Ibrahim, 2007; Pallant, 2001). For this purpose, the respondents in this research were split into two groups, which are early responses (32) and late responses (82), based on the time period in which the questionnaires were received (Williams & Seaman, 2002). The early responses (first group of respondents) are the group of responses that were obtained within one month after the distribution of the questionnaires while the late responses are the second group of respondents that returned their questionnaires after the first one month of distribution. Based on the suggestions of Armstrong and Overton (1977) and Pertusa-Ortega et al. (2010), if a significant difference were portrayed between the groups of the respondents, this indicates a difference between early respondents and late respondents.

In addition, all the constructs of the study were taken into consideration. Levene test was observed to confirm that the groups were mutually exclusive in order to satisfy the assumptions of homogeneity of variance. The results confirmed that the variances are homogeneous across the two groups at the 0.05 level of significance ($p>0.05$). Invariably, the results in Table 4.5 shows that there are no significant differences between the early and late respondents for all the variables (p-value is obviously greater than 0.05 in the two tested groups) since the equality of the mean responses of both groups were not significant. Therefore, there is no issue of response bias in the data.

Table 4.5
Response Bias Analysis

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
ABC Implementation Success	.012	.914	.839	112	.403	.13054	.15566	-.17788	.43895
			.816	53.643	.418	.13054	.15994	-.19018	.45125
Organizational Performance	.104	.748	.331	112	.741	.06279	.18975	-.31319	.43876
			.319	52.654	.751	.06279	.19689	-.33218	.45776
Environmental Uncertainty	.630	.429	.805	112	.422	.19417	.24117	-.28367	.67201
			.774	52.377	.443	.19417	.25094	-.30928	.69762
Cost Leadership Strategy	3.307	.072	-.019	112	.985	-.00366	.19522	-.39045	.38314
			-.017	48.539	.986	-.00366	.21191	-.42962	.42230
Differentiation Strategy	.695	.406	-.325	112	.746	-.04497	.13837	-.31913	.22919
			-.317	53.941	.752	-.04497	.14177	-.32922	.23928
Vertical Decentralized Structure	.408	.524	-1.156	112	.250	-.23369	.20221	-.63434	.16696
			-1.043	46.914	.302	-.23369	.22400	-.68435	.21697
Horizontal Decentralized Structure	.990	.322	-1.311	112	.193	-.32671	.24930	-.82068	.16725
			-1.343	59.596	.184	-.32671	.24326	-.81337	.15994
Market Orientation	.010	.921	-.081	112	.935	-.01077	.13218	-.27267	.25113
			-.079	52.825	.938	-.01077	.13692	-.28542	.26387
Information Technology	.273	.602	-.419	112	.676	-.06696	.15964	-.38327	.24936
			-.416	55.620	.679	-.06696	.16105	-.38963	.25572

n= 114

4.4 Descriptive Statistics

The descriptive analysis conducted and presented in Table 4.6 below is to show that the responses of the respondents fall within the expected range. Based on the values of mean and standard deviation, the findings presented in Table 4.6 reveals the central tendency of the measured variables with regards to the opinion and perceptions of the respondents. As shown in Table 4.6, the mean values for the variables ranges from 3.98 to 5.93. In an ascending order, horizontal decentralized structure has the least mean value (Mean = 3.98). This implies that, majority of the respondents moderately agree to the measures of horizontal decentralized structure. This is followed by environmental uncertainty (Mean = 4.50) which evinces that majority of the respondents have the opinion that the corporate environment in Iraq is moderately unpredictable.

The remaining variables have mean values above 5.00. For organizational performance, the mean value is 5.56 which indicates that majority of the respondents rate the performance of their organization as high. Also, the mean for information technology is 5.61 which demonstrates the fact that information technology is employed among manufacturing companies in Iraq to a moderate extent. Similarly, the findings demonstrate that, respondents moderately agree with the measurement of ABCIS (Mean = 5.73). Furthermore, the mean for market orientation and vertical decentralized structure are also 5.73 respectively. The mean value of market orientation indicates the respondents revealed that they concur with the presence of market orientation in terms of competitors' orientation, customer orientation and inter-functional coordination. For vertical decentralized structure, the value indicates that majority of respondents moderately agree to the presence of vertical decentralized

structure in their organizations. In addition, the mean values for both cost leadership strategy and differentiation strategy are 5.85 and 5.93 respectively. These values evinced that the respondents in this study moderately agree to the employment of both strategies by the manufacturing organizations in Iraq.

Table 4.6
Descriptive Analysis of Variables

Variables	Mean	Min	Max	Std. Deviation
ABC Implementation Success	5.7318	3.05	6.89	.74580
Organizational Performance	5.5603	2.25	7.00	.90678
Environmental Uncertainty	4.5088	1.63	6.63	1.15523
Market Orientation	5.7327	3.47	6.67	.63137
Cost Leadership Strategy	5.8526	3.40	7.00	.93243
Differentiation Strategy	5.9386	4.00	7.00	.66121
Vertical Decentralized Structure	5.7368	2.40	7.00	.97157
Horizontal Decentralized Structure	3.9850	1.00	6.50	1.19987
Information Technology	5.6141	2.81	6.81	.76312

n= 114

4.5 Data Screening and Statistical Assumptions

As discussed in the previous chapter, the inferential statistics employed to measure the hypotheses formulated in this study are the analytical schemes in PLS-SEM 3.0. However, before proceeding with PLS-SEM analysis, there are certain perquisite analyses which include data screening such as assessment of missing data and statistical assumptions, assessment of outliers, normality test, multicollinearity test, heteroscedasticity and linearity that were conducted using the analysis in SPSS version 23.0 (Hair et al., 2016). The following sections presents the procedures of data screening and preliminary statistical assumptions that were conducted in this study.

4.5.1 Assessment of Missing Values

Missing values replacement is a prerequisite analysis before proceeding with the analysis procedures because PLS path method is unable to handle missing data (Hair

et al., 2014). After data from the questionnaires were keyed into the SPSS, a descriptive analysis reveals that there are randomly missing values (0.001 before outlier test). However, five percent missing value can be considered insignificant and harmless (Tabachnick & Fidell, 2007). Therefore, the missing values in the current research was treated with mean replacement which has been approved by data analysis experts (Hair et al., 2016). Subsequently, the data set was free of missing values and set for further tests.

4.5.2 Assessment of Outliers

Outliers are unusual responses to a particular observation (Byrne & Van de Vijver, 2010). Theorists have opined that the presence of outliers in the dataset is capable of causing distortion in analysis results especially in a regression-based analysis (Schumacker & Lomax, 2016; Verardi & Croux, 2008). Accordingly, there are two methods for detecting outliers namely the univariate level (an extreme value on one variable) and the multivariate level (an unusual combination of scores on two or more variables) (Tabachnick & Fidell, 2007). In this study adopts both methods; outliers are detected at the univariate level through the screening of box plots using the exploratory descriptive method in SPSS while Mahalanobis distance was calculated to detect the outliers at the multivariate level (Pallant, 2005).

An inspection of the box plot for each of the variables revealed four outliers having more than 1.5 box length from the edge of the box (Pallant, 2005). Although Hair, Black, Babin, & Anderson (2010) cautions on the deletion of outliers "unless demonstrable proof indicates that they are truly aberrant and not representative of any observations in the population" (p.67), the four observations was deleted from the data

set especially because they are criticial values and not just outliers. Therefore, the four outlier cases were deleted from the data set and the boxplot with no outlier is presented in Appendix B.

Subsequently, Mahalanobis distance (D2) was used to detect outliers at the multivariate level (Osborne & Overbay, 2004; Cerioli, 2010). To detect outliers, it is important to know the critical Chi-Square value using the total of items used in measuring the independent variables as the degree of freedom (Schumacker & Lomax, 2016). Therefore, the total number of items in the questionnaire measuring the independent variables in this study is 70. Therefore, the recommended threshold of chi-square was 90.53 (p=0.05) (See Appendix B for Chi-Square table). When the Chi-Square value was compared with the Mahalanobis value in SPSS, it was found that, there was no Mahalanobis value exceeding the Chi-Square value. Therefore, there is no outlier case to be deleted in this level. These analysis show that, the data is free from outliers and can be used for further inferential analyses.

4.5.3 Normality Test

Normality test can be done using two common methods (Tabachnick & Fidell, 2007): a histogram with a normal curve, and skewness and kurtosis analysis. The first method (histogram) uses the graphical method i.e. using the histogram graph of the normality plot in regression analysis. Figure 4.1 shows the histogram and normal curve. The figure shows that, the normal curve was symmetrical, bell shaped, and the majority of the values were located within plus/minus (Tabachnick & Fidell, 2007) two standard deviations from the mean. Thus, it can be accepted that the normality assumption was met in this study. Further, the second method of normality assessment is determined

by the skewness and kurtosis of the data (Table 4.7). According to the argument placed by Ryu (2011), the data can be considered normal when the skewness of each question is between -2 to +2, and kurtosis is between -7 to +7.

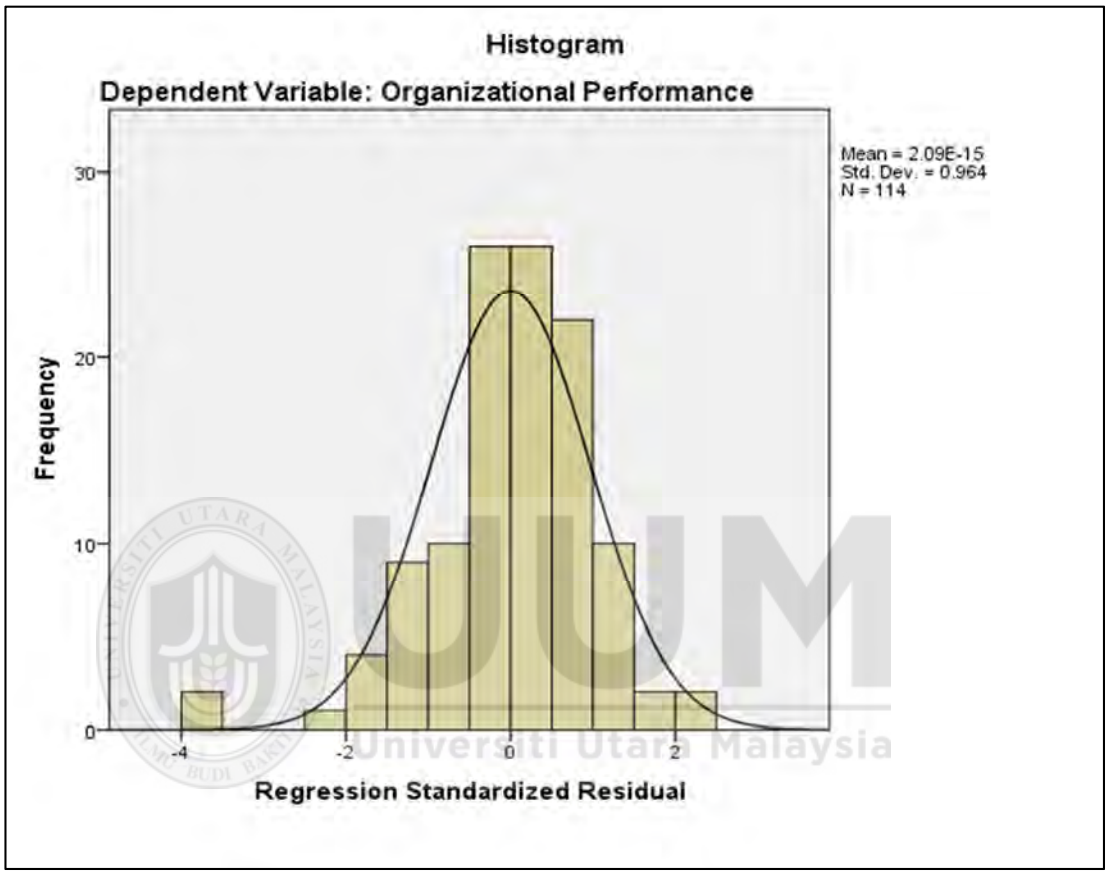


Figure 4.1
Histogram for Normality Test

Table 4.7
Assessment of Normality

	N	Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error
ABC Implementation	114	-1.246	.226	1.633	.449
Organization Performance	114	-.949	.226	.817	.449
Environmental Uncertainty	114	-.177	.226	-.842	.449
Market Orientation	114	-1.280	.226	1.507	.449
Cost Leadership Strategy	114	-.878	.226	-.088	.449
Differentiation Strategy	114	-1.120	.226	.929	.449
Vertical Decentralized Structure	114	-1.168	.226	1.691	.449
Horizontal Decentralized Structure	114	-.068	.226	-.565	.449
Information Technology	114	-.914	.226	1.058	.449

Table 4.7 reveals that the values of skewness and kurtosis for the entire variables were below ±2. Therefore, even though PLS can work with non-normal data (Hair et al., 2014), the data used in this study demonstrate to be normally distributed.

4.5.4 Linearity

The linearity assumption was confirmed in this study based on normal probability plot of the regression-standardized residual, according to the suggestion of previous studies (Pallant, 2005; Tabachnick & Fidell, 2007). The result of linearity for dependent variable namely organizational performance is presented in Figure 4.2 which the points' line in a relatively straight diagonal manner. With this figure, it is therefore confirmed that the assumptions of linearity were met and there are not many deviations in the dataset.

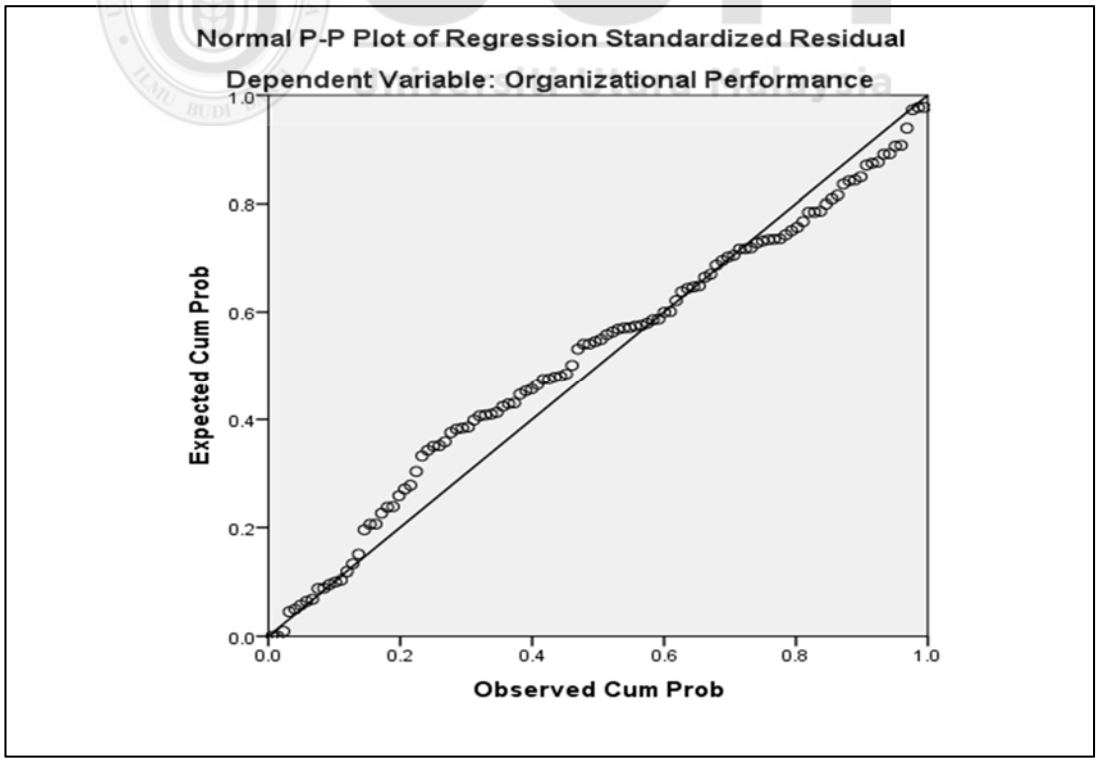


Figure 4.2
Linearity Plot

4.5.5 Homoscedasticity

Homoscedasticity test is conducted by using scatter plot (Hair et al., 2010; Pallant, 2001). The scatter plot diagram presents the standardized residuals against standardized predicted values for the dependent variable namely; organizational performance. The scatter plot presented in Figure 4.3 shows that there is no systematic pattern such as curvilinear, or the existence of the residuals in one side. Therefore, the assumption of homoscedasticity was met in this study.

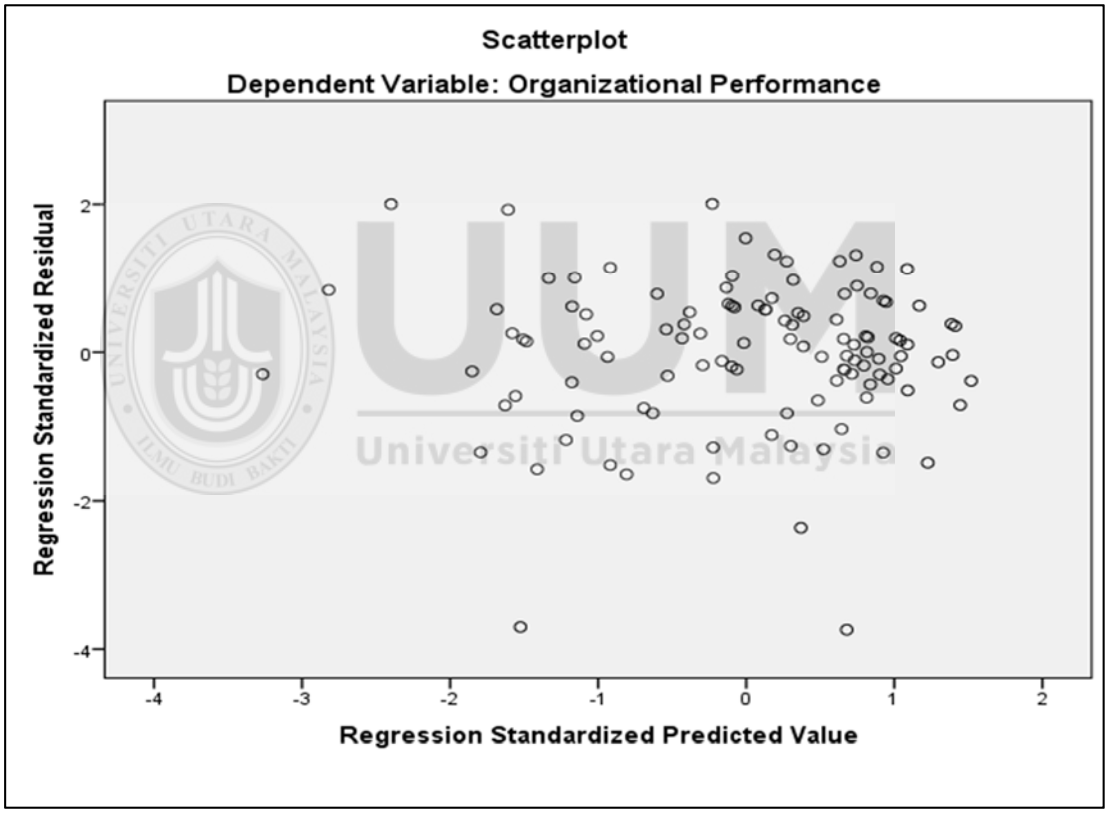


Figure 4.5.53
Scatter Plot Diagram

4.5.6 Multicollinearity Test

Multicollinearity can be measured between the exogenous latent variables by using Pearson correlations, Tolerance Value, and Variance Inflation Factors (VIF) (Pallant, 2005). Assessing multicollinearity for a study aiming to employ a regression-based

analysis is essential because according to Hair et al., (2010), the presence of multicollinearity is a situation whereby exogenous latent variables are highly correlated among themselves. It is believed that the presence of multicollinearity can distort the result of regression analysis (Hair, et al., 2010). In other words, multicollinearity increases the standard errors of the coefficients, which subsequently makes the coefficients insignificant (Tabachnick & Fidell, 2007).

In this study, multicollinearity was examined through Tolerance value and VIF. As a general rule, Tolerance with value less than 0.10 and VIF with value higher than 10.00 indicate that there is multicollinearity between the exogenous latent variables (Pallant, 2005). The results presented in Table 4.8 show that multicollinearity does not exist among exogenous latent variables because all tolerance values were not less than 0.10 (ranging from 0.369 to 0.829) and all VIF values were not more than 10 (ranging from 1.206 to 2.709).

Table 4.8
The Tolerance Value and the Variance Inflation Factor (VIF) Value

Constructs	**Tolerance**	**VIF**
ABC Implementation	0.425	2.355
Environmental Uncertainty	0.792	1.263
Market Orientation	0.369	2.709
Cost Leadership Strategy	0.536	1.864
Differentiation Strategy	0.503	1.989
Vertical Decentralized Structure	0.468	2.137
Horizontal Decentralized Structure	0.829	1.206
Information Technology	0.553	1.808

Multicollinearity can also be measured by using Pearson correlation and it occurs when the correlation matrix of the exogenous latent variable is 0.80 and above (Allison, 1999). Pearson correlation results as displayed in Table 4.9, presents the correlations matrix between the exogenous latent variables (environmental uncertainty, market

orientation, competitive strategy (cost leadership and differentiation strategy), organizational structure (vertical and horizontal decentralized structure) and information technology) which was apparently below 0.80. This result indicates the absence of multicollinearity in the data of this study.

Table 4.9
Correlation Matrix for Exogenous Variables

	1	2	3	4	5	6	7	8	9
ABC	1								
OP	.653**	1							
EU	.386**	.342**	1						
MO	.628**	.503**	.303**	1					
CLS	.554**	.551**	.230*	.537**	1				
DS	.319**	.485**	.210*	.596**	.455**	1			
VDS	.605**	.535**	.282**	.643**	.551**	.392**	1		
HDS	-.282**	-.398**	-.313**	-.151	-.267**	-.210*	-.164	1	
IT	.478**	.490**	.192*	.541**	.313**	.541**	.498**	-.145	1

Note: ABC (ABC Implementation Success), OP (Organizational Performance), EU (Environmental Uncertainty) MO (Market Orientation), CLS (Cost Leadership Strategy), DS (Differentiation Strategy), VD (Vertical Decentralized Structure), HD (Horizontal Decentralized Structure, IT (Information Technology). **: Correlation is significant at the 0.01 level (2-tailed); *: Correlation is significant at the 0.05 level (2-tailed).

4.6 Assessment of PLS-SEM Path Model Result

The SPSS data file of 114 samples was converted to Excel spreadsheet and saved as comma separated files (CSV). This is because the PLS software only supports importing CSV files. Then, the data was analyzed by a Smart-PLS 3.0 M3 (Wong, 2016). As discussed in the previous chapter, PLS version 3 is employed in this study to construct both the measurement and structural models of the proposed theoretical framework as well as to test the formulated hypotheses.

In the early 1980s, PLS-SEM was used in marketing researches and limited use of this package was noted in MA researches (Smith and Langfield-Smith, 2004). However, in view of the valuable advantages of PLS path model (Hair et al., 2011), the level of

its use by the MA researchers has recently increased (e.g. Bastian and Muchlish, 2012; Chenhall et al., 2011; Hammad et al., 2013; Hoque, 2011; Ismail et al., 2017; Laitinen, 2014; Lay and Jusoh, 2012). The model can be used to estimate complex model (Henseler, et al., 2009) with many input, intervening and outcome variables. PLS is also useful when the theory sets out to explain the effect of variables that intervene the relationships between independent variables and dependent variables (Hair et al., 2016). In the current study, contingency factors and the implementation of ABC are input variables while the outcome of the investigation is the effect on organizational performance. However, the path model also includes relationship between contingency factors and ABC implementation leading to a mediation effect.

In addition, PLS package has the blindfolding test feature (Hair et al., 2016) which is required to examine the predictive relevance (cross-validated communality and cross-validated redundancy) of the model (Fornell and Cha, 1994). In doing so, the two-step process was adopted to assess and present the findings of PLS-SEM paths (Henseler et al., 2009). These steps include the assessment of the measurement model and the assessment of the structural model (Hair et al., 2014). The following sections explain details of the measurement model and the structural model.

4.6.1 Assessment of Measurement Model

The assessment of the measurement model involves a series of activities such as: determining internal consistency reliability, examining indicator reliability, and finally, assessing the convergent and discriminant validity (Hair et al., 2014). The essence of these activities is to collectively establish the relationship between the observed variables and the latent variables. In other words, the measurement model

can be assessed by confirmatory factor analysis in terms of internal consistency and validity of a measure (Janudin & Maelah, 2016; Netemeyer, Bearden, & Sharma, 2003). However, considering the fact that some latent variables in this study such as ABCIS, organizational performance, market orientation and IT are multidimensional variables, thus these variables are operationalized at a higher level of abstraction which thus formed a Higher-Order Model (HOM) (Wetzels et al., 2009). In other words, HOM consists of two elements or layers: Higher-Order Construct (HOC) and Lower-Order Constructs (LOCs). Specifically, HOC is a main construct and usually related to two or more LOCs. This means that the LOCs represent the sub-dimensions of the HOC (Hair et al., 2014).

The Higher-Order Models (HOMs) are also known as Hierarchical Construct Models (HCMs) which use a second-order structures for testing constructs with two layers (HOC and LOCs) (Lohmöller, 1989). In other words, hierarchical constructs are multidimensional variables with more than one dimension (Netemeyer et al., 2003). PLS-SEM analysis allows for the conceptualization of a hierarchical model through the recurrent use of manifest variables (Lohmöller, 1989). Specifically, higher-order latent variables or constructs can be assessed by defining the latent variables that represent the main latent variables.

Notably, the current study adopts the HCM approach in order to reduce the complexity of the research model and also to achieve more theoretical parsimony (Netemeyer et al., 2003). According to Hair et al. (2016), there are series of reasons for employing HCM approach. The main important reason for employing HCM approach in this study is to ensure easier understanding of both the measurement and structural models.

Also, HCM is used in this study to avoid collinearity issues which may affect the discriminant validity of some items in the study. According to Hair et al. (2014), HCM can be established following the top-down approach. As such, the HCM of the study contained the HOCs, which are the main constructs and LOCs which are the sub-dimensions of the main construct.

In general, a measurement model can have formative indicators or reflective indicators. The formative indicators (items or manifest variables) help to describe the constructs, this means that the indicators cause the measurement of the construct (Hair et al., 2014). Conversely, the reflective indicators are determined by the construct, this means that the construct causes the measurement of the items or manifest variables (Bisbe, Batista-Foguet, & Chenhall, 2007). PLS supports both reflective and formative types. However, each type is characterized by different relationships between the HOC and the LOCs, and the constructs and their indicators (Hair et al., 2014). According to the nature of measures used (Bisbe et al., 2007) in the current study, the measurement model is considered as a reflective-reflective type of HCM. Accordingly, the reflective-reflective type of HCM which indicates a reflective relationship between the HOC and the LOCs, and a reflective relationship between the dimensions and latent variables at LOC levels were both employed (Wetzels et al., 2009).

PLS-SEM allows for the conceptualization of a HCM through the repeated use of manifest variables (Hair et al., 2014). As such, the repeated indicators approach (also known as hierarchical component approach) where all indicators from the LOCs are also assigned to the HOC was adopted in the current study (Lohmöller, 1989). Therefore, a higher-order factor was directly measured by the observed variable for all

the lower-order factors. Hence, the number of manifest variables used was repeated and estimated with the standard PLS algorithm and at the same time, the manifest indicators were repeated to represent the HOC. This approach was used for this study because a stronger relationship emerged between HOCs and LOCs since they shared a large number of indicators in the HCM (Henseler, 2007; Wong, 2016). The following sections describe how the data of 114 samples is processed by PLS3 software.

4.6.1.1 Assessment of Lower-Order Constructs of HCM

The researcher designed the model in PLS program based on the theoretical framework presented in Figure 3.1. The HCM employed in the current study involves the assessment of LOCs (also known as first order model) which are the dimensions of main constructs. In other words, the measurement model in PLS3 path modelling identifies the relationships between the indicators and the constructs that they represent. Once the model is drawn, The PLS3 algorithm is run by using "Calculate → PLS Algorithm". The findings of these assessments are presented in Table 4.10, 4.11, 4.12 and Figure 4.4.

4.6.1.1.1 Internal Consistency Reliability

The present study employed composite reliability and Cronbach's Alpha coefficients to measure the internal consistency of the items used in measuring the dimensions of the latent variables (Hulland, 1999). Using composite reliability coefficient to measure internal consistency is based on the rule of thumb that composite reliability coefficient should be at least 0.70 and Cronbach's Alpha value should be 0.60 and above (Hair et al., 2010). Therefore, the result presented in Table 4.10 showed the values of composite reliability range between 0.797 and 0.928 and Cronbach's Alpha range

between 0.665 and 0.896. The values of both Cronbach's Alpha and composite reliability reported in the current study indicate that the items retained in the model have internal consistency and reliability in measuring the dimensions of the latent variables.

4.6.1.1.2 Indicator Reliability

The next step of activity in assessing measurement model was to ensure the indicator reliability. The indicator reliability was measured by the outer loadings of the measurement of each construct (Hair et al., 2016). The measurement of indicator reliability was done to ensure unidimensionality of the measurement model. Hence, items were expected to have 0.50 loadings and above (Afthanorhan, 2013). Therefore, the items that loaded below 0.50 are deleted from the model. The measurement model presented in Figure 4.4, a total of 7 items with loadings below 0.50 were eliminated from the model (MO6, CS6, CS7, IT12, IT20, IT21 and IT22). The deletion of these items has led to an increase in the composite reliability and content validity above or equal the suggested threshold value, indicating that the items measuring the constructs are compatible with each other. Finally, the first-order measurement model entailed 90 indicators with factor loadings range between 0.503 and 0.893 (See Table 4.10 and Figure 4.4).

4.6.1.1.3 Convergent Validity

Having established the acceptable level of reliability of the first-order model, the following step was to determine the validity of the measures of the model. Therefore, convergent validity was employed to measure the validity of the measurement employed in this study. Experts explained that convergent validity is the extent to

which items truly represent the intended latent variable and correlate with other measures of the same latent construct (Hair et al., 2014). The convergent validity is measured in the current study using the Average Variance Extracted (AVE) of each latent variable. According to Fornell and Larcker (1981) and Chin (1998), the AVE of each construct must be at least 0.50. Table 4.10 presents the AVE values of the latent constructs which are all greater than 0.50. Therefore, these findings indicated the adequacy of convergent validity of the lower-order constructs.

Table 4.10
Outer Loadings, Cronbach's Alpha, Composite Reliability and Average Variance Extracted (AVE) for the Lower-Order Constructs of HCM

Code	Loadings	Cronbach's Alpha	Composite Reliability	AVE
ABC Implementation Success (ABC) Impact on Organization Process (IOP)		**0.821**	**0.870**	**0.527**
ABC1	0.747			
ABC2	0.689			
ABC3	0.762			
ABC4	0.715			
ABC5	0.725			
ABC6	0.716			
Perceived Usefulness of ABC (PUA)		**0.755**	**0.837**	**0.509**
ABC10	0.777			
ABC11	0.600			
ABC7	0.673			
ABC8	0.760			
ABC9	0.744			
Technical Characteristic (TC)		**0.833**	**0.888**	**0.666**
ABC12	0.809			
ABC13	0.790			
ABC14	0.836			
ABC15	0.827			
Employee Attitude (EA)		**0.896**	**0.928**	**0.762**
ABC16	0.893			
ABC17	0.863			
ABC18	0.877			
ABC 19	0.858			
Organizational Performance (OP) Financial (FB)		**0.858**	**0.904**	**0.702**
OP1	0.850			
OP2	0.889			
OP3	0.822			
OP4	0.788			

Table 4.10 (Continued)

Code	Loadings	Cronbach's Alpha	Composite Reliability	AVE
Non-financial (NFB)		**0.832**	**0.888**	**0.665**
OP5	0.846			
OP6	0.852			
OP7	0.758			
OP8	0.804			
Environmental Uncertainty (EU)		**0.881**	**0.904**	**0.544**
EU1	0.584			
EU2	0.686			
EU3	0.764			
EU4	0.712			
EU5	0.813			
EU6	0.775			
EU7	0.773			
EU8	0.769			
Market Orientation (MO)				
Customer Orientation (CUO)		**0.782**	**0.852**	**0.536**
MO1	0.786			
MO2	0.788			
MO3	0.741			
MO4	0.691			
MO5	0.644			
Competitor Orientation (COO)		**0.765**	**0.849**	**0.585**
MO10	0.754			
MO7	0.764			
MO8	0.807			
MO9	0.733			
Inter-Functional Orientation (IFO)		**0.766**	**0.842**	**0.516**
MO11	0.719			
MO12	0.728			
MO13	0.765			
MO14	0.721			
MO15	0.656			
Cost Leadership Strategy (CLS)		**0.850**	**0.894**	**0.630**
CS1	0.887			
CS2	0.840			
CS3	0.828			
CS4	0.724			
CS5	0.671			
Differentiation Strategy (DS)		**0.665**	**0.797**	**0.500**
CS10	0.771			
CS11	0.673			
CS8	0.570			
CS9	0.791			
Vertical Decentralization (VD)		**0.846**	**0.891**	**0.621**
OS1	0.771			
OS2	0.812			
OS3	0.831			
OS4	0.815			
OS5	0.704			

Table 4.10 (Continued)

Code	Loadings	Cronbach's Alpha	Composite Reliability	AVE
Horizontal Decentralization (HD)		**0.777**	**0.836**	**0.564**
OS6	0.637			
OS7	0.683			
OS8	0.830			
OS9	0.833			
Information Technology (IT)				
IT for Communication (ITC)		**0.773**	**0.854**	**0.596**
IT1	0.820			
IT2	0.795			
IT3	0.786			
IT4	0.680			
IT for Production and Operation (ITP)		**0.858**	**0.891**	**0.511**
IT10	0.748			
IT11	0.689			
IT5	0.635			
IT6	0.701			
IT7	0.849			
IT8	0.773			
IT9	0.786			
IT13	0.503			
IT for Decision Support (ITD)		**0.797**	**0.867**	**0.621**
IT14	0.747			
IT15	0.763			
IT16	0.825			
IT17	0.814			
IT for Administration (ITA)		**0.880**	**0.907**	**0.584**
IT18	0.754			
IT19	0.709			
IT23	0.646			
IT24	0.775			
IT25	0.840			
IT26	0.778			
IT27	0.831			

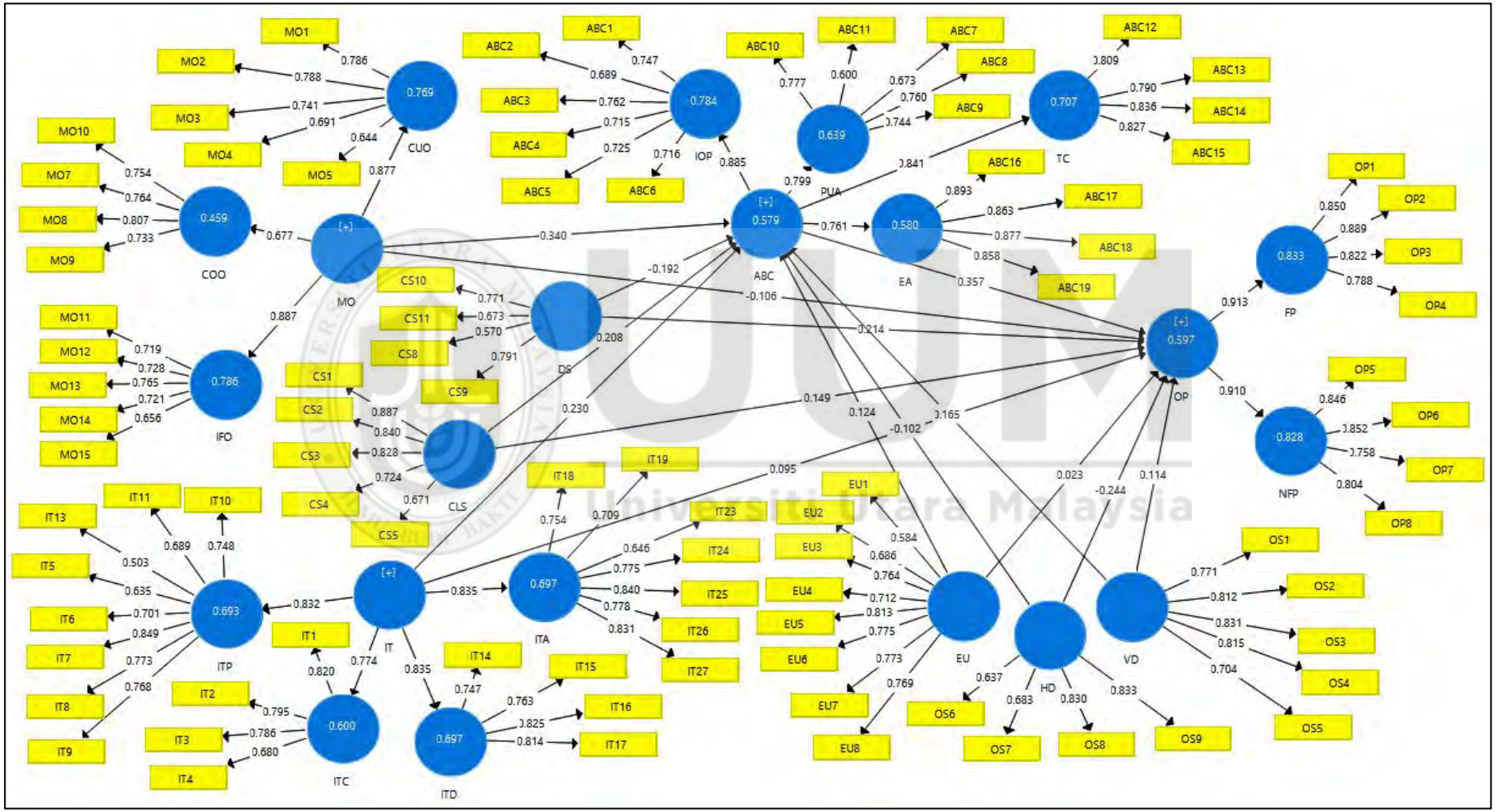


Figure 4.4
Lower-Order Constructs of HCM

4.6.1.1.4 Discriminant Validity

In addition to ensuring the convergent validity, the discriminant validity was also ascertained using the AVE values (Fornell & Larcker, 1981). Following the suggestion of Fornell and Larcker's (1981), discriminant validity was measured with the square root of the AVE values which was expected to be greater than the correlations among latent constructs. Table 4.11 presents the result of discriminant validity which shows the square root of the AVE values of each construct were all greater than the correlations among latent constructs as expected (Fornell & Larcker, 1981). The square roots of AVE are bolded in Table 4.11. In addition, discriminant validity was also measured in this present study by following the suggestion of Chin (1998). As such, the cross-loadings of reflective indicators were cross-tabulated with the loadings of other variables. It is expected that the cross-loadings of the reflective indicators should be greater under the measured construct. The results presented in Table 4.12 showed the cross-loadings of the reflective indicators are all greater than the cross-loadings of the other constructs. This finding also affirmed the adequacy of discriminant validity in this study.

Table 4.11

Discriminant Validity (Fornell-Larcker Criterion) for the Lower-Order Constructs of HCM

	COO	CLS	CUO	DS	EA	EU	FP	HD	IFO	IOP	ITA	ITC	ITD	ITP	NFP	PUA	TC	VD
COO	**0.765**																	
CLS	0.285	**0.794**																
CUO	0.400	0.524	**0.732**															
DS	0.413	0.394	0.467	**0.707**														
EA	0.144	0.499	0.463	0.253	**0.873**													
EU	0.077	0.261	0.284	0.201	0.353	**0.738**												
FP	0.246	0.434	0.435	0.460	0.526	0.275	**0.838**											
HD	0.023	-0.302	-0.244	-0.176	-0.292	-0.365	-0.397	**0.751**										
IFO	0.451	0.492	0.664	0.548	0.431	0.373	0.406	-0.248	**0.719**									
IOP	0.281	0.477	0.595	0.344	0.521	0.355	0.529	-0.332	0.543	**0.726**								
ITA	0.249	0.393	0.426	0.566	0.358	0.435	0.454	-0.301	0.461	0.579	**0.765**							
ITC	0.283	0.198	0.296	0.389	0.183	0.223	0.285	-0.177	0.286	0.478	0.575	**0.772**						
ITD	0.352	0.276	0.363	0.413	0.280	0.109	0.314	-0.067	0.414	0.391	0.616	0.515	**0.788**					
ITP	0.386	0.248	0.509	0.492	0.276	0.099	0.379	-0.124	0.441	0.381	0.463	0.571	0.670	**0.715**				
NFP	0.169	0.567	0.480	0.403	0.531	0.389	0.661	-0.473	0.479	0.575	0.519	0.391	0.360	0.333	**0.815**			
PUA	0.300	0.372	0.460	0.157	0.476	0.244	0.319	-0.169	0.502	0.643	0.283	0.290	0.271	0.281	0.426	**0.714**		
TC	0.282	0.463	0.530	0.292	0.514	0.356	0.438	-0.291	0.435	0.687	0.544	0.354	0.274	0.263	0.516	0.572	**0.816**	
VD	0.398	0.551	0.614	0.371	0.377	0.304	0.420	-0.218	0.545	0.578	0.502	0.368	0.384	0.460	0.560	0.478	0.568	**0.788**

Note: COO (Competitors Orientation), CLS (Cost Leadership Strategy), CUO (Customer Orientation), DS (Differentiation Strategy), EA (Employee Attitude), EU (Environmental Uncertainty) FP (Financial Performance), HD (Horizontal Decentralized Structure), IFO (Inter-Functional Coordination), IOP (Impact on Process), ITA (IT for Administration), ITC (IT for Communication), ITD (IT for Decision Support), ITP (IT for Production and Operations), NFP (Non-Financial Performance), PUA (Perceived Usefulness of ABC), TC (Technical Characteristics), VD (Vertical Decentralized Structure).

Note: Entries shown in bold represent the square root of the AVE

Table 4.12

Cross-Loadings for the Lower-Order Constructs of HCM

	IOP	PUA	TC	EA	FP	NFP	EU	CUO	COO	IFO	CLS	DF	VD	HD	ITC	ITP	ITD	ITA
ABC1	**0.747**	0.487	0.512	0.344	0.447	0.395	0.159	0.438	0.286	0.368	0.342	0.307	0.472	-0.158	0.380	0.379	0.399	0.432
ABC2	**0.689**	0.412	0.391	0.393	0.419	0.479	0.209	0.346	0.112	0.422	0.420	0.283	0.388	-0.237	0.212	0.226	0.300	0.331
ABC3	**0.762**	0.435	0.617	0.456	0.459	0.521	0.361	0.490	0.174	0.448	0.392	0.231	0.484	-0.417	0.444	0.300	0.293	0.504
ABC4	**0.715**	0.514	0.438	0.400	0.369	0.439	0.302	0.482	0.194	0.396	0.311	0.213	0.435	-0.177	0.284	0.283	0.298	0.433
ABC5	**0.725**	0.433	0.493	0.224	0.242	0.323	0.248	0.414	0.105	0.366	0.232	0.211	0.374	-0.220	0.364	0.271	0.246	0.414
ABC6	**0.716**	0.516	0.524	0.432	0.354	0.342	0.255	0.412	0.334	0.366	0.373	0.256	0.356	-0.220	0.378	0.200	0.172	0.396
ABC7	0.511	**0.673**	0.408	0.333	0.310	0.326	0.263	0.528	0.223	0.455	0.334	0.221	0.397	-0.231	0.252	0.330	0.293	0.268
ABC8	0.469	**0.760**	0.366	0.418	0.251	0.327	0.125	0.321	0.222	0.355	0.267	0.138	0.337	-0.081	0.342	0.308	0.219	0.219
ABC9	0.499	**0.744**	0.327	0.255	0.235	0.335	0.189	0.247	0.218	0.356	0.236	0.124	0.246	-0.124	0.210	0.198	0.177	0.255
ABC10	0.414	**0.777**	0.455	0.328	0.198	0.213	0.133	0.238	0.195	0.308	0.222	0.009	0.342	-0.039	0.106	0.100	0.140	0.124
ABC11	0.393	**0.600**	0.481	0.352	0.137	0.317	0.161	0.295	0.209	0.313	0.262	0.064	0.377	-0.126	0.114	0.052	0.132	0.141
ABC12	0.604	0.539	**0.809**	0.392	0.324	0.435	0.307	0.500	0.306	0.479	0.429	0.272	0.523	-0.220	0.372	0.182	0.270	0.521
ABC13	0.447	0.436	**0.790**	0.317	0.253	0.404	0.250	0.366	0.124	0.280	0.352	0.109	0.375	-0.236	0.255	0.165	0.157	0.344
ABC14	0.544	0.379	**0.836**	0.397	0.339	0.400	0.318	0.369	0.187	0.314	0.295	0.294	0.432	-0.222	0.228	0.200	0.189	0.498
ABC15	0.627	0.501	**0.827**	0.546	0.486	0.440	0.283	0.478	0.281	0.336	0.423	0.260	0.505	-0.270	0.291	0.297	0.262	0.405
ABC16	0.438	0.393	0.433	**0.893**	0.462	0.477	0.298	0.358	0.100	0.333	0.411	0.198	0.311	-0.227	0.155	0.249	0.254	0.319
ABC17	0.454	0.400	0.468	**0.863**	0.478	0.534	0.367	0.368	0.046	0.345	0.362	0.181	0.254	-0.309	0.140	0.199	0.212	0.349
ABC18	0.396	0.364	0.421	**0.877**	0.383	0.327	0.212	0.409	0.159	0.336	0.382	0.192	0.318	-0.225	0.153	0.244	0.223	0.265
ABC19	0.520	0.493	0.468	**0.858**	0.504	0.505	0.345	0.477	0.195	0.478	0.573	0.305	0.426	-0.255	0.188	0.269	0.284	0.315
OP1	0.469	0.288	0.355	0.479	**0.850**	0.504	0.189	0.451	0.261	0.403	0.395	0.409	0.420	-0.238	0.184	0.317	0.282	0.346
OP2	0.375	0.166	0.326	0.413	**0.889**	0.558	0.211	0.322	0.160	0.291	0.400	0.448	0.319	-0.328	0.242	0.370	0.319	0.415
OP3	0.376	0.222	0.381	0.433	**0.822**	0.477	0.257	0.300	0.153	0.292	0.219	0.357	0.226	-0.311	0.190	0.343	0.200	0.363
OP4	0.545	0.390	0.404	0.438	**0.788**	0.664	0.262	0.383	0.246	0.372	0.427	0.325	0.431	-0.443	0.330	0.242	0.245	0.394
OP5	0.473	0.308	0.449	0.442	0.645	**0.846**	0.336	0.440	0.131	0.403	0.464	0.376	0.459	-0.422	0.261	0.243	0.262	0.414
OP6	0.531	0.377	0.471	0.451	0.576	**0.852**	0.351	0.421	0.263	0.439	0.481	0.408	0.476	-0.494	0.338	0.269	0.337	0.524
OP7	0.430	0.334	0.372	0.336	0.433	**0.758**	0.157	0.311	0.066	0.314	0.376	0.170	0.447	-0.254	0.336	0.196	0.204	0.278
OP8	0.438	0.375	0.381	0.499	0.482	**0.804**	0.409	0.383	0.076	0.396	0.525	0.334	0.445	-0.351	0.352	0.380	0.369	0.462
EU1	0.094	0.210	0.198	0.133	0.067	0.084	**0.584**	0.111	0.096	0.239	-0.042	0.072	0.102	-0.057	0.026	-0.008	-0.027	0.185
EU2	0.150	0.157	0.237	0.271	0.208	0.193	**0.686**	0.145	0.149	0.206	0.030	0.079	0.142	-0.252	0.040	0.075	0.057	0.263
EU3	0.198	0.137	0.266	0.330	0.245	0.290	**0.764**	0.312	0.099	0.388	0.235	0.254	0.290	-0.198	0.092	0.166	0.185	0.389
EU4	0.293	0.093	0.238	0.200	0.158	0.281	**0.712**	0.170	-0.107	0.212	0.116	0.047	0.122	-0.191	0.216	0.048	0.018	0.399
EU5	0.269	0.117	0.224	0.212	0.105	0.291	**0.813**	0.199	0.011	0.160	0.222	0.074	0.240	-0.352	0.161	-0.002	0.025	0.299

Table 4.12 (Continued)

	IOP	PUA	TC	EA	FP	NFP	EU	CUO	COO	IFO	CLS	DF	VD	HD	ITC	ITP	ITD	ITA
EU6	0.307	0.230	0.310	0.297	0.275	0.394	**0.775**	0.224	0.144	0.299	0.300	0.178	0.303	-0.357	0.210	0.072	0.158	0.314
EU7	0.235	0.162	0.308	0.252	0.142	0.309	**0.773**	0.239	-0.100	0.269	0.198	0.099	0.247	-0.343	0.195	0.021	-0.010	0.304
EU8	0.413	0.295	0.281	0.307	0.299	0.322	**0.769**	0.218	0.125	0.365	0.289	0.272	0.250	-0.296	0.264	0.139	0.127	0.358
MO1	0.548	0.362	0.464	0.435	0.386	0.364	0.326	**0.786**	0.330	0.549	0.330	0.386	0.487	-0.174	0.374	0.458	0.305	0.413
MO2	0.471	0.237	0.379	0.462	0.475	0.452	0.280	**0.788**	0.282	0.526	0.479	0.385	0.493	-0.326	0.264	0.436	0.300	0.378
MO3	0.407	0.417	0.410	0.357	0.252	0.308	0.173	**0.741**	0.296	0.552	0.415	0.344	0.413	-0.111	0.053	0.324	0.240	0.266
MO4	0.424	0.327	0.393	0.198	0.186	0.357	0.105	**0.691**	0.183	0.388	0.353	0.249	0.499	-0.103	0.164	0.226	0.141	0.261
MO5	0.308	0.346	0.282	0.195	0.259	0.271	0.119	**0.644**	0.367	0.388	0.334	0.331	0.356	-0.162	0.212	0.397	0.331	0.217
MO7	0.128	0.098	0.122	0.019	0.187	0.048	0.069	0.335	**0.764**	0.271	0.176	0.426	0.270	0.087	0.237	0.368	0.297	0.222
MO8	0.250	0.210	0.314	0.166	0.243	0.172	0.159	0.288	**0.807**	0.379	0.346	0.368	0.307	-0.029	0.180	0.334	0.344	0.323
MO9	0.191	0.255	0.175	0.146	0.090	0.103	0.061	0.201	**0.733**	0.268	0.112	0.204	0.244	-0.020	0.159	0.184	0.139	0.030
MO10	0.275	0.340	0.236	0.111	0.211	0.179	-0.043	0.376	**0.754**	0.434	0.214	0.257	0.375	0.028	0.276	0.281	0.275	0.162
MO11	0.373	0.440	0.319	0.375	0.375	0.406	0.242	0.496	0.280	**0.719**	0.369	0.403	0.401	-0.302	0.180	0.305	0.320	0.272
MO12	0.482	0.307	0.383	0.189	0.274	0.360	0.308	0.497	0.314	**0.728**	0.384	0.481	0.421	-0.172	0.387	0.348	0.396	0.520
MO13	0.395	0.448	0.306	0.313	0.321	0.335	0.198	0.567	0.391	**0.765**	0.306	0.437	0.388	-0.134	0.243	0.400	0.323	0.274
MO14	0.284	0.274	0.224	0.307	0.186	0.290	0.277	0.390	0.332	**0.721**	0.393	0.275	0.350	-0.085	0.049	0.209	0.192	0.195
MO15	0.416	0.321	0.330	0.375	0.298	0.328	0.335	0.419	0.297	**0.656**	0.326	0.360	0.402	-0.204	0.147	0.309	0.244	0.400
CS1	0.424	0.377	0.403	0.506	0.426	0.474	0.242	0.495	0.321	0.512	**0.887**	0.395	0.496	-0.280	0.186	0.283	0.293	0.334
CS2	0.320	0.301	0.325	0.458	0.333	0.444	0.260	0.468	0.245	0.399	**0.840**	0.310	0.404	-0.342	0.062	0.150	0.153	0.252
CS3	0.417	0.315	0.411	0.310	0.322	0.469	0.211	0.435	0.258	0.373	**0.828**	0.296	0.425	-0.208	0.231	0.258	0.283	0.355
CS4	0.366	0.287	0.334	0.336	0.234	0.325	0.049	0.431	0.193	0.316	**0.724**	0.239	0.504	0.033	0.098	0.202	0.192	0.242
CS5	0.357	0.185	0.355	0.348	0.378	0.516	0.244	0.245	0.095	0.324	**0.671**	0.302	0.365	-0.349	0.192	0.081	0.159	0.362
CS8	0.246	0.170	0.211	0.095	0.333	0.230	0.177	0.250	0.248	0.307	0.247	**0.570**	0.254	-0.194	0.220	0.173	0.050	0.299
CS9	0.254	0.106	0.229	0.233	0.426	0.405	0.249	0.356	0.433	0.449	0.381	**0.791**	0.298	-0.269	0.309	0.423	0.450	0.497
CS10	0.256	0.082	0.187	0.213	0.231	0.222	0.117	0.366	0.213	0.367	0.216	**0.771**	0.230	0.005	0.306	0.421	0.369	0.467
CS11	0.211	0.080	0.185	0.158	0.255	0.223	-0.041	0.348	0.203	0.409	0.221	**0.673**	0.252	0.052	0.256	0.359	0.245	0.298
OS1	0.429	0.351	0.340	0.261	0.399	0.496	0.159	0.466	0.370	0.406	0.521	0.338	**0.771**	-0.128	0.271	0.344	0.341	0.336
OS2	0.373	0.334	0.468	0.274	0.287	0.426	0.228	0.446	0.285	0.367	0.392	0.219	**0.812**	-0.201	0.178	0.314	0.279	0.307
OS3	0.490	0.407	0.438	0.389	0.338	0.463	0.288	0.557	0.240	0.471	0.463	0.280	**0.831**	-0.126	0.287	0.443	0.351	0.410
OS4	0.471	0.414	0.508	0.338	0.332	0.411	0.285	0.510	0.325	0.473	0.375	0.313	**0.815**	-0.162	0.297	0.362	0.245	0.410
OS5	0.504	0.370	0.483	0.211	0.290	0.405	0.228	0.426	0.349	0.421	0.416	0.308	**0.704**	-0.252	0.410	0.336	0.294	0.511
OS6	-0.072	-0.041	-0.076	-0.162	-0.194	-0.155	-0.150	0.014	0.082	-0.017	-0.103	-0.079	0.031	**0.637**	0.012	-0.052	0.010	-0.097
OS7	-0.158	-0.118	-0.076	-0.106	-0.145	-0.130	-0.228	0.006	0.001	-0.110	-0.127	-0.119	-0.073	**0.683**	-0.022	0.057	0.006	-0.182

Table 4.12 (Continued)

	IOP	PUA	TC	EA	FP	NFP	EU	CUO	COO	IFO	CLS	DF	VD	HD	ITC	ITP	ITD	ITA
OS8	-0.243	-0.172	-0.222	-0.199	-0.294	-0.376	-0.276	-0.192	-0.113	-0.185	-0.237	-0.123	-0.157	**0.830**	-0.182	-0.106	-0.051	-0.187
OS9	-0.371	-0.139	-0.335	-0.312	-0.417	-0.521	-0.359	-0.326	0.094	-0.290	-0.318	-0.175	-0.283	**0.833**	-0.199	-0.157	-0.094	-0.336
IT1	0.401	0.175	0.332	0.132	0.209	0.302	0.329	0.304	0.154	0.248	0.219	0.317	0.355	-0.234	**0.820**	0.360	0.239	0.442
IT2	0.537	0.280	0.428	0.220	0.260	0.356	0.382	0.375	0.285	0.312	0.253	0.382	0.450	-0.215	**0.795**	0.412	0.395	0.607
IT3	0.322	0.249	0.201	0.167	0.306	0.341	-0.022	0.219	0.277	0.249	0.149	0.384	0.221	-0.053	**0.786**	0.579	0.537	0.434
IT4	0.172	0.172	0.101	0.010	0.059	0.174	-0.016	-0.045	0.122	0.026	-0.053	0.052	0.067	-0.041	**0.680**	0.384	0.389	0.242
IT5	0.313	0.270	0.183	0.223	0.293	0.353	-0.046	0.216	0.291	0.273	0.218	0.321	0.274	-0.107	0.550	**0.635**	0.568	0.297
IT6	0.294	0.239	0.173	0.171	0.244	0.291	0.163	0.291	0.226	0.360	0.163	0.253	0.360	-0.190	0.414	**0.701**	0.489	0.258
IT7	0.365	0.217	0.231	0.178	0.331	0.246	0.145	0.480	0.381	0.432	0.158	0.476	0.386	-0.133	0.480	**0.849**	0.521	0.423
IT8	0.293	0.290	0.208	0.272	0.310	0.284	0.109	0.499	0.325	0.508	0.286	0.459	0.386	-0.047	0.275	**0.773**	0.479	0.264
IT9	0.259	0.142	0.165	0.145	0.285	0.120	0.126	0.449	0.344	0.288	0.154	0.385	0.366	-0.086	0.397	**0.768**	0.359	0.329
IT10	0.242	0.084	0.173	0.259	0.311	0.227	0.130	0.383	0.214	0.179	0.176	0.314	0.255	-0.183	0.395	**0.748**	0.364	0.354
IT11	0.098	0.121	0.060	0.136	0.183	0.088	-0.042	0.193	0.222	0.119	0.045	0.293	0.188	0.074	0.322	**0.689**	0.575	0.330
IT13	0.296	0.246	0.309	0.195	0.187	0.296	-0.039	0.384	0.170	0.349	0.231	0.277	0.410	-0.021	0.402	**0.503**	0.458	0.370
IT14	0.439	0.288	0.381	0.315	0.217	0.340	0.063	0.269	0.125	0.326	0.185	0.278	0.357	-0.025	0.532	0.485	**0.747**	0.541
IT15	0.032	0.041	0.015	0.044	0.060	0.049	-0.049	0.040	0.327	0.091	0.075	0.177	0.080	0.021	0.351	0.506	**0.763**	0.300
IT16	0.299	0.221	0.127	0.224	0.236	0.281	0.068	0.306	0.368	0.366	0.231	0.353	0.326	-0.041	0.357	0.550	**0.825**	0.384
IT17	0.403	0.270	0.288	0.264	0.426	0.411	0.222	0.470	0.305	0.470	0.344	0.457	0.400	-0.143	0.371	0.566	**0.814**	0.660
IT18	0.421	0.224	0.425	0.216	0.275	0.266	0.282	0.297	0.204	0.291	0.290	0.307	0.408	-0.178	0.444	0.404	0.581	**0.754**
IT19	0.423	0.210	0.441	0.313	0.313	0.272	0.260	0.344	0.310	0.358	0.287	0.369	0.372	-0.166	0.440	0.391	0.514	**0.709**
IT23	0.326	0.131	0.299	0.153	0.350	0.455	0.202	0.189	0.171	0.267	0.245	0.392	0.254	-0.233	0.420	0.317	0.442	**0.646**
IT24	0.390	0.160	0.341	0.245	0.423	0.511	0.296	0.377	0.155	0.335	0.320	0.497	0.392	-0.323	0.395	0.445	0.531	**0.775**
IT25	0.446	0.170	0.384	0.261	0.380	0.436	0.335	0.267	0.166	0.325	0.319	0.450	0.393	-0.241	0.412	0.300	0.475	**0.840**
IT26	0.521	0.321	0.506	0.374	0.338	0.431	0.453	0.369	0.141	0.395	0.313	0.473	0.415	-0.208	0.463	0.279	0.323	**0.778**
IT27	0.563	0.298	0.508	0.351	0.347	0.414	0.496	0.419	0.183	0.489	0.323	0.538	0.436	-0.254	0.502	0.322	0.405	**0.831**

Note: IOP (Impact on Process), PUA (Perceived Usefulness of ABC), TC (Technical Characteristics), EA (Employee Attitude), FP (Financial Performance), NFP (Non-Financial Performance), EU (Environmental Uncertainty), CUO (Customer Orientation), COO (Competitors Orientation), IFO (Inter-Functional Coordination), CLS (Cost Leadership Strategy), DS (Differentiation Strategy), VD (Vertical Decentralized Structure), HD (Horizontal Decentralized Structure), ITC (IT for Communication), ITP (IT for Production and Operations), ITD (IT for Decision Support), ITA (IT for Administration).

4.6.1.2 Assessment of Higher-Order Constructs of HCM

In the second stage of the measurement model, the HCM involves the assessment of HOCs (also known as second order model) which are the main constructs of the model. To assess the HOCs of HCM, the latent variable scores in the first order model were recomputed under the variables in the second order model (Henseler, 2007). As a result, the dimensions of the LOCs in the first order model in Figure 4.4 served as items for the constructs in the second order model presented in Figure 4.5.

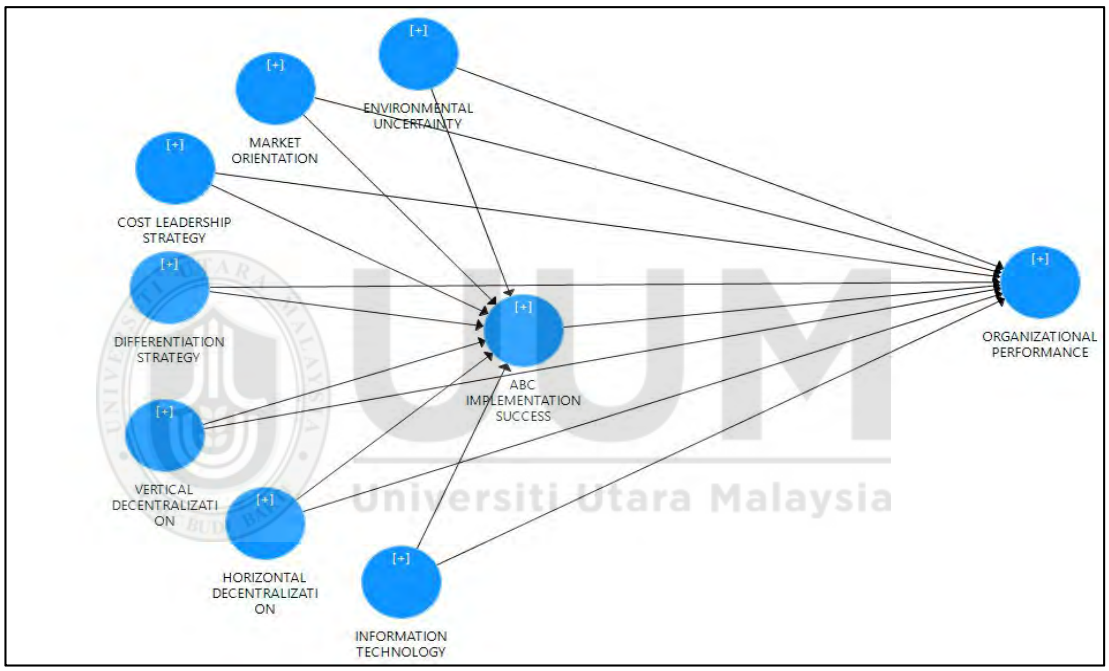


Figure 4.5
Higher-Order Constructs of HCM

The PLS results of HOCs are presented in Table 4.13. The findings revealed the HOCs is fit as the Cronbach's Alpha, Composite Reliability and AVE values were all above the expected threshold of 0.60, 0.70 (Hair et al., 2011) and 0.50 respectively (Chin, 1998). Additionally, Table 4.14 presents the discriminant validity of the second-order model which is assessed with the square root of the AVE values and it was expected to be greater than the correlations among latent constructs.

Table 4.13

Loadings, Cronbach's Alpha, Composite Reliability and Average Variance Extracted (AVE) for Higher-Order Constructs of HCM

Code	Loadings	Cronbach's Alpha	Composite Reliability	AVE
ABC Implementation Success		**0.841**	**0.893**	**0.678**
Impact on Organizational Process	0.881			
Perceived Usefulness of ABC	0.800			
Technical Characteristics	0.848			
Employee Attitude	0.759			
Organizational Performance		**0.796**	**0.907**	**0.830**
Financial	0.899			
Non-Financial	0.923			
Environmental Uncertainty	**1.000**	**Nil**	**Nil**	**Nil**
Market Orientation		**0.754**	**0.855**	**0.667**
Customer Orientation	0.892			
Competitor Orientation	0.637			
Inter-Functional Orientation	0.894			
Cost Leadership Strategy	**1.000**	**Nil**	**Nil**	**Nil**
Differentiation Strategy	**1.000**	**Nil**	**Nil**	**Nil**
Vertical Decentralization	**1.000**	**Nil**	**Nil**	**Nil**
Horizontal Decentralization	**1.000**	**Nil**	**Nil**	**Nil**
Information Technology		**0.840**	**0.892**	**0.673**
IT for Communication	0.801			
IT for Production and Operation	0.796			
IT for Decision Support	0.838			
IT for Administration	0.846			

Table 4.14

Discriminant Validity (Fornell-Larcker Criterion) for Higher-Order Constructs

Constructs	1	2	3	4	5	6	7	8	9
ABC	**0.823**								
CLS	0.553	**1.000**							
DS	0.325	0.394	**1.000**						
EU	0.401	0.261	0.201	**1.000**					
HD	-0.335	-0.302	-0.176	-0.365	**1.000**				
IT	0.530	0.352	0.577	0.290	-0.220	**0.821**			
MO	0.648	0.551	0.579	0.330	-0.229	0.555	**0.817**		
OP	0.652	0.554	0.471	0.368	-0.480	0.521	0.525	**0.911**	
VD	0.612	0.551	0.371	0.304	-0.218	0.529	0.646	0.542	**1.000**

Note: Entries shown in bold represent the square root of the AVE.

ABC (ABC Implementation Success), CLS (Cost Leadership Strategy), DS (Differentiation Strategy), EU (Environmental Uncertainty), HD (Horizontal Decentralized Structure), IT (Information Technology), MO (Market Orientation), OP (Organizational Performance), VD (Vertical Decentralized Structure).

The result of the discriminant validity (Table 4.14) shows the square root of the AVE values of each construct are all greater than the correlations among the constructs. Hence, this result indicates that, there is a valid relationship between the first order dimensions and the second stage variables.

Finally, Table 4.15 presents the item loadings and cross-loadings which are entirely within the acceptable limit as all the loadings are greater than 0.50 (Afthanorhan, 2013). Meanwhile, the variable that has no dimension in the case of environmental uncertainty, cost leadership strategy, differentiation strategy, horizontal decentralized structure and vertical decentralized structure have the loading of 1.000 which indicate the absence of dimension at the first order model.

Table 4.15
Cross-loadings for Higher-Order Constructs of HCM

	ABC	OP	EU	MO	CLS	DS	VD	HD	IT
IOP	**0.881**	0.607	0.355	0.609	0.477	0.344	0.578	-0.332	0.571
PUA	**0.800**	0.412	0.244	0.528	0.372	0.157	0.478	-0.169	0.343
TC	**0.848**	0.526	0.356	0.527	0.463	0.292	0.568	-0.291	0.458
EA	**0.759**	0.580	0.353	0.461	0.499	0.253	0.377	-0.292	0.343
FP	0.557	**0.899**	0.275	0.459	0.434	0.460	0.419	-0.397	0.446
NFP	0.627	**0.923**	0.389	0.497	0.567	0.403	0.560	-0.473	0.501
EU	0.401	0.368	**1.000**	0.330	0.261	0.201	0.304	-0.365	0.290
CUO	0.627	0.504	0.283	**0.892**	0.524	0.467	0.614	-0.244	0.487
COO	0.305	0.225	0.077	**0.637**	0.285	0.413	0.398	0.023	0.378
IFO	0.581	0.488	0.373	**0.894**	0.492	0.548	0.545	-0.248	0.493
CLS	0.553	0.554	0.261	0.551	**1.000**	0.394	0.551	-0.302	0.352
DS	0.325	0.471	0.201	0.579	0.394	**1.000**	0.371	-0.176	0.577
VD	0.612	0.542	0.304	0.646	0.551	0.371	**1.000**	-0.218	0.529
HD	-0.335	-0.480	-0.365	-0.229	-0.302	-0.176	-0.218	**1.000**	-0.220
ITC	0.405	0.374	0.223	0.343	0.198	0.389	0.368	-0.177	**0.801**
ITP	0.368	0.389	0.099	0.544	0.248	0.492	0.460	-0.124	**0.796**
ITD	0.374	0.371	0.109	0.452	0.276	0.413	0.384	-0.067	**0.838**
ITA	0.548	0.536	0.435	0.481	0.393	0.566	0.502	-0.301	**0.846**

Note: IOP (Impact on Process), PUA (Perceived Usefulness of ABC), TC (Technical Characteristics), EA (Employee Attitude), FP (Financial Performance), NFP (Non-Financial Performance), EU (Environmental Uncertainty), CUO (Customer Orientation), COO (Competitors Orientation), IFO (Inter-Functional Coordination), CLS (Cost Leadership Strategy), DS (Differentiation Strategy), VD (Vertical Decentralized Structure), HD (Horizontal Decentralized Structure), ITC (IT for Communication), ITP (IT for Production and Operations), ITD (IT for Decision Support), ITA (IT for Administration).

4.6.2 Assessment of Structural Model

After to assessing the measurement model by establishing reliability and validity of both the first and second order models, the structural model is assessed in the following sections. The assessment of structural, or inner, model served as the empirical proof for the proposed theoretical framework and for testing the hypotheses formulated in this research. A structural model in PLS3 software identifies the relationship among the main constructs (HOCs) and helps to assess whether the hypotheses are supported. To evaluate the structural model, both path coefficients and R- Squared are used as the primary indications (Hair et al., 2014). Therefore, the assessment of structural model involved the following activities: examining the significance of path coefficients for direct relationships, assessing the significance of path coefficients for indirect relationships, determining the level of R-Squared values, determining the effect size and examining the predictive relevance (Hair et al., 2016). For this purpose, the current study applied the standard bootstrapping procedure of 500 bootstrapping samples to examine the structural model (Hair et al., 2016). Path coefficients between HOCs generated by PLS3 path modeling based on 114 samples are presented in Table 4.16 and 4.17. Specifically, the estimates of the structural model for direct relationships are shown in Table 4.16. Meanwhile, the estimates for the indirect relationships and the assessment of mediating roles are presented in Table 4.17. The following subsections examine whether the PLS3 results support the hypotheses of direct relationships between contingency factors, ABCIS and organizational performance.

Table 4.16

Assessment of Structural Model

Hypotheses	Relationships	Beta	SE	t - values	p - values	Decisions
H1	Environmental Uncertainty -> ABC Implementation Success	0.118	0.069	1.699	0.045**	Supported
H2	Market Orientation -> ABC Implementation Success	0.352	0.100	3.518	0.000***	Supported
H3a	Cost Leadership Strategy -> ABC Implementation Success	0.203	0.085	2.398	0.008***	Supported
H3b	Differentiation Strategy -> ABC Implementation Success	-0.195	0.091	2.152	0.016**	Supported
H4a	Vertical Decentralized Structure -> ABC Implementation Success	0.164	0.125	1.310	0.095*	Supported
H4b	Horizontal Decentralized Structure -> ABC Implementation Success	-0.097	0.067	1.446	0.074*	Supported
H5	Information Technology -> ABC Implementation Success	0.233	0.079	2.935	0.002***	Supported
H6	ABC -> Organizational Performance	0.347	0.113	3.067	0.001***	Supported
H7	Environmental Uncertainty -> Organizational Performance	0.067	0.083	0.809	0.209	Not Supported
H8	Market Orientation -> Organizational Performance	0.022	0.097	0.230	0.409	Not Supported
H9a	Cost Leadership Strategy -> Organizational Performance	0.225	0.100	2.235	0.013**	Supported
H9b	Differentiation Strategy -> Organizational Performance	0.140	0.129	1.083	0.140	Not Supported
H10a	Vertical Decentralized Structure -> Organizational Performance	0.178	0.120	1.481	0.070*	Supported
H10b	Horizontal Decentralized Structure -> Organizational Performance	-0.281	0.067	4.209	0.000***	Supported
H11	Information Technology -> Organizational Performance	0.174	0.099	1.762	0.039**	Supported

Note: *: P<0.10, **: P <0.05; ***: P <0.01

4.6.2.1 The Effects of Contingency Factors on ABC Implementation Success

Based on the results presented in Table 4.16, the direct effects of hypotheses H1 to H5 were supported. The following subsections present the interpretation of the findings based on the individual hypotheses.

H1: *Environmental uncertainty has a positive and significant effect on ABC implementation success.*

The first hypothesis proposed in this study suggests that environmental uncertainty has a positive and significant effect on ABCIS. The findings presented in Table 4.16 and Figure 4.5 show that, environmental uncertainty has a significant and positive effect on ABCIS (β= 0.118, T= 1.699, p< 0.05). Hence, the first hypothesis is supported. The implication of this finding is that, the variance of ABCIS is explained by 11.8% changes in environmental uncertainty. Thus, for every increase in environmental uncertainty, there is an expected 11.8% increase in ABCIS.

H2: *Market Orientation has a positive and significant effect on ABC implementation success.*

Furthermore, the second hypothesis proposes that market orientations have positive and significant effect on ABCIS. The results presented in Table 4.16 demonstrate that, market orientation has a significant and a positive effect on ABCIS (β= 0.352, T= 3.518, p< 0.01). On this basis, the second hypothesis is supported. The interpretation of this findings is that for every change in market orientation there is an expected 35% increase in ABCIS. This implies that market orientation is important contingency factor for the success of ABC implementation among manufacturing organizations in Iraq.

H3a: *Cost leadership strategy has a positive and significant effect on ABC implementation success.*

In addition, the third hypothesis presumes that cost leadership strategy has a positive effect on ABCIS. The results presented in Table 4.16 reveals that, cost leadership strategy has a significant and positive effect on ABCIS (β= 0.203, T= 2.398, p< 0.01). As such, this hypothesis is supported. This implies that the successful implementation of ABC is affected by cost leadership strategy of organizations.

H3b: *Differentiation Strategy has a negative and significant effect on ABC implementation success.*

This hypothesis presumes the negative and significant effect of differentiation strategy on ABCIS. The result presented in Table 4.16 reveals that differentiation strategy has a negative and significant effect on ABC implementation strategy (β= -0.195, T= 2.152, p< 0.05). This implies that for every increase in differentiation strategy, there is an expected 19.5% decrease in ABCIS. As such, this hypothesis is supported.

H4a: *Vertical Decentralized* structure *has a positive and significant effect on ABC implementation success.*

This hypothesis proposes the effect of vertical decentralized structure on ABCIS. The result revealed that vertical decentralized structure has a significant and positive effect on ABCIS (β= 0.164, t= 1.310, p< 0.10). This result evinces that for every increase in vertical decentralized structure there is an expected 16% increase in ABCIS. As such, this hypothesis is supported by this finding.

H4b: *Horizontal Decentralized structure has a negative and significant effect on ABC implementation success.*

The following hypothesis proffers that horizontal decentralized structure has a negative and significant effect on ABCIS. The result presented in this study shows that horizontal decentralized structures has a significant and negative effect on ABCIS (β= -0.097, T= 1.446, p< 0.10). Therefore, this forms the basis in which this hypothesis is accepted. This result indicates that for every increase in horizontal decentralized structure there is an expected 9.7% decrease in ABCIS. In other words, this result demonstrates that horizontal decentralized structure is not an important contingency factor to be considered for the successful implementation of ABC.

H5: *Information technology has a positive and significant effect on ABC implementation success.*

In the same vein, the fifth hypothesis proposed in this research states that IT has a positive effect on ABCIS. The result presented in this research demonstrates that IT has a positive and significant effect on the success of ABC implementation (β= 0.233, T= 2.935, p< 0.01). This result implies that when there is an increase in IT, there is an expected 23% increase in ABCIS. Subsequently, this hypothesis is supported. This finding implies that IT is an important contingency factor to ABCIS.

4.6.2.2 The Effect of ABC Implementation Success on Organizational Performance

H6: *ABC implementation success has a positive and significant effect on organizational performance.*

This hypothesis proposes that ABCIS has a positive effect on organizational performance. The results presented in Table 4.16 support this hypothesis by

demonstrating a significant and positive effect of ABCIS on organizational performance (β= 0.347, T= 3.067, p< 0.01). This implies that for every change in ABCIS, there is an expected 34.7% increase in organizational performance. Invariably, ABCIS demonstrates to be an important factor for enhancing organizational performance.

4.6.2.3 The Effects of Contingency Factors on Organizational Performance

The results of the direct effects of contingency factors on organizational performance as proposed by hypotheses H7 to H11 are discussed separately in the following subsections.

H7: *Environmental uncertainty has a negative and significant effect on organizational performance.*

This hypothesis presents that environmental uncertainty has a negative effect on organizational performance. Contrarily, the result of this study shows that environmental uncertainty has no significant with negative effect on organizational performance (β= 0.067, t= 0.809, p> 0.10). Based on this result, this hypothesis is not supported by the findings reported. The implication of this findings is that the environmental uncertainty in Iraq does not effect on organizational performance of manufacturing companies.

H8: *Market orientation has a positive and significant effect on organizational performance.*

This hypothesis presents that market orientation has a positive and significant effect on organizational performance. Meanwhile, the result presented in Table 4.16 reveals

that market orientation has no significant with positive effect on organizational performance (β= 0.022, T= 0.230, p> 0.10). As such, the eighth hypothesis is not supported in the current study. This finding shows that market orientation is not directly related to organizational performance.

H9a: *Cost leadership strategy has a positive and significant effect on organizational performance.*

Additionally, it is hypothesized that cost leadership strategy has a positive and significant effect on organizational performance. The result presented in Table 4.16 shows that cost leadership strategy has positive and significant effect on organizational performance (β= 0.225, T= 2.235, p< 0.05). This result shows the basis in which this hypothesis is accepted. Therefore, for every increase in cost leadership strategy, there is an expected 22.5% increase in organizational performance. The interpretation of this result is that cost leadership strategy plays a significantly effective role in enhancing organizational performance.

H9b: *Differentiation strategy has a significant effect on organizational performance.*

This hypothesis presents that differentiation strategy has a significant effect on organizational performance. The result presented in Table 4.16 shows that differentiation strategy has a positive but an insignificant effect on organizational performance (β= 0.140, T= 1.083, p> 0.10). This result does not support the hypothesis. Therefore, this implies that differentiation strategy is not an important contingency factor to enhancing organizational performance.

H10a: *Vertical decentralized structure has a positive and significant effect on organizational performance.*

This hypothesis proposes that vertical decentralized structure has a positive and significant effect on organizational performance. As presented in Table 4.16, the result of this study reveals that vertical decentralized structure has a significant and positive effect on organizational performance (β= 0.178, T= 1.481, p< 0.10). For this reason, this hypothesis is supported. This implies that for every increase in vertical decentralized structure, there is an expected 17.8% increase in organizational performance. The interpretation of this finding is that vertical decentralized structure is an important contingency factor on organizational performance.

H10b: *Horizontal decentralized structure has a negative and significant effect on organizational performance.*

This hypothesis proposes that horizontal decentralized structure has a negative and significant effect on organizational performance. The result of this study (Table 4.16) reveals that horizontal decentralized structure has a significant and negative effect on organizational performance (β= -0.281, t= 4.209, p< 0.01). For this reason, this hypothesis is supported. This implies that for every increase in horizontal decentralized structure, there is an expected 28% decrease in organizational performance. The interpretation of this finding is that horizontal decentralized structure is not an important contingency factor on organizational performance.

H11: *Information technology has a positive and significant effect on organizational performance.*

The eleventh hypothesis proposes that IT has a positive and significant effect on organizational performance. The result presented in Table 4.16 shows that IT has a significant positive effect on organizational performance (β= 0.174, t= 1.762, p< 0.05). On this basis, this hypothesis is supported. Therefore, this implies that for every change in IT, there is an expected 17 % increase in organizational performance. Invariably, IT proves to be an important contingency factor in improving organizational performance.

4.6.2.4 Testing the Mediating Effect of ABC Implementation Success

Drawing on the theoretical framework proposed in this study, the mediating effect of ABC success on the relationship between contingency factors (environmental uncertainty, market Orientation, competitive strategy (cost leadership and differentiation strategy), decentralized structure (vertical and horizontal) and IT) and organizational performance was proposed. As such, the indirect effect of ABCIS was estimated and presented in Table 4.17.

In relation to hypothesis 12 which proposes that ABCIS mediates the relationship between environmental uncertainty and organizational performance. The finding presented in Table 4.17 shows that there is a significant and positive mediation effect of ABCIS on the environmental uncertainty-organizational performance relationship (β= 0.041, t=1.383, p<0.10). This finding of H12 indicates that the informational effect of environmental uncertainty has improved organizational performance via the success of ABC implementations.

In the same vein, it is hypothesized that ABCIS mediates the relationship between market orientation and organizational performance (H13). The finding of H13 reveals that ABCIS has a significant and positive mediational effect (β= 0.122, t=2.523, p<0.01) on the relationship between market orientation and organizational performance. This implies that the informational effect of market orientation improved organizational performance via the success of ABC implementations.

Table 4.17
Testing the Mediation Effect of ABC Implementation Success

						Confidence Intervals		
	Mediation Path	**Beta**	**SE**	**t-value**	**p- value**	**Lower Limit (5%)**	**Upper Limit (95%)**	**Decision**
H12	EU>ABC>OP	0.041	0.030	1.383	0.084*	0.003	0.098	**Supported**
H13	MO>ABC>OP	0.122	0.048	2.523	0.006***	0.049	0.205	**Supported**
H14a	CLS>ABC>OP	0.070	0.040	1.746	0.041**	0.018	0148	**Supported**
H14b	DS>ABC>OP	-0.068	0.044	1.541	0.062*	-0.154	-0.012	**Supported**
H15a	VD>ABC>OP	0.057	0.053	1.071	0.142	-0.018	0.162	**Not Supported**
H15b	HD>ABC>OP	-0.034	0.029	1.178	0.120	-0.089	0.000	**Not Supported**
H16	IT>ABC>OP	0.081	0.042	1.937	0.027**	0.029	0.162	**Supported**

Note: *: p>0.1; **: p>0.05; ***: p>0.01

Furthermore, H14a posits that ABCIS mediates the relationship between cost leadership strategy and organization performance. The result shows that ABCIS has a significant and positive mediation effect (β= 0.070, t=1.746, p<0.05) on the relationship between cost leadership strategy and organizational performance. This suggests that the success of ABC implementation is associated with better performance in manufacturing companies following a cost leadership strategy.

Consistently, H14b proposes that ABCIS mediates the relationship between differentiation strategy and organizational performance. The result presented in Table

4.17 shows that ABCIS significantly but negatively mediates the relationship between differentiation strategy and organizational performance (β= -0.068, t=1.541, p<0.10). This suggests that ABCIS does not help manufacturing companies that are pursuing differentiation strategy to enhance their performance.

In addition, H15a posits that ABCIS mediates the relationship between vertical decentralized structure and organizational performance. The result (Table 4.17) demonstrates that ABCIS does not mediate the relationship between vertical decentralized structure and organizational performance (β= 0.057, t=1.071, p>0.10). Hence, H15a is rejected. H15b also posits that ABCIS mediates the relationship between horizontal decentralized structure and organizational performance. The result presented in Table 4.17 shows that ABCIS has no mediation effect on the relationship between horizontal decentralized structure and organizational performance (β= -0.034, t=1.178, p>0.10). On this basis, the H15b is not supported. The results (H15a and H15b) imply that decentralized structures (vertical and horizontal) do not lead to success in ABC implementation to affect organizational performance.

Finally, H16 proposes that ABCIS mediates the relationship between IT and organizational performance. This result of H16 indicates that ABCIS has a significant and positive mediation effect (β= 0.081, t=1.973, p<0.05) on the IT-organizational performance relationship. This implies that investment in IT improved organizational performance through the success of ABC implementations.

In order to confirm the mediation effects of ABCIS for the significant indirect effects (H12, H13, H14a, H14b and H16) as reported in Table 4.17, the Variance Accounted

For (VAF) is calculated. The VAF (VAF =path a* path b/ (path c + path a*path b) determines the size of indirect effect in relation to total effect (Hair et al., 2016). According to Hair *et al*. (2016), the VAF is proposed as follow: VAF < 20% = No Mediation; 20% > VAF < 80% = Partial Mediation; VAF > 80% = Full Mediation.

The VAF for the H12 is 0.379 which therefore means there is a partial mediation. Therefore, H12 is supported by these findings. The VAF for H13 is 0.847 which means there is a full mediation. Hence, H13 is supported. Furthermore, the VAF for H14a is 0.238 which indicates a partial mediation exists. Therefore, H14a is supported by these findings. The VAF for H14b is -0.935 which also reveal that there is a full mediation. As such, this hypothesis is supported. Finally, the VAF for H16 is 0.317 which demonstrates a partial mediation. Hence, H16 is supported.

4.6.3 Assessment of Variance Explained (R Squared) in the Endogenous Latent Variables

According to Hair et al. (2014), PLS is a regression-based method that explores the linear relationships between multiple independent variables and an individual or multiple dependent variable(s). In other words, the Coefficient of Determination (or R-Squared) in PLS software represents the combined effects of independent variables (e.g. contingency factors) on the dependent variable (e.g. ABCIS and organizational performance) (Hair et al., 2014). The findings presented in Table 4.18 below show that the model developed in this research explained 58.1% of the total variance in ABCIS and 59.9% in organizational performance. This explains that environmental uncertainty, market orientation, cost leadership strategy, differentiation strategy, vertical and horizontal decentralized structure and IT collectively (or simultaneously) explained 58.1% of variance in ABCIS. In addition, environmental uncertainty, market

orientation, cost leadership strategy, differentiation strategy, vertical and horizontal decentralized structure, information technology and ABCIS collectively (or simultaneously) explained 59.9% of variance in organizational performance. There has not been a unanimous threshold for the acceptance of a model based on the R^2 value. However, Falk and Miller (1992) explained that R-squared value above 0.50 is considered substantial, 0.30 is considered moderate while 0.10 is considered weak. According to this categorization, the R-squared values of the endogenous variables in the model specified in this study are substantial.

Table 4.18
Variance Explained in the Endogenous Latent Variable

Latent Variables	**Variance Explained R^2**
ABC Implementation Success	58.1%
Organizational Performance	59.9%

As explained in the earlier discussions under the contingency theory (see Section 2.8.1), the proposed theoretical model in this study adhered to the Cartesian model as against the Configuration model. The validated theoretical framework as presented in Figure 4.6 could reveal the individual and holistic fit between exogenous variables (e.g. contextual factors) and endogenous variables (e.g. ABCIS and organizational performance). Consistent with Hair et al. (2014), path coefficients or Beta values (how much effect each variable has) and R-squared (how much effect all variables have) along with their significance have been used as the primary assessment indications. The validated model presented in Table 4.6 demonstrates that for the individual effect of each contingency factor on ABCIS, market orientation (35.2%) has the highest effect and followed by horizontal decentralized structure (28.1%), then IT (23.3%), cost leadership strategy (20.3%), differentiation strategy (19.5%), vertical

decentralized structure (16.4%) and environmental uncertainty (11.8%) has the lowest effect. However, horizontal decentralized structure and differentiation strategy are negatively associated to ABCIS. Meanwhile, for the holistic effect, the validated model shows that ABCIS has a R-squared value of 58.1%, indicating that contingency variables (environmental uncertainty, market orientation, cost leadership strategy, differentiation strategy, vertical decentralized strategy, horizontal decentralized structure and IT) in combination explained 58.1% of the variation. Therefore, the model evinces that contingency variables simultaneously have a significant fit with ABCIS.

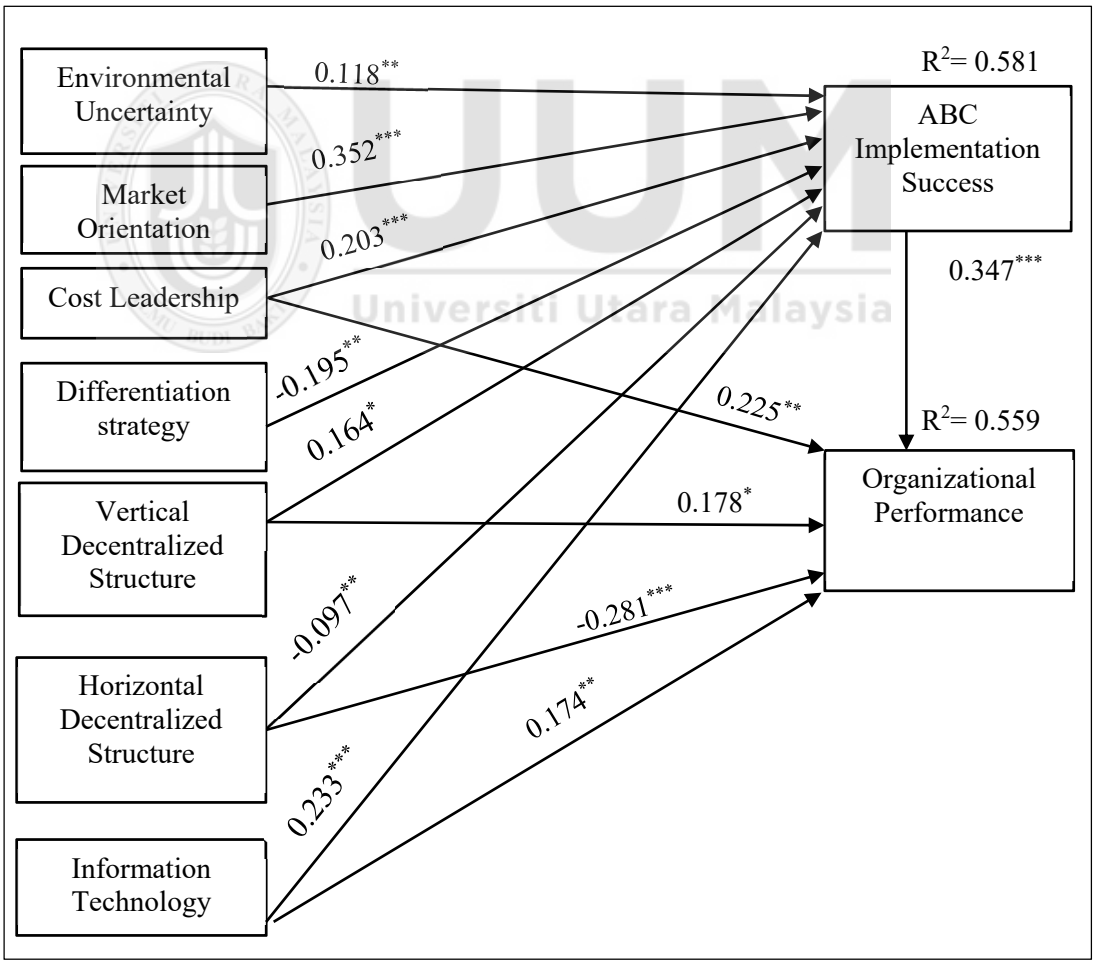


Figure 4.6
The Validated Theoretical Framework

Similarly, the validated theoretical model shows that ABCIS (34.7%) has the highest effect on organizational performance and followed by horizontal decentralized structure (28.1%) then cost leadership strategy (22.5%), vertical decentralized strategy (17.8%) and IT (17.4%) has the lowest effect on organizational performance. However, horizontal decentralized structure is negatively associated to ABCIS. Meanwhile, for the holistic effect, the validated model shows that organizational performance has a R-squared value of 59.9%, indicating that contingency variables (environmental uncertainty, market orientation, cost leadership strategy, differentiation strategy, vertical decentralized strategy, horizontal decentralized structure and IT) in combination explained 59.9% of the variation. Thus, the model evinces that contingency variables simultaneously have a significant fit with organizational performance.

4.6.4 Assessment of Effect Size (f^2)

Effect size is defined as the effect of exogenous latent variable on endogenous latent variable by the changes that occur in the R-Squared value (Chin, 1998). Effect size is calculated by the increase in R-Squared value of the latent variable to which the path is connected, relative to the latent variable's proportion of unexplained variance (Hair et al., 2014). According to Cohen's categorization of the effects of f^2 values, 0.02 is considered as small, 0.15 as moderate and 0.35 as high. Table 4.19 shows the findings of effect size in this study and the interpretation of the effect sizes.

The findings presented in Table 4.19 show that environmental uncertainty affects ABCIS the least (0.026), but even this value is somewhat above the 0.02 threshold of small effect size. The effects of vertical decentralized structure, differentiation

strategy, cost leadership strategy and IT on ABCIS are a bit higher (0.031 and 0.050, 0.058 and 0.69) respectively. Meanwhile, the effect size of market orientation is very close to moderate (0.122), while the effect size of horizontal decentralized structure is weak (0.018).

Table 4.19
Effect Sizes of the Latent Variables based on the Recommendation of Cohen (1988)

Exogenous Variables	**f^2**	**Effect Size**
ABC Implementation Success		
Environmental Uncertainty	0.026	Small
Market Orientation	0.122	Small
Cost Leadership Strategy	0.058	Small
Differentiation Strategy	0.050	Small
Horizontal Decentralized Structure	0.018	None
Vertical Decentralized Structure	0.031	Small
Information Technology	0.069	Small
Organizational Performance		
ABC Implementation Success	0.126	Small
Environmental Uncertainty	0.001	None
Market Orientation	0.009	None
Cost Leadership Strategy	0.033	Small
Differentiation Strategy	0.056	Small
Horizontal Decentralized Structure	0.122	Small
Vertical Decentralized Structure	0.017	None
Information Technology	0.011	None

On the other hands, the findings presented in Table 4.19 show that ABCIS and horizontal decentralized structure have almost a moderate effect on organizational performance (0.126 and 0.122) respectively. The f^2 of differentiation strategy is small (0.056). It is, however, interesting that the f^2 is weak, even for the significant relationships. The strongest effect is found between cost leadership strategy and organizational performance (0.033), but in the two other cases, f^2 is even lower (0.017 for vertical decentralized structure and 0.011 for IT). Meanwhile, environmental uncertainty (0.001) and market orientation (0.009) have no significant effects on organizational performance.

4.6.5 Assessment of Predictive Relevance

The model predictive relevance can be examined by the Stone-Geisser non-parametric test (Chin, 1998; Fornell & Cha, 1994; Geisser, 1975; Stone, 1974). In Smart-PLS package, the blindfolding procedure can be performed to examine the predictive of the model, and it is only applied to endogenous constructs that have a reflective measurement model operationalization (Henseler et al., 2009). Blindfolding step is designed to remove some data while handle them as a missing value for parameters estimation (Wong, 2016). Then, the estimated parameters are used again to reconstruct the raw data that are supposed earlier to be missed. As a result of blindfolding process, a general cross-validating metrics Q^2 is produced (Hair et al., 2014).

Generally, there are several forms of Q^2 that can be gained based on the form of the chosen prediction. A cross-validated communality is obtained when the points of the data are predicted employing the underlying latent variable scores (Henseler et al., 2009). While if the prediction of the data points is acquired by the latent variables that predict the block in question, a cross-validated redundancy Q^2 is the output (Hair et al., 2014).

It has been indicated by Fornell and Cha (1994) that the cross-validated redundancy measure can be considered as a reliable indicator of the model predictive relevance under examination. According to Fornell and Cha (1994), the redundant communality was found to be larger than 0 for all endogenous variables, therefore, the model is considered to have predictive validity, but if not, the predictive relevance of the model cannot be concluded (Henseler et al., 2009). As illustrated in Table 4.20, the cross-validated redundancy for both ABCIS and Organizational performance are 0.347,

0.447 respectively. Thus, based on the criteria suggested by Fornell and Cha (1994), the redundant communality was found to be larger than 0 for all endogenous variables, therefore, the model is considered to have predictive validity.

Table 4.20
Assessment of Predictive Relevance of the Model

Exogenous Variables	R Squared	Cross Validated Communality	Cross Validated Redundancy
ABC Implementation Success	0.581	0.447	0.347
Organizational Performance	0.599	0.396	0.447

4.7 Additional Analysis

The ABC-based model tested above is used to refer to all levels of ABC implementation. However, previous studies (e.g. Baird et al., 2007) argued that different contingency factors are found to be associated with ABC success at different levels of implementation. In addition, the respondents in this study are recruited from companies with different levels of ABC implementation (refer to Table 4.1), the study is therefore interested to further analyze the differential effects of contingency factors on different levels of ABC implementation.

This section presents the assessment of the differential effect of contingency factors on different levels of ABC implementation namely cost analysis level (First Level) and measuring product cost and decision making process level (Second Level). To achieve this, the PLS-SEM including measurement model and structural model was assessed by splitting the responses in accordance to the level of ABC implementation. As shown in Table 4.1, 112 respondents declared that ABC is implemented for the first level in their organization and 77 respondents revealed that ABC is implemented for the second level. However, for this analysis, the first level of implementation was

based on 108 responses as 4 cases were deleted from the initial 112 during the assessment of outliers. Similarly, the second level of implementation was based on 75 (77- 2 outliers) responses.

The measurement model for both first level and second level of ABC implementation was assessed separately. For the first level, the result of the measurement model as shown in Appendix C reveals the following items; MO6, MO15, CS6, CS7, CS8, ABC2, IT12, IT13, IT20, IT21 and IT22 were deleted in order to achieve acceptable reliability and convergent validity. After deleting these items, the results show that the internal consistency, indicator reliability, convergent validity and discriminant validity were all established.

Similarly, for the second level of ABC implementation, the results presented in Appendix C show the following items; MO6, CS6, CS7, CS8, ABC11, IT5, IT20, IT21 and IT22 were deleted in order to achieve acceptable results. After deleting these items, the results of internal consistency, indicator reliability, convergent validity and discriminant validity were all acceptable and above threshold.

Notably, to compare between the measurement models of the first and second level of ABC implementation, it is apparent that different sets of items were deleted from the two models. Also, the total number of items deleted from the first level model (11) is more than the total number of items deleted at the second level model (9). Invariably, it is expected that the path coefficients of the relationships between the constructs of the two different models will be different.

For the structural model, the results presented in Table 4.21 compare between the path coefficients of the first and second level of ABC implementation models. The results show that the relationship between environmental uncertainty and ABC implementation at the first level is positive and significant (β= 0.172, t=2.689, p<0.01). Meanwhile, the same relationship was insignificant but positive at the second level model (β= 0.122, t=1.288, p>0.10).

Additionally, the results presented in Table 4.21 reveal that the relationship between market orientation and ABC implementation is significant at the first level (β= 0.374, t=3.730, p<0.01) and the second level (β= 0.242, t=2.234, p<0.05) of ABC implementation. Also, a significant and positive relationship was found between cost leadership strategy and ABC implementation at the first level (β= 0.183, t=2.170, p<0.05). Meanwhile, the same relationship was positive but insignificant at the second level (β= 0.066, t=0.684, p>0.10). Similarly, the relationship between differentiation strategy and ABC implementation for the first level was negative and significant (β= -0.199, t=2.342, p<0.05) while the effect of differentiation strategy on ABC implementation for the second level was similarly negative but insignificant (β=-0.099, t=0.914, p>0.10).

Table 4.21

Assessment of Structural Model (Additional Analysis)

Relationships	First Level				Second Level			
	Beta	SE	t - values	p - values	Beta	SE	t - values	p - values
Environmental Uncertainty -> ABC Implementation	0.172	0.064	2.689	0.007***	0.122	0.095	1.288	0.198
Market Orientation -> ABC Implementation	0.374	0.100	3.730	0.000***	0.242	0.108	2.234	0.026**
Cost Leadership Strategy -> ABC Implementation	0.183	0.084	2.170	0.030**	0.066	0.096	0.684	0.494
Differentiation Strategy -> ABC Implementation	-0.199	0.085	2.342	0.020**	-0.099	0.108	0.914	0.361
Vertical Decentralized Structure -> ABC Implementation	0.089	0.095	0.942	0.347	0.262	0.153	1.716	0.087*
Horizontal Decentralized Structure -> ABC Implementation	-0.107	0.066	1.615	0.107	-0.086	0.090	0.957	0.339
Information Technology -> ABC Implementation	0.374	0.100	3.730	0.002***	0.306	0.119	2.567	0.011**
ABC -> Organizational Performance	0.310	0.115	2.689	0.007***	0.379	0.130	2.907	0.004***

Note: *: P<0.10, **: P <0.05; ***: P <0.01

The relationship between vertical decentralized structure and ABC implementation was also found to be insignificant for the first level (β= 0.089, t=0.942, p>0.10). However, the same relationship demonstrates a significant and positive relationship at the second level of ABC implementation (β= 0.262, t=1.716, p<0.10). The results of the relationship between horizontal decentralized structure and ABC implementation for the first level (β= -0.107, t=1.615, p>0.10) and for the second level (β= 0.086, t=0.957, p>0.10) were found to be negative and insignificant.

The relationship between IT and ABC implementation was similarly positive and significant for both first level (β= 0.374, t=3.730, p<0.01) and second level (β= 0.306, t=2.567, p<0.05). Similarly, there is no difference between the effect of ABC implementation for the first level (β= 0.310, t=2.689, p<0.01) and second level (β= 0.379, t=2.907, p<0.01) on organizational performance.

4.8 Summary of Findings

This study employs SPSS program and Partial Least Squares Structural Equation Modeling (PLS-SEM) as the technique of analysis. In this chapter, an elaborate treatment of the PLS-SEM mechanism analysis technique was given for the reason that PLS is a new analysis technique in construction. The findings from the PLS-SEM appear to be in line with the hypothetical relationships between contingency factors (environmental uncertainty, market orientation, cost leadership strategy, vertical decentralized structure and IT) and ABCIS. In specific, the results revealed that these contingency factors are significantly and positively associated with ABCIS. Also, ABCIS was reported to be positively and significantly associated with organizational performance. Meaning that, the use of ABC has an advantage to enhance

organizational performance. However, the overall structural model does not find any relationship between some contingency factors such as environmental uncertainty, market orientation, differentiation strategy and organizational performance. A further test of structural model, however, found that ABCIS mediates the relationship between contingency factors (environmental uncertainty, market orientation, cost leadership strategy, differentiation strategy and IT) and organizational performance. Also, the additional analysis reveals some interesting findings on the differential effects of contingency factors on the different levels of ABC implementation. For instance, the analysis shows that, environmental uncertainty, market orientation, cost leadership strategy, differentiation strategy, and information technology all have significant effects on ABC implementation at the first level. Meanwhile only market orientation, vertical decentralization strategy and information technology were significantly related to ABC implementation at the second level. Finally, ABC implementation was found to be significantly related to organizational performance at both first level and second level of ABC implementation. The following chapter covers the detailed discussion and implications of the findings presented in this chapter.

CHAPTER FIVE

DISCUSSIONS, IMPLICATIONS AND CONCLUSION

5.0 Introduction

This chapter presents detailed discussion of findings of this study with regards to the theoretical and practical implications and in relation to the previous studies. This chapter also presents discussions on the contributions of this research findings to the body of literature, the underpinning theory employed in this study and methodological contributions as well as the practical significance of the present study. Finally, the overall conclusion of this study is presented.

5.1 Summary of Findings

The broad objective of this study is to initially determine the level of ABC implementation in the manufacturing industry of Iraq. Further, the current study focuses on the effect of contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structures and information technology (IT)) on ABC implementation success (ABCIS) and organizational performance. The effect of ABCIS on organizational performance. Besides, the study aims to examine the mediating effect of ABCIS on the relationships between contingency factors and organizational performance. In specific, the motivation for this research to set out on achieving the highlighted objectives was to determine the role of ABC implementation success in improving the performance of manufacturing companies and also to discern the effects of contingency factors on the success of ABC implementation and organizational performance. Therefore, the specific research questions below were formulated:

1. What is the level of ABC implementation among Iraqi manufacturing companies?
2. Do contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structures and IT) have significant effects on ABC implementation success in Iraqi manufacturing sector?
3. Do contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structures and IT) have significant effects on organizational performance in Iraqi manufacturing sector?
4. Does ABC implementation success have significant effects on organizational performance in Iraqi manufacturing sector?
5. Does ABC implementation success play a mediating role on the relationship between contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structures and IT) and organizational performance in Iraqi manufacturing sector?

For the purpose of providing empirical answers to the above questions, the researcher reviewed the body of literature on ABCIS, contingency variables and organizational performance. Subsequently, this study relies mainly on the fundamentals of contingency theory to formulate 22 hypotheses for this study.

Research objective 1 aims to determine the level of ABC implementation among Iraqi manufacturing companies. To this end, the descriptive analysis presented in Table 4.6 reveals that the mean score for ABCIS is 5.73 (SD= 0.74). This result indicates that ABC system is highly implemented in Iraqi manufacturing companies, indicating that these companies that have implemented or used ABC view it as successful. This

suggests that Iraqi manufacturing managers perceived ABCIS as useful, favorable, integrate information system, and has a significant impact on organizational processes.

Consistently, with regard to the level of ABC implementation, the ABC implementers in this study were divided into three sub-groups based on their level of ABC implementation. Of the 114 companies, 39 (34%) of them were currently implementing ABC to the cost analysis level. Another six (5%) of the ABC implementers stated that ABC was used to measure products cost and decision-making process level. Further, 61% (69) of total implementers reported that ABC was used for both levels (cost analysis, and measure product cost and decision-making process). This implies that ABC systems can be used for different purposes or levels. Thus, 114 of total sample industrial companies in Iraq which were categorized as being in a usage stage of ABC, and they accounted for 47.7% (114 ÷ 239) of total sample manufacturing companies. In other words, this study was motivated to examine the effect of contingency factors on the organizational performance of those organizations who have implemented ABC systems.

The first seven (7) hypotheses which were formulated with regards to the relationships between contingency variables (environmental uncertainty, market orientation, competitive strategy (cost leadership strategy and differentiation strategy), decentralized organizational structure (vertical decentralized structure and horizontal decentralized structure) and IT) and ABCIS. The results presented in this study revealed that the contingency variables understudied have significant relationship with ABCIS. However, it is evident in the findings that differentiation strategy and

horizontal decentralized structure are negatively related with ABCIS. Nonetheless, the first seven hypotheses were supported.

Furthermore, eight (8) hypotheses (H6, H7, H8, H9a, H9b, H10a, H10b, H11) were postulated to determine the relationships between contingency variables (environmental uncertainty, market orientation, competitive strategies (cost leadership strategy and differentiation strategy), organizational structures (vertical decentralized structure and horizontal decentralized structure) and IT), ABCIS and organizational performance. Five out of these hypotheses were supported. In specific, it was found that ABCIS, cost leadership strategy, vertical and horizontal decentralized structures and IT have significant relationships with organizational performance. In contrast, environmental uncertainty, market orientation and differentiation strategy are not significantly related to organizational performance.

The result of the mediating effect of ABCIS is quite innovative and meaningful. The result demonstrated that ABCIS has significant effect on the relationships between environment uncertainty, market orientation, cost leadership strategy, differentiation strategy, IT and organizational performance. Meanwhile, ABCIS is not found to have mediation effects on the relationships with both vertical and horizontal decentralized structure and organizational performance. The following sections present the detailed discussions of these study findings.

5.2 Discussions

This section presents a detailed discussion on the findings of this study in relation to the theoretical framework and the findings from previous studies. The sub-headings of

the discussion in this section are structured according to the research questions and objectives of this study.

5.2.1 The Effects of Contingency Variables on ABC Implementation Success

The discussion presented in this section is related to the second objective of the current study which aims at examining whether contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structures and IT) have significant effects on ABCIS in Iraqi manufacturing sector. For this purpose, the H1, H2, H3a, H3b, H4a, H4b and H5 were formulated and tested in this study. The results of these hypotheses represent the achievement of this particular objective. Subsequently, the following subsections present the separate discussions on the findings of these hypotheses.

5.2.1.1 The Effect of Environmental Uncertainty on ABC Implementation Success

In order to achieve the objective stated above, this study examines the relationship between environmental uncertainty and ABCIS based on the contingency theory. The result of PLS test revealed that there is a positive and significant relationship between environmental uncertainty and ABCIS. Thus, H1 is supported. The implication of this finding is that an unpredictable environment has a significant and positive impact on the use of ABC implementation (Elhamma, 2015). The result of this research suggests that organizations do not exist in isolation to their primary and secondary environment. Hence, the level of predictability and certainty of the organization's environment have impacted on the successful implementation of innovations like ABC systems among manufacturing organizations in Iraq.

The operationalization of environmental uncertainty in this study is in line with the definition of environmental uncertainty by early researchers such as Buchko (1994). Environmental uncertainty was understood to be the inability of an organization to predict the certainty of its environment accurately (Buchko, 1994). As such, in this study environmental uncertainty is measured with the unpredictability of manufacturing organizations in Iraq, particularly in terms of, the political condition, economic environment, suppliers' actions, customer demands, market activities of competitors, production and information technologies, stability of environment and industrial relations. By recoding the value of environmental uncertainty items, the result revealed that the manufacturing organizations in Iraq perceived their environments to be unpredictable and uncertain. By implication, the results of this study confirm the expected environmental condition of Iraq. The whole of manufacturing companies in Iraq are going through governmental and economic instabilities, technological and market uncertainty, political crisis and terrorism. On this basis, the manufacturing companies in Iraq perceived their environment as unpredictable for their organizations, which represents one of the motives for the adoption and implementation of ABC systems (Innes and Mitchell, 1990), hence the reason for the positive and significant effect of environmental uncertainty on the success of ABC implementations as demonstrated in this study.

As such, this finding supports that environmental uncertainties and ABCIS are positively associated and is therefore consistent with past ABC researches, where a positive relation between environmental uncertainty and ABCIS has been proposed (Innes and Mitchell, 1990) and empirically supported (Anderson and Young, 1999; Arnaboldi and Lapsley, 2005). Elhamma (2015) also found environmental uncertainty

and ABC implementation are positively and significantly associated. Consistently, in view of the uncertain external environment facing Iraqi manufacturing companies, managers used new and advanced cost control system to provide additional information to support their decision needs and assist them to cope with the uncertainties.

In addition, this result is innovative and consistent with previous MAS researchers such as Mia (1993), Ajibolade (2013a), Chong and Chong (1997) and Lal and Hassel (1998) which demonstrated a positive relationship between enviromental uncertainty and management accounting system (MAS) information. Furthermore, some other ABC-based studies such as Jusoh and Miryazdi (2015) reported negative but significant relationship between environmental uncertainty and ABC implementation. However, the implications of their findings are similar to that of this research. Hence, environmental certainty/uncertainty is a significant contingency factor on the success of ABC implementations.

In addition, the result of this study in this regard, provides an empirical evidence on the fundamentals of contingency theory which proffers the importance of contingency variables such as enviromental uncertainty on the perceived usefulness of MAS (Chenhall & Morris, 1986). Invariably, the attributes of the external environment of an organization determines the availability of resources and by extension the general business operations of the organization (Jane et al., 2014; Lusthaus, 2002). In other words, the result of this study evinced that the political, economic and microeconomic conditions of Iraq are significant and effective for the successful implementation of ABC system.

5.2.1.2 The Effect of Market Orientation on ABC Implementation Success

Another important contingency factor which has been examined in this study in relation to the success of ABC implementation among manufacturing companies was market orientation. On this basis, the positive and significant relationship between market orientation and ABCIS was formulated and tested. The results revealed in this study demonstrated that there is a positive and significant relationship between market orientation and ABCIS. Hence, H2 is supported. In specific, the orientations of organizations in terms of customer, competitor and inter-functional coordination have significant effects on the implementation of ABC.

This result is logical in the sense that market orientation explains how much an organization exerts efforts on edging their competitors. Meanwhile, experts are unanimous on the fact that enormous analytical and strategic efforts are needed to outsmart competitors (Deng & Dart, 1994; Piercy et al., 2002). The result of H2 suggests that ABC is a perfect system for manufacturing companies in Iraq because it offers them the sophisticated information needed in analyzing markets especially in terms of competitors cost, customer profitability and customers' expectations. In addition, the manufacturing companies in Iraq can properly control the complex interrelationships among activities and functions, with the use of ABC systems. In other words, market orientation is an important reason why manufacturing organizations consider the implementation of ABC systems (Stevenson et al., 1993; Choe, 2004; Bromwich, 1990).

Even though not many management accounting (MA) studies have joined the debate on whether market orientation is a contingency factor which affects the

implementation of ABC (Cadez & Guilding, 2008), the result of this study is therefore constructive. This is because this research provides a consistent findings with few previous ABC researchers such as Yapa and Kongchan (2012) and Liu & Pan (2007). They explain the effect of market orientation among customer-focused, competitor-focused and inter-functional focused organizations on their resolute to implement ABC.

The result of H2 is also consistent with Abdel-Kader & Luther (2008) who found that MA practices (e.g ABC system) are more highly evolved in organizations facing powerful customers. In another past MAS-based study, Guilding and McManus (2002) suggested that ABC is applicable when customer is the unit of analysis. Cadez and Guilding (2008) found that market orientation is significantly associated with the usage of strategic MA including ABC. Meanwhile, Naranjo-Gil (2009) found that market concentration is significantly and positively associated with the administrative innovations such as ABC. One top of that, contingency theory posits that organizational systems (e.g. cost control system) are a function of firm-specific factors (e.g. market orientation) (Anderson and Young, 1999). As such, the finding of the present study is also in line with the principles of contingency theory.

5.2.1.3 The Effect of Two Dimensions of Competitive Strategies on ABC Implementation Success

Among the individual objectives of this present study is to determine the effects of Porter's competitive strategies on ABCIS. For this purpose, both H3a and H3b were formulated and tested. The results of the hypotheses revealed that both cost leadership strategy and differentiation strategy have significant relationships with ABCIS. However, the association between differentiation strategy and ABCIS is negative

while the association between cost leadership strategy and ABCIS is positive. Therefore, the results support both H3a and H3b. This finding is consistent with that of previous researchers (such as, Alcouffe, 2002; Al-Omiri & Drury, 2007; Cinquini & Tenucci, 2010; Gosselin, 1997; Jermias & Gani, 2004; Krumwiede & Charles, 2014; Seaman, 2006) who have also indicated that a particular type of competitive strategy significantly influence the adoption of ABCIS.

In specific, the result of H3a (cost leadership strategy-ABCIS) implies that the implementation of ABC could help Iraqi manufacturing companies to achieve the advantages of cost leadership strategy such as optimizing capacity utilization, increasing market share and cost minimization in all activities. This result is in line with that of Pavlatos & Paggios (2009) who demonstrated that the direct effect between cost leadership strategy and the level of cost system functionality is positive and significant. The result of H3a is also consistent with that of Chenhall & Langfield-Smith (1998b) who found that high level of sophisticated systems (ABC implementation) are suitable for organizations that follow a low-price or cost-leadership strategy. In addition, the finding of H3a is consistent with that of Alsoboa and Aldehayyat (2013) and Bhimani et al. (2005) who found that the cost-leadership strategy is positively and significantly associated to the use or success of ABC implementations.

On the other hand, the PLS result of H3b (differentiation strategy-ABCIS) is consistent with those findings reported by Hyvonen (2007) and Govindarajan (1988). For instance, Hyvonen (2007) found a significant and negative association between customer-focused or differentiation strategy and the use of contemporary MA

techniques including ABC system. Govindarajan (1988) also found administrative mechanisms such as budget evaluative style and differentiation strategy are negatively associated. To some extent, the result is consistent with the research of Bastian and Muchlish (2012) who found a negative results in the relationship between prospector strategy and financial performance measurement system.

The practical implications of these results are twofold. One is that, manufacturing organizations with cost leadership strategy have the tendency of implementing ABC systems successfully. On the other hand, differentiation strategy does not appear to be supportive for the implementation of ABC systems. In addition, the results also have theoretical implications, following the discussions by experts, organizations focus on either the cost leadership or differentiation strategies depending on the requirements of their target market (Porter, 1980; Lay and Jusoh, 2012). Porter (1980) argued that organizations competing in cost leadership strategy need more sophisticated product costs system than organizations aiming at product differentiation strategy. Therefore, the study evinced that cost leadership strategy is apt for manufacturing organizations with the intention of implementing ABC system. This assertion is an interpretation of the results presented in the current study with regard to the effects of competitive strategies on the implementation of ABC. Moreover, this study further affirms the stance of contingency theorists (such as, Chenhall & Langfield-Smith, 1998b; Chong & Chong, 1997; Govindarajan, 1988) on the importance of competitive strategies in relation to the implementation of ABC system. As demonstrated in this study, the implementation of ABC system is positively influenced by the consistent information generated and the strategic practices of cost leadership strategies as opposed to differentiation strategies.

The results of this study can be explained with the fact that cost leadership strategy is connected to costing and profitability analysis which are the core functions of ABC system. For instance, Acquaah and Yasai-Ardekani (2008) suggested that cost leadership strategy is a suitable strategy for big organizations, implemented through a very stringent analysis of total control of overhead cost and costing of overall production activities. On the other hand, differentiation strategy is implemented by differentiating through uniqueness and branding (Hoque, 2004). Invariably, the results of this study revealed the theoretical and practical connections between cost leadership strategy and the functionalities of ABC system. Hence, the result of this study indicated the suitability of cost leadership strategy as one of the predicting purpose of implementing ABC successfully. This is because the cost leadership strategy can be implemented perfectly with the assistance of a sophisticated cost analysis systems like ABC system (Allen & Helms, 2006).

5.2.1.4 The Effect of Two Dimensions of Decentralized Organizational Structures on ABC Implementation Success

Following the second objective of this study, the effects of both vertical and horizontal decentralized organizational structures on ABCIS were hypothesized. The result of these hypotheses (H4a and H4b) revealed that the relationship between vertical decentralized organizational structure and ABCIS is significant and positive. However, the relationship between horizontal decentralized organizational structure and ABCIS is significant but negative. These results imply that vertical decentralized organizational structure is more enabling and effective in influencing the implementation of ABC systems as compared to horizontal decentralized structure among manufacturing organizations in Iraq.

The PLS results support that the vertical decentralized structure and ABCIS are positively and significantly associated (H4a). This finding is consistent with the Abernethy and Bouwens's (2005) study, that the delegation of decision rights or (vertical) decentralization choices reduce resistance to accounting innovation in the following ways: (1) by extending the responsibility of managers to make their sub-units more ready to adapt to the new MAS innovations provided by accounting innovations and (2) by involving sub-managers in the design of these systems. The PLS results of H4a are also in line with that of Elhamma and Moalla (2015) and Liu and Pan (2007), who demonstrated a strong positive relationship between vertical decentralized structure and the success of ABC implementation.

Notably, this study evidences the fundamentals of the contingency theory by revealing the effect of vertical decentralized structure on the implementation success of ABC. In line with the explanation presented by Abdel-Kader & Luther (2008), that revealed the significance of vertical decentralized structure on the need for more sophisticated MA practices for coordinating a complex process among managers of the organizational structure. In other words, by implementing ABC system, managers can make decisions, planning and controlling based on the relevant information provided by ABC systems. In essence, vertical decentralized structure is practically more favorable for the implementation of ABC as compared to horizontal decentralized structure in large companies. Previous MAS studies such as Chenhall & Morris (1986), Chia (1995), Damanpour (1991), Gordon & Narayanan (1984), Hammad et al. (2013) and Ngoc Phi Anh (2016) have also demonstrated that vertical decentralized organizational structure is significantly related to sophisticated MA practices or MAS information.

The result of H4b needs to be interpreted carefully because most of the previous studies have dealt only with vertical decentralized structure. Clearly, in order to shift the locus of decision-making from high (vertical) to low (horizontal) in the organization hierarchy, operators or co-workers should have high levels of training, skills, knowledge and information intensive intellectual work (Nahm et al., 2003). However, Iraqi industrial labors are unable to take decisions due to the low levels of skill, training and professionalism of those operators (Mohamed & Yacoub, 2012). Aiken and Hage (1971) claims that professionalism is very important to ensure the successful implementation of innovations. As such, the result of H4b is consistent with that of Aiken and Hage (1971) who found that less level of professionalized staff has a negative effect on the implementation of new ideas or innovations into an organization. Gerdin (2005b) also found a negative relationship between decentralized structure (no specific dimension to decentralized structure was identified) and increased sophistication in MAS designs in large and complex organizations. In addition, Hashem and Mahmood (2014) also found that the number of workers is negatively associated with the productivity and financial performance measures in the Iraqi industrial sector. This is a reasonable expectation since less professional staff would be less likely to be delegated to decision-making tasks, hence resulting in a negative impact on ABCIS.

5.2.1.5 The Effect of IT on ABC Implementation Success

Finally, to achieve the second objective of this study, the relationship between IT and ABCIS was hypothesized (H5). The relationship between IT and ABCIS is found to be positively and statistically significant. Thus, H5 is supported. The implication of this finding is that, the investments made on IT have significant effects on ABCIS. IT

applications result in changes in the structure of manufacturing costs and the amount of information required by decision makers (Isa and Foong, 2005). Therefore, IT applications encourage the increased use of ABC implementation that supports the needs of decision makers (Waweru et al., 2004) to increase time saving and resources.

In other words, when there is a sufficient investment on IT applications in an organization, the implementation of ABC in such organization is made easy and successful (Krumwiede, 1998). This finding is quite logical because IT applications for communications, for aiding decisions, for manufacturing and operations and for office and administrative use form the functional base for the implementation of ABC. Hence, there will be no functional ABC system in an organization if the available IT applications do not suffice. In addition, Cooper and Kaplan (1988) argues that sophisticated IT facilitates data collection, data processing and information exchange that resulted from the use of ABC systems.

Additionally, the result of this study evidences the fundamental argument of contingency theory especially with regard to the influence of IT applications on ABCIS (Hoque, 2000). The current result is also consistent with the previous researchers of Anderson and Young (1999), Isa and Foong (2005), Ittner et al. (2002), James (2013) and Krumwiede (1998) which found a strong positive relationship between IT applications and ABCIS. In addition, previous contingency-based MAS studies (Ajibolade, 2013a; Ismail, 2010; Ismail and Isa, 2011) have reported that IT applications play an important role on the successful implementation of MA techniques. Meanwhile, this study advances this discussion by specifying four different types of IT applications namely, IT for communications, IT for aiding

decisions, IT for manufacturing and operations and IT for office and administrative use all have importance and supportive role on the successful implementation of ABC system.

5.2.2 The Effects of ABC Implementation Success on Organizational Performance

The third objective of this study is to determine the effect of ABCIS on organizational performance. For this purpose, the relationship between ABCIS and organizational performance was hypothesized (H6). The result of this hypothesis confirmed that there is a positive and significant relationship between ABCIS and organizational performance. This implies that the successfully implemented ABC systems have important influence on both the financial and non-financial performance of manufacturing organizations.

This result is in line with the assumptions of ABC advocates who believed that the increasing proliferation of ABC implementation among organizations is the result of the influence of ABC system on their financial and non-financial performance (Lee et al., 2010; Zaman, 2009). Evidently, this result demonstrated that the functionalities of ABCIS among manufacturing organizations in Iraq such as in the area of quality of decision, efficiency and waste reduction, relationship across functions, operations control, accurate information, timeliness information and overall goal of the organization have positive implications on organizational performance. To put it simply, the successful adoption and implementation of ABC system among manufacturing organizations in Iraq results in higher attainment of target related to firm profitability, operational and cost efficiency, sales and revenues, return on

investment, market share, customer loyalty, employee satisfaction, as well as research and development activities.

Furthermore, this present result can be explained in relation to the theoretical perspectives of contingency theory on the relationship between cost control systems and organizational performance (Haldma & Laats, 2002). Contingency based studies unanimously agreed that firm performance is contingent to the firm approach to costing systems and control (Chenhall, 2006b). As such, this result revealed that there is a fit between ABCIS and organizational performance. According to contingency theorists (Anderson and Young, 1999; Haldma & Laats, 2002), the fit between ABCIS and organizational performance reflects the feasibility of improving organizational performance through ABC systems that provides relevant information to the managers, then take improved managerial decisions and thus achieve the organisational goals in a better way.

The finding of this study confirms that the strategical role of ABC success improved financial and nonfinancial manufacturing performance in Iraq. This finding is in line with the previous contingency-based studies that examine the implementation of ABC and have found several results for its role. These studies revealed a significant and positive relationship between ABC implementation and different aspects of performance such as reducing cost (Abdul Majid and Sulaiman, 2008), profitability (Plowman, 1997), higher quality levels (Ittner et al., 2002), level of satisfaction (Abernethy and Bouwens, 2005), analyze customer satisfaction (Salem-Mhamdia and Ghadhab, 2011), financial performance (Cagwin and Bouwman, 2002), competitiveness (Elhamma, 2015) and financial and non-financial performance

improvement (Lee et al., 2010; Chea, 2011; Zaman, 2009). Similar to the findings of other previous studies (such as, Cadez & Guilding, 2008; Shields, 1995; Elhamma & Moalla, 2015; Hardan and Shatnawi, 2013; Kennedy and Affleck-Graves, 2001; Maiga & Jacobs, 2003; Kim et al., 1997; Zhang & Isa, 2011), the findings of the current study evince that the implementation of ABC systems among Iraqi organizations have important implications on the overall performance of manufacturing companies.

5.2.3 The Effects of Contingency Factors on Organizational Performance

Following the highlighted objectives in this study, the fourth objective of this study was to investigate the effects of contingency factors (environmental uncertainty, market orientation, competitive strategies, organizational structures and IT) on organizational performance. For this reason, H7, H8, H9a, H9b, H10a, H10b, and H11 were formulated and tested. The results of these tested hypotheses were discussed separately in the following subsections.

5.2.3.1 The Effect of Environmental Uncertainty on Organizational Performance

For the purpose of achieving the stipulated objective above, the H7 formulated and tested revealed that environmental uncertainty has no significant effect on organizational performance. Thus, H7 is not supported. This result infers that managers' perceived unpredictable information and details of their corporate environment have no direct connection with their organizational performance. The implication of this result is that managers' perception on environmental uncertainty has no significant effect on the performance of Iraqi manufacturing companies.

The results of this study in this regard could not establish evidence on the contingency theory which proffered that contingency variable such as environmental uncertainty has a fit with organizational performance. This study is also inconsistent with past contingency-based researchers. For instance, in spite of the significant number of studies such as Jane et al., (2014), Jusoh (2008), Mia and Clarke (1999), Uyar and Kuzey (2016), Yang et al. (2011) and Wagner et al. (2002), which unanimously revealed that environmental uncertainty is significantly (between positive and negative) associated with organizational performance. However, this study could not establish the proof on the connection between environmental uncertainty and organizational performance among manufacturing organizations in Iraq.

This result is also unexpected because according to the argument of Jusoh (2008) that the lower the degree of perceived environmental uncertainty, the higher the performance is. Nevertheless, it is evident that the unpredictability of the organizational environment of manufacturing organizations in Iraq did not have any effect on their organizational performance. However, the reason for this uncommon result could be due to the adaptable corporate culture of Iraqi organizations. This is coupled with the fact that the descriptive results of this study revealed that there is quite a moderate level of uncertainty and unpredictability of the organizational environment in Iraq. In addition, manufacturing organizations in Iraq might have learned how to cope with the moderate uncertainty in their organizational environments. Hence, the reason why environmental uncertainty does not influence organizational performance.

Surprisingly, this finding of non-significant association between environmental uncertainty and organizational performance is consistent with the findings of Köseoglu et al. (2013). They found that the correlation between market uncertainty and both financial and non-financial performance is not significant. Dev & Olsen (1989) found that environment uncertainty explains an insignificant amount of variance in performance. Additionally, Hoque (2004) found that the relationship between environmental uncertainty and organizational performance is not significant. The result of H7 is also consistent with the contingency model proposed by Mia (1993), who found perceived environmental uncertainty to be not associated with organizational performance. He proved that this relationship is mediated by MAS information. Perhaps, it is true in Mia's (1993) argument that the strong positive effect of MAS information use has exceeded the negative effect of environmental uncertainty on organizational performance. Thus, without reliable information systems such as MAS, the environmental uncertainty may result in insignificant effect on performance.

5.2.3.2 The Effect of Market Orientation on Organizational Performance

In order to achieve the stipulated objective, the relationship between market orientation and organizational performance was hypothesized (H8). Market orientation is positively but not significantly associated with organizational performance. Thus, H8 is not supported. This result infers that market-based details and information have no direct influence on both financial and non-financial performance of manufacturing organizations in Iraq.

In line with the result of the descriptive analysis of the variables in this study, it was evinced that market orientation is a subset of an organizational culture that is practiced

among manufacturing organizations in Iraq. However, the result of this study does not demonstrate a significant relationship between market orientation and organizational performance. In other words, this result revealed that market orientation does not have any noticeable influence on organizational performance of manufacturing firms in Iraq.

The logical explanation behind the connection between market orientation and organizational performance especially among contingency-based studies is that the more an organization pays attention to the details and the information about its primary market, such as customers and competitors, the more advance the organizational performance (O'Cass & Viet Ngo, 2007). Meanwhile, the results of this study is inconsistent with previous studies (Cadez and Guilding, 2008; Dawes, 2000; McManus, 2013; Narver &, Slater 1990; Wang et al., 2012; Pelham, 1999; Piercy et al., 2002).

Although the findings of the above studies on market orientation are positive and significant on organizational performance, the result of H8 was positive but non-significant. This non-significant nature of market orientation is not entirely unexpected, however, in light of the non-robust and mixed findings in previous studies (Atuahene-Gima, 1995; Jaworski & Kohli, 1993; Martin & Grbac, 2003; Noble et al., 2002). For instance, Zhou et al. (2009) found a positive and non-significant relationship between competitor orientation and market performance. The result of the current study is also consistent with that of Han et al. (1998) who found that the relationship between market orientation and organizational performance is positive but insignificant. They proved that this relationship is in fact mediated by technical and

administrative innovations. Their study empirically provided evidence that market orientation facilitates an organization's innovations, which in turn positively affect its performance. Erdil et al. (2004) also indicated that the effects of innovation performance by market orientation appear indirectly through innovation. Likewise, Baker & Sinkula (1999) suggested that the importance of market orientation for organizational performance is in fact dependent on environmental conditions.

5.2.3.3 The Effect of the Two Dimensions of Competitive Strategies on Organizational Performance

Consistent with the theoretical expectations, the effects of competitive strategies namely; cost leadership strategy and differentiation strategy on organizational performance was hypothesized (H9a and H9b) and tested as one of the purpose of achieving the fourth objective of this study. The result of these hypotheses revealed that cost leadership strategy has a significant and positive effect on organizational performance. Thus, H9a is supported. Meanwhile, differentiation strategy was found to have positive but insignificant effect on organizational performance. Thus, H9b is not supported. The interpretation of these findings is that among the two strategies tested against organizational performance, cost leadership strategy is the only strategy that influences the advancement of organizational performance in the manufacturing industry of Iraq.

The findings of this study are consistent with the findings of contingency-oriented studies (Acquaah & Yasai-Ardekani, 2008; Agyapong and Boamah, 2013; Allen & Helms, 2006; Lay and Jusoh, 2012; Leitner and Güldenberg, 2010; Pertusa-Ortega et al. 2009; Spanos et al., 2004) to an extent. In specific, the significant effect of cost leadership strategy on organizational performance affirms with the previous studies in

this regard. Further, the results of the current study that was drawn on 114 samples do fully support the contention of Porter (1980) that if an organization adopts a pure strategy (cost leadership vs. differentiation), it can lead to a more successful outcomes and consequently, enhance the performance of organization. Accordingly, H9a finding that the degree of improvement of the performance of Iraqi industrial companies is contingent upon cost leadership strategy is consistent with that of the contingency theory (Hambrick, 1985) and previous findings (Parnell, 2011; Cadez and Guilding, 2008).

The result of H9a and H9b is also consistent with Parnell (2011) who found a positive and significant relationship between cost leadership strategy and organizational performance in Argentina and a positive but insignificant relationship between differentiation strategy and organizational performance. Moreover, Cadez and Guilding (2008) found that cost leadership strategy is significantly associated with organizational performance, whereas differentiation strategy does not have significant associated with organizational performance. According to Kumar & Subramanian (1997), an organization follows cost leadership strategy when there are political/goverenment and supplier uncertainties, as is the case in Iraqi manufacturing environment. In a similar vein, Allen & Helms (2006) pointed out that cost leadership strategy is most suitable for large organizations.

The implications of these results are insightful as the different effects of cost leadership strategy and differentiation strategy on organizational performance are revealed. In specific, these results answer the call raised by Porter (1980) by clarifying on the specific strategy which influences organizational performance. In other words, the

current study demonstrates that cost leadership strategy is influential to the advancement of organizational performance among manufacturing companies in Iraq as compared to the effect of differentiation strategy on organizational performance. Notably, the positive and non-significant nature of differentiation strategy is supported by Perera et al. (1997) who found that a customer-focused or differentiation strategy does not help organizations to enhance their performance. Instead, a match between the differentiation strategy and non-financial performance measures may improve the outcomes. The results of Spencer et al. (2009) indicated that the relationship between differentiation strategy and organizational performance (financial and non-financial) is positive but insignificant. In addition, Amoako-Gyampah and Acquaah (2008) pointed out that the direct effect of competitive strategy on organizational performance (market share and sales growth) is positive and not significant. These findings are also consistent with Ittner and Larcker's (1997) results.

5.2.3.4 The Effect of Two Dimensions of Decentralized Organizational Structures on Organizational Performance

Similarly, the effect of decentralized structures on organizational performance was hypothesized and tested in this study (H10a and H10b). The results of this study revealed that both vertical and horizontal decentralized structures have significant effects on organizational performance. Meanwhile, only vertical decentralized structure has a positive significant effect on organizational performance while horizontal decentralized structure has a negative significant effect. Thus, both H10a and H10b cannot be rejected. The implication of these findings is that the vertical decentralized organizational structure which is practiced by manufacturing organizations has the influence to enhancing organizational performance. Meanwhile,

horizontal decentralized structure does not have a supportive effect on enhancing organizational performance.

In the same vein, the result of H10a provides evidence on the fundamental argument of contingency theory (Koberg and Ungson 1987) especially with regard to the influence of decentralized structure on organizational performance. In essence, this study demonstrates that vertical decentralized structure dispersion of responsibilities among employees and managers in the manufacturing companies in Iraq is found to be positively influential to the performance of manufacturing organizations. Hence, the top and down distribution of organizational responsibilities allow smooth and flawless decision-making process which therefore enhances organizational performance. This result is in line with contingency-based studies which have similarly demonstrated that vertical decentralized organizational structure positively affects organizational performance (Chia, 1995; Chen and Huang, 2007; Hoque, 2011; Uyar and Kuzey, 2016).

Meanwhile, the horizontal decentralized of organizational structure which involves the division of decision-making control with individuals outside the organizational hierarchy is found to be negatively influential to organizational performance. This outcome seems to be consistent with the findings of Nahm et al. (2003) who suggested that horizontal decentralized structure is more suitable in managing small companies due to the limited size, resources and layers in the hierarchy. Meanwhile vertical decentralized is more suitable to large companies because they have a large number of layers in the hierarchy. Therefore, they reported that small companies would be able to achieve better performance in this area. In addition to the discussion on the negative

effect of the horizontal decentralized structure on ABC implementations and decision-making in Section 5.2.1.4, Elhamma and Moalla (2015) elaborated that vertical decentralized structure is regarded as a formal dispersion of responsibilities among employees while horizontal decentralized structure is regarded as informal organizational structure. Therefore, this study revealed that informal form of organizational structure is negatively related to organizational performance.

In addition, Mohamed & Yacoub (2012) proved that the absence of professional workers is a major obstacle to efficient economic activities in the Iraqi industrial sector, resulting in low productivity and hindering the process of industrial development, hence resulting in a negative impact on the performance of manufacturing companies. This finding corroborates the results of Jogaratnam and Tse (2006), which indicated that organic structure (more decentralized) has a negative effect on performance in Asia context. They claimed that this result may be attributed to the workforces and management styles in Asian sub-cultures that is different from western context.

5.2.3.5 The Effect of IT on Organizational Performance

Finally, the positive effect of IT on organizational performance is hypothesized (H11) and tested in this study. The result revealed that IT applications have significant and positive effects on organizational performance. Thus, H11 is supported. This implies that the more organizations invest on IT applications for communications within departments, for decision making, for administrative and for manufacturing and operations, the more influence they have on advancing the performance of the manufacturing organizations in Iraq. In other words, when organizations made

significant investments on IT applications, the ability to gaining competitive advantages, reach out to new markets and meet customer demands, improve efficiency, exchange information and make accurate decisions (Straub and Watson 2001; Kalkan et al., 2011) can, therefore, increase the financial and non-financial performance of the manufacturing companies in Iraq.

The result of the H11 evidences the theoretical perspective of contingency theory (Raymond et al., 1995) as well as the empirical evidences from contingency-based studies, such as Davern and Kauffman (2000), Ajibolade (2013b), Alshbiel (2017), Raymond et al. (1995), and Watcharasriroj & Tang (2004) who have demonstrated the important (positive and significant) influence of IT on organizational performance. In addition, the result of H11 is in line with the results of past non contingency-based research (e.g. Banker et al., 2002; Albadvi et al., 2007; Kalkan et al., 2011; Maiga, 2012; Shaukat et al., 2009). The evidences presented in this study are in line with the findings of previous researchers.

5.2.4 The Mediating Effects of ABC Implementation Success

The final objective of this study is to determine the mediating effects of ABCIS on the relationship between environmental uncertainty, market orientation, competitive strategies, organizational structures, IT and organizational performance. For this purpose, the H12, H13, H14a, H14b, H15a, H15b and H16 were formulated and tested. According to the Variance Accounted For (VAF) tests, the results of these hypotheses revealed that the success of ABC implementation mediates the relationship between environmental uncertainty, market orientation, competitive strategies, IT and organizational performance. However, VAF tests could not establish the mediating

effect of ABCIS on the relationship between decentralized structures and organizational performance.

With regard to the mediating effect of ABCIS on the relationship between environmental uncertainty and organizational performance (H12), the result of VAF test supports that the success of ABC implementations act as a positive mediation on the relationship between environmental uncertainty and organizational performance. According to the propositions of Preacher and Hayes (2008) and Mia (1993), in order to confirm that ABCIS plays a mediation role on the relationship between environmental uncertainty and organizational performance, H1 (environmental uncertainty-ABCIS relationship) and H6 (ABCIS-organizational performance relationship) must be supported. The result is complementary with the direct relationship between environmental uncertainty and ABCIS, and organizational performance.

The result of H12 indicates that the success of ABC implementations among manufacturing organizations in Iraq further help to explain the effect of environmental uncertainty on organizational performance. Therefore, with the help of ABCIS, manufacturing companies will be able to acquire detailed information and accurate analysis of their environments and therefore these detailed and information will be used to advance organizational performance. Thus, the mediation role of ABCIS on environmental uncertainty-organizational performance relationship (H12) is supported. Interestingly, the result of H12 is consistent with the findings of Chong and Chong (1997), Mia (1993) and Muslichah (2013) who found environmental uncertainty has to be supported by appropriate MAS information to achieve

competitive advantages and ensure high performance. In other words, Gul (1991) affirmed that the effect of MAS on performance is dependent on environmental uncertainty. He proved that in a situation with a high level of uncertainty, more MAS information will need to be used which could lead to an improvement in organizational performance.

In addition, market orientation is also revealed in this study to have a significant indirect effect on organizational performance through ABCIS (H13). VAF test further demonstrates the importance of ABCIS among manufacturing organizations in Iraq and supports H13. This result means that without the appropriate information of ABC systems, market orientation alone cannot improve the performance of manufacturing companies in Iraq. This is evidence as the indirect relationship between market orientation and organizational performance. Subsequently, the introduction of ABCIS as the mediating variable significantly influences the market orientation-organizational performance relationship. This result is consistent with the findings of Mia & Clarke (1999), Han et al. (1998) and Hoque (2011), who reported that market competition or orientation is a determinant of the use of the MAS information (or innovations) and that organizational performance is contingent on the managers' use of these information or innovations.

Additionally, the mediating effect of ABCIS on the relationship between Porter's competitive strategies and organizational performance (H14a and H14b) is evidenced in this study through VAF test. In specific, the result presented in this study revealed that both cost leadership strategy and differentiation strategy respectively, positively

and negatively influenced the organizational performance through the success of ABC implementations. Thus, H14a and H14b are supported.

The result of H14a suggests that the appropriate information of ABC systems helps manufacturing companies in Iraq that are pursuing cost leadership strategy to enhance their performance. The findings of this study in this regard are consistent with the findings of Hoque (2004). In particular, the significant indirect effect of non-financial measures on the relationship between management's strategic choice (defender strategy) and organizational performance. However, the results fully supported the argument of Chenhall and Langfield-Smith (1998b) that higher performing organizations employing a cost leadership (low price) strategy would benefit from ABC system. The results are also in line with King et al. (2010) who found that organizational performance is positively associated with the degree of fit between contingent factors, including cost leadership strategy, and the extent of budget use. Hence, ABCIS complements the effects of cost leadership strategy to positively advance organizational performance. On the contrary, these results are not consistent with Abdel-Kader and Luther (2008) who found that competitive strategy cannot explain the differences in MA practices.

Consistently, VAF test results support that the implementation of ABC system acts as a passive mediation on the relationship between differentiation strategy and organizational performance (H14b). However, this result is consistent with other studies, such as Govindarajan (1988) which reported that low emphasize budgetary goals is associated with high performance (effectiveness) in organizations employing a differentiation strategy. The result of H14b is also in line with Hyvonen (2007), who

found that the contemporary performance measures, non-financial measures including ABC, do not help organizations that are pursuing differentiation (customer-focused) strategy to enhance their performance. Meanwhile, Chenhall & Langfield-Smith (1998b) argued that management techniques such as balanced scorecard and benchmarking (e.g. not ABC implementation) are suitable for organizations that follow differentiation strategy.

Furthermore, the findings of VAF revealed that there is no significant mediating effect of both vertical and horizontal decentralized organizational structure and organizational performance. Though H4a, H6 and H10a are supported, the mediating effects of ABCIS on the relationship between vertical decentralized structure and organizational performance (H15a) were not significant. This result implies that among the manufacturing companies in Iraq, the effect of vertical decentralized structure on the performance does not go through the ABC implementation. The weak of the vertical decentralized structure /ABC-implementation coefficient might be responsible for the insignificance of the above relationships. Surprisingly, these results do closely support Hoque's (2011) findings. Hoque (2011) found that decentralized structure (increased delegation) has no indirect effect on organizational performance through changes in MAS including ABC system.

In addition, although H4b, H6 and H10b are significant, the indirect effect of ABCIS on the relationship between horizontal decentralized structure and organizational performance (H15b) is not supported according to VAF test. This can be explained by the very strong negative relationship between horizontal decentralized structure and organizational performance which undermines the indirect effect of ABCIS. The

results of both H15a and H15b are in contrast with previous researches (Soobaroyen and Poorundersing, 2008; King et al., 2010) which suggested that MAS and its practices mediate the relationship between decentralized structure and organizational performance.

Finally, the indirect effect of ABCIS on the IT-organizational performance relationship is revealed in this study (H16) and supported by VAF test. This implies that ABCIS significantly mediates the relationship between IT and organizational performance. In essence, the implementation of ABC system reflects the reason why IT influences organizational performance (Cooper, 1988; Cagwin and Bouwman, 2002). The implications of this result are that the performance of Iraqi manufacturing companies could be improved through ABCIS when ABC information is used to improve the quality of the decision-making process and control activities in advanced IT applications. That is, the group of IT applications may be driving the overall positive effects of ABCIS on the performance of the manufacturing companies in Iraq. These results are in line with past researches (e.g. Abdul Rasid et al., 2010; Al-Nuaimi et al., 2017; Alshbiel, 2017; Ismail et al., 2017; Ismail and Isa, 2011; Cagwin and Bouwman, 2002; Muslichah, 2013; Choe, 2004) which suggested that MAS or ABC implementation mediates the relationship between IT applications and organizational performance.

In a similar context, the results of this study provide an empirical evidence on the fundamentals of contingency theory that the effects of ABCIS on organizational performance are dependent (contingent) on environmental uncertainty (Kasim et al., 2012), market orientation (Guilding and McManus, 2002), cost leadership strategy

(Langfield-Smith, 1997) and IT (Ismail and Isa, 2011). In other words, under abovementioned circumstances, the implementation of ABC systems resulted in effective strategical decisions, which in turn, improved the performance of Iraqi manufacturing companies. However, the findings do not support the assumption of contingency theory that organizational effectiveness is dependent on a fit or match between decentralized structures and ABCIS (Gordon & Miller, 1976).

5.3 The Results of Additional Analysis

The results of PLS reveal that the effect of contingency factors on ABC implementation for the first level (activity cost analysis level) are not similar to the effect of the same contingencies on ABC for the second level (measuring product cost and decision-making process level) of implementation. The differences in ABC implementation levels reflect that each level serving a different purpose (Angelis & Lee, 1996; Cotton et al., 2003; Kallunki and Silvola, 2008; Gosselin & Mevellec, 2003; Turney, 1989; Schoute, 2009) and therefore it is differently effected by contingency factors. However, the effects of ABC implementation for both the first and second level on organizational performance are found to be positive and significant.

In detail, the findings from the PLS3 model support that environmental uncertainty, market orientation, cost leadership strategy and IT are positively and significantly associated with ABC for first level of implementation. Differentiation strategy is significant but negatively associated with ABC implementation for the first level. However, the association between contingency factors (environmental uncertainty, cost leadership strategy and differentiation strategy) and ABC implementation for the second level are found to be insignificant. Nonetheless, market orientation, vertical

decentralized structure and IT are found to be positively and significantly associated with ABC implementation for the second level. In addition, the findings reveal that both levels of implementation are not effected by horizontal decentralized structure.

The findings of the comparison between the first and second level of ABC system implementations described above allow to infer that different contingency factors do influence implement ABC across different levels. In one hand, these results are consistent with Gosselin (1997) who found that contingency factors differentially effect the levels of ABC implementation. On the other hand, the results of the second level are inconsistent with Gosselin (1997) who showed that decentralized organizational structure have greater flexibility to stop the ABC implementation process at the first level of ABC implementation. The results of the first level are also inconsistent with Gosselin (1997) who found that prospectors (differentiators) prefer first level of ABC implementation since this level requires less time and effort and is less constraining than second level of ABC implementation.

The result of the first level of ABC implementation is in line with the result of Cinquini & Tenucci (2010) who found that strategic MA is able to support different competitive strategies. However, the result of the second level of ABC implementation is consistent with Bhimani et al. (2005) who demonstrated that competitive strategies do not influence the extent of deployment of ABC after system implementation.

In other words, the importance of contingency factors at the first and second levels of ABC implementation is consistent with previous literature (Schoute, 2009; Gosselin & Mevellec, 2003; Baird et al., 2007) and contingency theory that companies with

different contingencies or circumstances have both different needs for ABC systems in planning, controlling, coordinating their activities and supporting their decision-making, and different abilities to commit resources to develop and implement ABC for specific level.

5.4 Implications of the Study

This study is necessitated by research gaps from previous studies, both in terms of empirical and theoretical gaps identified in the literature. Furthermore, this study is explained from the theoretical perspectives of the contingency theory. Subsequently, based on the findings and discussions reported in this study, several theoretical, practical and methodological contributions and implications are discussed separately in the following subsections.

5.4.1 Theoretical Implications

At the theoretical level, the findings reported in this research have significant theoretical implications. First, with regard to the theoretical perspectives of contingency theory (Donaldson, 2001; Reid and Smith, 2000), contingency variables cut across internal, external and technological contextual variables that have the abilities of affecting the operations and structures of an organization. The theoretical framework validated in this study incorporates external contingency variables (environmental uncertainty and marketing orientation), internal contingency variables (competitive strategies, decentralized structures) and technology applications. In other words, external, internal and technological contingency variables are revealed in this study to have fit with ABCIS and organizational performance. The constructs of market orientation and IT applications are introduced in the current study as contingent

factors that influence the implementation of ABC. There has been very limited research in ABC-based studies that have considered these potentially important constructs.

Second, this study also provides empirical evidence to support the assumption of contingency theory that MAS and its practices are adopted in order to provide relevant information and to assist managers in achieving some organizational goals or desired outcomes (Haldma & Laats, 2002). Despite its importance, there is still scant research on ABCIS in developing countries especially in Iraq. In other words, the positive and significant relationship between ABCIS and organizational performance will provide a better understanding for researchers, practitioners, ABC adopters and companies that are interested in adopting the ABC system on how ABC systems can improve organizational performance.

Third, this study also affirms the contingency-based "mediation" model by demonstrating the significant mediating effect of ABCIS on the relationship between contextual factors (environmental uncertainty, market orientation, competitive strategies and IT) and organizational performance. Invariably, the present study evinced that the accurate information produced by ABC system enhances the effect of contingency variables on organizational performance, which is consistent with Gerdin and Greve's (2004) "mediation" model of Cartesian-contingency approach. What is more, the results are consistent with the view put forward by previous MA research (e.g. Abdul Rasid et al., 2010; Cagwin and Bouwman, 2002; Chenhall and Langfield-Smith, 1998b; Chong and Chong, 1997; Han et al., 1998; Hoque, 2011; Ismail and Isa, 2011; King et al., 2010; Mia, 1993; Mia & Clarke, 1999; Maiga et al., 2013) that the

more the contingencies, the greater the need for sophisticated MASs that can provide managers with high quality information in order to make reasonable and accurate decisions, so that organizations are able to enhance their overall goals.

Forth, the results of the present study provide the empirical evidence on the contingency theory which proffers cause-effect relationship or fit (Drazin & Van de Ven, 1985; Islam & Hu, 2012) between multiple contingency variables, cost control systems (e.g. ABCIS) and organizational performance. On this basis, the development of theoretical contingency model in the current study is in response to the calls (Fisher, 1995; Otley, 2016) for using multiple contingency factors (Gerdin, 2005b) to bridging the gap between these factors and their multiple effects on cost control systems and outcome variables. The results of R-squared reported in this study support the notion of a combined effect of contingency factors (environmental uncertainty, market orientation, competitive strategies, decentralized structures and IT) on ABCIS (R-squared= 58.1%) and organizational performance (R= 59.9%). Though there are other contingency-based MAS research have been conducted in developing countries (e.g. Auzair (2015) in Malaysia), they do not specifically test the combined effect of contingency factors using a PLS3. Thus, the current study contributes to the MAS literature by adopting a more holistic approach than has typically been the case (e.g. Al-Omiri & Drury, 2007; Abdel-Kader & Luther, 2008; Elhamma & Moalla, 2015; Hoque, 2011; Ismail & Isa, 2011; Ismail et al., 2017; Mia & Clarke, 1999). In other words, the results support the theoretical perspective of configuration approach that is to include multiple contingencies in investigating MAS contingent relationships. Therefore, the results of this study significantly contribute to a growing body of

knowledge on contingency theory, contingency variables, ABC systems and organizational performance in a different developing economic setting like Iraq.

Finally, the findings of this study posits another important theoretical contribution by supporting the heart of contingency theory that there is no single optimal accounting information system that is applicable equally well to all organizations under all circumstances and situations (Gordon & Miller, 1976; Otley, 1980). The results of the additional analysis show that managers perceive ABC to be successful at different levels of implementation, and that different contingency factors are associated with success at different levels. Therefore, the findings from past ABC-based studies may liable to a level of ambiguity especially for organizations whose ABC implementation is not at the same level. In this regard, the results of this study have important implications. For instance, future research needs to take these results in their consideration and cannot proceed on the assumption that ABC system is a single level. The additional result presented in this study also points to the fact that ABC at different levels of implementation plays similar significant roles in improving the performance of organizations. Such outcome clarifies that, in fact ABC implementation serves the same purpose at different levels of implementation in the Iraqi manufacturing sector. This therefore advances the discussion in previous contingency-based studies which has only been based on the effect of ABC system on organizational performance without specifying the differential effects of the different levels of ABC implementation on organizational performance.

5.4.2 Practical Implications

At the practical level, the present study also makes some important practical contributions and implications. The findings from the survey conducted on manufacturing companies in Iraq are worthwhile for the managers and decision makers. In other words, this research supports that successful implementation of ABC systems among manufacturing companies in Iraq are closely associated to contingency factors such as environmental uncertainty, market orientation, cost leadership strategy, vertical decentralized structure and increased investment of IT. The results of this study also indicate that Iraqi manufacturing companies do perceive their ABC implementations as successful. Practically, this finding is a key contribution to the ABC literature. It suggests that ABC implementation has the characteristics of an any information system which covers information and details relating to external environment as well as internal environment. The non-financial as well as financial benefits of ABC systems allow manufacturing managers to make successful decisions, which in turn, improved the financial and non-financial performance of Iraqi manufacturing companies.

In addition, the current study tested the effects of contingency factors on organizational performance. The results reported in this study have practical contributions especially with regards to how changes in external environment, in technology and in organizational variables influence organizational performance. Therefore, it is revealed that the performance of manufacturing companies in Iraq can be enhanced through implementing ABC, pursuing cost leadership strategy, more vertical decentralized structure and more investments on IT applications. To an extent, the result of this study revealed an insight for stakeholders especially the managers of

manufacturing companies on how to improve both financial and non-financial performance of the organizations.

In fact, manufacturing companies in Iraq faces various situations concurrently. Therefore, the inclusion of multiple contingencies will be helpful for determining the effectiveness of MA systems. The research findings from the effect of multiple contingency factors support that all factors are important to successful implementation of ABC and to improve the performance of manufacturing companies in Iraq. Therefore, Iraqi manufacturing companies must realize that besides the implementation of ABC systems, contingency factors play an important role in improving their poor performance and gaining competitive advantages. These contingencies and ABCIS are imperative for Iraqi companies, especially those suffering from poor performance, that face different challenges such as open importation, pressures of increased competition and decreasing market shares. Decision makers may use ABC information to help in overcoming these challenges and also help in improving the performance of their organizations.

Furthermore, the results of the significant mediating effect of ABCIS infer that when manufacturing organizations implement ABC system, the information resulting from environmental uncertainty, market orientation, cost leadership strategy, and IT become more useful to improve organizational performance. Hence, the functionalities of ABC system can help manufacturing organizations to further understand the importance of these contingency variables on organizational performance. These findings are helpful to manufacturing managers in Iraq to better understand the best fit between contingency factors, ABCIS and organizational performance.

Also, the differential effects of contingency factors on different levels of ABC implementation as reported in this study will broaden the understanding of ABC users on the different conditions which are important to the successful implementation of ABC at different levels. For instance, five contingency factors (environmental uncertainty, market orientation, cost leadership strategy, differentiation strategy and information technology) are found to be associated with ABC implementation for activity cost analysis level. However, only three contingency factors (market orientation, vertical decentralized structure and information technology) are found to be associated with ABC implementation for measuring product cost and decision-making level. Practically, these results will broaden the sphere within which ABC system may be successfully implemented, and thereby will enhance the viability of ABC systems within Iraqi manufacturing companies.

5.4.3 Methodological Implications

This study also makes important methodological implications. This study is necessitated by the dearth of contingency-based studies and ABC studies which emerged from the non-western economy such as the Iraq. In this regard, this study focuses on the manufacturing industry of Iraq to provide the innovative findings from an Arab-based economy which has received less concentration among MAS and contingency-based studies.

Furthermore, PLS-SEM analysis was used to assess the reliability and validity of each latent construct in this study. Specifically, a robust approach (PLS-SEM analysis) was used to assess the effects of contingency factors on both ABCIS and organizational performance. Also, it was used to examine the mediational effects of ABCIS on the

relationships between contingency factors and organizational performance. The majority of the previous contingency-based researchers have only focused on a limited number of contingency factors leaving out many other important contingent factors that can also affect structural variables and organizational performance. Also, not many studies have attempted to examine the mediating effect of ABCIS on the relationship between contextual factors and organizational performance. However, the present study proposes a complex model to examine both the direct and indirect relationships between contingency factors, ABCIS and organizational performance, and it validates a model with multiple contingency factors which was made possible with help of multivariate statistical package such as the PLS3-SEM. Therefore, the use of PLS3-SEM avails this study to contribute methodologically to the budding literature of contingency-based study.

Finally, it has been recommended by Govindarajan (1988) that contingency-based studies should be designed to consider both Cartesian approach and Configuration approach in order to provide a clear and complementary information of fits between contextual variables, strucutral vriables and organizational perfroamnce. However, not many previous contingencies-based studies have been able to heed such call (Otley, 2016) mainly because they are limited to adopt only one enquiry approach because of the statistical technique available to them. Therefore, this study contributes methodologically by using a PLS-SEM which is a multivariate statistical technique and enables the assessment of both individual and combined effects of contingency factors on ABCIS and organizational performance in one model. The individual and the combined effects conform with the Cartisean and Configuration approach of the

contigency theory. Hence, this study justifies the contribution of PLS-SEM to the body of knowledge of contingency-based studies

5.5 Limitations of the Study

Even though all the highlighted objectives of this study are achieved through the analysis presented above, there are some limitations which are observed. The foremost limitation of this study is the nature of its design. Due to the use of the cross-sectional survey approach, there is no room for causal inferences to be made from the population of this study. Thus, the cross-sectional nature of data collection provides a static perspective on the effect of contingency variables on ABC implementation and organizational performance.

Additionally, the implementation of ABC and organizational performance in this study were examined using self-report measures which is associated with common method variance (Podsakoff et al, 2003). Although an attempt was made to reduce common method variance by ensuring anonymity and improving scale items, the possibility that participants in this study might have under or over reported their rate of ABC implementation and organizational performance in the questionnaire cannot be ignored. Further, since this research used the manufacturing organization as the unit of analysis, only one respondent was selected from each company. The responses given by such an individual respondent only represent his/her opinion and not necessarily the actual fact. Added to that, the respondents hold different positions such as CFO, Financial Controller and Financial Manager. Thus, their different responsibilities and nature of work could have shaped their opinions separately.

Consequently, their perceptions of contingency factors, ABCIS and organizational performance might not be complete or valid.

In addition, the generalization of the results of this study may be limited. This is because the respondents in this study are only drawn from the companies who have implemented ABC systems. In other words, this might not provide adequate representation of the companies who are just adopting or planning to adopt ABC systems. Also, the study only makes use of the ABC system and does not consider the effectiveness of other MAS techniques such as balanced scorecard and target costing that may be useful in this regard. At the empirical level, this research is limited to the Iraqi manufacturing sector and it is also limited to large companies only. Thus, the results may not be generalizable to small and medium companies and other sectors.

Finally, the R-Squares which was explained by contingency variables on ABCIS is 58.1% and on that of organizational performance is 59.9%. This indicates that, the contingency variables understudied in this research could not explain more than average variance on both ABCIS and organizational performance. Hence, there are possibilities other contingency variables can explain both ABCIS and organizational performance.

5.6 Recommendations for Future Study

Based on the limitations highlighted above, the following recommendations are proffered for future studies. Firstly, with regards to the research design adopted in this study, it is recommended that a longitudinal design which could allow the measurement of ABCIS and organizational performance over a longer period of time

needs to be carried out. This will enable the measuring of the study variables at a different levels of ABC implementation.

In addition, other measures than self-report could be used to measure ABCIS and organizational performance through panel data to extract a more objective record of ABC functionality and organizational performance ratio. Furthermore, future studies could accommodate both the implementation levels of ABC and the use of some other MAS practices (such as balanced scorecard and target costing) and their joint effects on organizational performance. Also, future researchers are expected to employ an experimental research in order to mitigate the limitation of gathering the opinion of respondents.

Finally, since only 58.1% and 59.9% variance was explained for both ABCIS and organizational performance, future studies can consider other contingency factors such knowledge, organizational life cycle and interdependence that could also influence the implementation of ABC and organizational performance. In addition, future studies may replicate this study in other sector and in small and medium size manufacturing companies.

5.7 Conclusion

The broad objectives of this study are to examine the effect of contingency factors on ABCIS and organizational performance. Also, this study determines the effect of ABCIS on organizational performance. In addition, the mediating role of ABCIS on the relationship between contingency variables such as environmental uncertainty, market orientation, competitive strategies, organizational structures, IT and

organizational performance. These objectives are achieved through the findings reported in this study. In specific, this study revealed that environmental uncertainty, market orientation, cost leadership strategy, vertical decentralized structure and IT have significant and positive effects on ABCIS. However, this study could not establish significant positive effects of differentiation strategy and horizontal decentralized structure on ABCIS. Also, this study demonstrates that ABCIS, cost leadership strategy, vertical decentralized structure and IT have significant and positive effects on organizational performance. Meanwhile, this study could not demonstrate the significant positive effect of environmental uncertainty, market orientation, differentiation strategy and horizontal decentralized structure on organizational performance. In addition, this study revealed that ABCIS significantly mediates the relationship between environmental uncertainty, market orientation, cost leadership strategy, differentiation strategy, IT and organizational performance. Meanwhile, the mediating effect of ABCIS is not significant on the relationship between decentralized organizational structures (both vertical and horizontal) and organizational performance. The results also support the notion of a combined effect of contingencies on ABCIS and organizational performance. Finally, the results of this study show that different conditions are associated with ABC success at different levels of implementation.

REFERENCES

Abdel-Kader, M., & Luther, R. (2006). Management accounting practices in the British food and drinks industry. *British Food Journal, 108*(5), 336-357.

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 Emam, H. A. (2006). The effect of organizational structure on the effectiveness of banking organizations. *Managerial Studies Journal, 1*(1), 103-126.

Abdul Majid, J., & Sulaiman, M. (2008). Implementation of activity-based costing in Malaysia: A case study of two companies. *Asian Review of Accounting, 16*(1), 39-55.

Abdul Rasid, S. Z. A., Abdul Rahman, A. R. A., Ismail, W. K. W., Osman, M. H. M., & Amin, M. (2010). The mediating effect of management accounting systems on the relationships between contextual variables and organizational performance. In *Global Business and Social Science Research Conference,* China.

Abdullah N. Y. (2013). *Examine the availability of the basic requirements of the application of activity basied costing (ABC) system*. Unpublished M.Sc.Degree in Accounting., Basra University, Iraq.

Abdullah, Q. M. (2012). The importance of using activity-based costing accounting (ABC) system in the Iraqi industrial companies: An empirical study. *Al muthana Journal Of Administrative &Economics Science, 2*(2), 152-183.

Abernethy, M. A., & Bouwens, J. (2005). Determinants of accounting innovation implementation. *Abacus, 41*(3), 217-240.

Abernethy, M. A., & Guthrie, C. H. (1994). An empirical assessment of the "fit" between strategy and management information system design. *Accounting & Finance, 34*(2), 49-66.

Acquaah, M., & Yasai-Ardekani, M. (2008). Does the implementation of a combination competitive strategy yield incremental performance benefits? A new perspective from a transition economy in Sub-Saharan Africa. *Journal of business research, 61*(4), 346-354.

Afthanorhan, W. M. A. B. W. (2013). A comparison of partial least square structural equation modeling (PLS-SEM) and covariance based structural equation modeling (CB-SEM) for confirmatory factor analysis. *International Journal of Engineering Science and Innovative Technology, 2*(5), 198-205.

Agbejule, A. (2006). Motivation for activity-based costing implementation: Administrative and institutional influences. *Journal of Accounting & Organizational Change, 2*(1), 42-73.

Agndal, H., & Nilsson, U. (2007). Activity-based costing: Effects of long-term buyer-supplier relationships. *Qualitative Research in Accounting & Management, 4*(3), 222-245.

Agyapong, A., & Boamah, R. B. (2013). Business strategies and competitive advantage of family hotel businesses in Ghana: The role of strategic leadership. *Journal of Applied Business Research, 29*(2), 531.

Aharonson, B. S., Baum, J. A., & Feldman, M. P. (2007). Desperately seeking spillovers? Increasing returns, industrial organization and the location of new entrants in geographic and technological space. *Industrial and Corporate Change, 16*(1), 89-130.

Ahmad, K., & Zabri, S. M. (2015). Factors explaining the use of management accounting practices in Malaysian medium-sized firms. *Journal of Small Business and Enterprise Development, 22*(4), 762-781.

Aiken, M., & Hage, J. (1971). The organic organization and innovation. *Sociology, 5*(1), 63-82.

Ajibolade, S. (2013b). Management accounting systems design and company performance in Nigerian manufacturing companies: A contingency theory perspective. *British Journal of Arts and Social Sciences, 14*(2), 228-244.

Ajibolade, S. O. (2013a). Drivers of choice of management accounting system designs in Nigerian manufacturing companies. *International Journal of Business and Social Research, 3*(9), 45-57.

Al-Ani, T. M., & Abdullah, A. W. (2014). Assessing the efficiency economic performance of the Diyala deneral company for electrical industries for the period (2000-2010). *Journal of Economics and Administrative Sciences, 20*(75), 242-275.

Al-Areda, M. M. (2015). *The systems integration responsibility accounting and activity-based costing (ABC) for control and performance evaluation.* Unpublished M.Sc.Degree in accounting., Basra University, Iraq.

Alaudin, A., Abdullah, Z., & Ibrahim, M. (2017). Leadership change: A case study analysis of strategy and control systems development. In SHS Web of Conferences (Vol. 34, p. 08005). EDP Sciences.

Alazzawi, K. O. (2009). The reality of the Iraqi private sector and ways to promote it. *Journal of college Administration & Economics for Economic, Administration & Financial Studies, 322*(1), 277-322

Albadvi, A., Keramati, A., & Razmi, J. (2007). Assessing the impact of information technology on firm performance considering the role of intervening variables:

Organizational infrastructures and business processes reengineering. *International Journal of Production Research, 45*(12), 2697-2734.

Al-Basteki, H., & Ramadan, S. (1998). A survey of activity-based costing practices in Bahraini manufacturing firms. *Economics and Administration, 11*(1), 17-29.

Albieaj, Q. M., & Alkraawi, N. (2014). The integration between (ABC - JIT) systems to reduce costs in industrial companies: A case study. *Baghdad College of Economic Sciences University,* (39), 365-394.

Albu, N., & Albu, C. N. (2012). Factors associated with the adoption and use of management accounting techniques in developing countries: The case of Romania. *Journal of International Financial Management & Accounting, 23*(3), 245-276.

Alcouffe, S. (2002). *Publication of the ABC in france: An empirical study using the theory of the spread of innovations.* Paper presented at the Technology and Information Management: Challenges and implications of accounting and control and audit, France.

Al-fadhel, M. M., & Al-Chlaihawi, M. A. (2015). Evaluation of organizational performance based on a contingency theory. *Qadisiyah Journal of Economic and Administrative Sciences, 17*(2), 131-156.

Al-Ghaban, T. S., & Hussain , N. S. (2009). Integration between balanced scorecard and benchmarking for evaluating the strategic performance of the economic organizations. *Baghdad College of Economic Sciences University,* (22), 299-388.

Al-Hroot, Y. A. K., Mssadeh, A. A. D., & Amireh, M. S. L. (2015). The effect of activity-based costing on companies financial performance: A study among Jordanian industrial shareholding companies. *European Journal of Business and Management, 7*(35), 146-153.

Ali, S., Malo-Alain, A. M., & Haque, M. I. (2013). Impact of activity-based costing on firms' performance in Saudi Arabia. *Journal of American Science, 9*(9), 597-606.

Al-Janabi, A. K., & Al-Nuaimi, N. S. (2014). Integration of e-commerce, information technology and its impact on reducing costs to make pricing decisions. *Journal of Economics and Administrative Sciences, 20*(77), 389-414.

Al-Janabi, H, A. (2013). Some indicators of the economic productivity in the industrial sector in Iraq. *Economics and Administrative Sciences, 90*(70), 249-267.

Al-Khafaji, O. I., & Al-Azzawi, F. R. (2015). Diagnosing the information technology (IT) capabilities and its effect to achieving a competitive superiority: Analytical research in Baghdad soft drinks company. *Journal of Economics and Administrative Sciences, 21*(81), 190-230.

Al-Khalidy, S. H. (2004). *Using ABC system for assigning and allocating marketing costs and directing pricing decisions: An applied study in oil products*

distribution company. Unpublished M.Sc.Degree in Accounting., Baghdad University, Iraq.

Al-Kubaisi, S. A. D., & Dawood, F. S. (2015). The use of management principles to Fayol in the implementation of the porter competitive strategies. *Journal of Economics and Administrative Sciences, 21*(82), 196-237.

Al-Lami, G. D., & Ismael, M. M. (2011). Competitive marketing under strategic environmental uncertainty: An applied study. *Tanmiat Al-Rafidain, 33*(105), 77-97.

Allawi, K. M. (2009). *Evaluating the performance of responsibility centers using activity-based: An empirical study.* (Unpublished M.Sc. Degree in Accounting), Baghdad University, Iraq.

Allawi, K. M. (2015). Measure the performance of industrial companies according to the balanced scorecard. *Al muthana Journal Of Administrative &Economics Science, 5*(2), 137-154.

Allen, R. S., & Helms, M. M. (2006). Linking strategic practices and organizational performance to Porter's generic strategies. *Business Process Management Journal, 12*(4), 433-454.

Allison, P. D. (1999). *Multiple regression: A primer*. Pine Forge Press.

Almaemuri, M. H. (2014). Ways to advance economic reality in Iraq. *AL-anbar University Journal of Economic and Administration Sciences, 6*(12), 126-142.

Al-Musawi, S. K. (2013). Economic reform and promote the development of the private sector in Iraq. *Iraqi Journal of Administrative Sciences, 9*(36), 214-229.

Al-Najar, Y. G., & Kadhim, R. J. (2017). The reality of the manufacturing industry in Iraq and the strategies to promote it: A vision for the future. *Baghdad College of Economic Sciences University, 50*(1), 1-26.

Al-Nuaimi, S. I. M., Mohamed, R., & Alekam, J. M. E. (2017). The link between information technology, activity-based costing implementation and organizational performance. *International Review of Management and Marketing, 7*(1), 452-457.

Al-Omiri, M., & Drury, C. (2007). A survey of factors influencing the choice of product costing systems in UK organizations. *Management Accounting Research, 18*(4), 399-424.

Al-Robaaiy, M. S. (2018). Contribution of some managerial accounting techniques to achieve market share requirements: An applied research. *Accounting and Financial Studies Journal,* 13(42), 249-275.

Al-Sayed, M., & Dugdale, D. (2016). Activity-based innovations in the UK manufacturing sector: Extent, adoption process patterns and contingency factors. *The British Accounting Review, 48*(1), 38-58.

Al-Shabani, S. I., & Al-Hadede, H. O. (2010). The use of value chain, as one of the modern strategies, for cost management to reduce cost: An applied study. *Tanmiat Al-Rafidain, 32*(97), 65-97.

Al-Shawi, A. N., & Mohamed, A. A. (2011). The state's role in supporting the industrial sector in Iraq: An empirical study. *Journal of Administration and Economics,* (89), 1-13.

Alshbiel, S. O. (2017). The mediating role of performance measurement systems in the relationship between contingent variables and organizational performance in Jordanian financial companies: A contingency perspective. *Al-Manarah, 23*(3), 517-544.

Alsoboa, S. S., & Aldehayyat, J. S. (2013). The impact of competitive business strategies on managerial accounting techniques: A study of Jordanian public industrial companies. *International Journal of management, 30*(2), 545-555.

Al-Tumimi, K. G. (2006). The use of activity-based costing in measuring the costs of quality in a Ninavah factory of Soft Drinks. *Tanmiat Al-Rafidain, 28*(82), 241-260

Al-Zaidy, M. F. (2010). The challenges facing the application of modern management accounting techniques studying for the opinion a sample of accountants in the city of mosul. *Tanmiat Al-Rafidain, 32*(97), 311-334.

Amir, A. M., Auzair, S. M., Maelah, R., & Ahmad, A. (2012). Determination of educational cost in Public University – A modified activity-based approach. *World journal of social sciences, 2*(2), 34-48.

Amoako-Gyampah, K., & Acquaah, M. (2008). Manufacturing strategy, competitive strategy and firm performance: An empirical study in a developing economy environment. *International Journal of Production Economics, 111*(2), 575-592.

Anderson, S. W. (1995). A framework for assessing cost management system changes: The case of activity-based costing implementation at general motors. *Journal of Management Accounting Research, 7*, 1-15.

Anderson, S. W., & Young, S. M. (1999). The impact of contextual and process factors on the evaluation of activity-based costing systems. *Accounting, organizations and society, 24*(7), 525-559.

Anderson, S. W., Hesford, J. W., & Young, S. M. (2002). Factors influencing the performance of activity-based costing teams: A field study of ABC model development time in the automobile industry. *Accounting, organizations and society, 27*(3), 195-211.

Angelis, D. I., & Lee, C. Y. (1996). Strategic investment analysis using activity-based costing concepts and analytical hierarchy process techniques. *International Journal of Production Research, 34*(5), 1331-1345.

Aragon-Correa, J. A., & Sharma, S. (2003). A contingent resource-based view of proactive corporate environmental strategy. *Academy of management review, 28*(1), 71-88.

Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of marketing research, 14*, 396-402.

Arnaboldi, M., & Lapsley, I. (2005). Activity-based costing in healthcare: A UK case study. *Research in healthcare financial management, 10*(1), 61.

Askarany, D. (2011). Factors affecting organizational performance. *Paradigms: A Research Journal of Commerce, Economics and Social Scieneces, 5*(1), 14-31.

Askarany, D., & Yazdifar, H. (2012). An investigation into the mixed reported adoption rates for ABC: Evidence from Australia, New Zealand and the UK. *International Journal of Production Economics, 135*(1), 430-439.

Askarany, D., Smith, M., & Yazdifar, H. (2007a). Attributes of innovation and the implementation of managerial tools: An activity-based management technique. *International Journal of Business and Systems Research, 1*(1), 98-114.

Askarany, D., Smith, M., & Yazdifar, H. (2007b). Technological innovations, activity-based costing and satisfaction. *Journal of accounting-Business & management, 14*, 53-63.

Askarany, D., Yazdifar, H., & Askary, S. (2010). Supply chain management, activity-based costing and organisational factors. *International Journal of Production Economics, 127*(2), 238-248.

Atkinson, A. A., Balakrishnan, R., Booth, P., & Cote, J. M. (1997). New directions in management accounting research. *Journal of Management Accounting Research, 9*, 79-108.

Atuahene-Gima, K. (1995). An exploratory analysis of the impact of market orientation on new product performance. *Journal of product innovation management, 12*(4), 275-293.

Auzair, S. (2011). The effect of business strategy and external environment on management control systems: A study of Malaysian hotels. *International Journal of Business and Social Science, 2*(13).

Auzair, S. (2015). A configuration approach to management control systems design in service organizations. *Journal of Accounting & Organizational Change, 11*(1), 47-72.

Auzair, S. M., & Langfield-Smith, K. (2005). The effect of service process type, business strategy and life cycle stage on bureaucratic MCS in service organizations. *Management Accounting Research, 16*(4), 399-421.

Auzair, S., Amiruddin, R., Abdul Majid, A., & Maelah, R. (2013). Linking business strategy to management accounting: A study in Malaysian service organizations. *Jurnal Pengurusan, 37*, 45-52.

Ax, C., Greve, J., & Nilsson, U. (2008). The impact of competition and uncertainty on the adoption of target costing. *International Journal of Production Economics, 115*(1), 92-103.

Babbie, E. R. (2015). *The practice of social research* (13 ed.). WADSWORTH CENGAGE Learning: Nelson Education.

Baines, A., & Langfield-Smith, K. (2003). Antecedents to management accounting change: A structural equation approach. *Accounting, organizations and society, 28*(7), 675-698.

Baird, K., Harrison, G., & Reeve, R. (2004). Adoption of activity management practices: A note on the extent of adoption and the influence of organizational and cultural factors. *Management Accounting Research, 15*(4), 383-399.

Baird, K., Harrison, G., & Reeve, R. (2007). Success of activity management practices: The influence of organizational and cultural factors. *Accounting & Finance, 47*(1), 47-67.

Baker, W. E., & Sinkula, J. M. (1999). The synergistic effect of market orientation and learning orientation on organizational performance. *Journal of the academy of marketing science, 27*(4), 411-427.

Banker, R. D., & Potter, G. (1993). Economic implications of single cost driver systems. *Journal of Management Accounting Research, 5*, 15-32.

Banker, R. D., Bardhan, I. R., & Chen, T.-Y. (2008). The role of manufacturing practices in mediating the impact of activity-based costing on plant performance. *Accounting, organizations and society, 33*(1), 1-19.

Banker, R. D., Chang, H., & Kao, Y. C. (2002). Impact of information technology on public accounting firm productivity. *Journal of Information Systems, 16*(2), 209-222.

Barlett, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information technology, learning, and performance journal, 19*(1), 43-50.

Barua, A., Konana, P., Whinston, A. B., & Yin, F. (2004). Assessing internet enabled business value: An exploratory investigation. *MIS Quarterly, 28*(4), 585-620.

Barua, A., Kriebel, C. H., & Mukhopadhyay, T. (1995). Information technologies and business value: An analytic and empirical investigation. *Information Systems Research, 6*(1), 3-23.

Bastian, E., & Muchlish, M. (2012). Perceived environment uncertainty, business strategy, performance measurement systems and organizational performance. *Procedia-Social and Behavioral Sciences, 65*, 787-792.

Bauer, C., & Colgan, J. (2001). Planning for electronic commerce strategy: An explanatory study from the financial services sector. *Logistics Information Management, 14*(1/2), 24-32.

Baxendale, S. J. (2001). Activity-based costing for the small business: A primer. *Business Horizons, 44*(1), 61-68.

Baykasoglu, A., & Kaplanoglu, V. (2008). Application of activity-based costing to a land transportation company: A case study. *International Journal of Production Economics, 116*(2), 308-324.

Beheshti, H. M. (2004). Gaining and sustaining competitive advantage with activity-based cost management system. *Industrial Management & Data Systems, 104*(5), 377-383.

Bellis-Jones, R. (1989). Customer profitability analysis. *Management Accounting, 67*(2), 26-28.

Bennett, R. (2005). Competitive environment, market orientation, and the use of relational approaches to the marketing of charity beneficiary services. *Journal of Services Marketing, 19*(7), 453-469.

Bergeron, H., & Bélaïd, Z. (2006). Pratiques de calcul des coûts, utilisation de l'information et performance dans les PME manufacturières. *Communication au XVI congrès de l'Association Française de Comptabilité*.

Bernard, H. R. (2006). *Research methods in anthropology: Qualitative and quantitative approaches*: Rowman Altamira.

Berry, A. J., Coad, A. F., Harris, E. P., Otley, D. T., & Stringer, C. (2009). Emerging themes in management control: A review of recent literature. *The British Accounting Review, 41*(1), 2-20.

Bharadwaj, A. S. (2000). A resource-based perspective on information technology capability and firm performance: An empirical investigation. *MIS Quarterly, 24*(1), 169-196.

Bhimani, A., Gosselin, M., & Ncube, M. (2005). Strategy and activity-based costing: A cross national study of process and outcome contingencies. *International Journal of Accounting, Auditing and Performance Evaluation, 2*(3), 187-205.

Bisbe, J., Batista-Foguet, J. M., & Chenhall, R. (2007). Defining management accounting constructs: A methodological note on the risks of conceptual misspecification. *Accounting, organizations and society, 32*(7), 789-820.

Bititci, U., Garengo, P., Dörfler, V., & Nudurupati, S. (2012). Performance measurement: Challenges for tomorrow. *International Journal of Management Reviews, 14*(3), 305-327.

Bjørnenak, T. (1997). Diffusion and accounting: The case of ABC in Norway. *Management Accounting Research, 8*(1), 3-17.

Boehe, D. M., & Cruz, L. B. (2010). Corporate social responsibility, product differentiation strategy and export performance. *Journal of Business ethics, 91*(2), 325-346.

Bourne, M., Mills, J., Wilcox, M., Neely, A., & Platts, K. (2000). Designing, implementing and updating performance measurement systems. *International journal of operations & production management, 20*(7), 754-771.

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.

Bouwens, J., & Abernethy, M. A. (2000). The consequences of customization on management accounting system design. *Accounting, organizations and society, 25*(3), 221-241.

Boyer, K. K., Leong, G. K., Ward, P. T., & Krajewski, L. J. (1997). Unlocking the potential of advanced manufacturing technologies. *Journal of operations management, 15*(4), 331-347.

Brännlund, R., Färe, R., & Grosskopf, S. (1995). Environmental regulation and profitability: An application to Swedish pulp and paper mills. *Environmental and resource Economics, 6*(1), 23-36.

Braz, R. G. F., Scavarda, L. F., & Martins, R. A. (2011). Reviewing and improving performance measurement systems: An action research. *International Journal of Production Economics, 133*(2), 751-760.

Brierley, J. A. (2008). Toward an understanding of the sophistication of product costing systems. *Journal of Management Accounting Research, 20*(s1), 61-78.

Brierley, J. A. (2009). An examination of the factors influencing the level of consideration for activity-based costing. *International Journal of Business and Management, 3*(8), 58-67.

Brierley, J. A. (2011). Why the proper definition of the ABC matters: A note. *Advances in Management Accounting, 19*, 225-249.

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., & Hong, C. (1999). Activity-based costing systems and incremental costs. *Management Accounting Research, 10*(1), 39-60.

Brown, D. A., Booth, P., & Giacobbe, F. (2004). Technological and organizational influences on the adoption of activity-based costing in Australia. *Accounting & Finance, 44*(3), 329-356.

Bruggeman, W., & Slagmulder, R. (1995). The impact of technological change on management accounting. *Management Accounting Research, 6*(3), 241-252.

Bruns, J., & Kaplan, R. S. (1987). *Accounting & Management: Field Study Perspectives*: Harvard Business Press.

Brynjolfsson, E., & Hitt, L. M. (1998). Beyond the productivity paradox. *Communications of the ACM, 41*(8), 49-55.

Bstieler, L. (2005). The moderating effect of environmental uncertainty on new product development and time efficiency. *Journal of product innovation management, 22*(3), 267-284.

Buchko, A. A. (1994). Conceptualization and measurement of environmental uncertainty: An assessment of the Miles and Snow perceived environmental uncertainty scale. *Academy of management journal, 37*(2), 410-425.

Busi, M., & Bititci, U. S. (2006). Collaborative performance management: Present gaps and future research. *International Journal of Productivity and Performance Management, 55*(1), 7-25.

Byrne, B. M., & Van de Vijver, F. J. (2010). Testing for measurement and structural equivalence in large-scale cross-cultural studies: Addressing the issue of nonequivalence. *International Journal of Testing, 10*(2), 107-132.

Byrne, S. (2011). What determines ABC success in mature sites?. *Journal of Accounting & Organizational Change, 7*(3), 259-277.

Byrne, S., Stower, E., & Torry, P. (2009). Is ABC adoption a success in Australia?. *Journal of Applied Management Accounting Research, 7*(1), 37-52.

Cadez, S., & Guilding, C. (2008). An exploratory investigation of an integrated contingency model of strategic management accounting. *Accounting, organizations and society, 33*(7), 836-863.

Cagwin, D., & Bouwman, M. J. (2002). The association between activity-based costing and improvement in financial performance. *Management Accounting Research, 13*(1), 1-39.

Cardoş, I. R., & Cardoş, V. D. (2012). An overview on the adoption and implementation of activity-based costing in practice. *Romanian Journal of Economics, 35*(2), 185-200.

Cardoş, I. R., & Pete, S. (2011). Activity-based costing (ABC) and activity-based management (ABM) implementation– Is this the solution for organizations to gain profitability?. *Romanian Journal of Economics, 32*(1), 151-168.

CBI. (2014). Anuual Economic Report. *Available at; http://www.cbi.iq/documents/AnnualEconomic_report%202014_f.pdf*

Celuch, K. G., Kasouf, C. J., & Peruvemba, V. (2002). The effects of perceived market and learning orientation on assessed organizational capabilities. *Industrial marketing management, 31*(6), 545-554.

Cerioli, A. (2010). Multivariate outlier detection with high-breakdown estimators. *Journal of the American Statistical Association*, *105*(489), 147-156.

Chae, H. C., Koh, C. E., & Prybutok, V. R. (2014). Information technology capability and firm performance: Contradictory findings and their possible causes. *MIS Quarterly, 38*(1), 305-326.

Chan, Y. C. L. (1993). Improving hospital cost accounting with activity-based costing. *Health care management review, 18*(1), 71-77.

Chapman, C. S. (1997). Reflections on a contingent view of accounting. *Accounting, organizations and society, 22*(2), 189-205.

Chapman, C. S. (2005). Not because they are new: Developing the contribution of enterprise resource planning systems to management control research. *Accounting, organizations and society, 30*(7), 685-689.

Chapman, C. S., & Kihn, L. A. (2009). Information system integration, enabling control and performance. *Accounting, organizations and society, 34*(2), 151-169.

Charaf, K., & Bescos, P. L. (2013). The role of organizational and cultural factors in the adoption of activity-based costing: The case of Moroccan Firms. *Accounting and Management Information Systems, 12*(1), 4-21.

Charles, S. L., & Hansen, D. R. (2008). An evaluation of activity-based costing and functional-based costing: A game-theoretic approach. *International Journal of Production Economics, 113*(1), 282-296.

Chea, A. (2011). Activity-based costing system in the service sector: A strategic approach for enhancing managerial decision making and competitiveness. *International Journal of Business and Management, 6*(11), 3-10.

Chen, C. J., & Huang, J. W. (2007). How organizational climate and structure affect knowledge management—The social interaction perspective. *International journal of information management, 27*(2), 104-118.

Chen, Y., & Zhu, J. (2004). Measuring information technology's indirect impact on firm performance. *Information Technology and Management, 5*(1-2), 9-22.

Chenhall, R. (2006a). The contingent design of performance measures, In A. Bhimani (Ed.). *Contemporary issues in management accounting.*(Oxford University Press, Oxford,), 92-116.

Chenhall, R. H. (1997). Reliance on manufacturing performance measures, total quality management and organizational performance. *Management Accounting Research, 8*(2), 187-206.

Chenhall, R. H. (2003). Management control systems design within its organizational context: Findings from contingency-based research and directions for the future. *Accounting, organizations and society, 28*(2), 127-168.

Chenhall, R. H. (2004). The role of cognitive and affective conflict in early implementation of activity-based cost management. *Behavioral research in accounting, 16*(1), 19-44.

Chenhall, R. H. (2006b). Theorizing contingencies in management control systems research. *Handbooks of Management Accounting Research, 1*, 163-205.

Chenhall, R. H., & Langfield-Smith, K. (1998a). Adoption and benefits of management accounting practices: An Australian study. *Management Accounting Research, 9*(1), 1-19.

Chenhall, R. H., & Langfield-Smith, K. (1998b). 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., & Morris, D. (1986). The impact of structure, environment, and interdependence on the perceived usefulness of management accounting systems. *Accounting Review, 61*, 16-35.

Chenhall, R. H., Kallunki, J.-P., & Silvola, H. (2011). Exploring the relationships between strategy, innovation, and management control systems: The roles of social networking, organic innovative culture, and formal controls. *Journal of Management Accounting Research, 23*(1), 99-128.

Chi, T. (2010). Corporate competitive strategies in a transitional manufacturing industry: An empirical study. *Management decision, 48*(6), 976-995.

Chia, Y. M. (1995). Decentralization, management accounting system (MAS) information characteristics and their interaction effects on managerial performance: A Singapore study. *Journal of Business Finance & Accounting, 22*(6), 811-830.

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., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. *Information systems research, 14*(2), 189-217.

Choe, J. M. (2003). The effect of environmental uncertainty and strategic applications of IS on a firm's performance. *Information & Management, 40*(4), 257-268.

Choe, J. M. (2004). The relationships among management accounting information, organizational learning and production performance. *The Journal of Strategic Information Systems, 13*(1), 61-85.

Chong, V. K., & Cable, R. (2002). A study on the implementation of an activity-based costing (ABC) system in an Australian Oil and Gas company. *Asian Review of Accounting, 10*(2), 81-99.

Chong, V. K., & Chong, K. M. (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.

Chongruksut, W., & Brooks, A. (2005). The adoption and implementation of activity-based costing in Thailand. *Asian Review of Accounting, 13*(2), 1-17.

Cinquini, L., & Mitchell, F. (2005). Success in management accounting: Lessons from the activity-based costing/management experience. *Journal of Accounting & Organizational Change, 1*(1), 63-77.

Cinquini, L., & Tenucci, A. (2010). Strategic management accounting and business strategy: A loose coupling?. *Journal of Accounting & Organizational Change, 6*(2), 228-259.

Clarke, P. J., Hill, N. T., & Stevens, K. (1999). Activity-based costing in Ireland: Barriers to, and opportunities for, change. *Critical perspectives on Accounting, 10*(4), 443-468.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hilsdale. NJ: Lawrence Earlbaum Associates.

Cokins, G. (1997). If activity-based costing is the answer, what is the question?. *IIE Solutions, 29*(8), 38-43.

Cooper, D. R., Schindler, P. S., & Sun, J. (2014). *Business research methods* (10 ed.). New York: McGraw-Hill.

Cooper, R. B., & Zmud, R. W. (1990). Information technology implementation research: A technological diffusion approach. *Management science, 36*(2), 123-139.

Cooper, R., & Kaplan, R. S. (1988). Measure costs right: Make the right decisions. *Harvard business review, 66*(5), 96-103.

Cooper, R., & Kaplan, R. S. (1991). Profit priorities from activity-based costing. *Harvard business review, 69*(3), 130-135.

Cooper, R., & Kaplan, R. S. (1992). Activity-based systems: Measuring the costs of resource usage. *Accounting horizons, 6*(3), 1-13.

Cotton, W. D., Jackman, S. M., & Brown, R. A. (2003). Note on a New Zealand replication of the Innes et al. UK activity-based costing survey. *Management Accounting Research, 14*(1), 67-72.

Covaleski, M. A., Dirsmith, M. W., & Samuel, S. (1996). Managerial accounting research: The contributions of organizational and sociological theories. *Journal of Management Accounting Research, 8*, 1-36.

Covin, J. G., & Slevin, D. P. (1990). New venture strategic posture, structure, and performance: An industry life cycle analysis. *Journal of business venturing, 5*(2), 123-135.

Creswell, J. W. (2009). *Qualitative, Quantitative, and mixed methods approaches*. London: Sage Publications, Inc.

Csaszar, F. A. (2012). Organizational structure as a determinant of performance: Evidence from mutual funds. *Strategic Management Journal, 33*(6), 611-632.

CSO. (2015). Statistics of large industrial installations (cumulative) annual 2015. *Available at; http://www.cosit.gov.iq*.

Čudanov, M., Jaško, O., & Jevtić, M. (2009). Influence of information and communication technologies on decentralization of organizational structure. *Computer science and information systems, 6*(1), 93-109.

Dalton, D. R., Todor, W. D., Spendolini, M. J., Fielding, G. J., & Porter, L. W. (1980). Organization structure and performance: A critical review. *Academy of management review, 5*(1), 49-64.

Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of management journal, 34*(3), 555-590.

Das, S. R., & Joshi, M. P. (2007). Process innovativeness in technology services organizations: Roles of differentiation strategy, operational autonomy and risk-taking propensity. *Journal of operations management, 25*(3), 643-660.

Davern, M. J., & Kauffman, R. J. (2000). Discovering potential and realizing value from information technology investments. *Journal of Management Information Systems, 16*(4), 121-143.

Davidsson, P., Delmar, F., & Wiklund, J. (2006). *Entrepreneurship and the Growth of Firms*. UK: Edward Elgar.

Davis, D., Morris, M., & Allen, J. (1991). Perceived environmental turbulence and its effect on selected entrepreneurship, marketing, and organizational characteristics in industrial firms. *Journal of the academy of marketing science, 19*(1), 43-51.

Dawes, J. (2000). Market orientation and company profitability: Further evidence incorporating longitudinal data. *Australian journal of management, 25*(2), 173-199.

Day, G. (1999). Aligning organizational structure to the market. *Business Strategy Review, 10*(3), 33-46.

Day, G. S. (1994). The capabilities of market-driven organizations. *The Journal of marketing, 58*(4), 37-52.

Day, G. S., & Wensley, R. (1988). Assessing advantage: a framework for diagnosing competitive superiority. *The Journal of Marketing, 55*(2), 1-20.

Dechow, N., Granlund, M., & Mouritsen, J. (2006). Management control of the complex organization: Relationships between management accounting and information technology. *Handbooks of Management Accounting Research, 2*, 625-640.

Dedrick, J., Gurbaxani, V., & Kraemer, K. L. (2003). Information technology and economic performance: A critical review of the empirical evidence. *ACM Computing Surveys (CSUR), 35*(1), 1-28.

Dehayes, D. W., & Lovrinic, J. G. (1994). Activity-based costing model for assessing economic performance. *New Directions for Institutional Research, 1994*(82), 81-93.

Dekker, H., & Smidt, P. (2003). A survey of the adoption and use of target costing in Dutch firms. *International Journal of Production Economics, 84*(3), 293-305.

del Brío, J. Á., Fernandez, E., & Junquera, B. (2007). Management and employee involvement in achieving an environmental action-based competitive advantage: An empirical study. *The International Journal of Human Resource Management, 18*(4), 491-522.

Delmas, M. (2001). Stakeholders and competitive advantage: the case of ISO 14001. *Production and Operations Management, 10*(3), 343-358.

Deng, F., & Smyth, H. (2013). Contingency-based approach to firm performance in construction: Critical review of empirical research. *Journal of Construction Engineering and Management, 139*(10), 1-14.

Deng, S., & Dart, J. (1994). Measuring market orientation: A multi-factor, multi-item approach. *Journal of marketing management, 10*(8), 725-742.

Dent, J. F. (1990). Strategy, organization and control: Some possibilities for accounting research. *Accounting, organizations and society, 15*(1-2), 3-25.

Desarbo, W. S., & Grewal, R. (2008). Hybrid strategic groups. *Strategic Management Journal, 29*(3), 293-317.

Dess, G. G., & Beard, D. W. (1984). Dimensions of organizational task environments. *Administrative science quarterly, 29*(1) 52-73.

Dess, G. G., & Davis, P. S. (1984). Porter's (1980) generic strategies as determinants of strategic group membership and organizational performance. *Academy of management journal, 27*(3), 467-488.

Dev, C. S., & Olsen, M. D. (1989). Environmental uncertainty, business strategy, and financial performance: An empirical study of the US lodging industry. *Hospitality Education and Research Journal, 13*(3), 171-186.

Devaraj, S., & Kohli, R. (2003). Performance impacts of information technology: Is actual usage the missing link? *Management science, 49*(3), 273-289.

Dobni, C. B., & Luffman, G. (2000). Market orientation and market strategy profiling: An empirical test of environment-behaviour-action coalignment and its performance implications. *Management decision, 38*(8), 503-522.

Donaldson, L. (2001). *The contingency theory of organizations*: Sage, Thousand Oaks.

Downey, H. K., Hellriegel, D., & Slocum Jr, J. W. (1975). Environmental uncertainty: The construct and its application. *Administrative science quarterly, 20*(4), 613-629.

Drazin, R., & Van de Ven, A. H. (1985). Alternative forms of fit in contingency theory. *Administrative science quarterly, 30*(4), 514-539.

Dropulić, I. (2013). The effect of contingency factors on management control systems: A study of manufacturing companies in Croatia. *Ekonomska istraživanja,* (1), 369-382.

Druckman, D. (2005). *Doing research: Methods of inquiry for conflict analysis*. Thousand Oaks, CA: Sage Publications, Inc.

Drury, C., & Tayles, M. (2005). Explicating the design of overhead absorption procedures in UK organizations. *The British Accounting Review, 37*(1), 47-84.

Duh, R. R., Lin, T. W., Wang, W. Y., & Huang, C. H. (2009). The design and implementation of activity-based costing: A case study of a Taiwanese textile company. *International Journal of Accounting & Information Management, 17*(1), 27-52.

Eisenhardt, K. M. (1989). Making fast strategic decisions in high-velocity environments. *Academy of management journal, 32*(3), 543-576.

Elenkov, D. S. (1997). Strategic uncertainty and environmental scanning: The case for institutional influences on scanning behavior. *Strategic Management Journal, 18*(4), 287-302.

Elhamma, A. (2015). The relationship between activity-based costing, perceived environmental uncertainty and global performance. *International Journal of Management, Accounting and Economics, 2*(1), 73-90.

Elhamma, A., & Moalla, H. (2015). Impact of uncertainty and decentralization on activity-based costing use. *International Journal of Accounting and Economics Studies, 3*(2), 148-155.

Elhamma, A., & Zhang, Y. (2013). The relationship between activity-based costing, business strategy and performance in Moroccan enterprises. *Accounting and Management Information Systems, 12*(1), 22-38.

Emblemsvåg, J. (2003). *Life-cycle costing: Using activity-based costing and Monte Carlo methods to manage future costs and risks*: John wiley & sons.

Emmanuel, C., Otley, D., & Merchant, K. (1990). *Accounting for management control* (2 ed.). London: Chapman and Hall.

Enz, C. A. (2008). Creating a competitive advantage by building resource capability the case of outback steakhouse Korea. *Cornell Hospitality Quarterly, 49*(1), 73-78.

Erdil, S., Erdil, O., & Keskin, H. (2004). The relationships between market orientation, firm innovativeness and innovation performance. *Journal of Global Business and Technology, 1*(1), 1-11.

Fadzil, F. H. B., & Rababah, A. (2012). Management accounting change: ABC adoption and implementation. *Journal of Accounting and Auditing, 2012*(2012), 1-17.

Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling.* Akron, OH: University of Akron Press.

Farhanghi, A. A., Abbaspour, A., & Ghassemi, R. A. (2013). The effect of information technology on organizational structure and firm performance: An analysis of consultant engineers firms (CEF) in Iran. *Procedia-Social and Behavioral Sciences, 81*, 644-649.

Farhood, S. B. (2005). Influence of using activity-based costing system in evaluation of performance efficincy. *Foundation of technical education, 18*(4), 70-88.

Filomena, T. P., Neto, F. J. K., & Duffey, M. R. (2009). Target costing operationalization during product development: Model and application. *International Journal of Production Economics, 118*(2), 398-409.

Fisher, C. (1996). The impact of perceived environmental uncertainty and individual differences on management information requirements: A research note. *Accounting, organizations and society, 21*(4), 361-369.

Fisher, J. (1995). Contingency-based research on management control systems: Categorization by level of complexity. *Journal of accounting literature, 14*, 24-53.

Fleming, D. M., Chow, C. W., & Chen, G. (2009). Strategy, performance-measurement systems, and performance: A study of Chinese firms. *The International Journal of Accounting, 44*(3), 256-278.

Flohr, N., Jørn, Bukh, P., Nikolaj, D., & Mols, N. P. (2000). Barriers to customer-oriented management accounting in financial services. *International Journal of Service Industry Management, 11*(3), 269-286.

Florin, P., Mitchell, R., & Stevenson, J. (1993). Identifying training and technical assistance needs in community coalitions: A developmental approach. *Health Education Research, 8*(3), 417-432.

Fornell, C., & Cha, J. (1994). Partial least squares. *Advanced methods of marketing research, 407*(3), 52-78.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of marketing research*, *18*(1) 382-388.

Fortin, A., Haffaf, H., & Viger, C. (2007). The measurement of success of activity-based costing and its determinants: A study within Canadian Federal Government. *Accounting Perspectives, 6*(3), 231-262.

Foster, G., & Swenson, D. W. (1997). Measuring the success of activity-based cost management and its determinants. *Journal of Management Accounting Research, 9*, 109-142.

Frazier, P. A., Tix, A. P., & Barron, K. E. (2004). Testing moderator and mediator effects in counseling psychology research. *Journal of counseling psychology*, *51*(1), 115-134.

Frey, K., & Gordon, L. A. (1999). ABC, strategy and business unit performance. *International Journal of Applied Quality Management, 2*(1), 1-23.

Fry, L. W., & Smith, D. A. (1987). Congruence, contingency, and theory building. *Academy of Management Review, 12*(1), 117-132.

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.

Garrigós-Simón, F. J., Palacios Marqués, D., & Narangajavana, Y. (2005). Competitive strategies and performance in Spanish hospitality firms. *International Journal of Contemporary Hospitality Management, 17*(1), 22-38.

Geisser, S. (1975). The predictive sample reuse method with applications. *Journal of the American statistical Association*, *70*(350), 320-328.

Gerdin, J. (2005a). The impact of departmental interdependencies and management accounting system use on subunit performance. *European Accounting Review, 14*(2), 297-327.

Gerdin, J. (2005b). 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), 303-326.

Germain, R. (1996). The role of context and structure in radical and incremental logistics innovation adoption. *Journal of business research, 35*(2), 117-127.

Ghalayini, A. M., & Noble, J. S. (1996). The changing basis of performance measurement. *International journal of operations & production management, 16*(8), 63-80.

Gilley, K. M., McGee, J. E., & Rasheed, A. A. (2004). Perceived environmental dynamism and managerial risk aversion as antecedents of manufacturing outsourcing: The moderating effects of firm maturity. *Journal of Small Business Management, 42*(2), 117-133.

Gímzauskiené, E., & Kloviené, L. (2008). Implementing activity-based management: The role of organizational values. *Social research, 4*(14), 26-35.

Gladson Nwokah, N. (2008). Strategic market orientation and business performance: The study of food and beverages organisations in Nigeria. *European Journal of Marketing, 42*(3/4), 279-286.

Gliaubicas, D., & Kanapickienė, R. (2015). Contingencies impact on strategic cost management usage in Lithuanian companies. *Procedia-Social and Behavioral Sciences, 213*(2015), 254-260.

Goebel, D. J., Marshall, G. W., & Locander, W. B. (1998). Activity-based costing: Accounting for a market orientation. *Industrial marketing management, 27*(6), 497-510.

Gordon, L. A., & Miller, D. (1976). A contingency framework for the design of accounting information systems. *Accounting, organizations and society, 1*(1), 59-69.

Gordon, L. A., & Narayanan, V. K. (1984). Management accounting systems, perceived environmental uncertainty and organization structure: An empirical investigation. *Accounting, organizations and society, 9*(1), 33-47.

Gordon, L. A., & Silvester, K. J. (1999). Stock market reactions to activity-based costing adoptions. *Journal of Accounting and Public Policy, 18*(3), 229-251.

Gosselin, M. (1997). The effect of strategy and organizational structure on the adoption and implementation of activity-based costing. *Accounting, organizations and society, 22*(2), 105-122.

Gosselin, M. (2006). A review of activity-based costing: Technique, implementation, and consequences. *Handbooks of Management Accounting Research, 2*, 641-671.

Gosselin, M., & Mévellec, P. (2003). Plaidoyer pour la prise en compte des paramètres de conception dans la recherche sur les innovations en comptabilité de gestion. *Comptabilité-Contrôle-Audit, 9*(3), 87-109.

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. (1986). Decentralization, strategy, and effectiveness of strategic business units in multibusiness organizations. *Academy of management review, 11*(4), 844-856.

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.

Grabski, S. V., Leech, S. A., & Schmidt, P. J. (2011). A review of ERP research: A future agenda for accounting information systems. *Journal of information systems, 25*(1), 37-78.

Granlund, M., & Lukka, K. (1998). It's a small world of management accounting practices. *Journal of Management Accounting Research, 10*, 153-211.

Granlund, M., & Mouritsen, J. (2003). Special section on management control and new information technologies. *European Accounting Review, 12*(1), 77-83.

Gray, B. J., & Hooley, G. J. (2002). Guest editorial: Market orientation and service firm performance-a research agenda. *European Journal of Marketing, 36*(9/10), 980-989.

Guenther, T. W., & Gaebler, S. (2014). Antecedents of the adoption and success of strategic cost management methods: A meta-analytic investigation. *Journal of Business Economics, 84*(2), 145-190.

Guilding, C., & McManus, L. (2002). The incidence, perceived merit and antecedents of customer accounting: An exploratory note. *Accounting, organizations and society, 27*(1), 45-59.

Guilding, C., Cravens, K. S., & Tayles, M. (2000). An international comparison of strategic management accounting practices. *Management Accounting Research, 11*(1), 113-135.

Gul, F. A. (1991). The effects of management accounting systems and environmental uncertainty on small business managers' performance. *Accounting and business research, 22*(85), 57-61.

Gul, F. A., & Chia, Y. M. (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.

Gunasekaran, A., & Sarhadi, M. (1998). Implementation of activity-based costing in manufacturing. *International Journal of Production Economics, 56*, 231-242.

Gunasekaran, A., Williams, H. J., & McGaughey, R. E. (2005). Performance measurement and costing system in new enterprise. *Technovation, 25*(5), 523-533.

Gupta, A. K. (1987). SBU strategies, corporate-SBU relations, and SBU effectiveness in strategy implementation. *Academy of management journal, 30*(3), 477-500.

Gupta, M., & Galloway, K. (2003). Activity-based costing/management and its implications for operations management. *Technovation, 23*(2), 131-138.

Hair , J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications.

Hair , J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (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., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Applications of SEM. Multivariate data analysis*.Prentice hall.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 19(2), 139-152.

Haldma, T., & Laats, K. (2002). Contingencies influencing the management accounting practices of Estonian manufacturing companies. *Management Accounting Research, 13*(4), 379-400.

Hama, K. A. (2017). The reality of the investment process in the Kurdistan Region of Iraq during the period 2006 - 2014. *The Scientific Journal of Cihan University – Sulaimanyia, 1* (4), 161-172.

Hambrick, D. C. (1983). Some tests of the effectiveness and functional attributes of Miles and Snow's strategic types. *Academy of management journal, 26*(1), 5-26.

Hambrick, D. C., & Lei, D. (1985). Toward an empirical prioritization of contingency variables for business strategy. *Academy of Management Journal, 28*(4), 763-788.

Hammad , A. S., Jusoh, R., & Ghozali, 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.

Han, J. K., Kim, N., & Srivastava, R. K. (1998). Market orientation and organizational performance: Is innovation a missing link?. *The Journal of marketing, 62*(4), 30-45.

Hao, Q., Kasper, H., & Muehlbacher, J. (2012). How does organizational structure influence performance through learning and innovation in Austria and China. *Chinese Management Studies, 6*(1), 36-52.

Hardan, A. S., & Shatnawi, T. M. (2013). Impact of applying the ABC on improving the financial performance in telecom companies. *International Journal of Business and Management, 8*(12), 48-61.

Hared, B. A., Abdullah, Z., & Huque, S. M. R. (2013). Management control systems: A review of literature and a theoretical framework for future researches. *Management, 5*(26), 1-13.

Harris, P. J., & Mongiello, M. (2001). Key performance indicators in European hotel properties: General managers' choices and company profiles. *International Journal of Contemporary Hospitality Management, 13*(3), 120-128.

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.

Hashem, S. K., & Mahmood, M. H. (2014). Evaluation the performance efficiency of the public manufacturing sector in Iraq for the period (2000-2009). *Journal of Economics and Administrative Sciences, 20*(75), 276-293.

Hassouni, H. S. (2012). The role of strategic management accounting techniques in serving the strategic managements of contemporary organizations in Iraq. *Al muthana Journal Of Administrative &Economics Science, 2*(4), 199-221.

Hayes, D. C. (1977). The contingency theory of managerial accounting. *Accounting review, 52*(1), 22-39.

Hazaimeh, A. M., Alani, M. S., & Jawad , S. N. (2013). Article the impact of the application of information technology to improve the competitive advantage in the public shareholding companies. *Al-Mustansyriah University,* (96), 83-96.

Helgesen, O. (2007). Customer accounting and customer profitability analysis for the order handling industry—A managerial accounting approach. *Industrial marketing management, 36*(6), 757-769.

Helms, M. M., Dibrell, C., & Wright, P. (1997). Competitive strategies and business performance: Evidence from the adhesives and sealants industry. *Management decision, 35*(9), 689-703.

Henseler, J. (2007). A new and simple approach to multi-group analysis in partial least squares path modeling.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115-135.

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in international marketing, 20*(1), 277-319.

Hill, C. W. (1988). Differentiation versus low cost or differentiation and low cost: A contingency framework. *Academy of management review, 13*(3), 401-412.

Hirst, M. K. (1981). Accounting information and the evaluation of subordinate performance: A situational approach. *Accounting Review, 56*(4), 771-784.

Hitt, L. M., & DJ Wu, X. Z. (2002). Investment in enterprise resource planning: Business impact and productivity measures. *Journal of Management Information Systems, 19*(1), 71-98.

Homburg, C., Krohmer, H., & Workman, J. P. (2004). A strategy implementation perspective of market orientation. *Journal of business research, 57*(12), 1331-1340.

Hopper, T., Tsamenyi, M., Uddin, S., & Wickramasinghe, D. (2009). Management accounting in less developed countries: What is known and needs knowing. *Accounting, Auditing & Accountability Journal, 22*(3), 469-514.

Hoque, Z. (2000). Just-in-time production, automation, cost allocation practices and importance of cost information: An empirical investigation in New Zealand-based manufacturing organizations. *The British Accounting Review, 32*(2), 133-159.

Hoque, Z. (2004). A contingency model of the association between strategy, environmental uncertainty and performance measurement: Impact on organizational 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. (2011). The relations among competition, delegation, management accounting systems change and performance: A path model. *Advances in Accounting, 27*(2), 266-277.

Hoque, Z., & James, W. (2000). Linking balanced scorecard measures to size and market factors: Impact on organizational performance. *Journal of Management Accounting Research, 12*(1), 1-17.

Hoque, Z., Mia, L., & Alam, M. (2001). Market competition, computer-aided manufacturing and use of multiple performance measures: An empirical study. *The British Accounting Review, 33*(1), 23-45.

Horngren, C. T., Datar, S. M., & Foster, G. (2003). *Managerial accounting*: Prentice Hall.

Howell, R. A., & Soucy, S. (1990). Customer profitability. *Management Accounting, 72*(4), 43-47.

Hudson, B. A., & Bielefeld, W. (1997). Structures of multinational nonprofit organizations. *Nonprofit management and Leadership, 8*(1), 31-49.

Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic management journal, 20*, 195-204.

Hunt, S. D., & Lambe, C. J. (2000). Marketing's contribution to business strategy: Market orientation, relationship marketing and resource-advantage theory. *International Journal of Management Reviews, 2*(1), 17-43.

Hunt, S. D., & Morgan, R. M. (1995). The comparative advantage theory of competition. *The Journal of marketing, 59*, 1-15.

Hunton, J. E. (2002). Blending information and communication technology with accounting research. *Accounting horizons, 16*(1), 55-67.

Hunton, J. E., Lippincott, B., & Reck, J. L. (2003). Enterprise resource planning systems: Comparing firm performance of adopters and nonadopters. *International Journal of Accounting Information Systems, 4*(3), 165-184.

Huo, Y. H. (1998). Information technology and the performance of the restaurant firms. *Journal of Hospitality & Tourism Research, 22*(3), 239-251.

Hussain, M., & Gunasekaran, A. (2001). Activity-based cost management in financial services industry. *Managing Service Quality: An International Journal, 11*(3), 213-226.

Huynh, T., Gong, G., & Huynh, H. (2014). Suggest solutions for diffusion and implementation of activity-based costing in Vietnam. *Asian Economic and Financial Review, 4*(2), 173-182.

Hyvonen, J. (2007). Strategy, performance measurement techniques and information technology of the firm and their links to organizational performance. *Management Accounting Research, 18*(3), 343-366.

Ibrahim, H. K. (2014). The role of the accounting responsibility as a tool for monitoring and evaluating performance. *Baghdad College of Economic Sciences University,* (41), 375-404.

Industrial Strategy in Iraq until 2030. (2013). *Ministry of Industry and Minerals*.

Innes, J., & Mitchell, F. (1990). The process of change in management accounting: Some field study evidence. *Management Accounting Research, 1*(1), 3-19.

Innes, J., & Mitchell, F. (1995). A survey of activity-based costing in the UK's largest companies. *Management Accounting Research, 6*(2), 137-153.

Innes, J., Mitchell, F., & Sinclair, D. (2000). Activity-based costing in the UK's largest companies: A comparison of 1994 and 1999 survey results. *Management Accounting Research, 11*(3), 349-362.

Isa, C. R., & Foong, S. Y. (2005). Adoption of advanced manufacturing technology (AMT) and management accounting practices: The case of manufacturing firms in Malaysia. *World Review of Science, Technology and Sustainable Development, 2*(1), 35-48.

Isabella, L. A., & Waddock, S. A. (1994). Top management team certainty: Environmental assessments, teamwork, and performance implications. *Journal of Management, 20*(4), 835-858.

Islam, J., & Hu, H. (2012). A review of literature on contingency theory in managerial accounting. *African Journal of Business Management, 6*(15), 5159-5164.

Ismail, K., & Isa, C. R. (2011). The role of management accounting systems in advanced manufacturing environment. *Australian Journal of Basic and Applied Sciences, 5*(9), 2196-2209.

Ismail, K., Isa, C. R., & Mia, L. (2017). Evidence on the usefulness of management accounting systems in integrated manufacturing environment. *Pacific Accounting Review*, (just-accepted), 00-00.

Ismail, N. A. (2007). The impact of information technology on performance: The mediating role of management accounting systems. *Jurnal Teknologi, 46*(1), 27–44.

Ismail, N. A. (2010). Activity-based management system implementation in higher education institution: Benefits and challenges. *Campus-Wide Information Systems, 27*(1), 40-52.

Ismail, N. A., & King, M. (2005). Firm performance and AIS alignment in Malaysian SMEs. *International Journal of Accounting Information Systems, 6*(4), 241-259.

Ittner, C. D. (1999). Activity-based costing concepts for quality improvement. *European Management Journal, 17*(5), 492-500.

Ittner, C. D., & Larcker, D. F. (1997). Quality strategy, strategic control systems, and organizational performance. *Accounting, Organizations and Society, 22*(3-4), 293-314.

Ittner, C. D., & Larcker, D. F. (1998). Are nonfinancial measures leading indicators of financial performance? An analysis of customer satisfaction. *Journal of accounting research, 36*, 1-35.

Ittner, C. D., Lanen, W. N., & Larcker, D. F. (2002). The association between activity-based costing and manufacturing performance. *Journal of accounting research, 40*(3), 711-726.

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), 715-741.

Jabr, W. A., Gulab, A. H., & Kazem, B. M. (2009). The competitive advantages of the products in the Iraqi market. *Algharee for Economics and Administration Sciences, 2*(13), 183-200.

Jaf, R. A., Sabr, S. A., & Nader, K. A. (2015). Impact of management accounting techniques on achieve competitive advantage. *Research Journal of Finance and Accounting, 6*(4), 84-99.

James, P. C. (2013). An analysis of the factors influencing the adoption of activity-based costing (ABC) in the financial sector in Jamaica. *International Journal of Business and Social Research, 3*(7), 8-18.

Jamil, C. Z. M., & Mohamed, R. (2013). The effect of management control system on performance measurement system at small medium hotel in Malaysia. *International Journal of Trade, Economics and Finance*, 4(4), 202-208.

Jane, N. K., Justus, M., & Francis, K. (2014). Influence of external organizational environment on performance of community-based hiv and aids organizations in Nairobi County, Kenya. *European Scientific Journal, 10*(28), 405-426.

Jänkälä, S., & Silvola, H. (2012). Lagging effects of the use of activity-based costing on the financial performance of small firms. *Journal of Small Business Management, 50*(3), 498-523.

Janudin, S. E., & Maelah, R. (2016). Performance measurement system in Malaysian public research universities: Is it contemporary?. *International Journal of Management in Education, 10*(3), 219-233.

Jarvenpaa, M. (2009). The institutional pillars of management accounting function. *Journal of Accounting & Organizational Change, 5*(4), 444-471.

Jasem, Y. M., & Zhou, S. M. (2014). Evaluation of the effectiveness of some economic variables in the Iraqi manufacturing industry for the period (1990-2008). *Journal of Kirkuk University For Administrative and Economic Sciences, 1*(4), 65-91.

Jaworski, B. J., & Kohli, A. K. (1993). Market orientation: Antecedents and consequences. *The Journal of marketing*, 53-70.

Jermias, J., & Gani, L. (2004). Integrating business strategy, organizational configurations and management accounting systems with business unit effectiveness: A fitness landscape approach. *Management Accounting Research, 15*(2), 179-200.

Jogaratnam, G., & Tse, C. Y. E. (2006). Entrepreneurial orientation and the structuring of organizations: Performance evidence from the asian hotel industry. *International Journal of Contemporary Hospitality Management, 18*(6), 454-468.

Johnson, A. J., Dibrell, C. C., & Hansen, E. (2009). Market orientation, innovativeness, and performance of food companies. *Journal of Agribusiness, 27*(1/2), 85-106.

Johnson, G., Scholes, K., & Whittington, R. (2008). *Exploring corporate strategy: Text and cases*: Pearson Education.

Joiner, T. A., Spencer, S. Y. X., & Salmon, S. (2009). The effectiveness of flexible manufacturing strategies: The mediating role of performance measurement systems. *International Journal of Productivity and Performance Management, 58*(2), 119-135.

Jones, C. S. (1985). An empirical study of the evidence for contingency theories of management accounting systems in conditions of rapid change. *Accounting, Organizations and Society, 10*(3), 303-328.

Joshi, P. L. (2001). The international diffusion of new management accounting practices: The case of India. *Journal of International Accounting, Auditing and Taxation, 10*(1), 85-109.

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. (2010). The influence of perceived environmental uncertainty, firm size, and strategy on multiple performance measures usage. *African Journal of Business Management, 4*(10), 1972.

Jusoh, R., & Miryazdi, S. (2015). The influence of technological and environmental factors on the diffusion of activity-based costing in Iran. *Tékhne, 13*(2), 95-109.

Jusoh, R., & Parnell, J. A. (2008). Competitive strategy and performance measurement in the Malaysian context: An exploratory study. *Management decision, 46*(1), 5-31.

Kaabi, G. C., & Mustafa, R. F. (2015). Analysis of some of the success factors and product strategies: Applied research in the Iraqi industrial sector. *Journal of Economics and Administrative Sciences, 21*(86), 62-87.

Kadhim, S. J. (2007). Competitive strategies and their role in determining the strategic choice: Comparative study. *Al-Qadisiya Journal for Administrative and Economic sciences, 9*(2), 9-36.

Kadhim, T. A. (2017). The reality of the Iraqi economy and the requirements of reform. *Almuthana Journal of Administrative & Economics Science, 7*(1), 43-56.

Kald, M., Nilsson, F., & Rapp, B. (2000). On strategy and management control: the importance of classifying the strategy of the business. *British Journal of Management, 11*(3), 197-212.

Kalkan, A., Erdil, O., & Çetinkaya, Ö. (2011). The relationships between firm size, prospector strategy, architecture of information technology and firm performance. *Procedia-Social and Behavioral Sciences, 24*, 854-869.

Kallunki, J. P., & Silvola, H. (2008). The effect of organizational life cycle stage on the use of activity-based costing. *Management accounting research, 19*(1), 62-79.

Kaplan, R. S. (1983). Measuring manufacturing performance: A new challenge for managerial accounting research. *Readings in accounting for management control,* (284-306): Springer.

Kaplan, R. S. (1991). New systems for measurement and control. *The Engineering Economist, 36*(3), 201-218.

Kaplan, R. S. (2001). Strategic performance measurement and management in nonprofit organizations. *Nonprofit management and Leadership, 11*(3), 353-370.

Kaplan, R. S., & Cooper, R. (1998). *Cost & effect: Using integrated cost systems to drive profitability and performance*: Harvard Business Press.

Kaplan, R. S., & Norton, D. P. (1996). *The balanced scorecard: translating strategy into action*: Harvard Business Press.

Kaplan, R. S., & Norton, D. P. (2001). Transforming the balanced scorecard from performance measurement to strategic management: Part I. *Accounting horizons, 15*(1), 87-104.

Kaplan, R. S., & Norton, D. P. (2005). The balanced scorecard: Measures that drive performance. *Harvard business review, 83*(7), 172.

Kaplan, R., & Anderson, S. (2003). Time-driven activity-based costing. *Harvard Business Review, 82*,131–138.

Karakas, E., Koyuncu, M., Erol, R., & Kokangul, A. (2010). Fuzzy programming for optimal product mix decisions based on expanded ABC approach. *International Journal of Production Research, 48*(3), 729-744.

Kasim, K. N., Amiruddin, R., & Auzair, S. M. (2012). Management control systems design of malaysian research and development units. *Asian Journal of Accounting and Governance, 3*, 49-60.

Kattan, F., Pike, R., & Tayles, M. (2007). Reliance on management accounting under environmental uncertainty: The case of Palestine. *Journal of Accounting & Organizational Change, 3*(3), 227-249.

Kennedy, T., & Affleck-Graves, J. (2001). The impact of activity-based costing techniques on firm performance. *Journal of Management Accounting Research, 13*(1), 19-45.

Kennerley, M., & Neely, A. (2003). Measuring performance in a changing business environment. *International journal of operations & production management, 23*(2), 213-229.

Keramati, A. (2007). Assessing the effects of information technology on firm performance using canonical correlation analysis: A survey in Iran car part suppliers sector. *Waset.Org, 21*, 11-18.

Khandwalla, P. N. (1972). The effect of different types of competition on the use of management controls. *Journal of Accounting Research,10*(2), 275-285.

Kim, G., Park, C. S., & Yoon, K. P. (1997). Identifying investment opportunities for advanced manufacturing systems with comparative-integrated performance measurement. *International Journal of Production Economics, 50*(1), 23-33.

Kim, W. C., & Mauborgne, R. (2005). Blue ocean strategy: From theory to practice. *California Management Review, 47*(3), 105-121.

King, R., Clarkson, P. M., & Wallace, S. (2010). Budgeting practices and performance in small healthcare businesses. *Management Accounting Research*, *21*(1), 40-55.

Koberg, C. S., & Ungson, G. R. (1987). The effects of environmental uncertainty and dependence on organizational structure and performance: A comparative study. *Journal of management, 13*(4), 725-737.

Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: The construct, research propositions, and managerial implications. *The Journal of marketing, 54*, 1-18.

Kohli, R., & Grover, V. (2008). Business value of IT: An essay on expanding research directions to keep up with the times. *Journal of the association for information systems, 9*(1), 23-39.

Köseoglu, 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.

Kotha, S., & Nair, A. (1995). Strategy and environment as determinants of performance: Evidence from the Japanese machine tool industry. *Strategic Management Journal, 16*(7), 497-518.

Kraft, K. L., Pula, G. M., & Hage, J. (1995). Structural contingency theory revisited: Main effects versus interactions in Child's national study of manufacturing and service sectors. *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration, 12*(3), 182-194.

Kreitner, R. (2009). *Management.* (11 ed.). Boston: Houghton Mifflin.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educ psychol meas, 30*, 607-610.

Krumwiede, K. R. (1998). The implementation stages of activity-based costing and the impact of contextual and organizational factors. *Journal of Management Accounting Research, 10*, 239.

Krumwiede, K. R., & Charles, S. L. (2011). The use of activity-based costing with competitive strategies: Impact on firm performance. *IMA*, 1-54.

Krumwiede, K. R., & Charles, S. L. (2014). The use of activity-based costing with competitive strategies: Impact on firm performance. *Advances in Management Accounting, 23*(1), 113-148.

Kuchta, D., & Troska, M. (2007). Activity-based costing and customer profitability. *Journal of cost management, 21*(3), 18-25.

Kumar, K., & Subramanian, R. (1997). Porter's strategic types: Differences in internal processes and their impact on performance. *Journal of Applied Business Research, 14*(1), 107-124.

Kumar, N., & Mahto, D. (2013). Current trends of application of activity-based costing (ABC): A review. *Global Journal of Management and Business Research, 13*(3), 10-24.

Kuzey, C., Uyar, A., & Delen, D. (2018). An investigation of the factors influencing cost system functionality using decision trees, support vector machines and logistic regression. *International Journal of Accounting and Information Management, 26*(3), 1-55.

Laitinen, E. K. (2014). Influence of cost accounting change on performance of manufacturing firms. *Advances in Accounting, 30*(1), 230-240.

Lal, M., & Hassel, L. (1998). The joint impact of environmental uncertainty and tolerance of ambiguity on top managers' perceptions of the usefulness of non-conventional management accounting information. *Scandinavian Journal of Management, 14*(3), 259-271.

Langfield-Smith, K. (1997). Management control systems and strategy: A critical review. *Accounting, organizations and society, 22*(2), 207-232.

Langfield-Smith, K. (2006). A review of quantitative research in management control systems and strategy. *Handbooks of Management Accounting Research, 2*, 753-783.

Langfield-Smith, K. (2008). Strategic management accounting: how far have we come in 25 years?. *Accounting, Auditing & Accountability Journal, 21*(2), 204-228.

Lawrence, P. R., & Lorsch, J. W. (1967). Differentiation and integration in complex organizations. *Administrative science quarterly, 12*(1), 1-47.

Lay, T. A., & 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, 22*(2), 84-104.

Lee, C. L., Yen, D. C., Peng, K. C., & Wu, H. C. (2010). The influence of change agents' behavioral intention on the usage of the activity-based costing/management system and firm performance: The perspective of unified theory of acceptance and use of technology. *Advances in Accounting, 26*(2), 314-324.

Leisen, B., Lilly, B., & Winsor, R. D. (2002). The effects of organizational culture and market orientation on the effectiveness of strategic marketing alliances. *Journal of Services Marketing, 16*(3), 201-222.

Leitner, K. H., & Güldenberg, S. (2010). Generic strategies and firm performance in smes: A longitudinal study of austrian SMEs. *Small Business Economics, 35*(2), 169-189.

Liu, L. Y., & Pan, F. (2007). The implementation of activity-based costing in china: An innovation action research approach. *The British Accounting Review, 39*(3), 249-264.

Liu, S. S., Luo, X., & Shi, Y.-Z. (2002). Integrating customer orientation, corporate entrepreneurship, and learning orientation in organizations-in-transition: An empirical study. *International Journal of research in Marketing, 19*(4), 367-382.

Löfsten, H., & Lindelöf, P. (2005). Environmental hostility, strategic orientation and the importance of management accounting: An empirical analysis of new technology-based firms. *Technovation, 25*(7), 725-738.

Lohmöller, J. B. (1989). *Latent variable path modeling with partial least squares*. Springer Science & Business Media.

Low, D. R., Chapman, R. L., & Sloan, T. R. (2007). Inter-relationships between innovation and market orientation in SMEs. *Management Research News, 30*(12), 878-891.

Luft, J., & Shields, M. D. (2003). Mapping management accounting: Graphics and guidelines for theory-consistent empirical research. *Accounting, organizations and society, 28*(2), 169-249.

Lukka, K., & Granlund, M. (1996). Cost accounting in Finland: Current practice and trends of development. *European Accounting Review, 5*(1), 1-28.

Lunenburg, F. C. (2012). Organizational structure: Mintzberg's framework. *International journal of scholarly, academic, intellectual diversity, 14*(1), 1-8.

Lusthaus, C. (2002). *Organizational assessment: A framework for improving performance*: IDRC.

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.

Maduenyi, S., Oke, A. O., Fadeyi, O., & Ajagbe, A. M. (2015). *Impact of organisational structure on organisational performance*. Paper presented at the Covenant University International Conference on African Development Issues (CU-ICADI 2015).

Maelah, R., & Ibrahim, D. N. (2006). Activity-based costing (ABC) adoption among manufacturing organizations-The case of Malaysia. *International Journal of Business and Society, 7*(1), 70-101.

Maelah, R., & Ibrahim, D. N. (2007). Factors influencing activity-based costing (ABC) adoption in manufacturing industry. *Investment Management & Financial Innovations, 4*(2), 113-124.

Maffei, M. J., & Meredith, J. (1995). Infrastructure and flexible manufacturing technology: Theory development. *Journal of Operations Management, 13*(4), 273-298.

Maiga, A. S. (2012). The effects of information technology integration on manufacturing financial performance: The role of cost control systems. *Advances in Management Accounting, 21*, 183-206.

Maiga, A. S. (2014). Assessing self-selection and endogeneity issues in the relation between activity-based costing and performance. *Advances in Accounting, 30*(2), 251-262.

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.

Maiga, A. S., & Jacobs, F. A. (2008). Extent of ABC use and its consequences. *Contemporary Accounting Research, 25*(2), 533-566.

Maiga, A. S., Nilsson, A., & Jacobs, F. A. (2013). Assessing the interaction effect of cost control systems and information technology integration on manufacturing plant financial performance. *The British Accounting Review, 30*, 1-14.

Maiyaki, A. A. (2011). The practicability of activity-based costing (ABC) in the Nigerian retail bank. *Business Intelligence Journal, 4*(2), 351-354.

Malik, S. A., & Sullivan, W. G. (1995). Impact of ABC information on product mix and costing decisions. *IEEE Transactions on Engineering Management, 42*(2), 171-176.

Malmi, T. (1997). Towards explaining activity-based costing failure: Accounting and control in a decentralized organization. *Management Accounting Research, 8*(4), 459-480.

Malmi, T. (1999). Activity-based costing diffusion across organizations: An exploratory empirical analysis of finnish firms. *Accounting, organizations and society, 24*(8), 649-672.

Malone, T. W. (1987). Modeling coordination in organizations and markets. *Management science, 33*(10), 1317-1332.

Martin, J. H., & Grbac, B. (2003). Using supply chain management to leverage a firm's market orientation. *Industrial marketing management, 32*(1), 25-38.

Martínez-Lorente, A. R., Sánchez-Rodríguez, C., & Dewhurst, F. W. (2004). The effect of information technologies on TQM: An initial analysis. *International Journal of Production Economics, 89*(1), 77-93.

Maskell, B. H. (1991). *Performance measurement for world class manufacturing: A model for American companies*: CRC Press, Boston, MA.

Mat, T. Z. T., & Smith, M. (2014). The impact of changes in environment and AMT on management accounting practices and organizational strategy, structure and performance. *Journal of Applied Management Accounting Research, 12*(1), 55-82.

Matsuno, K., & Mentzer, J. T. (2000). The effects of strategy type on the market orientation-performance relationship. *Journal of marketing, 64*(4), 1-16.

McGowan, A. S. (1998). Perceived benefits of ABCM implementation. *Accounting horizons, 12*(1), 31.

McGowan, A. S., & Klammer, T. P. (1997). Satisfaction with activity-based cost management implementation. *Journal of Management Accounting Research, 9*, 217.

McManus, L. (2013). Customer accounting and marketing performance measures in the hotel industry: Evidence from Australia. *International Journal of Hospitality Management, 33*, 140-152.

Meijaard, J., Brand, M. J., & Mosselman, M. (2005). Organizational structure and performance in Dutch small firms. *Small Business Economics, 25*(1), 83-96.

Melnyk, S. A., Bititci, U., Platts, K., Tobias, J., & Andersen, B. (2014). Is performance measurement and management fit for the future?. *Management Accounting Research, 25*(2), 173-186.

Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Review: Information technology and organizational performance: An integrative model of IT business value. *MIS Quarterly, 28*(2), 283-322.

Menon, N. M., Lee, B., & Eldenburg, L. (2000). Productivity of information systems in the healthcare industry. *Information Systems Research, 11*(1), 83-92.

Meyer, A. D., Tsui, A. S., & Hinings, C. R. (1993). Configurational approaches to organizational analysis. *Academy of Management journal, 36*(6), 1175-1195.

Mia, L. (1993). The role of mas information in organisations: An empirical study. *The 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.

Miles, M. P., Arnold, D. R., & Thompson, D. L. (1993). The interrelationship between environmental hostility and entrepreneurial orientation. *Journal of Applied Business Research, 9*(4), 12-23.

Miles, R. E., & Snow, C. C. (1978). *Organizational strategy, structure, and process*. New York, NY: McGraw-Hill.

Miller, D. (1986). Configurations of strategy and structure: Towards a synthesis. *Strategic Management Journal, 7*(3), 233-249.

Miller, D., & Friesen, P. H. (1984). A longitudinal study of the corporate life cycle. *Management science, 30*(10), 1161-1183.

Milliken, F. J. (1987). Three types of perceived uncertainty about the environment: State, effect, and response uncertainty. *Academy of management review, 12*(1), 133-143.

Mintzberg, H. (1980). Structure in 5's: A Synthesis of the research on organization design. *Management science, 26*(3), 322-341.

Minzberg, H. (1979). *The structuring of organizations*. New York: Prentice Hall.

Mohamed, F. H., & Yacoub, N. S. (2012). The unemployed energy in Iraq manufacturing industry for years (2000–2010). *Journal of Economics and Administrative Sciences, 18*(67), 193-211.

Mohamed, H. S. (2007). Proposed strategy for the development of manufacturing industry in Iraq. *Baghdad College of Economic Sciences University,* (15), 304-326.

Mohamed, F. H., & Radi , H. K. (2013). The evolution productivity in the manufacturing sector (the public sector) in Iraq for the period (2000-2011). *Journal of Administration and Economics,* (96), 1-14.

Moisello, A. M. (2012). ABC: Evolution, problems of implementation and organizational variables. *American Journal of Industrial and Business Management, 2*, 55-63.

Moorthy, M. K., Voon, O. O., Samsuri, C. A. S. B., Gopalan, M., & Yew, K.-T. (2012). Application of information technology in management accounting decision making. *International Journal of Academic Research in Business and Social Sciences, 2*(3), 1-16.

Morris, J. H., & Steers, R. M. (1980). Structural influences on organizational commitment. *Journal of Vocational Behavior, 17*(1), 50-57.

Morton, N. A., & Hu, Q. (2008). Implications of the fit between organizational structure and ERP: A structural contingency theory perspective. *International Journal of Information Management, 28*(5), 391-402.

Musawi, A. N., & Algharban, F. S. (2010). The integration of total quality management (TQM) and activity-based costing system (ABC). *Journal of Administration and Economics, 80*, 1-38.

Muslichah, M. (2013). The effect of contingency variables on management accounting system characteristics and managerial performance. *The International Journal of Accounting and Business Society, 12*(2), 47-70.

Nahm, A. Y., Vonderembse, M. A., & Koufteros, X. A. (2003). The impact of organizational structure on time-based manufacturing and plant performance. *Journal of operations management, 21*(3), 281-306.

Nanni, A. J., Dixon, J. R., & Vollmann, T. E. (1992). Integrated performance measurement: Management accounting to support the new manufacturing realities. *Journal of Management Accounting Research, 4*(1), 1-19.

Naranjo-Gil, D. (2009). The influence of environmental and organizational factors on innovation adoptions: Consequences for performance in public sector organizations. *Technovation, 29*(12), 810-818.

Narayanan, V., & Kaplan, R. S. (2001). Measuring and managing customer profitability. *Journal of cost management, 15*(5), 5-15.

Narayanan, V., & Sarkar, R. G. (1999). The impact of activity-based costing on managerial decisions at insteel industries: A field study. *Available at SSRN 173530*.

Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *The Journal of marketing*, 20-35.

Nassar, M., Al-Khadash, H. A., Sangster, A., & Mah'd, O. (2013). Factors that catalyse, facilitate and motivate the decision to implement activity-based costing in Jordanian industrial companies. *Journal of Applied Accounting Research, 14*(1), 18-36.

Nasuri, F. A., & Saher, F. Z. (2014). Restructuring the public industrial sector companies through privatization. *Baghdad College of Economic Sciences University, 20*(7), 286-296.

Needy, K. L., Bidanda, B., & Gulsen, M. (2000). A model to develop, assess, and validate an activity-based costing system for small manufacturers. *Engineering Management Journal, 12*(1), 31-38.

Neely, A., Gregory, M., & Platts, K. (1995). Performance measurement system design: A literature review and research agenda. *International journal of operations & production management, 15*(4), 80-116.

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). *Scaling procedures: Issues and applications*. Sage Publications.

Newell, S., Huang, J. C., Galliers, R. D., & Pan, S. L. (2003). Implementing enterprise resource planning and knowledge management systems in tandem: Fostering efficiency and innovation complementarity. *Information and Organization, 13*(1), 25-52.

Ngoc Phi Anh, D. O. A. N. (2016). Factors affecting the use and consequences of management accounting practices in a transitional economy: The case of Vietnam. *Journal of economics and development, 18*(1), 1-22.

Nimtrakoon, S., & Tayles, M. E. (2010). Contingency factors of management accounting practices in Thailand: A selection approach. *Asian Journal of Accounting and Governance, 1*(1), 51-78.

Noble, C. H., Sinha, R. K., & Kumar, A. (2002). Market orientation and alternative strategic orientations: A longitudinal assessment of performance implications. *Journal of marketing, 66*(4), 25-39.

Noone, B., & Griffin, P. (1999). Managing the long-term profit yield from market segments in a hotel environment: A case study on the implementation of customer profitability analysis. *International Journal of Hospitality Management, 18*(2), 111-128.

Noreen, E. (1991). Conditions under which activity-based cost systems provide relevant costs. *Journal of Management Accounting Research, 3*(4), 159-168.

Norris, G. (1994). User perceptions of an application of activity-based costing. *Advances in Management Accounting, 3*, 139-177.

Nudurupati, S. S., Bititci, U. S., Kumar, V., & Chan, F. T. (2011). State of the art literature review on performance measurement. *Computers & Industrial Engineering, 60*(2), 279-290.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3 ed.). New York: McGraw-Hill.

O'Cass, A., & Viet Ngo, L. (2007). Market orientation versus innovative culture: Two routes to superior brand performance. *European Journal of Marketing, 41*(7/8), 868-887.

O'Connor, N. G., Chow, C. W., & Wu, A. (2004). The adoption of "Western" management accounting/controls in China's state-owned enterprises during economic transition. *Accounting, organizations and society, 29*(3), 349-375.

Ogunsiji, A. S., & Akanbi, P. A. (2013). The role of perceived environmental uncertainty and strategic agility on the performance of selected banks in Oyo state of Nigeria. *Information and Knowledge Management, 3*(7), 23-30.

Olson, E. M., Slater, S. F., & Hult, G. T. M. (2005). The performance implications of fit among business strategy, marketing organization structure, and strategic behavior. *Journal of marketing, 69*(3), 49-65.

Olson, K. (2010). An examination of questionnaire evaluation by expert reviewers. *Field Methods, 22*(4), 295-318.

Ong, T. S., & Teh, B. H. (2008). 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.

Ormanidhi, O., & Stringa, O. (2008). Porter's model of generic competitive strategies. *Business Economics, 43*(3), 55-64.

Osborne, J. W., & Overbay, A. (2004). The power of outliers (and why researchers should always check for them). *Practical assessment, research & evaluation*, *9*(6), 1-12.

Osei-Bryson, K. M., & Ko, M. (2004). Exploring the relationship between information technology investments and firm performance using regression splines analysis. *Information & Management, 42*(1), 1-13.

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. (1980). The contingency theory of management accounting: Achievement and prognosis. *Accounting, organizations and society, 5*(4), 413-428.

Ottenbacher, M. C. (2007). Innovation management in the hospitality industry: Different strategies for achieving success. *Journal of Hospitality & Tourism Research, 31*(4), 431-454.

Pagell, M., & Krause, D. R. (1999). A multiple-method study of environmental uncertainty and manufacturing flexibility. *Journal of operations management, 17*(3), 307-325.

Pallant, J. (2001). *The SPSS Survival Manual: A Step-by-Step Guide to Data Analysis Using SPSS for Windows* (version 10). St Leonards, NSW: Allen & Unwin.

Pallant, J. (2005). *SPSS survival manual: A step by step guide to using SPSS for windows* (version 12). New South Wales, Australia: Allen & Unwin.

Parnell, J. A. (1997). New evidence in the generic strategy and business performance debate: A research note. *British Journal of Management, 8*(2), 175-181.

Parnell, J. A. (2011). Strategic capabilities, competitive strategy, and performance among retailers in Argentina, Peru and the United States. *Management decision, 49*(1), 139-155.

Parnell, J. A., Lester, D. L., & Menefee, M. L. (2000). Strategy as a response to organizational uncertainty: An alternative perspective on the strategy-performance relationship. *Management decision, 38*(8), 520-530.

Parnell, J. A., Lester, D. L., Long, Z., & Koseoglu, M. A. (2012). How environmental uncertainty affects the link between business strategy and performance in SMEs: Evidence from China, Turkey, and the USA. *Management decision, 50*(4), 546-568.

Pavlatos, O. (2010). The impact of firm characteristics on ABC systems: A Greek-based empirical analysis. *Performance Measurement and Management Control: Innovative Concepts and Practices, 20*, 501-527.

Pavlatos, O., & Paggios, I. (2009). A survey of factors influencing the cost system design in hotels. *International Journal of Hospitality Management, 28*(2), 263-271.

Pelham, A. M. (1999). Influence of environment, strategy, and market orientation on performance in small manufacturing firms. *Journal of business research, 45*(1), 33-46.

Pelham, A. M., & Wilson, D. T. (1995). A longitudinal study of the impact of market structure, firm structure, strategy, and market orientation culture on dimensions of small-firm performance. *Journal of the academy of marketing science, 24*(1), 27-43.

Perera, S., Harrison, G., & Poole, M. (1997). Customer-focused manufacturing strategy and the use of operations-based non-financial performance measures: A research note. *Accounting, Organizations and Society, 22*(6), 557-572.

Perrow, C. (1967). A framework for the comparative analysis of organizations. *American sociological review, 32*(2), 194-208.

Pertusa-Ortega, E. M., Molina-Azorin, J. F., & Claver-Cortes, E. (2010). Competitive strategy, structure and firm performance: A comparison of the resource-based view and the contingency approach. *Management decision, 48*(8), 1282-1303.

Pertusa-Ortega, E. M., Molina-Azorín, J. F., & Claver-Cortés, E. (2009). Competitive strategies and firm performance: A comparative analysis of pure, hybrid and 'stuck-in-the-middle'strategies in Spanish firms. *British Journal of Management, 20*(4), 508-523.

Piercy, N. F., Harris, L. C., & Lane, N. (2002). Market orientation and retail operatives' expectations. *Journal of business research, 55*(4), 261-273.

Pizzini, M. J. (2006). The relation between cost-system design, managers' evaluations of the relevance and usefulness of cost data, and financial performance: An empirical study of us hospitals. *Accounting, organizations and society, 31*(2), 179-210.

Plowman, B. (1997). The cost of the customer. *The TQM Magazine, 9*(1), 54-60.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of applied psychology, 88*(5), 879.

Pokorná, J. (2016). Impact of activity-based costing on financial performance in the Czech Republic. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, 64*(2), 643-652.

Porter, M. E. (1980). *Competitive strategy: Techniques for analyzing industries and competitors*: New York: Free Press.

Porter, M. E. (1998). *Competitive strategy: Techniques for analyzing industries and competitors*: Simon and Schuster.

Poston, R., & Grabski, S. (2001). Financial impacts of enterprise resource planning implementations. *International Journal of Accounting Information Systems, 2*(4), 271-294.

Powers, T. L., & Hahn, W. (2004). Critical competitive methods, generic strategies, and firm performance. *International Journal of Bank Marketing, 22*(1), 43-64.

Preacher, K. J., and Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior research methods, 40*(3), 879-891.

Priem, R. L., Rasheed, A. M., & Kotulic, A. G. (1995). Rationality in strategic decision processes, environmental dynamism and firm performance. *Journal of Management, 21*(5), 913-929.

Qian, L., & Ben-Arieh, D. (2008). Parametric cost estimation based on activity-based costing: A case study for design and development of rotational parts. *International Journal of Production Economics, 113*(2), 805-818.

Quattrone, P., & Hopper, T. (2005). A 'time–space odyssey': Management control systems in two multinational organisations. *Accounting, organizations and society, 30*(7), 735-764.

Qunhui, L., & Yang, H. (2011). The effects of organizational structure on time-based performance: An empirical study in Chinese automobile industry. *Journal on Innovation and Sustainability, São Paulo, 2*(3), 59-67.

Radi, M. M., & Ismail, M. D. (2011). Determing activity-based costing and its role in making management decision: A practical study. *Al-Taqani, 24*(9), 81-99.

Rahmouni, A. F. A., & Charaf, K. (2010). Success of activity-based costing projects in French companies: The influence of organizational and technical factors. *Journal of Cost Management, 26*(6), 1-27.

Raymond, L., Paré, G., & Bergeron, F. (1995). Matching information technology and organizational structure: An empirical study with implications for performance. *European Journal of Information Systems, 4*(1), 3-16.

Raz, T., & Elnathan, D. (1999). Activity-based costing for projects. *International Journal of Project Management, 17*(1), 61-67.

Rbaba'h, A. (2013). The influence of company characteristics factors to activity-based costing system implementation. *Journal of Education and Vocational Research, 4*(2), 36-46.

Reid, G. C., & Smith, J. A. (2000). The impact of contingencies on management accounting system development. *Management Accounting Research, 11*(4), 427-450.

Reinartz, W., Haenlein, M., & Henseler, J. (2009). An empirical comparison of the efficacy of covariance-based and variance-based SEM. *International Journal of research in Marketing, 26*(4), 332-344.

Rivard, S., Raymond, L., & Verreault, D. (2006). Resource-based view and competitive strategy: An integrated model of the contribution of information technology to firm performance. *The Journal of Strategic Information Systems, 15*(1), 29-50.

Robinson, R. B., & Pearce, J. A. (1988). Planned patterns of strategic behavior and their relationship to business-unit performance. *Strategic management journal, 9*(1), 43-60.

Rockart, J. F., Earl, M. J., & Ross, J. W. (1996). Eight imperatives for the new IT organization. *MIT Sloan Management Review, 38*(1), 43.

Roslender, R., & Hart, S. J. (2003). In search of strategic management accounting: Theoretical and field study perspectives. *Management Accounting Research, 14*(3), 255-279.

Rumelt, R. P. (1991). How much does industry matter?. *Strategic Management Journal, 12*(3), 167-185.

Russell, R. D., & Russell, C. J. (1992). An examination of the effects of organizational norms, organizational structure, and environmental uncertainty on entrepreneurial strategy. *Journal of management, 18*(4), 639-656.

Ryu, E. (2011). Effects of skewness and kurtosis on normal-theory based maximum likelihood test statistic in multilevel structural equation modeling. *Behavior research methods, 43*(4), 1066-1074.

Saad, S. M., & Al-Musawi, A. N. (2005). The effect of some contingency factors in the use of management accounting techniques. *Journal of Administration and Economics*, 55, 88-127.

Sadagopan, S. (2003). Enterprise resource planning. *Encyclopedia of Information Systems, 2*, 169-184.

Saleh, J. I. (2013). Problems and difficulties faced by the application of the activity-based costing approach in Iraqi industrial companies (A study in number of industrial companies). *Journal of Kirkuk University for Administrative and Economic Sciences, 3*(1), 188-213.

Salem-Mhamdia, A. B. H., & Ghadhab, B. B. (2012). Value management and activity-based costing model in the Tunisian restaurant. *International Journal of Contemporary Hospitality Management, 24*(2), 269-288.

Salman, A. J., Alwan, M. K. (2015). The role of determining the quality cost based on activity-based costing system in improvment the quality of product. *Al-Rafidain university college for sciences,* (35), 79-118.

Salman, K. K. (2012). Small and mediam enterprices and their role in economic growth in Iraq. *Al Muthana Journal of Administrative & Economics Science,* (5), 63-88.

Samson, D. A., Langfield-Smith, K., & McBride, P. (1991). The alignment of management accounting with manufacturing priorities: A strategic perspective. *Australian Accounting Review, 1*(1), 29-40.

Santhanam, R., & Hartono, E. (2003). Issues in linking information technology capability to firm performance. *MIS Quarterly, 27*(1), 125-153.

Sashi, C., & Stern, L. W. (1995). Product differentiation and market performance in producer goods industries. *Journal of business research, 33*(2), 115-127.

Schoonhoven, C. B. (1981). Problems with contingency theory: Testing assumptions hidden within the language of contingency theory. *Administrative science quarterly,* (26), 349-377.

Schoute, M. (2004). *Determinants of the adoption and use of activity-based costing*. Paper presented at the Annual Congress of the European Accounting Association in Seville.

Schoute, M. (2009). The relationship between cost system complexity, purposes of use, and cost system effectiveness. *The British Accounting Review, 41*(4), 208-226.

Schoute, M. (2011). The relationship between product diversity, usage of advanced manufacturing technologies and activity-based costing adoption. *The British Accounting Review, 43*(2), 120-134.

Schumacker, R. E., & Lomax, R. G. (2016). *A beginner's guide to structural equation modeling*. Routledge.

Seaman, A. E. (2006). Strategic information content and performance: The impact of management accounting and control system changes. *Review of Business Information Systems (RBIS), 10*(1), 59-66.

Sekaran, U. (2003). *Research methods for business: A skill building approach* (4 ed.). New Jersey: John Wiley & Sons.

Selto, F. H., Renner, C. J., & Young, S. M. (1995). Assessing the organizational fit of a just-in-time manufacturing system: testing selection, interaction and systems models of contingency theory. *Accounting, Organizations and Society, 20*(7-8), 665-684.

Shaukat, M., Zafarullah, M., & Wajid, R. A. (2009). Information technology in Pakistan: An analysis of problems faced in IT implementation by Pakistan's banking and manufacturing companies. *Pakistan Journal of Social Sciences (PJSS), 29*(1), 13-22.

Shields, M. D. (1995). An empirical analysis of firms' implementation experiences with activity-based costing. *Journal of Management Accounting Research, 7*, 148-166.

Simons, R. (1987). Accounting control systems and business strategy: An empirical analysis. *Accounting, organizations and society, 12*(4), 357-374.

Singer, M., & Donoso, P. (2008). Empirical validation of an activity-based optimization system. *International Journal of Production Economics, 113*(1), 335-345.

Sink, D. S., & Tuttle, T. C. (1989). *Planning and measurement in your organization of the future*: Industrial Engineering And Management.

Sisaye, S., & Birnberg, J. (2010). Extent and scope of diffusion and adoption of process innovations in management accounting systems. *International Journal of Accounting & Information Management, 18*(2), 118-139.

Slater, S. F., & Narver, J. C. (1994). Does competitive environment moderate the market orientation-performance relationship?. *The Journal of Marketing,58,* 46-55.

Slater, S. F., & Narver, J. C. (1996). Competitive strategy in the market-focused business. *Journal of market-focused management, 1*(2), 159-174.

Slater, S. F., & Narver, J. C. (2000). The positive effect of a market orientation on business profitability: A balanced replication. *Journal of business research, 48*(1), 69-73.

Smith, D., & Langfield-Smith, K. (2004). Structural equation modeling in management accounting research: Critical analysis and opportunities. *Journal of Accounting Literature, 23*, 49-86.

Smith, M., Abdullah, Z., & Abdul Razak, R. (2008). The diffusion of technological and management accounting innovation: Malaysian evidence. *Asian Review of Accounting, 16*(3), 197-218.

Sohal, A. S., & Chung, W. W. (1998). Activity-based costing in manufacturing: Two case studies on implementation. *Integrated manufacturing systems, 9*(3), 137-147.

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, 4*(1), 231-239.

Soin, K., Seal, W., & Cullen, J. (2002). ABC and organizational change: An institutional perspective. *Management Accounting Research, 13*(2), 249-271.

Soobaroyen, T., & Poorundersing, B. (2008). The effectiveness of management accounting systems: Evidence from functional managers in a developing country. *Managerial Auditing Journal*, *23*(2), 187-219.

Spanos, Y. E., Zaralis, G., & Lioukas, S. (2004). Strategy and industry effects on profitability: Evidence from Greece. *Strategic Management Journal, 25*(2), 139-165.

Spencer, X. S. Y., Joiner, T. A., & Salmon, S. (2009). Differentiation strategy, performance measurement systems and organizational performance: Evidence from Australia. *International Journal of Business, 14*(1), 83.

Stapleton, D., Pati, S., Beach, E., & Julmanichoti, P. (2004). Activity-based costing for logistics and marketing. *Business Process Management Journal, 10*(5), 584-597.

Stefano, N. M., & Filho, N. C. (2013). Activity-based costing in services: Literature bibliometric review. *SpringerPlus, 2*(1), 1-11.

Stevenson, T. H., Barnes, F. C., & Stevenson, S. A. (1993). Activity-based costing: An emerging tool for industrial marketing decision makers. *Journal of Business & Industrial Marketing, 8*(2), 40-52.

Stone, M. (1974). Cross-validatory choice and assessment of statistical predictions. *Journal of the royal statistical society. Series B (Methodological), 36*(2), 111-147.

Straub, D. W., & Watson, R. T. (2001). Research commentary: Transformational issues in researching IS and net-enabled organizations. *Information Systems Research, 12*(4), 337-345.

Subramaniam, N., & Mia, L. (2001). The relation between decentralised structure, budgetary participation and organisational commitment: The moderating role of managers' value orientation towards innovation. *Accounting, Auditing & Accountability Journal, 14*(1), 12-30.

Suroor, M. J., & Omar, S. S. (2013). Using of quality costs in strategic performance evaluation. *Al-Rafidain university college for sciences,* (32), 102-130.

Szychta, A. (2002). The scope of application of management accounting methods in Polish enterprises. *Management Accounting Research, 13*(4), 401-418.

Tabachnick, B.G., & Fidell, L.S. (2007), *Using Multivariate Statistics* (5th ed.). New York: Allyn and Bacon.

Talpe, M. M. (2014). Measurement and analysis of the costs and profitability of the customer using activity-based costing management entrance. *AL-dananeer,* (3), 364-398.

Tavitiyaman, P., Zhang, H. Q., & Qu, H. (2012). The effect of competitive strategies and organizational structure on hotel performance. *International Journal of Contemporary Hospitality Management, 24*(1), 140-159.

Tayles, M., & Drury, C. (1994). New manufacturing technologies and management accounting systems: Some evidence of the perceptions of UK management accounting practitioners. *International Journal of Production Economics, 36*(1), 1-17.

Teeratansirikool, L., Siengthai, S., Badir, Y., & Charoenngam, C. (2013). Competitive strategies and firm performance: The mediating role of performance measurement. *International Journal of Productivity and Performance Management, 62*(2), 168-184.

Theodorou, P., & Florou, G. (2008). Manufacturing strategies and financial performance: The effect of advanced information technology: CAD/CAM systems. *Omega, 36*(1), 107-121.

Thomas Johnson, H. (1991). Activity-based management: past, present, and future. *The Engineering Economist, 36*(3), 219-238.

Tillema, S. (2005). Towards an integrated contingency framework for MAS sophistication: Case studies on the scope of accounting instruments in Dutch power and gas companies. *Management Accounting Research, 16*(1), 101-129.

Tosi, H. L., & Slocum, J. W. (1984). Contingency theory: Some suggested directions. *Journal of Management, 10*(1), 9-26.

Tran, Q., & Tian, Y. (2013). Organizational structure: Influencing factors and impact on a firm. *American Journal of Industrial and Business Management, 3*(2), 229-236.

Tsai, W. H. (1998). Quality cost measurement under activity-based costing. *International Journal of Quality & Reliability Management, 15*(7), 719-752.

Tsai, W. H., & Hung, S. J. (2009). A fuzzy goal programming approach for green supply chain optimisation under activity-based costing and performance evaluation with a value-chain structure. *International Journal of Production Research, 47*(18), 4991-5017.

Tsai, W. H., & Kuo, L. (2004). Operating costs and capacity in the airline industry. *Journal of air transport management, 10*(4), 269-275.

Tsai, W. H., Lai, C. W., Tseng, L. J., & Chou, W. C. (2008). Embedding management discretionary power into an ABC model for a joint products mix decision. *International Journal of Production Economics, 115*(1), 210-220.

Tsamenyi, M., Sahadev, S., & Qiao, Z. S. (2011). The relationship between business strategy, management control systems and performance: Evidence from China. *Advances in Accounting, 27*(1), 193-203.

Tung, R. L. (1979). Dimensions of organizational environments: An exploratory study of their impact on organization structure. *Academy of management journal, 22*(4), 672-693.

Turney, P. B. (1989). Activity-based costing: A tool for manufacturing excellence. *Target*, (Summer), 13-19.

Turney, P. B. (2010). Activity-based costing: An emerging foundation for performance management. *Cost Management, 24*(4), 1-12.

Tushman, M. L. (1979). Work characteristics and subunit communication structure: A contingency analysis. *Administrative science quarterly, 24*(1), 82-98.

Udegbe, S., E, & Udegbe, M., I. (2013). The Relationship between market orientation firm, innovativeness and business performance of companies in Nigeria. *International Journal of Asian Social Science, 3*(11), 2350-2362.

Uyar, A., & Kuzey, C. (2016). Contingent factors, extent of budget use and performance: A structural equation approach. *Australian Accounting Review, 26*(1), 91-106.

Van der Stede, W. A., Young, S. M., & Chen, C. X. (2005). Assessing the quality of evidence in empirical management accounting research: The case of survey studies. *Accounting, organizations and society, 30*(7-8), 655-684.

Van Nguyen, H., & Brooks, A. (1997). An empirical investigation of adoption issues relating to activity-based costing. *Asian Review of Accounting, 5*(1), 1-18.

Venkatraman, N. (1989). The concept of fit in strategy research: Toward verbal and statistical correspondence. *Academy of management review, 14*(3), 423-444.

Verardi, V., & Croux, C. (2008). Robust regression in Stata.

Verhees, F. J., & Meulenberg, M. T. (2004). Market orientation, innovativeness, product innovation, and performance in small firms. *Journal of Small Business Management, 42*(2), 134-154.

Wagner, M., Van Phu, N., Azomahou, T., & Wehrmeyer, W. (2002). The relationship between the environmental and economic performance of firms: An empirical analysis of the European paper industry. *Corporate Social Responsibility and Environmental Management, 9*(3), 133-146.

Wanas, K. A. (2017). Time-Driven Activities Based Cost: Evidence of Industrial Firms of Iraq. *International Journal of Accounting and Financial Reporting, 7*(1), 133-152.

Wang, C. H., Chen, K. Y., & Chen, S. C. (2012). Total quality management, market orientation and hotel performance: The moderating effects of external environmental factors. *International Journal of Hospitality Management, 31*(1), 119-129.

Watcharasriroj, B., & Tang, J. C. (2004). The effects of size and information technology on hospital efficiency. *The Journal of High Technology Management Research, 15*(1), 1-16.

Waterhouse, J. H., & Tiessen, P. (1978). A contingency framework for management accounting systems research. *Accounting, organizations and society, 3*(1), 65-76.

Waweru, M. N., Hoque, Z., & Uliana, E. (2004). Management accounting change in South Africa: Case studies from retail services. *Accounting, Auditing & Accountability Journal, 17*(5), 675-704.

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.

Whicker, L., Bernon, M., Templar, S., & Mena, C. (2009). Understanding the relationships between time and cost to improve supply chain performance. *International Journal of Production Economics, 121*(2), 641-650.

Williams, J. J., & Seaman, A. E. (2002). Management accounting systems change and departmental performance: The influence of managerial information and task uncertainty. *Management Accounting Research, 13*(4), 419-445.

Wong, K. K. K. (2016). Mediation analysis, categorical moderation analysis, and higher-order constructs modeling in Partial Least Squares Structural Equation Modeling (PLS-SEM): A B2B Example using SmartPLS. *Marketing Bulletin, 26,* 1-22.

Wouters, M., & Verdaasdonk, P. (2002). Supporting management decisions with ex ante accounting information. *European Management Journal, 20*(1), 82-94.

Yang, M. G. M., Hong, P., & Modi, S. B. (2011). Impact of lean manufacturing and environmental management on business performance: An empirical study of manufacturing firms. *International Journal of Production Economics, 129*(2), 251-261.

Yapa, P., & Kongchan, P. (2012). Factors influencing the implementation of activity-based costing in thailand: Acase study of a thai telecommunications company. *Proceedings of Accounting and Finance Association of Australia and New Zealand Conference (AFAANZ 2012)*, 1-3 July. Carlton, Australia, 1-30.

Yaqoob, F. A., & Bachay, A. R (2017). Designing activity based costing systems (ABC) for transport services and its role in improving the efficiency of pricing decisions. *Accounting and Financial Studies Journal, 41*(4), 1-27.

Yaşar, F. (2010). Competitive strategies and firm performance: Case study on Gaziantep Carpeting Sector/Rekabet Stratejileri Ve Firma Performansi: Gaziantep Hali Sektörü Üzerinde Bir Durum Çalişmasi. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 7*(14), 309-324.

Youssef, K. A., & Al-Ani, L. H. (2016). The effect of activity-based costing system on improving the quality of accounting information. *Baghdad College of Economic Sciences University,13*(46), 229-334.

Youssef, Z. J., & Oudah, H. A. G. (2014). The importance of activity-based costing system in the administrative decisions (A case study). *Journal of Babylon University, 22*(4), 932-945.

Zahra, S. A. (1993). Environment, corporate entrepreneurship, and financial performance: A taxonomic approach. *Journal of business venturing, 8*(4), 319-340.

Zaman, M. (2009). The Impact of activity-based costing on firm performance: The Australian experience. *International Review of Business Research Papers, 5*(4), 200-208.

Zhang, Y. F., & Isa, C. R. (2010a). Behavioral and organizational variables affecting the success of ABC success in China. *African Journal of Business Management, 4*(11), 2302-2308.

Zhang, Y. F., & Isa, C. R. (2010b). Factors influencing activity-based costing success: A research framework. *International journal of trade, economics and finance, 1*(2), 144-150.

Zhang, Y. F., & Isa, C. R. (2011). The effect of activity-based costing on firms performance: A study among chinese manufacturing firms. *Australian Journal of Basic and Applied Sciences, 5*(9), 227-237.

Zhang, Y. F., Hoque, Z., & Isa, C. R. (2015). The effects of organizational culture and structure on the success of activity-based costing implementation. *Advances in Management Accounting, 25,* 229-257.

Zhang, Y. I., Namazi, M., & Isa, C. R. (2017). Investigating the empirical effect of ABC stages on the performance of companies. *Iranian Journal of Management Studies, 10*(1), 175-205.

Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. Journal of consumer research, 37(2), 197-206.

Zhou, K. Z., Brown, J. R., & Dev, C. S. (2009). Market orientation, competitive advantage, and performance: A demand-based perspective. *Journal of business research, 62*(11), 1063-1070.

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2009). *Business research methods* (8 ed.). USA: South-Western College Publishing.

Zimmerman, J. L. (2011). *Accounting for Decision Making and Control*. USA: Irwin McGraw-Hill.

APPENDIX A

Pusat Pengajian Perakaunan
Tunku Puteri Intan Safinaz
TUNKU PUTERI INTAN SAFINAZ SCHOOL OF ACCOUNTANCY
Universiti Utara Malaysia

Survey Questionnaire

Dear Sir/Madam,

The above matter is kindly referred. This is a survey questionnaire of a study titled "The Effect of Contingency Factors and ABC Implementation Success on Organizational Performance in Iraqi Manufacturing Sector". The purpose of this study is to gain a better understanding of the level of ABC implementation in the Iraqi manufacturing sector, its relationship with contingency factors (Environmental uncertainty, Market orientation, Competitive strategy, Organizational structure and IT) and ascertain possible effect of this relationship on improving the performance of Iraqi manufacturing companies. Your participation in completing the questionnaire is paramount to the success of this research project.

The survey questionnaire is to be completed by the Chief Finance Officers (CFO) or their representatives such as finance managers or finance controllers. If you are not in the position to complete this survey, I would appreciate if you could forward it to the relevant manager in your organization. Kindly be assured that your responses will be used strictly for academic purposes. Also, your identity will not be revealed throughout the process of the study. The survey will take about 15 to 20 minutes of your time.

Should you need further information or clarification regarding this research study, please do not hesitate to contact me at the addresses below.

I sincerely thank you for taking time from your busy day to help contribute to the success of this study.

Faeq Malallah Mahmood
PhD Student,
Tunku Puteri Intan Safinaz School of Accountancy
Universiti Utara Malaysia
06010 Sintok, Kedah, Malaysia
Phone: +9647702042101 and +601139498042
E-mail: faeq_mahmood@yahoo.com

SECTION ONE
PART A
THE LEVEL OF ACTIVITY-BASED COSTING (ABC) IMPLEMENTATION

Instruction:
The following questions will help the researcher understand the level of implementation of ABC in your organization. Kindly note that there is no wrong or right answers to the questions.

1. For which of the following levels of ABC is implemented in your organization? Please circle an appropriate answer (yes / no).

LABC1	ABC is not implemented at all.	Yes	No
LABC2	We are planning to implement ABC.	Yes	No
LABC3	ABC is used for cost analysis in our organization.	Yes	No
LABC4	ABC is used across departments for measuring product cost and to support decision-making process in our organization.	Yes	No

PART B
ABC IMPLEMENTATION SUCCESS

Instruction:
The following questions will help the researcher understand your knowledge and attitude towards the successful implementation of ABC in your organization. Kindly note that there is no wrong or right answer to the questions. Use the scales provided below to indicate your level of agreement or disagreement with each of the following statements.

Strongly Disagree	Moderately Disagree	Disagree	Neutral	Moderately Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

2. How would you rate the overall success of the implementation of ABC system in your organization? Please circle an appropriate answer.

ABC1	The implementation of ABC enhances quality of decisions in our organization.	1	2	3	4	5	6	7
ABC2	The implementation of ABC enhances efficiency and waste reduction in our organization.	1	2	3	4	5	6	7
ABC3	The implementation of ABC enhances innovation in our organization.	1	2	3	4	5	6	7
ABC4	The implementation of ABC enhances relationship across functions in the organization.	1	2	3	4	5	6	7
ABC5	The implementation of ABC enhances communication across functions in the organization.	1	2	3	4	5	6	7
ABC6	The implementation of ABC enhances overall goal of the organization.	1	2	3	4	5	6	7

ABC7	The implementation of ABC enhances operational control.	1	2	3	4	5	6	7
ABC8	The implementation of ABC enhances accomplishment of task more quickly.	1	2	3	4	5	6	7
ABC9	The implementation of ABC enhances operations effectiveness.	1	2	3	4	5	6	7
ABC10	The implementation of ABC makes job much easier.	1	2	3	4	5	6	7
ABC11	ABC is useful for my job entirely.	1	2	3	4	5	6	7
ABC12	ABC provides accurate information.	1	2	3	4	5	6	7
ABC13	ABC provides accessible information.	1	2	3	4	5	6	7
ABC14	ABC provides reliable information.	1	2	3	4	5	6	7
ABC15	ABC provides timeliness information.	1	2	3	4	5	6	7
ABC16	Our employees have favorable attitude towards the implementation of ABC.	1	2	3	4	5	6	7
ABC17	Our employees embrace the implementation of ABC.	1	2	3	4	5	6	7
ABC18	Our employees are willing to use ABC system.	1	2	3	4	5	6	7
ABC19	Our employees believe it is easy to incorporate ABC system.	1	2	3	4	5	6	7

SECTION TWO
ORGANIZATIONAL PERFORMANCE

Instruction:
The following questions will help the researcher assess the performance of your organization. Kindly note that there is no wrong or right answer to the questions. Use the scales provided below to rate the performance of your organization in the following areas.

Very Low	Moderately Low	Low	Neutral	Moderately High	High	Very High
1	2	3	4	5	6	7

3. Over the past three years how would you rate the performance of your organization as compared to that of the industry? Please circle an appropriate answer.

OP1	Firm profitability.	1	2	3	4	5	6	7
OP2	Sales and revenues.	1	2	3	4	5	6	7
OP3	Return on investments.	1	2	3	4	5	6	7
OP4	Operational and cost efficiency.	1	2	3	4	5	6	7
OP5	Market share.	1	2	3	4	5	6	7
OP6	Customer loyalty.	1	2	3	4	5	6	7
OP7	Employee satisfaction.	1	2	3	4	5	6	7
OP8	Research and development activities.	1	2	3	4	5	6	7

SECTION THREE
ENVIRONMENTAL UNCERTAINTY

Instruction:
The following questions will help the researcher examine the dynamism of your organizational environment. Kindly note that there is no wrong or right answer to the questions. Use the scales provided below to rate the predictability of the following statements.

Very Unpredictable	Unpredictable	Moderately Unpredictable	Neutral	Moderately Predictable	Predictable	Very Predictable
1	2	3	4	5	6	7

4. How would you rate the predictability of the following environmental factors of your organization? Please circle an appropriate answer.

EU1	Suppliers' actions.	1	2	3	4	5	6	7
EU2	Customer demands, tastes and preferences.	1	2	3	4	5	6	7
EU3	Market activities of competitors.	1	2	3	4	5	6	7
EU4	Government regulation and policies.	1	2	3	4	5	6	7
EU5	Economic environment.	1	2	3	4	5	6	7
EU6	Production and information technologies.	1	2	3	4	5	6	7
EU7	Stability of environment.	1	2	3	4	5	6	7
EU8	Industrial relations.	1	2	3	4	5	6	7

SECTION FOUR
MARKET ORIENTATION

Instruction:
The following questions will help the researcher understand how market-oriented your organization is. Kindly use the scales provided below to indicate your level of agreement or disagreement with each of the following statements.

Strongly Disagree	Moderately Disagree	Disagree	Neutral	Moderately Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

5. How would you describe the market orientation of your organization? Please circle an appropriate answer of the following statements.

MO1	Our managers understand how the employees in our business can contribute to creating customer value.	1	2	3	4	5	6	7
MO2	Information about customers is freely communicated throughout our organization.	1	2	3	4	5	6	7
MO3	Our organization closely monitors and assesses our level of commitment in understanding customers' needs.	1	2	3	4	5	6	7
MO4	Our business objectives are driven by customer satisfaction.	1	2	3	4	5	6	7

MO5	Our organization frequently measures customer satisfaction.	1	2	3	4	5	6	7
MO6	Our organization pays close attention to after-sales services.	1	2	3	4	5	6	7
MO7	Top management regularly discusses competitors' strengths and weaknesses.	1	2	3	4	5	6	7
MO8	In responding to competitive opportunities, our business develops new capabilities as they are required.	1	2	3	4	5	6	7
MO9	Our organization responds rapidly to competitive actions.	1	2	3	4	5	6	7
MO10	In our organization, our salespeople share information with managers about competitors' information.	1	2	3	4	5	6	7
MO11	Our business functions are integrated to serve the target market needs.	1	2	3	4	5	6	7
MO12	Our managers across all business functions understand how employees can contribute to value of customers.	1	2	3	4	5	6	7
MO13	Our managers from each business function regularly call or visit customers.	1	2	3	4	5	6	7
MO14	Our managers freely communicate information about our successful and unsuccessful customer experiences across all business functions.	1	2	3	4	5	6	7
MO15	We share resources with other business units.	1	2	3	4	5	6	7

SECTION FIVE
COMPETITIVE STRATEGY

Instruction:
The following questions will help the researcher examine the strategies employed by your organization. Kindly use the scales provided below to rate your organization in the following strategies.

Much less than competitors	Somewhat less than competitors	Less than competitors	Same with competitors	Somewhat more than competitors	More than competitors	Much more than competitors
1	2	3	4	5	6	7

6. To what extent does your organization use the following business strategies? Please circle an appropriate answer of the following statements.

CS1	Optimizing capacity utilization.	1	2	3	4	5	6	7
CS2	Negotiating the best price when buying raw materials.	1	2	3	4	5	6	7
CS3	Emphasizing competitive pricing.	1	2	3	4	5	6	7
CS4	Improving the productivity of the manufacturing system.	1	2	3	4	5	6	7

CS5	Lowering manufacturing costs.	1	2	3	4	5	6	7
CS6	Providing extensive services before and after sale.	1	2	3	4	5	6	7
CS7	Adopting new marketing techniques.	1	2	3	4	5	6	7
CS8	Offering differentiated products.	1	2	3	4	5	6	7
CS9	Supporting advertising expenditure.	1	2	3	4	5	6	7
CS10	Emphasizing company's brands.	1	2	3	4	5	6	7
CS11	Offering high quality products.	1	2	3	4	5	6	7

SECTION SIX
ORGANIZATIONAL STRUCTURE

Instruction:
The following questions will help the researcher understand the structure of your organization. Kindly use the scales provided below to rate your agreement with the following statements.

Strongly Disagree	Moderately Disagree	Disagree	Neutral	Moderately Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

7. What is the extent of authority that is delegated to the general manager and to the different business managers (as middle management) in the strategic decision making? Please circle an appropriate answer.

OS1	In our organization, the general manager, functional managers and operational managers participate in making decisions over recruitment/dismissal of employees.	1	2	3	4	5	6	7
OS2	In our organization, the general manager, functional managers and operational managers participate in making decisions over launching of a new product.	1	2	3	4	5	6	7
OS3	In our organization, the general manager, functional managers and operational managers participate in making decisions over choice of suppliers/customers.	1	2	3	4	5	6	7
OS4	In our organization, the general manager, functional managers and operational managers participate in making decisions over selling prices.	1	2	3	4	5	6	7
OS5	In our organization, the general manager, functional managers and operational managers participate in making decisions over operational reorganization.	1	2	3	4	5	6	7
OS6	In our organization, our managers involved in making all the decisions, including minor decisions because they think that everything must be controlled.	1	2	3	4	5	6	7

OS7	In our organization, our managers can take important decisions only after consulting their coworkers.	1	2	3	4	5	6	7
OS8	The coworkers always consult their managers before the implementation of their decisions.	1	2	3	4	5	6	7
OS9	In our organization, our managers let their employees to take decisions alone within their area of responsibility.	1	2	3	4	5	6	7

SECTION SEVEN
INFORMATION TECHNOLOGY

Instruction:
The following questions will help the researcher understand the application of the listed information technology in your organization.

8. To what extent does your organization use the following items? Please circle only one of the numbers ranging from 1 (not at all) to 7 (to a great extent).

IT1	E-mail	1	2	3	4	5	6	7
IT2	Internet	1	2	3	4	5	6	7
IT3	Web site for advertisement	1	2	3	4	5	6	7
IT4	Local area network	1	2	3	4	5	6	7
IT5	Automatic warehousing	1	2	3	4	5	6	7
IT6	Software for project management	1	2	3	4	5	6	7
IT7	Computer aided production planning	1	2	3	4	5	6	7
IT8	Manufacturing requirement planning	1	2	3	4	5	6	7
IT9	Computer aided design	1	2	3	4	5	6	7
IT10	Computer aided manufacturing	1	2	3	4	5	6	7
IT11	Computer numerical control	1	2	3	4	5	6	7
IT12	Final product quality control	1	2	3	4	5	6	7
IT13	Process quality control	1	2	3	4	5	6	7
IT14	Data analysis software	1	2	3	4	5	6	7
IT15	Graphical data presentation tools	1	2	3	4	5	6	7
IT16	Decision support systems	1	2	3	4	5	6	7
IT17	Strategic information systems	1	2	3	4	5	6	7
IT18	Databases	1	2	3	4	5	6	7
IT19	Spread sheets	1	2	3	4	5	6	7
IT20	Word Possessors	1	2	3	4	5	6	7
IT21	Workflow management system	1	2	3	4	5	6	7
IT22	Internet recruitment	1	2	3	4	5	6	7
IT23	Training system	1	2	3	4	5	6	7
IT24	Performance analysis system	1	2	3	4	5	6	7
IT25	Payroll system	1	2	3	4	5	6	7
IT26	Invoice system	1	2	3	4	5	6	7
IT27	Financial system	1	2	3	4	5	6	7

SECTION EIGHT
DEMOGRAPHIC INFORMATION

Instruction:
Please fill in the blanks or tick the appropriate answer in the following sections:

9. I am currently holding the following position in the organization:
   Please tick (✓) an appropriate box

	Chief financial officer.		Financial manager.
	Financial controller		
	Others :……..…….……(Please state).		

10. Age (years): ……

11. Highest Education Qualification.

Diploma	1
Bachelor's Degree	2
Postgraduate Degree (master / PhD)	3

12. How long you have been working in this organization (in years)?

……

13. What is the total number of employees in your organization?

……

14. Please indicate what is the age of your organization?

☐ Less than 3 years ☐ 3-6 years ☐ More than 6 years

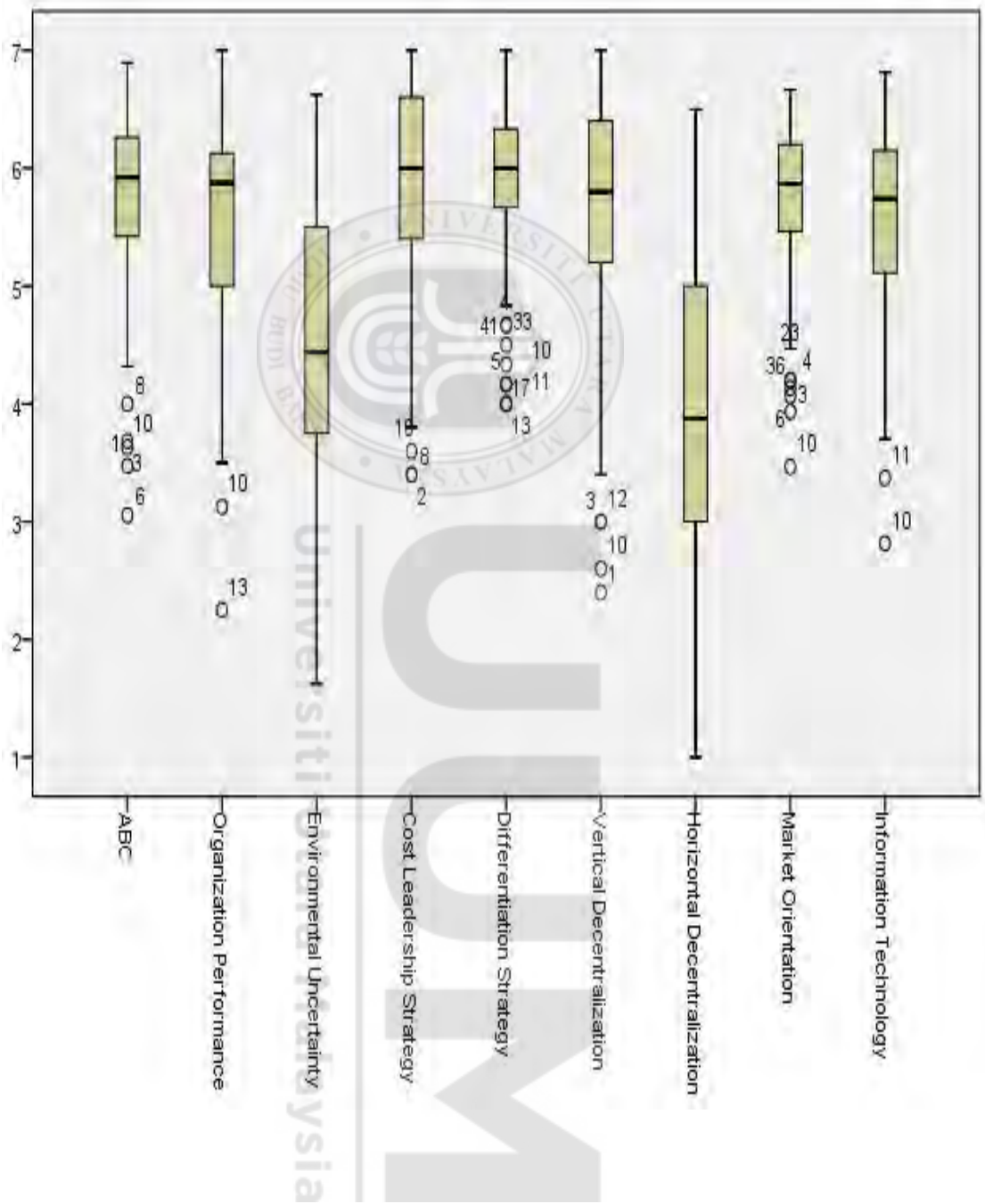
15. What is the type of industry in your organization?

	Food and beverages		Textiles and apparel
	Printing and publishing		Coal, and petroleum products
	Chemicals		Rubber-based products
	Metal products		Electrical and electronics
	Furniture		Pharmaceutical and toiletries
	Others (please state) …….		

-Ends-

Thank you for your cooperation in filling this questionnaire.

APPENDIX B
Outliers



Chi-square Distribution Table

d.f.	.995	.99	.975	.95	.9	.1	.05	.025	.01
1	0.00	0.00	0.00	0.00	0.02	2.71	3.84	5.02	6.63
2	0.01	0.02	0.05	0.10	0.21	4.61	5.99	7.38	9.21
3	0.07	0.11	0.22	0.35	0.58	6.25	7.81	9.35	11.34
4	0.21	0.30	0.48	0.71	1.06	7.78	9.49	11.14	13.28
5	0.41	0.55	0.83	1.15	1.61	9.24	11.07	12.83	15.09
6	0.68	0.87	1.24	1.64	2.20	10.64	12.59	14.45	16.81
7	0.99	1.24	1.69	2.17	2.83	12.02	14.07	16.01	18.48
8	1.34	1.65	2.18	2.73	3.49	13.36	15.51	17.53	20.09
9	1.73	2.09	2.70	3.33	4.17	14.68	16.92	19.02	21.67
10	2.16	2.56	3.25	3.94	4.87	15.99	18.31	20.48	23.21
11	2.60	3.05	3.82	4.57	5.58	17.28	19.68	21.92	24.72
12	3.07	3.57	4.40	5.23	6.30	18.55	21.03	23.34	26.22
13	3.57	4.11	5.01	5.89	7.04	19.81	22.36	24.74	27.69
14	4.07	4.66	5.63	6.57	7.79	21.06	23.68	26.12	29.14
15	4.60	5.23	6.26	7.26	8.55	22.31	25.00	27.49	30.58
16	5.14	5.81	6.91	7.96	9.31	23.54	26.30	28.85	32.00
17	5.70	6.41	7.56	8.67	10.09	24.77	27.59	30.19	33.41
18	6.26	7.01	8.23	9.39	10.86	25.99	28.87	31.53	34.81
19	6.84	7.63	8.91	10.12	11.65	27.20	30.14	32.85	36.19
20	7.43	8.26	9.59	10.85	12.44	28.41	31.41	34.17	37.57
22	8.64	9.54	10.98	12.34	14.04	30.81	33.92	36.78	40.29
24	9.89	10.86	12.40	13.85	15.66	33.20	36.42	39.36	42.98
26	11.16	12.20	13.84	15.38	17.29	35.56	38.89	41.92	45.64
28	12.46	13.56	15.31	16.93	18.94	37.92	41.34	44.46	48.28
30	13.79	14.95	16.79	18.49	20.60	40.26	43.77	46.98	50.89
32	15.13	16.36	18.29	20.07	22.27	42.58	46.19	49.48	53.49
34	16.50	17.79	19.81	21.66	23.95	44.90	48.60	51.97	56.06
38	19.29	20.69	22.88	24.88	27.34	49.51	53.38	56.90	61.16
42	22.14	23.65	26.00	28.14	30.77	54.09	58.12	61.78	66.21
46	25.04	26.66	29.16	31.44	34.22	58.64	62.83	66.62	71.20
50	27.99	29.71	32.36	34.76	37.69	63.17	67.50	71.42	76.15
55	31.73	33.57	36.40	38.96	42.06	68.80	73.31	77.38	82.29
60	35.53	37.48	40.48	43.19	46.46	74.40	79.08	83.30	88.38
65	39.38	41.44	44.60	47.45	50.88	79.97	84.82	89.18	94.42
70	43.28	45.44	48.76	51.74	55.33	85.53	90.53	95.02	100.43
75	47.21	49.48	52.94	56.05	59.79	91.06	96.22	100.84	106.39
80	51.17	53.54	57.15	60.39	64.28	96.58	101.88	106.63	112.33
85	55.17	57.63	61.39	64.75	68.78	102.08	107.52	112.39	118.24
90	59.20	61.75	65.65	69.13	73.29	107.57	113.15	118.14	124.12
95	63.25	65.90	69.92	73.52	77.82	113.04	118.75	123.86	129.97
100	67.33	70.06	74.22	77.93	82.36	118.50	124.34	129.56	135.81

APPENDIX C

Additional Analysis

1. ABC Implementation for First Level

Lower-Order Constructs of HCM

Table 1.
Outer Loadings, Cronbach's Alpha, Composite Reliability and AVE for the Lower-Order Constructs of HCM (First Level of ABC Implementation)

Items and Constructs	Loadings	Cronbach's Alpha	Composite Reliability	AVE
ABC Implementation				
Impact on Organizational Process		**0.774**	**0.847**	**0.525**
ABC1	0.676			
ABC3	0.791			
ABC4	0.738			
ABC5	0.706			
ABC6	0.708			
Perceived Usefulness of ABC		**0.750**	**0.835**	**0.505**
ABC7	0.674			
ABC8	0.763			
ABC9	0.748			
ABC10	0.769			
ABC11	0.580			
Technical Characteristics		**0.827**	**0.885**	**0.657**
ABC 12	0.800			
ABC 13	0.804			
ABC 14	0.820			
ABC 15	0.820			
Employee Attitude		**0.895**	**0.927**	**0.761**
ABC 16	0.893			
ABC 17	0.865			
ABC18	0.872			
ABC19	0.859			
Organizational Performance				
Financial		**0.856**	**0.903**	**0.699**
OP1	0.849			
OP2	0.892			
OP3	0.823			
OP4	0.778			
Non-Financial		**0.830**	**0.887**	**0.662**
OP5	0.842			
OP6	0.854			

OP7	0.752			
OP8	0.804			
Environmental Uncertainty		**0.879**	**0.903**	**0.541**
EU1	0.591			
EU2	0.691			
EU3	0.769			
EU 4	0.705			
EU5	0.806			
EU6	0.753			
EU7	0.769			
EU8	0.777			
Market Orientation				
Customer Orientation		**0.783**	**0.852**	**0.536**
MO1	0.762			
MO2	0.789			
MO3	0.728			
MO4	0.688			
MO5	0.685			
Competitor Orientation		**0.745**	**0.838**	**0.565**
MO7	0.754			
MO8	0.819			
MO9	0.685			
MO10	0.743			
Inter-Functional Coordination		**0.713**	**0.823**	**0.539**
MO11	0.742			
MO12	0.695			
MO13	0.805			
MO14	0.687			
Cost Leadership Strategy		**0.851**	**0.895**	**0.631**
CS1	0.886			
CS2	0.844			
CS3	0.819			
CS4	0.726			
CS5	0.679			
Differentiation Strategy		**0.720**	**0.836**	**0.630**
CS9	0.819			
CS10	0.818			
CS11	0.741			
Vertical Decentralization		**0.828**	**0.879**	**0.594**
OS1	0.737			
OS2	0.804			
OS3	0.806			
OS4	0.788			
OS5	0.713			
Horizontal Decentralization		**0.778**	**0.843**	**0.575**
OS6	0.666			

OS7	0.713			
OS8	0.834			
OS9	0.808			
Information Technology				
IT for Communication		**0.779**	**0.858**	**0.603**
IT1	0.834			
IT2	0.800			
IT3	0.784			
IT4	0.680			
IT for Production		**0.875**	**0.904**	**0.574**
IT5	0.645			
IT6	0.734			
IT7	0.860			
IT8	0.767			
IT9	0.778			
IT10	0.787			
IT11	0.715			
IT for Decision		**0.805**	**0.872**	**0.631**
IT14	0.759			
IT15	0.771			
IT16	0.831			
IT17	0.814			
IT for Administration		**0.883**	**0.909**	**0.591**
IT18	0.756			
IT19	0.710			
IT23	0.650			
IT24	0.776			
IT25	0.847			
IT26	0.784			
IT27	0.839			

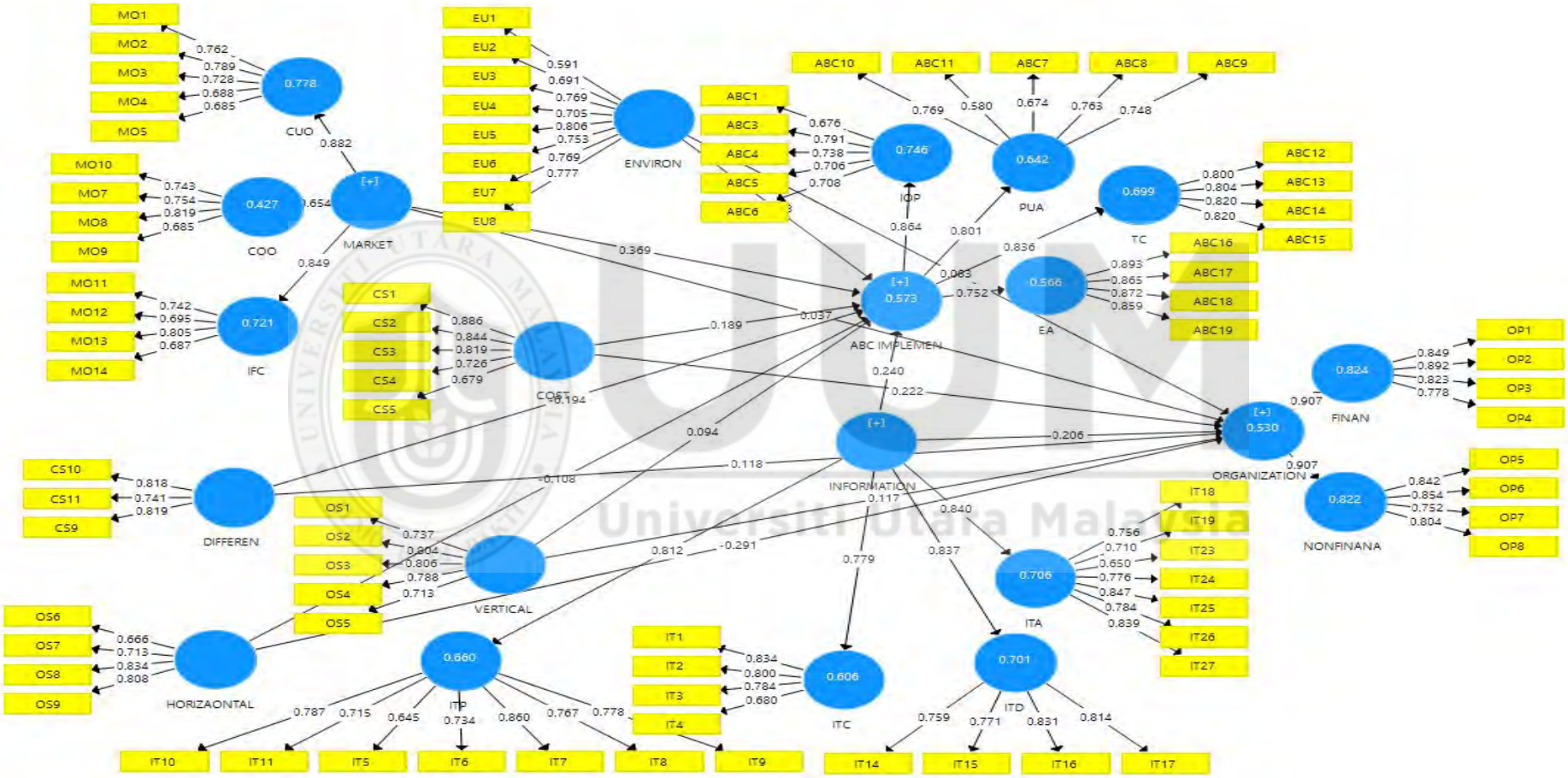


Figure 1.
Lower-Order Constructs of HCM (First level of ABC Implementation)

Table 2.

Discriminant Validity (Fornell-Larcker Criterion) for the Lower-Order Constructs of HCM (First Level of ABC Implementation)

	COO	CLS	CUO	DS	EA	EU	FP	HD	IFC	IOP	ITA	ITC	ITD	ITP	NFP	PUA	TC	VD
COO	**0.752**																	
CLS	0.250	**0.795**																
CUO	0.368	0.496	**0.732**															
DS	0.391	0.384	0.466	**0.794**														
EA	0.134	0.498	0.444	0.261	**0.872**													
EU	0.076	0.279	0.281	0.149	0.363	**0.735**												
FP	0.238	0.413	0.411	0.413	0.521	0.282	**0.836**											
HD	0.031	-0.314	-0.228	-0.127	-0.282	-0.337	-0.402	**0.758**										
IFC	0.391	0.451	0.624	0.512	0.393	0.328	0.358	-0.222	**0.734**									
IOP	0.284	0.411	0.590	0.326	0.491	0.443	0.501	-0.368	0.507	**0.725**								
ITA	0.281	0.402	0.433	0.555	0.346	0.444	0.450	-0.299	0.441	0.615	**0.769**							
ITC	0.289	0.200	0.303	0.378	0.195	0.218	0.302	-0.174	0.297	0.551	0.591	**0.777**						
ITD	0.344	0.262	0.354	0.481	0.274	0.111	0.312	-0.056	0.412	0.377	0.625	0.517	**0.794**					
ITP	0.391	0.230	0.500	0.488	0.257	0.113	0.394	-0.134	0.415	0.375	0.441	0.550	0.656	**0.758**				
NFP	0.154	0.553	0.454	0.386	0.518	0.395	0.645	-0.475	0.444	0.535	0.514	0.406	0.358	0.312	**0.814**			
PUA	0.288	0.346	0.439	0.126	0.463	0.274	0.310	-0.182	0.501	0.625	0.283	0.293	0.263	0.255	0.410	**0.710**		
TC	0.284	0.435	0.489	0.275	0.485	0.385	0.400	-0.298	0.382	0.676	0.549	0.387	0.272	0.237	0.478	0.555	**0.811**	
VD	0.368	0.512	0.575	0.380	0.355	0.350	0.386	-0.233	0.485	0.515	0.536	0.402	0.383	0.462	0.540	0.447	0.515	**0.771**

Note: COO (Competitors Orientation), CLS (Cost Leadership Strategy), CUO (Customer Orientation), DS (Differentiation Strategy), EA (Employee Attitude), EU (Environmental Uncertainty) FP (Financial Performance), HD (Horizontal Decentralized Structure), IFO (Inter-Functional Coordination), IOP (Impact on Process), ITA (IT for Administration), ITC (IT for Communication), ITD (IT for Decision Support), ITP (IT for Production and Operations), NFP (Non-Financial Performance), PUA (Perceived Usefulness of ABC), TC (Technical Characteristics), VD (Vertical Decentralized Structure).

Note: Entries shown in bold represent the square root of the AVE

Higher-Order Constructs of HCM

Table 3.

Loadings, Cronbach's Alpha, Composite Reliability and AVE for Higher-Order Constructs of HCM (First Level of ABC Implementation)

Code	Loadings	Cronbach's Alpha	Composite Reliability	AVE
ABC Implementation		**0.830**	**0.887**	**0.663**
Impact on Organizational Process	0.874			
Perceived Usefulness of ABC	0.795			
Technical Characteristics	0.837			
Employee Attitude	0.746			
Organizational Performance		**0.785**	**0.902**	**0.822**
Financial	0.892			
Non-Financial	0.921			
Environmental Uncertainty	1.000	**Nil**	**Nil**	**Nil**
Market Orientation		**0.720**	**0.838**	**0.639**
Customer Orientation	0.885			
Competitor Orientation	0.610			
Inter-Functional Orientation	0.874			
Cost Leadership Strategy	1.000	**Nil**	**Nil**	**Nil**
Differentiation Strategy	1.000	**Nil**	**Nil**	**Nil**
Vertical Decentralization	1.000	**Nil**	**Nil**	**Nil**
Horizontal Decentralization	1.000	**Nil**	**Nil**	**Nil**
Information Technology		**0.838**	**0.890**	**0.670**
IT for Communication	0.813			
IT for Production	0.773			
IT for Decision Support	0.836			
IT for Administration	0.850			

Table 4

Discriminant Validity (Fornell-Larcker Criterion) for Higher-Order Constructs of HCM (First Level of ABC Implementation)

Constructs	1	2	3	4	5	6	7	8	9
ABC	**0.814**								
CLS	0.520	**1.000**							
DS	0.311	0.384	**1.000**						
EU	0.456	0.279	0.149	**1.000**					
HD	-0.355	-0.313	-0.127	-0.337	**1.000**				
IT	0.545	0.347	0.586	0.298	-0.219	**0.818**			
MO	0.635	0.520	0.568	0.312	-0.211	0.562	**0.799**		
OP	0.630	0.538	0.439	0.377	-0.486	0.527	0.500	**0.907**	
VD	0.565	0.512	0.380	0.350	-0.233	0.553	0.605	0.517	**1.000**

Note: Entries shown in bold represent the square root of the AVE.

ABC (ABC Implementation Success), CLS (Cost Leadership Strategy), DS (Differentiation Strategy), EU (Environmental Uncertainty), HD (Horizontal Decentralized Structure), IT (Information Technology), MO (Market Orientation), OP (Organizational Performance), VD (Vertical Decentralized Structure).

2. ABC Implementation for Second Level

Lower-Order Constructs of HCM

Table 5.
Outer Loadings, Cronbach's Alpha, Composite Reliability and AVE for the Lower-Order Constructs of HCM (Second Level of ABC Implementation)

Items and Constructs	Loadings	Cronbach's Alpha	Composite Reliability	AVE
ABC Implementation				
Impact on Organizational Process		**0.817**	**0.868**	**0.524**
ABC1	0.777			
ABC2	0.602			
ABC3	0.707			
ABC4	0.747			
ABC5	0.786			
ABC6	0.711			
Perceived Usefulness of ABC		**0.688**	**0.811**	**0.519**
ABC7	0.621			
ABC8	0.754			
ABC9	0.779			
ABC10	0.719			
Technical Characteristics		**0.836**	**0.890**	**0.671**
ABC 12	0.793			
ABC 13	0.746			
ABC 14	0.870			
ABC 15	0.861			
Employee Attitude		**0.904**	**0.933**	**0.777**
ABC 16	0.905			
ABC 17	0.879			
ABC18	0.885			
ABC19	0.855			
Organizational Performance				
Financial		**0.828**	**0.886**	**0.660**
OP1	0.806			
OP2	0.870			
OP3	0.786			
OP4	0.784			
Non-Financial		**0.826**	**0.885**	**0.658**
OP5	0.839			
OP6	0.833			
OP7	0.729			
OP8	0.838			
Environmental Uncertainty		**0.872**	**0.897**	**0.526**
EU1	0.511			
EU2	0.674			

EU3	0.763			
EU 4	0.692			
EU5	0.814			
EU6	0.769			
EU7	0.790			
EU8	0.743			
Market Orientation				
Customer Orientation		**0.790**	**0.857**	**0.545**
MO1	0.767			
MO2	0.762			
MO3	0.749			
MO4	0.734			
MO5	0.675			
Competitor Orientation		**0.767**	**0.851**	**0.588**
MO7	0.824			
MO8	0.796			
MO9	0.694			
MO10	0.749			
Inter-Functional Coordination		**0.759**	**0.839**	**0.512**
MO11	0.765			
MO12	0.731			
MO13	0.791			
MO14	0.690			
MO15	0.583			
Cost Leadership Strategy		**0.845**	**0.891**	**0.622**
CS1	0.869			
CS2	0.826			
CS3	0.808			
CS4	0.763			
CS5	0.662			
Differentiation Strategy		**0.700**	**0.828**	**0.615**
CS9	0.793			
CS10	0.770			
CS11	0.790			
Vertical Decentralization		**0.853**	**0.895**	**0.630**
OS1	0.771			
OS2	0.803			
OS3	0.846			
OS4	0.817			
OS5	0.727			
Horizontal Decentralization		**0.742**	**0.809**	**0.520**
OS6	0.574			
OS7	0.616			
OS8	0.820			
OS9	0.837			
Information Technology				

IT for Communication		**0.787**	**0.860**	**0.610**
IT1	0.855			
IT2	0.860			
IT3	0.774			
IT4	0.608			
IT for Production		**0.855**	**0.889**	**0.503**
IT6	0.576			
IT7	0.828			
IT8	0.748			
IT9	0.774			
IT10	0.749			
IT11	0.710			
IT12	0.621			
IT13	0.631			
IT for Decision		**0.806**	**0.872**	**0.632**
IT14	0.786			
IT15	0.710			
IT16	0.818			
IT17	0.857			
IT for Administration		**0.897**	**0.920**	**0.623**
IT18	0.811			
IT19	0.716			
IT23	0.638			
IT24	0.810			
IT25	0.842			
IT26	0.819			
IT27	0.863			

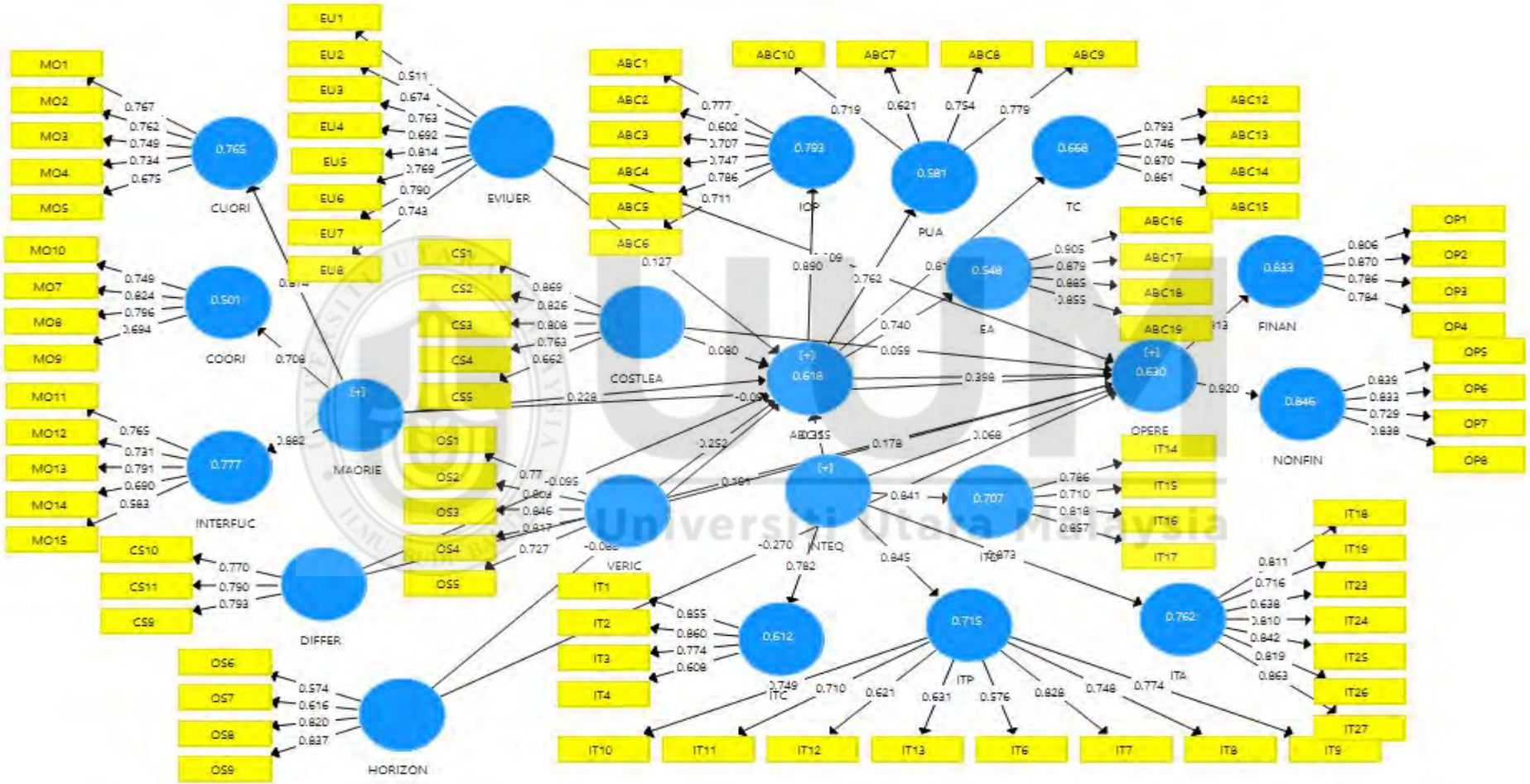


Figure 2.
Lower-Order Constructs of HCM (Second level of ABC Implementation)

Table 6.

Discriminant Validity (Fornell-Larcker Criterion) for the Lower-Order Constructs of HCM (Second Level of ABC Implementation)

	COO	CLS	CUO	DS	EA	EU	FP	HD	IFC	IOP	ITA	ITC	ITD	ITP	NFP	PUA	TC	VD
COO	0.**767**																	
CLS	0.268	**0.789**																
CUO	0.430	0.470	**0.738**															
DS	0.328	0.375	0.432	**0.785**														
EA	0.077	0.422	0.445	0.290	0.**881**													
EU	0.048	0.372	0.364	0.245	0.450	0.**725**												
FP	0.169	0.370	0.456	0.412	0.474	0.421	0.**812**											
HD	0.050	-0.327	-0.183	-0.074	-0.271	-0.511	-0.410	0.**721**										
IFC	0.485	0.512	0.650	0.599	0.474	0.508	0.463	-0.233	**0.716**									
IOP	0.315	0.475	0.601	0.364	0.479	0.386	0.595	-0.314	0.487	**0.724**								
ITA	0.263	0.447	0.417	0.576	0.396	0.508	0.476	-0.347	0.464	0.601	**0.789**							
ITC	0.365	0.218	0.367	0.450	0.191	0.329	0.344	-0.188	0.314	0.500	0.629	**0.781**						
ITD	0.437	0.384	0.502	0.494	0.380	0.180	0.420	-0.067	0.482	0.449	0.660	0.526	**0.795**					
ITP	0.377	0.306	0.623	0.530	0.402	0.260	0.451	-0.153	0.509	0.452	0.541	0.585	0.687	**0.709**				
NFP	0.167	0.566	0.475	0.405	0.516	0.422	0.679	-0.487	0.477	0.584	0.550	0.394	0.444	0.418	**0.811**			
PUA	0.442	0.350	0.467	0.253	0.447	0.314	0.455	-0.157	0.481	0.649	0.391	0.370	0.409	0.386	0.439	**0.721**		
TC	0.309	0.396	0.511	0.321	0.459	0.398	0.458	-0.341	0.425	0.667	0.594	0.421	0.414	0.424	0.558	0.477	**0.819**	
VD	0.405	0.591	0.639	0.371	0.365	0.345	0.468	-0.238	0.595	0.623	0.526	0.393	0.456	0.515	0.614	0.463	0.659	**0.794**

Note: COO (Competitors Orientation), CLS (Cost Leadership Strategy), CUO (Customer Orientation), DS (Differentiation Strategy), EA (Employee Attitude), EU (Environmental Uncertainty) FP (Financial Performance), HD (Horizontal Decentralized Structure), IFO (Inter-Functional Coordination), IOP (Impact on Process), ITA (IT for Administration), ITC (IT for Communication), ITD (IT for Decision Support), ITP (IT for Production and Operations), NFP (Non-Financial Performance), PUA (Perceived Usefulness of ABC), TC (Technical Characteristics), VD (Vertical Decentralized Structure).

Note: Entries shown in bold represent the square root of the AVE

Higher-Order Constructs of HCM

Table 7.
Loadings, Cronbach's Alpha, Composite Reliability and AVE for Higher-Order Constructs of HCM (second Level of ABC Implementation)

Code	Loadings	Cronbach's Alpha	Composite Reliability	AVE
ABC Implementation		**0.818**	**0.881**	**0.649**
Impact on Organizational Process	0.885			
Perceived Usefulness of ABC	0.787			
Technical Characteristics	0.823			
Employee Attitude	0.721			
Organizational Performance		**0.809**	**0.912**	**0.839**
Financial	0.904			
Non-Financial	0.927			
Environmental Uncertainty	1.000	**Nil**	**Nil**	**Nil**
Market Orientation		**0.766**	**0.860**	**0.676**
Customer Orientation	0.887			
Competitor Orientation	0.668			
Inter-Functional Orientation	0.892			
Cost Leadership Strategy	1.000	**Nil**	**Nil**	**Nil**
Differentiation Strategy	1.000	**Nil**	**Nil**	**Nil**
Vertical Decentralization	1.000	**Nil**	**Nil**	**Nil**
Horizontal Decentralization	1.000	**Nil**	**Nil**	**Nil**
Information Technology		**0.818**	**0.881**	**0.649**
IT for Communication	0.801			
IT for Production	0.862			
IT for Decision Support	0.858			
IT for Administration	0.831			

Table 8.
Discriminant Validity (Fornell-Larcker Criterion) for Higher-Order Constructs of HCM (Second Level of ABC Implementation)

Constructs	1	2	3	4	5	6	7	8	9
ABC	**0.806**								
CLS	0.512	**1.000**							
DS	0.384	0.375	**1.000**						
EU	0.479	0.372	0.245	**1.000**					
HD	-0.341	-0.327	-0.074	-0.511	**1.000**				
IT	0.640	0.414	0.616	0.391	-0.234	**0.838**			
MO	0.657	0.528	0.564	0.422	-0.185	0.621	**0.822**		
OP	0.695	0.518	0.445	0.460	-0.492	0.576	0.527	**0.916**	
VD	0.666	0.591	0.371	0.345	-0.238	0.568	0.681	0.595	**1.000**

Note: Entries shown in bold represent the square root of the AVE.
ABC (ABC Implementation Success), CLS (Cost Leadership Strategy), DS (Differentiation Strategy), EU (Environmental Uncertainty), HD (Horizontal Decentralized Structure), IT (Information Technology), MO (Market Orientation), OP (Organizational Performance), VD (Vertical Decentralized Structure).