THE IMPACT OF STRATEGIC ALIGNMENT ON THE PERFORMANCE OF PUBLIC ORGANISATIONS

A Thesis submitted for the degree of Doctor of Philosophy

Muneera Mohamed Al Khalifa

Brunel Business School

Brunel University London

February 2016

'And above every possessor of knowledge there is one most knowing.'

(Yusuf, 76)

Abstract

Today, technology is a key component in resolving a range of strategic issues; organisations are becoming increasingly dependent on Information Technology (IT) to improve their performance. In order to make the most out of the available technology, the continuing need to integrate IT strategies with business strategies remains evident. As illustrated from the extant literature, strategic planning and IT appear to present positive correlations with improved performance of organisations. Whilst there has been a range of research that has attempted to apply concepts such as strategic alignment, it remains that there are very few empirical findings centred on the overall effectiveness and usefulness of this approach.

The aim of this study is to examine the impact of strategic alignment between business and IT on organisational performance of public organisations and depicts factors affecting this alignment. The development of the conceptual model, which guided this study, was based on prior research conducted in the field of strategic alignment, organisational performance, Information Systems (IS) success and IT acceptance. The rationale here is that previous research on strategic alignment has mainly focused on the development of models and frameworks and examines them in a suitable context or explores the relationships between the variables of the models. Research has shown the need for further investigation on the impact of strategic alignment on organisational performance. Hence, This study expands the knowledge in this field by examining the impact of the strategic alignment of business and IT on the performance of public organisations using quantitative method approach. Following to the development of the conceptual model, a web survey examines this relationship was sent to 413 executives of Bahrain public organisations. Data was collected using a web-based questionnaire from a sample of 163 participants, i.e. some of whom were IT executives, business executives or both.

The results of this study imply a positive impact of strategic alignment on organisational performance of public organisations. It also suggest that IT acceptance and prior IS success significantly influence the strategic alignment in public organisations of Bahrain.

Key words: Strategic alignment, organisational performance, prior IS success and IT acceptance.

Acknowledgment

This research will not have been completed with out the help and guidance of Allah the Almighty and the support of many individuals to whom I will always be thankful.

At first, I would like to express my appreciation and gratitude to my supervisors, *Professor Amir Sharif* and *Professor Wajeeh El Ali*, for their guidance and constructive comments. Their priceless advice and encouragement allowed me to grow as a researcher. I would also like to acknowledge *Professor Abdulla Alhawaj, Professor Zahir Irani and Dr. Tillal Eldabi* for the continuous support, encouragement, and for keeping me motivated during this research. My gratitude is also extended to *Dr. Mohammed Kamal, Dr. Anjum Razzaqui*, *Mr. GowriShanker*, *Ms. Hessa Al Dhaen*, *Mrs. Emma Sigsworth* for the technical and academic support. I am also very grateful to all the professors and doctors who helped me go through this phase of my life by lecturing, reviewing, examining and for being inspiring role models. Further acknowledgement is due to the public organisations of Bahrain; headed by the cabinet and the first deputy prime minister's office, their participation and encouragement was really appreciated.

A very special thanks is due to my family, who incented me to strive towards my goals. Words cannot express how grateful I am to my mother ***Shaikha Sharina Bint Mohamed***, father ***Shaikh Mohamed Bin Salman***, sisters (***Latifa, Abeer, Khawla, Shaikha and Aysha)*** and my aunts ***Shaikha Sabeeka and Shaikha Thajba*** for the continuous support. Your prayers for me sustained me thus far. I would also like to thank my precious nieces and nephews for making my life easier while doing my research. ***Abdulla, Khalifa*** **and** ***Mohamed*** I am deeply thankful. Additional gratitude is offered to my friends, brothers-in-law, colleagues and everyone who directly and indirectly helped me in doing this achievement. All of you have helped in a unique way and have been there to support me in this lonely journey.

Finally, I would like to thank *Professor Jerry Luftman*, for the inspiration and encouragement, *Proffessor David Edgar* and *Dr. Lynn Baldwin* for agreeing to do my viva-voce examination, having them as examiners is a great honor.

Dedication

This thesis is dedicated with deepest love and everlasting respect to:

The one who honored me by his generosity in supporting my academic progress, to my role model and the one I always look up to, ***His Majesty King Hamad Bin Isa bin Salman Al Khalifa, King of Bahrain.***

My precious parents, for their endless support and encouragement.

And to every woman who strives to make a difference.

Declarations

Research undertaken and published by Muneera Mohamed Al Khalifa during the PhD:

Al Khalifa, M.; Sharif, A. and El Ali, W. (2014) ‘ The Impact of Strategic Alignment on Organisational Performance’, *British Academy of Management Conference*: Belfast, UK, 9th - 12th Sep.

Al Khalifa, M. (2014) ‘ The Impact of Strategic Alignment on Organisational Performance’, *PhD Doctoral Symposium (Brunel University):* Manama, Bahrain, 18th - 19th May.

Al Khalifa, M. (2013) ‘ The Impact of Strategic Alignment on Organisational Performance’, *PhD Doctoral Symposium (Brunel University):* Ahlia University, Manama, Bahrain, 28th - 29th May.

Al Khalifa, M. (2012) ‘ The Impact of Strategic Alignment on Organisational Performance’, *PhD Doctoral Symposium (Brunel University):* Ahlia University, Manama, Bahrain, 14th - 15th April,

Table of Contents

Abstract I
Acknowledgment III
Dedication IV
Declarations V
Table of Contents VI
List of Tables VIII
List of Figures X
CHAPTER 1: Introduction 1
1.1 Background to the Research Area 1
1.2 Research Problem 3
1.3 Significance of this Research 6
1.4 Research Aim and Objectives 7
1.5 Thesis Outline 8
1.6 Summary 10
CHAPTER 2: Literature Review 11
2.1 Introduction 11
2.2 The Concept of Strategic Alignment 11
2.3 Review of Strategic Alignment Models/ Tools 13
2.3.1 Strategic Alignment Model (SAM) 13
2.3.2 The Generic Framework 15
2.3.3 Inhibitors and Enablers of Strategic Alignment 17
2.3.4 Strategic Alignment Maturity Model (SAMM) 18
2.3.5 Other Models Measuring Strategic Alignment 21
2.4 Factors Influencing Strategic Alignment 22
2.5 Organisational Performance 26
2.5.1 Performance Measurement Frameworks 27
2.5.2 Selection of Organisational Performance Measures 30
2.6 The Impact of Strategic Alignment on Performance 30
2.6.1 IT Strategies and Organisational Performance 34
2.6.2 Business Strategies and Organisational Performance 37
2.6.3 Strategic Alignment and Organisational Performance 39
2.7 Summary 42
CHAPTER 3: Conceptual Model 44
3.1 Introduction 44
3.2 Conceptual Model Development 44
3.2.1 Prior IS Success and Strategic Alignment 45
3.2.2 IT Acceptance and Strategic Alignment 50
3.2.3 Strategic Alignment and Organisational Performance 54
3.3 Strategic Alignment Fit Perspective of the Conceptual Model 57
3.4 Summary 59
CHAPTER 4: Research Methodology 60
A Quantitative Approach 60
4.1 Introduction 60
4.2 Fundamental Philosophical Assumptions 60
4.2.1 Research Approach 62
4.2.2 Justifying the Use of Quantitative Approach 64

4.3 Empirical Research Methodology 66
4.3.1 Research Context 66
4.3.2 Research Design 71
4.3.3 Data Collection 73
4.4 Data Analysis 79
4.5 Summary 81
CHAPTER 5: Data Analysis 82
5.1 Introduction 82
5.2 Sample and Data Collection 82
5.3 Descriptive Analysis 84
5.3.1 Demographic Characteristics 85
5.4 Quantitative Data Analysis 100
5.4.1 Missing Data 100
5.4.2 Normality 101
5.4.3 Correlation Analysis 108
5.4.4 Reliability Test 114
5.4.5 Regression Analysis 116
5.4.6 SEM Model Testing 120
5.5 Summary 125
CHAPTER 6: Discussion 126
6.1 Introduction 126
6.2 Discussion of the Findings 126
6.2.1 Findings of Prior IS Success and Strategic Alignment 129
6.2.2 Findings of IT Acceptance and Strategic Alignment 131
6.2.3 Findings of Strategic Alignment and Organisational Performance 132
6.3 Summary 134
CHAPTER 7: Conclusions 135
7.1 Introduction 135
7.2 Research Summary 135
7.3 Research Contributions 137
7.5 Research Implications 139
7.6 Research Limitations 139
7.7 Future Work 140
References 142
Appendices 170
Appendix (1) Survey 170
Appendix (2) Letter to the Organisations 175
Appendix (3) Ethical Approval 176
Appendix (4) Quantitative Analysis Results 177

List of Tables

Table 2.1: Enablers and Inhibitors of Business-IT alignment (Luftman et al., 1999) 17
Table 2.2: Significant Factors of Strategic Alignment in Prior Research 24
Table 3.1: Factors Influencing the Alignment of Business and IT in Prior Research..... 45
Table 3.2: A Summary of IT Acceptance Models and Main Constructs Used..... 51
Table 3.3: IT Acceptance Constructs (Adopted from Venkatesh et al., 2003, pp448 & 451) 54
Table 3.4: Organisational Performance Measures based on the Performance Prism Framework . 56
Table 3.5: Perspectives of Fit in the Literature (Adapted form Kefi & Kalika 2005) 57
Table 4.1: A Comparison Between Quantitative and Qualitative Research - Adapted From Johnson & Christensen (2008) 64
Table 4.2: Constructs of the Conceptual Model and the Related Measurement Items 73
Table 4.3: Survey Pre-test Procedures (Adapted from Dillman *et al.,* 2000) 78
Table 5.1: Demographic Characteristics of the Research Sample 84
Table 5.2: Business Unit 85
Table 5.3: Type of Service 85
Table 5.4 Communication Descriptive Analysis..... 87
Table 5.5: Competency Descriptive Analysis 88
Table 5.6: Governance Descriptive Analysis 90
Table 5.7: Partnership Descriptive Analysis 91
Table 5.8: Scope and Architecture Descriptive Analysis..... 92
Table 5.9: Skills Descriptive Analysis 93
Table 5.10: Perceived Usefulness Descriptive Analysis 94
Table 5.11: Perceived Ease of Use Descriptive Analysis 95
Table 5.12: Prior IS Success Descriptive Analysis 96
Table 5.13: Stakeholders Satisfaction's Descriptive analysis 97
Table 5.14: Stakeholder's Contribution Descriptive Analysis 98
Table 5.15: Strategies Descriptive Analysis 98
Table 5.16: Processes Descriptive Analysis..... 99
Table 5.17: Descriptive Analysis Capabilities 100
Table 5.18: Normality Test: Demographic Characteristics..... 102
Table 5.19: Normality Test- Strategic Alignment..... 104
Table 5.20: Normality Test- IT Acceptance..... 105
Table 5.21: Normality Test- Prior IS Success..... 105
Table 5.22: Normality Tests- Organisational Performance 107
Table 5.23: Correlations Between the Sub-variables of Strategic Alignment 109
Table 5.24: Correlations Between the Sub-variables of IT Acceptance 111
Table 5.25: Correlations Between the Sub-variables of Prior IS Success 112
Table 5.26: Correlations Between the Sub-variables of Organisational Performance..... 113
Table 5.27: Reliability Test..... 114
Table 5.28: Principal Component Analysis..... 115
Table 5.29: Correlations between Strategic Alignment and Prior IS Success 117
Table 5.30: Regression Between strategic Alignment and Prior IS Success 117
Table 5.31: Prior IS Success and Strategic Alignment Coefficients[a] Table 118
Table 5.32: Correlations Between Strategic alignment and IT Acceptance 118
Table 5.33: Regression Between Strategic Alignment and IT Acceptance 118
Table 5.34: Strategic Alignment and IT Acceptance Coefficients[a] Table 119
Table 5.35: Correlations Between Strategic alignment and Organisational Performance 119
Table 5 36: Regression Between Organisational Performance and Strategic Alignment 120
Table 5.37: Strategic Alignment and IT Acceptance Coefficients[a] Table 120

Table 5.38: Results for Default Model 122
Table 5.39: Root Mean Square Error of Approximation 123
Table 5.40: Goodness of Fit Index 123
Table 5.41: Regression Weights 124
Table 5.42: Standardized Regression Weights 124
Table 5.43: Covariances 125
Table 6.1: Summary of Hypothesis and Paths Coefficients 129

List of Figures

Figure 1.1: Thesis Outline 9
Figure 2.1: Strategic Alignment (adapted from Henderson & Venkatraman, 1989). 14
Figure 2.2: A Generic Framework for Information Management16 (Maes *et al*., 2000 & Avison *et al.*, 2004) 16
Figure 2.3: Strategic Alignment Maturity Summary (Luftman, 2000) 20
Figure 3.1: Conceptual Model for Strategic Alignment and Organisational Performance 58
Figure 4.1: Punch's Hierarchy of Concepts (Punch, 2003) 63
Figure 4.2: Research Design 72
Figure 5.1: Conceptual Model for Strategic Alignment and Organisational Performance 116
Figure 5.2: SEM Model for Strategic Alignment and Organisational Performance 121

CHAPTER 1: Introduction

1.1 Background to the Research Area

The alignment of Information Technology (IT) with the business goals of an organisation is considered a highly important topic. Researchers have discussed the various tools, methods and approaches for measuring and assessing this importance and value based on the fact that IT has not lived up to organisations' expectations of enhancing performance and competitiveness despite the fact that it is widely acknowledged as an increasingly powerful tool for improving the delivery of private and public services, as well as enhancing organisations overall global reach and opportunities (Martinez and Williams, 2010). The value of IT is difficult to explain on a balance sheet owing to its interweaving nature (Irani, 2002; Luftman and Derkson, 2012). Xue *et al*. (2012) have identified that organisational efficiency is achieved once concentration is directed towards either cost efficiency or innovation through IT but not both.

Similar to strategic planning, IT planning can help organisations in the creative adoption of IT in a number of different ways: rationalising its investment, controlling expenditure, protecting existing IT investments, resolving conflicting demands for limited IT resources, obtaining joint IT management/user commitment, and avoiding ad-hoc ICT projects (Brady *et al*., 2008; Martinez and Williams, 2010; Thompson and Teo, 2004; Wild and MnCube, 1996). Accordingly, researchers suggest that organisations that actively align their business and IT strategies witness positive impacts in terms of IT effectiveness (Ciborra, 1997; Galliers, 1991; Porter, 1987), resulting in an enhanced business performance (Cragg *et al*., 2002). However, ambiguity still exists with regard to the impact, nature and characteristics of alignment and methods of linkage and integration, and remains one of the main issues facing organisations (Chan and Reich, 2007; Luftman and Ben-Zvi, 2011). Studies in this area have not yet provided sufficient research on the factors affecting business–IT alignment; especially the ones related to the culture and nature of organisation (Burn, 1997; Chan *et al*., 2006; Farrell, 2003; Hsaio and Ormerod, 1998).

Hence, this study investigates whether strategic alignment enhances organizational performance of public organisations or not. Organizational performance in terms of how far the organization's actual output or result matches its desired output or goal. Three areas of output are seen important when considering organizational performance in the private sector such as financial performance, product market performance and shareholder's return (Richard *et al.,* 2009). On the other hand, public sector is to meet the needs of a variety of stakeholders and pursuing individuals goals and objectives. The performance measures in public sector is not only limited to the mentioned three areas, rather how far it (public sector) meets the demands and needs of the stakeholders, which has become very crucial (Adcroft and Willis, 2005; Dixit, 2002 cited in Propper and Wilson 2003). Since the remit of public organisations often covers a number of diverse fields; such as the development of public policy, the deliverance of public services, the maintenance of social security, and law and order (Davies *et al*., 2007); it is linked to the degree to which benefits or public values are delivered in political, social and economic spheres, and can be measured depending on the degree to which the organisation's mission and goals have been achieved (Sorrentino, 2004). Hence, organisations need to enhance the delivery of services to the public, and accordingly develop internal processes through the development of its resources; such as human, organisational, informational, technological and financial (Ojo *et al*., 2009), it is considered that this will go some way to achieving enhanced performance. Accordingly, this research will use multiple performance indicators to capture the performance from both financial and non-financial angles.

During recent times, many organisations have depended on strategic values to develop services and IT resources, which are classified as one of the major strategic resources in a modern organisation (Elbanna, 2008). Nonetheless, the failure of IT investment is one of the key issues facing both public and private entities (Odiit *et al.*, 2014). This failure can be linked to many factors one of the main ones being the lack of clarity concerning the goals and benefits expected from this type of investment, especially across public organisations' IT investments, which are not measured by financial indicators but rather by the achievement of social and political goals (Friesk *et al*., 2014). In consideration to this point, the current research addresses the apparent gap between theory and practice (Cataldo et al., 2012, Chan and Reich,

2007; Luftman and Derksen, 2012; Wilson *et al*., 2013), and further proposes a model by which organisations can link IT and business strategies and goals to organisational performance.

This research attempts to fill the gap identified in the literature by studying the factors affecting the strategic alignment of business and IT as well, and presenting it to further investigate the implications of this alignment on the organisational performance of public organisations.

The intended contribution will allow researchers, managers and public organisation executives to identify factors affecting this alignment; subsequently, leading them to achieve improved levels of alignment. This research therefore, presents a practical use of the Strategic Alignment Model (SAM), facilitating businesses in managing factors affecting alignment and providing scholars with empirical data on strategic alignment and organisational performance of public organisations paving the way for further research in this area.

1.2 Research Problem

Since the 1950s, business and public organisations have witnessed tremendous trends and developments across their market and non-market environments, which have, in turn, influenced organisations' capacity to manage their environments (Baron, 2006). Such trends and developments include IT, which can be considered as an opportunity or a burden on organisations. Hence, organisations need to cope with these trends to make the most out of them.

Public administrators have been realising that the waves of change sweeping across the world are more than manifestations of policies of particular governments or ideologies (Wilkinson and Willmot, 1995). Additionally, with regard to the external pressures generated by globalisation trends, there is a growing recognition amongst public administrators that they have to deal with a series of pressures within their national boundaries. Public organisations accordingly, are seeking to adopt models and approaches that have proven valuable in enhancing business organisations performance. In an effort to cope with the external and internal pressures of their

stakeholder, Bryson (1988) suggests that public organisations have to do at least three things: 'first, these organisations need to exercise as much discretion as they can in the areas under their control to ensure responsiveness to their stakeholders. Second, these organisations need to develop good strategies to deal with their changed circumstances. And third, they need to develop a coherent and defensible basis for decision making' (p. 74). Taking into consideration the fact that such public sector organisations and their managements are under pressure to do more for less, human resources and IT are then recognised as two forces that can significantly affect the performance and responsiveness of both public and private sectors in such a way that is related to the objectives of both sectors, where maximising the financial revenues of their services is one of the main objectives of private sectors, whilst minimising the costs of the provided services is one of the main objectives of public sectors (Bingle *et al.,* 2013).

Recent studies have highlighted the value of strategic management and its positive impact on performance considering that strategy is centred on managing and harmonising the organisational resources with environmental threats and opportunities (Andrews, 1980). Organisations are encouraged to align their IT strategies with business strategies so as to benefit from IT opportunities in view of the fact that IT is considered one of the key organisational resources (Bharadwaj *et al.,* 2013).

Indeed, researchers, such as Yusuf and Saffu (2009), suggested that since developing countries keep on doing economic reforms, private and public organisations need to be customer service-oriented to keep up with reforms requirements aside from financial outcomes. Decision makers in developing countries often need strategic planning and IT strategic planning to enhance their organisation's performance, meeting citizens' needs and elevating service level. For instance, Baron (2006, p. 53) states that 'managers rather than staff now formulate a firms strategy… managers must be centrally involved because they are in the best position to assess the consequences… and the overall performance'. Moreover, they need further research for key issues, such as the factors that enable or hinder strategic planning and IT activities, and the applicability of integrating business and IT strategies in public organisations in developing countries. Undoubtedly, without solving these issues

public organisations will not be able to integrate business strategies and IT strategies directed at building business IT strategy in a route to enhance performance.

When implementing IT, organisations are expected to adopt IT strategies in an effort to decide and accordingly employ the technology as an enabler or as a driver to organisational goals and objectives. Hence, the IT strategy adopted is encouraged to be aligned with the business strategy in an effort to enhance organisational performance, in case organisations or stakeholders are not seeing returns on IT investments on the business.

However, modern day organisations lack the knowledge of aligning business strategies with IT strategies and hence measuring its impact on organisational performance (Reich and Benbasat, 2000). Also there is a high level of disagreement on the factors affecting strategic alignment, a reinvestigation is needed of the factors that affect strategic alignment, especially in public organisations. Whilst the empirical findings to the research question, that is, whether strategic alignment enhances organisational performance remain largely inconsistent (Walter *et al*., 2013), some are supportive and found positive and significant link between alignment and performance (King *et al.* 2002; Santhanam *et al.* 2003; Bao *et al.,* 2008 and Colbert *et al.,* 2008). Others were partially supportive (Knight *et al.,* 1999; Walter *et al.,* 2013). For instance, Chae *et al.* (2014) did not find any significant link between a firm's ability to assemble, integrate and deploy IT- based resources and financial performance. However, they suggested replicating the studies in a different context to better understand the potential advantage of it in different types of organisations, as well as identifying the variables that can affect the relationship between firm's ability to assemble, integrate and deploy IT- based resources and performance. On the other hand, some did not support it at all, such as Zajac *et al.* (2000) and Ramos-Garza (2009 cited in Walter *et al.,* 2013). They all agree that this relationship depends on the context and the nature of the organisation and suggested further research on it.

The mixed results across various studies appealed for more empirical research to investigate the link between strategic alignment and organisational performance; which has been set as one of the objectives of the current study also. Therefore, the current study has focused on answering the following research questions rigorously:

1) Which factors affect strategic alignment?
2) Does strategic alignment affect the performance of public organisations?

1.3 Significance of this Research

The alignment of business and IT was identified in the literature other than strategic alignment (Henderson and Venkatraman, 1993), as fit (Porter, 1996), integration (Weill and Broadbent, 1998), harmony (Chen *et al*., 1996; Luftman, 1997) and linkage (Reich and Benbasat, 1996). Regardless of the phrase used and since the concept was originally generated from the theory of contingency it is generally the integration of related strategies that is related to the factors within the organisation that will consequently have an impact on performance (Luftman, 2014). Which is also the basic assumption of this study.

This concept has emerged; paving the way for management to align business strategies and IT strategies to achieve higher organisational performance for it is a consequence of fit between factors (Van de Ven and Drazin, 1985). The importance of strategic alignment of IT (Henderson and Venkatraman, 1993; Reich and Benbasat, 2000) is considered one of the top five frequently used topics (Luftman, 2014) owing to the fact that alignment contributes to both organisational capabilities and overall performance (Azab, 2005; Xia and King, 2002).

Although the relationship between strategic alignment and organisational performance has been recognized as an attractive topic for researchers as well as managers in business organisations and, to a lesser degree, across public organisations empirical studies still need to direct more attention to this relationship (Bryson, 1988, Grant *et al.* 2012). For the past two decades, researchers have investigated the impact of strategic alignment on performance; however, the majority of existing research has concentrated on the private sector in developed countries and, to lesser degree, in developing countries. As when adopting IT and strategically aligning it with the business, it is imperative to change people's passive beliefs and behaviors regarding technology (Praisi, 2013). Hence, Praisi (2013) highlighted the importance of adopting an effective training program whilst gradually moving the

traditional process to IT, with great consideration to the high costs associated with preparing, maintaining and keeping up with IT techniques and trends (Praisi, 2013). Accordingly, the context of the study will provide a deeper understanding of the relationship between strategic alignment and performance of public organisations. It will also provide significant implications on strategic alignment and the factors influencing this alignment for both researchers and managers of public organisations.

1.4 Research Aim and Objectives

This study has a potential value to both theory and practice of strategic planning. It examines fundamental issues, such as strategic planning and performance, whilst investigating the significant role of strategic alignment in enhancing organisational performance. It attempts to fill the mentioned gaps in the literature and accordingly study the applicability of the generalised relationship between strategic alignment and organisational performance across public organisations.

This thesis aims to examine the impact of strategic alignment between business and IT on organisational performance of public organisations and depicts factors affecting this alignment.

To achieve this aim, the researcher outlined the research objectives below:

Objective 1: **Critical Literature Review -** To critically review the strategic alignment models in order to gain an understanding of the area with particular focus on its implications on organisational performance of public organisations.

Objective 2: **Focused literature review -** To investigate the factors influencing strategic alignment in order to define and identify factors, which are the building blocks of the proposed conceptual model.

Objective 3: **Conceptual model development -** To develop and propose a conceptual model explaining the relationships between strategic alignment, the factors identified, and organisational performance.

Objective 4: **Model validation, Data Analysis and Discussion -** To validate the proposed model for strategic alignment in public organisations in order to examine the impact of strategic alignment on organisational performance of public organisations.

1.5 Thesis Outline

The structure of this thesis comprises the following elements: background theory, focal theory, data theory and novel contribution (Phillips and Pugh, 1994) (Figure 1.1). This study is structured as follows: Chapter 1 introduces the study by providing the background of the topic and its significance in the business and public management disciplines. Chapter 2 reviews the literature pertaining to the concept of strategic alignment, business strategies, IT strategies and public organisation performance, as well as the factors affecting strategic alignment, and antecedents of strategic alignment. Chapter 3 illustrates the hypothesised associations of strategic alignment and the factors affecting it with organisational performance, it also presents the hypotheses developed for this study based on the reviewed literature. Chapter 4 introduces the methodology; more specifically, the tools, measures and sample of the study. In addition, chapter 4 presents the employed data collection and analysis methods and techniques. It also includes details on the context of this study. Chapter 5 presents the data analysis and results are discussed in chapter 6. Finally, the contributions limitations recommendations for future work, as well as the conclusions, are presented in Chapter 7.

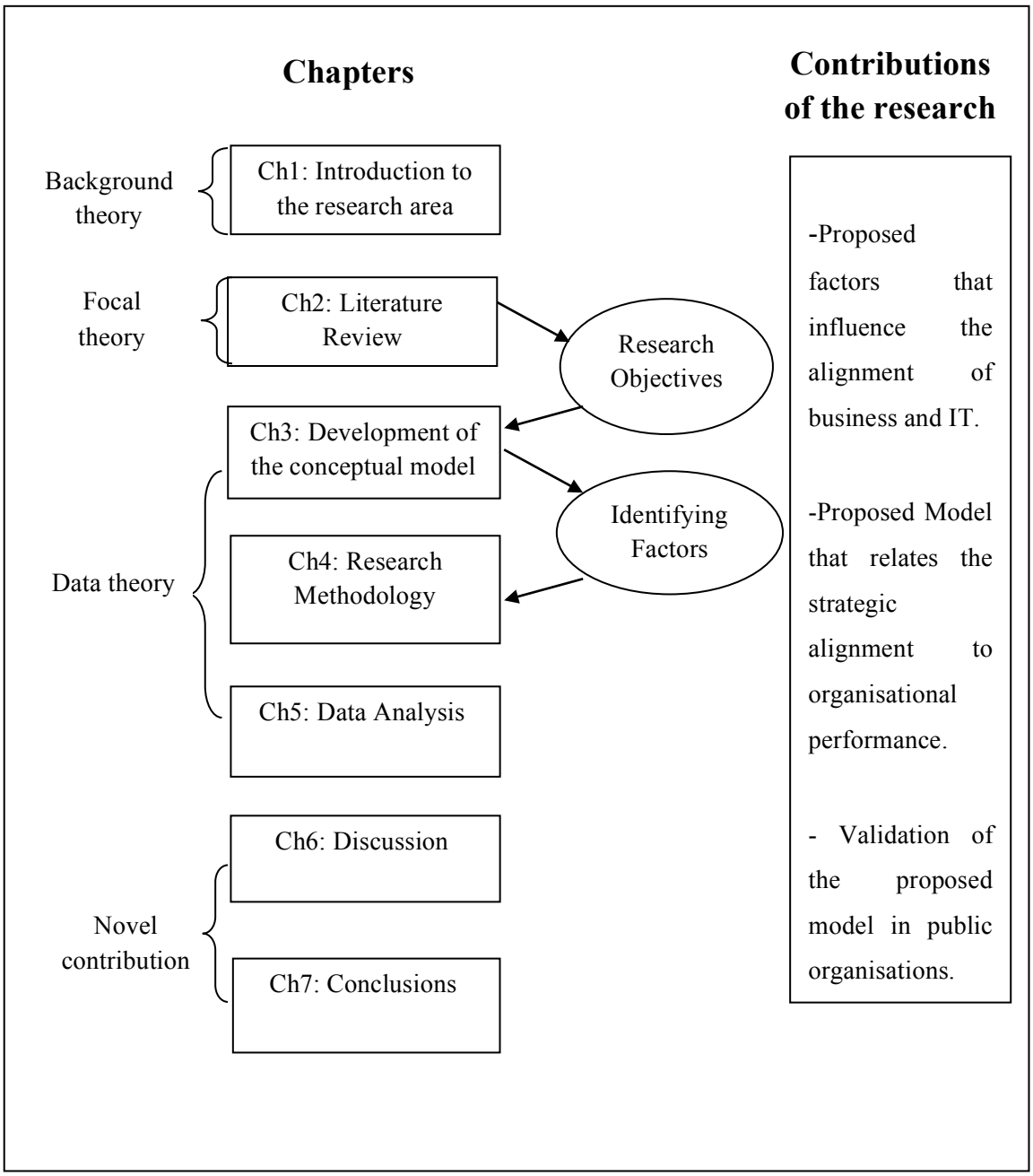


Figure 1.1: Thesis Outline

1.6 Summary

This chapter highlights the importance of this study. Although aligning business strategies and IT strategies may seem easy, it is important to consider the factors affecting this alignment, as well as the enablers to the successful deployment of a strategic alignment model. The chapter has presented a background to the research area, discussed the research problem, significance of this research, aim and objectives of the research and concluded by presenting the research outline.

CHAPTER 2: Literature Review

2.1 Introduction

The purpose of this study is to see whether or not strategic alignment has any impact on organisational performance. It also intends to investigate the factors that affect strategic alignment and hence builds a conceptual model based on it. This chapter discusses the recent and relevant research in the field of strategic alignment between business and Information Technology (IT) to provide an overall view of strategic alignment. It also presents the theoretical foundation of this research. The chapter consists of several sections, it starts with section 2.2 where the concept of strategic alignment is explained, section 2.3 reviews some models/tools of strategic alignment, section 2.4 presents factors affecting strategic alignment, section 2.5 discusses organisational performance including frameworks to measure it. Section 2.6 reviews the impact of strategic alignment on performance in prior research; section 2.7 summarises and concludes the chapter.

2.2 The Concept of Strategic Alignment

During recent decades, researchers have witnessed the emergence of the concept of strategic alignment. Although it has been clearly defined, attracted many researchers and has been the concern of many consultants and practitioners, this concept remains in its infancy, and seems to lack a theoretical foundation and a practical validation (Levy *et al.*, 2011; Luftman, 2014; Maes *et al.*, 2000; Schwarz *et al.*, 2010; Wilson, 2013).

The concept of strategic alignment was introduced by Henderson and Venkatraman (1993, p. 474), who describe it as, 'The degree of fit and integration among business strategy, IT strategy, business infrastructure, and IT infrastructure'. Others define alignment as the sharing and supporting of the business strategy with the IT strategy,

as well as how businesses manage IT (McKeen and Smith, 2003; Reich and Benbasat, 1996). Luftman and Brier (1999) define 'good alignment' as the application of the appropriate IT at the right time and place in mind of helping organisations to achieve their goals and objectives. Campbell (2007) stated that: 'Alignment is the business and IT working together to reach a common goal' (Campbell (2007), cited in Chan, Reich, 2007). Abraham (2006, p. 1) also provides a very clear and simple definition of alignment, which is, 'Strategic alignment is then, everyone rowing in the same direction'.

From the above various definitions of strategic alignment it is obvious that there is a lack of consensus about it as a concept (Vargas *et al*., 2010). For many years, strategic alignment has appeared at the top concerns of the business leaders and IT professionals (Luftman *et al.*, 2005, Luftman, 2014) and attracted many to investigate its impact on business and IT since mid-1980 (Benbya and McKelvey, 2006 cited in Vargas *et al.,* 2010). Despite the importance of strategic alignment, there has been a failure to build common ground on the subject matter and there has been debate what strategic alignment is about (Avison *et al.*; 2004 cited in Vargas *et al.*, 2010). Therefore, strategic alignment has been the subject of various interpretations and explanations by those who looked at it from different perspectives, from the academic to the practical, with the purpose of defining strategic alignment through some models as discussed in the following sections (Hackney *et al.*, 2000; Henderson and Venkatraman, 1993; Maes *et al.*, 2000; Vargas *et al*., 2010).

The Strategic Alignment Model (SAM), proposed by Henderson and Venkatraman (1993) is widely cited, which has gained strong empirical support over years due to the contribution it made theoretically and practically (Maes *et al.*, 2000; Avison *et al.*, 2004; Vargas *et al*; 2010). Research has extended the SAM with different control factors (e.g., shared domain knowledge, successful IT history, external IT expert and etc.) in different situations (e.g., time and country) and under different subjects (e.g., surveying IT and business executives, small business units, manufacturing firms and academic institutions) such as the research by Chan *et al*., (2006); Fattah and Arman (2014); Ismail and King (2014); Luftman *et al*. (2012); Tallon and Pinsonneault (2011); Trienekens *et al*. (2014) and Yayla and Hu (2009). Hence, it is worth

describing the SAM as this is considered to be the founding model of strategic alignment and accordingly of this research. Section 2.3 presents a critical analysis of the SAM and other models, e.g., the Generic Framework and Strategic Alignment Maturity Model (SAMM) that are said to have contributed to the understanding of strategic alignment in various organisations.

2.3 Review of Strategic Alignment Models/ Tools

SAM and SAMM have been used as a basis for models in many cases. A critical analysis of SAM and SAMM is presented in this section to identify the gap, factors never used in these two models but found to be significant by other research, and hence bridging the gap by extending SAM with the most influential factors in the current model.

2.3.1 Strategic Alignment Model (SAM)

Several have conducted studies on strategic alignment, with excellent models and frameworks developed (Johnston and Yetton, 1996; Morton, 1991). Most studies were based on the Strategic Alignment Model (SAM) proposed by Henderson and Venkatraman (1993, 1999), which many researchers and organisations have used in order to measure the level of strategic alignment in organisations (Avison *et al*., 2004).

SAM (1989) is defined in terms of four domains of strategic choice such as business strategy, IT strategy, organisation infrastructure and processes, and IT infrastructure and processes (Figure 2.1). Business strategy and IT strategy are recognised as an external level and the remaining two are recognised as an internal level. Each domain is comprised of three components: scope, competencies and governance at the external level; and infrastructure, skills and process at the internal level. The model is based on two fundamental characteristics of strategic management; strategic fit which links between external and internal domains; and functional integration linking between business and technology domains (Avison *et al*., 2004; Gutierrez *et al*., 2009).

SAM covers the alignment between business and IT strategies at a strategic level, in this case it is considered as a driver; however it is called an enabler when covering the alignment of business processes and organisation, and IT infrastructure and organisation at the operational level. The dynamic nature of the SAM also allows it to recognise cross-domain relationships (Henderson and Venkatraman, 1993).

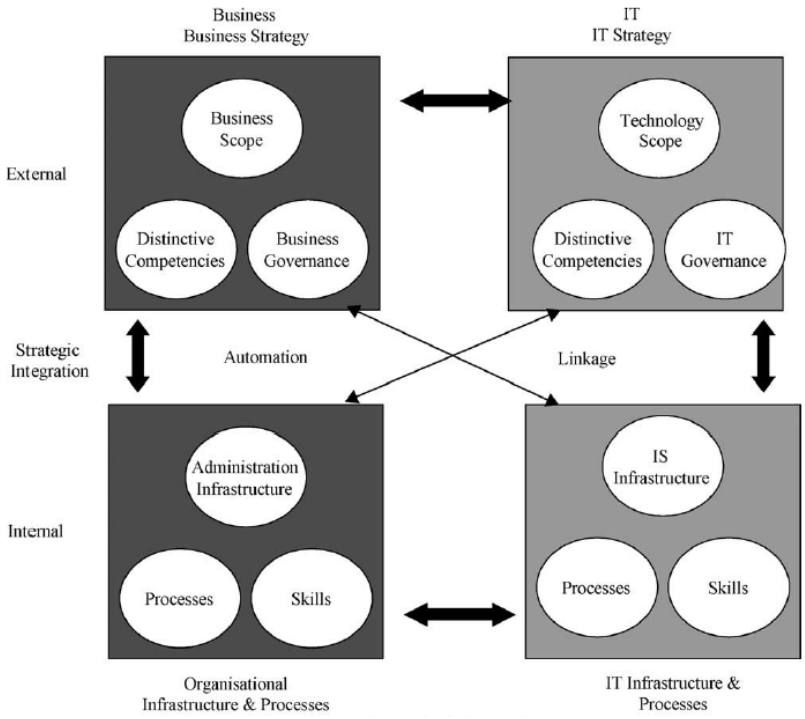


Figure 2.1: Strategic Alignment Model (Henderson & Venkatraman, 1989).

The first two cross-domain relationships occur when business strategy serves as the driver. This perspective is termed 'strategy execution'; which is the most common alignment perspective as it adopts the classic view of strategic management, viewing business strategy as the driving force for both organisational design and IT infrastructure. The second perspective is termed 'technology transformation', which engages IT strategy, infrastructure and processes in the assessment of the implementation of selected business strategy.

The other two perspectives arise when IT is considered an enabler of an enhanced business strategy. The 'competitive potential' perspective is related to the new capabilities of IT, which has a great influence on strategy and strategy execution,

creating new links with organisations' valuable resources. The last perspective is 'service level', with this alignment seeking to meet IT customers' needs and where the indirect role of the business strategy is established by setting directions to stimulate customer demands. It ensures the effective use of IT in organisations.

Henderson and Venkatraman (1989) argued that neither strategic nor functional integration alone is sufficient to align an organisation effectively. They examined the link between strategy and infrastructure and processes in terms of process, structure and people, rather than at an abstract level of attempting to relate internal architectures to strategic goals. Hence, they concluded that strategic alignment at an organisational level could only occur when three of the four corporate domains are in alignment. The underlying fact is, the change cannot happen in one domain without impacting on at least two of the remaining three domains in some way (Avison *et al*., 2004).

2.3.2 The Generic Framework

Like any other model, SAM has incurred a few limitations. Maes *et al.* (2000) argued that SAM model failed to consider all the key factors that influence the alignment of business to IT; it is not just the horizontal dimension (Strategy and Technology, figure 2.1) that influences the alignment. According to Maes *et al.* (2000) the process of aligning business into IT is actually influenced by many other factors such as cultural, political, financial and social. Therefore, Maes *et al.* (2000) proposed a Generic Framework Alignment Model by extending the original SAM from 2X2 dimension to 3X3 dimension; which added an extra horizontal column to split the internal domain into structural and operational levels; and extra vertical column (information/communication) between business and IT strategies (Avison *et al.,* 2004). The additional horizontal column symbolically represents few things of the organisation such as long-term architectural components, competencies and infrastructures, whereas the vertical column acts as a translator between technology and business (Avision *et al*., 2004). In this model, information sharing acts as buffer between business and technology as it is believed that usage and the sharing of information, rather than the provision of information, are the real sources of

competitive advantage. The structural level of Generic Framework is concerned with architecture and capabilities whereas process and skill are emphasized at operational level (Maes *et al.,*2000; Avison *et al.,* 2004).

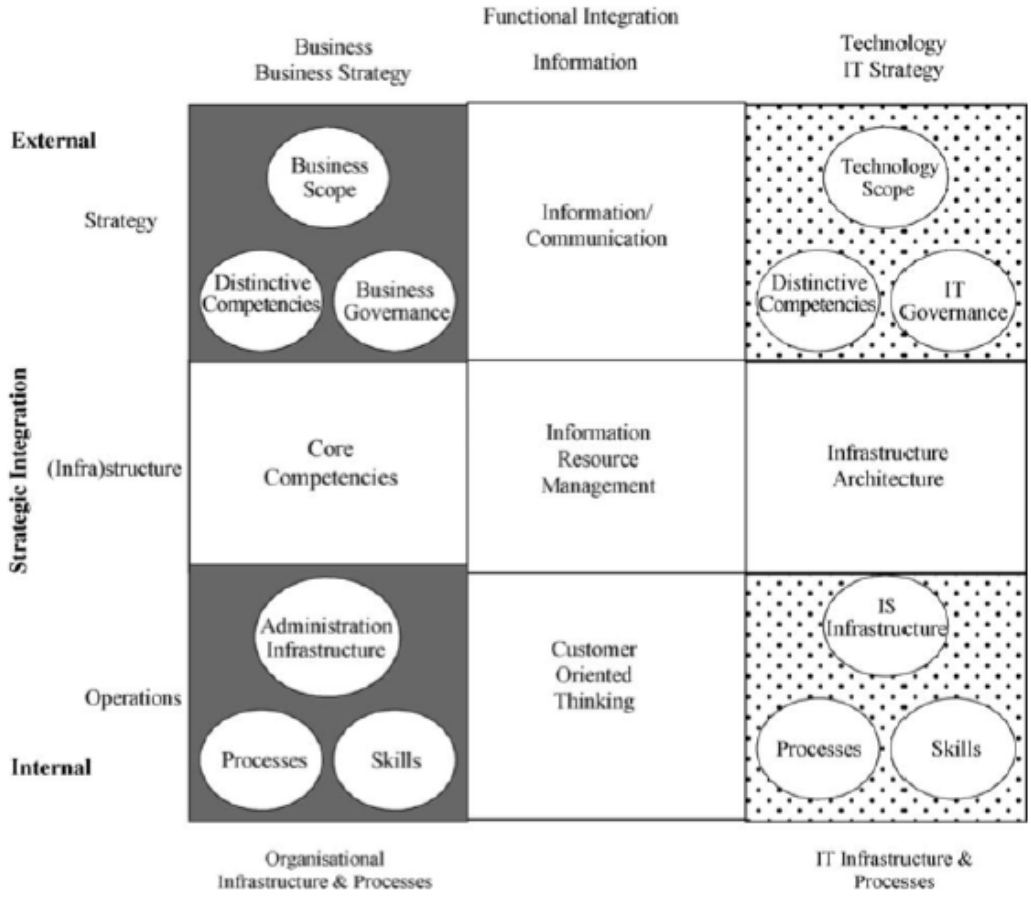


Figure 2.2: A Generic Framework for Information Management

(Maes *et al*., 2000 & Avison *et al.*, 2004)

The Generic Framework model is more relevant in examining external factors. Therefore, applying this model to public organisations might not address some internal resources holistically. For example, government should address accountability in order to promote transparency. Also the uncertainty in the sources of information, that must be addressed to improve the resource management and the management of risk related to IT (NASCIO, 2007; Stewart, 2008)

2.3.3 Inhibitors and Enablers of Strategic Alignment

Luftman (2000) believed that strategic alignment can be achieved by applying IT appropriately and timely in consistent with business strategies, goals and needs. Research found that many organisations failed to harness the power of IT for their own long-term benefit because of two issues mainly; such as inhibitors and enablers that must be minimized and maximized respectively to align IT with business effectively (Luftman *et al*., 1999). The participants, 1051 executives from diverse industries in US, were asked to identify the key enablers and inhibitors to strategic alignment and the top six of them are listed in table 2.1.

Table 2.1: Inhibitors and Enablers of Business-IT Alignment (Luftman et al., 1999)

Enablers of Business IT Strategies Alignment	Inhibitors of Business IT Strategies Alignment
• Senior executive support for IT; • IT involved in strategy development; • IT understands the business; • Business–IT partnership; • Well-prioritised IT projects; • IT demonstrates leadership.	• Senior executives do not support IT; • IT/business lack close relationships; • IT does not understand business; • IT fails to meet commitments; • IT does not prioritise well; • IT management lacks leadership.

Alignment between business and IT relies on minimizing the inhibitors and maximizing the enablers. A six steps approach was designed to achieve this; as follows (Balhareth *et al.,* 2013; Luftman *et al.,* 1999):

1. Set the goals and establish a team
2. Understand the business IT linkage.
3. Analyze and prioritize gap
4. Specify the actions (project management)
5. Choose and evaluate success criteria
6. Sustain alignment

Alignment between business and IT usually takes time due to complexity and dynamic nature that rooted in the process of alignment. Therefore, Luftman *et al.,* 1999 study suggests that executives should focus on the six steps approach, presented above, to get inhibitors and enablers minimized and maximized respectively.

2.3.4 Strategic Alignment Maturity Model (SAMM)

With the purpose of assessing the maturity of the firm's business-IT alignment Luftman (2000) proposed Strategic Alignment Maturity Model (SAMM), one of the key extensions to the SAM (Elmorshidy, 2013; Kurniawan, 2013; Luftman *et al.,* 1999; Salim and Arman, 2014). The twelve components of the SAM, in concert with enablers/inhibitors research (Luftman et al., 1999), formed the foundation of SAMM (Balhareth *et al*., 2013; Luftman, 2000). As mentioned previously, successful alignment needs executives to maximize and minimize the enablers and inhibitors respectively. The SAMM model would help organisations to evaluate these activities. An organisation would be able to see where it stands and how to improve once the maturity of its strategic choices and alignment practices are known to the executives of that organisation (Elmorshidy, 2013; Luftman, 2000). Luftman (2000) proposed a model which involves the following five levels of strategic alignment maturity:

1. Initial/Ad Hoc Process
2. Committed Process
3. Established Focused Process
4. Improved/Managed Process
5. Optimized Process

A set of six criteria, validated with an evaluation of 25 Fortune 500 companies, each is measured to identify the level of alignment maturity (figure 2.3) (Kurniawan, 2013; Luftman, 2000; Salim and Arman, 2014). Whether referred to as criteria, domain, factor or antecedent, enabler or inhibitor, researchers have studied the dimensions emphasising the importance of the functional integration between the IT domain and business domain; researchers have not only studied the factors that can influence the alignment but have also tested it (Luftman *et al.,* 1999; Reich and Benbasat, 1996; 2000). Thus, the set of six criteria/ dimensions are as follows:

1. Communications: which was defined Luftman (2000, p.14) as the effective on going exchange of knowledge between business and IT units within organisations. The attributes of the criteria are: understanding of business by IT, understanding of IT by business, inter/intra organisational learning,

protocol rigidity, knowledge sharing and liaisons' effectiveness (Luftman *et al*., 2004).

2. Competency: Luftman (2000, p.15)'Demonstrating the value of IT in terms of contribution to the business' (2004). The measures of this dimension are: formal assessment/review, service level agreement, balanced metrics, IT metrics, benchmarking, continuous improvement and business metrics (Luftman *et al*., 2004).

3. Governance: 'Ensuring that the appropriate business and IT participants formally discuss and review the priorities and allocation of IT resources' (Luftman, 2000, p.17). The measures of this dimension are prioritisation process, steering committee, IT investment management, budgetary control, IT strategic planning, reporting/organisation structure and business strategic planning (Luftman, 2000; Luftman *et al*., 2004).

4. Partnership: Luftman (2000, p.17) defined partnership as the 'the relationship that exists between business and IT organisation'. The measures of this dimension include role of IT in Strategic business planning, business perception of IT value, IT program management, business sponsor, trust style business, shared goals, risk, rewards/penalties (Luftman *et al*., 2004).

5. Scope and Architecture: This criteria provides an assessment to IT maturity, by measuring the extent to which IT is able to go beyond physical location, supports a flexible infrastructure, evaluate and apply latest technology, enable and drive business strategies and provides customisable solutions to customers as stated by Luftman (2000, p.18). The measures of this dimension are systemic competencies, traditional, enabler/driver external, standard articulation, architectural transparency, flexibility and architecture integration (Luftman, 2000; Luftman *et al*., 2004).

6. Skills: defined by Luftman (2000, p.18) 'Includes all of the human resources considerations for the organisation'. Skill attributes include locus of power, innovation, entrepreneurship, social, political, trusting environment, education, cross-training, career crossover, change readiness, hiring and retention (Luftman *et al*., 2004).

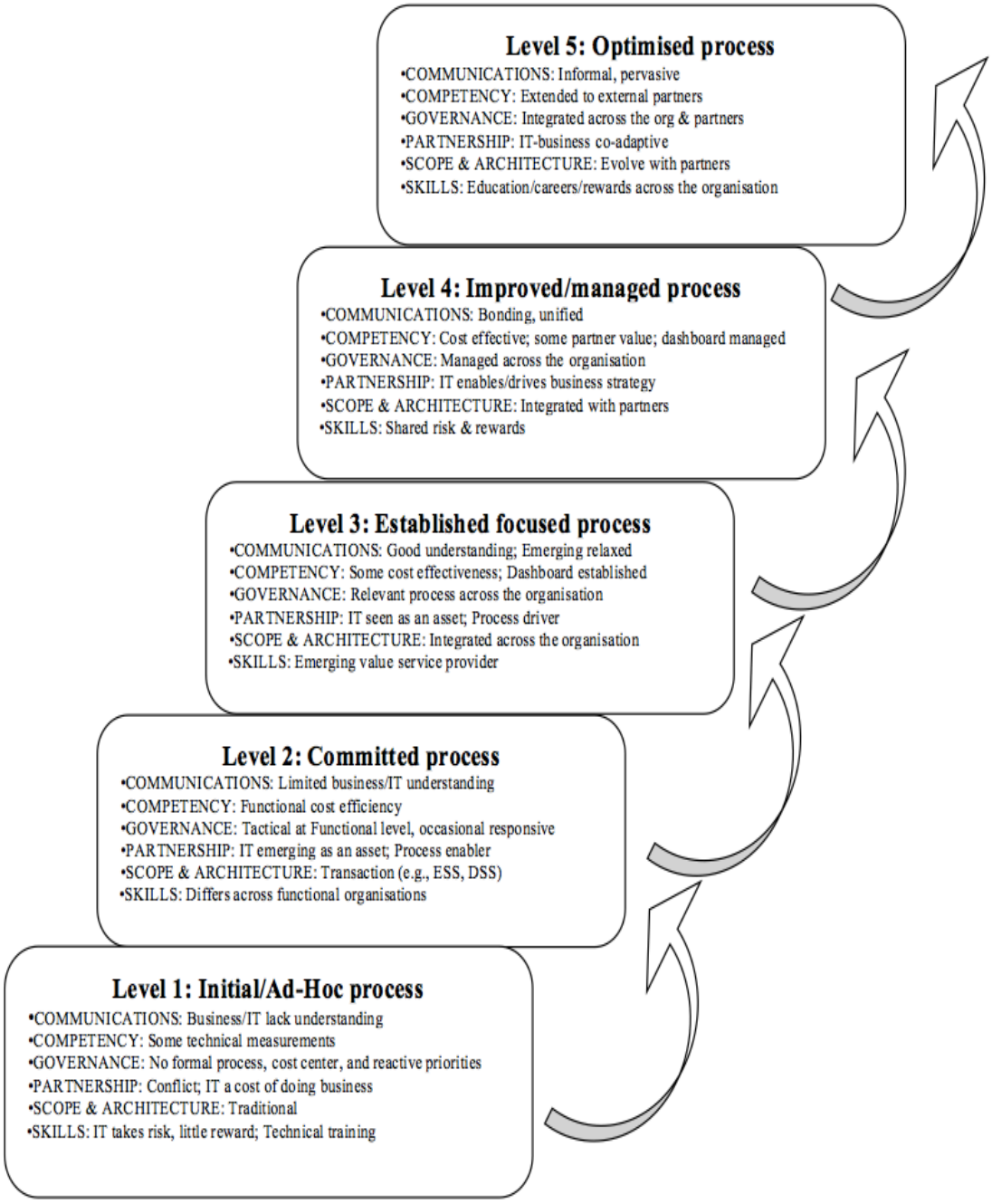


Figure 2.3: Strategic Alignment Maturity Summary (Luftman, 2000)

The majority of research has not detailed the validated tools (Boudreau *et al*., 2001; Grant *et al*. 2012), and alignment assessment tools are no exception (Sledgianowski *et al*., 2006). However, Luftman's assessment tool (figure 2.1) involves five levels of maturity covering the six dimensions of alignment; this is the most favorable tool to assess strategic alignment and has shown acceptable validity for various components,

and has been recommended to be used in research (Straub *et al*., 2004; Grant *et al.* 2012).

2.3.5 Other Models Measuring Strategic Alignment

Strategic alignment is one of the main reasons makes business executives and top managements develop strategies to link business and IT in their organisations. It helps them adapt in the business environment that is shaped by the rapid developments of IT (Luftman, 1996; Papp, 1995; Rosemann and vom Broke, 2014). Strategic alignment was ranked as one of the top 10 concerns for many years in a row and as the top most concern in 2011 according to an annual survey of organisations based in the US (Luftman and Ben-Zvi, 2011). As a result, it attracts the researchers to develop more models and tools that can enhance or measure the alignment between business and IT.

A recent study by Pereira *et al*. (2014) contributed with the development of a tool to improve alignment between business and IS strategies; this was achieved by generating relative information related to prioritising IS projects that meet business needs with the objective to achieve higher return on investment. A process model of reconfiguration of the firm's IT and organisational resources, competencies and capabilities was developed (Pelletier and Raymond 2014). However, this recent contribution was not validated, and the aim was only concerned with providing an alternative for investigating and managing the process of IT alignment.

Owing to the importance of strategic alignment (Avison *et al*., 2004) and since strategic alignment is hypothesised as having a positive impact on business performance and IT effectiveness (Chan and Huff, 1993). Researchers have proposed a number of tools and methods concerned with the assessment of strategic alignment, such as the 12-item measure of alignment, proposed by Kearns and Lederer (2003). Bergeron *et al*. (2004) also developed a tool for the measurement of IT strategy and IT structure in organisations, centred on assessing its effect on organisational performance. Another contributed to the research on alignment by covering some dimensions of the alignment (Amarilli, 2014). The developed model evidences practicality by overcoming limitations in previous models. However, this model

ignores some dimensions of strategic alignment; which could drive the need of IT, like the skills and the responsibility of IT to business.

Strategic alignment is best measured through operational effectiveness and strategy, both of which are essential to superior performance but which work in very different ways (Porter, 1998). Operational effectiveness is centred on performing similar activities (through operational improvements) better than rivals. Improvements can be made productively, with greater quality or speed (Total Quality Management), through continuous improvement, benchmarking, time-based competition, outsourcing, partnering, and reengineering and change management. Such initiatives change the ways in which organisations perform activities in an effort to eliminate wasted effort, employ more advanced technology, better motivate employees or achieve greater insight into managing particular activities or sets of activities which is perfectly covered in the assessment tool developed by Luftman (2000).

None of the aforementioned tools have been based on the components of the two dimensions of the strategic alignment model (Henderson and Venkatraman, 1993) or otherwise on the enablers and inhibitors of business and IT alignment (Luftman *et al*., 1999); but SAMM the one that had been developed by Luftman (2004), with this approach all dimensions of alignment are covered (Belfo and Sousa, 2012). The next section will focus on the factors that influence strategic alignment; followed by investigating organisational performance and the impact of strategic alignment on organisational performance.

2.4 Factors Influencing Strategic Alignment

Achieving and sustaining the strategic alignment of an organisation is very complex yet fundamental (Brancheau and Wetherbe, 1987; Henderson and Venkatraman, 1993; King, 1978; Niederman *et al*., 1991; Silvius, 2009) as it allows organisations to strategically adopt IT to achieve business goals. It is agreed that the process of strategic alignment requires complete awareness of the factors able to cause an impact (Naryan and Awashti, 2014). Accordingly, those such as Luftman *et al.* (1999), Reich and Benbasat (1996), Hussin et al. (2002), Chan *et al.* (2006) and

Gutierrez and Lycett (2011) have studied the factors proposed, confirming or otherwise rejecting the positive relation with strategic alignment.

Various strategic alignment enablers and inhibiters have been investigated. Luftman *et al.* (1999), for example, developed one of the most practical extensions to the original model of strategic alignment by determining the enablers and inhibitors of the strategic alignment between business and IT strategies within organisations. They have found a key enabler, which is senior executive support for IT, and a key inhibitor which is the lack of a close working relationship as shown in table 2.2. The outcomes of such research assisted in developing the conceptual model of the research presented in chapter 3.

It is obvious from table 2.2 that only a few factors were found to be significant by multiple studies such as share domain knowledge (Reich and Benbasat, 2000; Trienekens *et al*., 2014; Yayla and Hu, 2009), IT maturity (Hussain *et al.,* 2002; Ismail and King, 2014), successful IT history (Ismail and King, 2014; Reich and Benbasat, 2000; Yayla and Hu, 2009), prior IS success (Chan *et al*., 2006) and Tallon and Pinsonneault, 2011) and organisational size (Chung *et al.*, 2003; Chan *et al*, 2006).

Table 2.2: Significant Factors of Strategic Alignment in Prior Research

Factor Found Significant	Researcher (s)
Senior executive's support for IT	Luftman, Papp & Brier (1999a)
Top management support	Fattah & Arman (2014)
Intention and Support	Trienekens, Kusters & Cuenca (2014)
Well prioritize IT projects	Luftman, Papp & Brier (1999a)
IT Projects and Planning	Trienekens, Kusters & Cuenca (2014)
Planning sophistication	Chan et al. (2006)
Business IT partnerships	Luftman, Papp & Brier (1999a)
Influences of trading partners	Lee, Lin & Pai (2005)
Communication between business	Reich & Benbasat (2000)
Connections between business and	Reich & Benbasat (2000)
Improved coordination	Orozco, Tarhini & Tarhini (2015)
Manager's participation in strategic	Kearns & Sabherwal (2007)
CEO/CIO relationship	Lee, Lin & Pai (2005)
Relationship management	Yayla & Hu (2009)
IT strategic planning	Luftman et al. (2012)
IT involvement in strategy	Luftman, Papp & Brier (1999a)
IT understanding of Business	Luftman, Papp & Brier (1999a)
Share domain knowledge	Reich & Benbasat (2000), Yayla & Hu (2009) and Trienekens, Kusters & Cuenca (2014)
Level of knowledge	Ismail & King (2014)
Level of CEO's software	Hussain, King & Cragg (2002)
Knowledge management and	Kearns & Sabherwal (2007)
Level of expertise	Ismail & King (2014)
IT expertise	Lee, Lin & Pai (2005)
IT Performance	Trienekens, Kusters & Cuenca (2014)
IT maturity	Hussain, King & Cragg (2002), Ismail & King (2014)
System maturity	Lee, Lin & Pai (2005)
IT failure	Luftman, Papp & Brier (1999a)
Successful IT history	Reich & Benbasat (2000), Yayla & Hu (2009) and Ismail & King (2014)
Prior IS success	Chan et al. (2006) and Tallon & Pinsonneault (2011).
IT infrastructure flexibility	Chung, Rainer & Lewis (2003)
IT flexibility	Tallon & Pinsonneault (2011).
Organisational culture	Fattah & Arman (2014)
Organisational size	Chung, Rainer & Lewis (2003) and Chan et al.(2006)
misalignment between strategy	Balhareth, Liu & Alsoud (2013)
Matching the internal IS with	Burn & Szeto (2000)
IT Governance	Orozco, Tarhini & Tarhini (2015)

Although each of other factors was found to be significant by only one study, there is still some room to categorize these factors based on its coherence, meaning these factors are not same but very similar in nature. For example, some were interested to see the influence of ***support***, whether from top management or executives, on strategic alignment. Senior executive support (Luftman *et al.,* 1999a), top

management support (Fattah and Arman, 2014) and Intention and support (Trienekens *et al.,* 2014) were found to be affecting strategic alignment significantly by three different studies as cited. Some factors can be grouped under ***planning*** such as IT projects and planning (Trienekens *et al.*, 2014), IT strategic planning (Luftman *et al*., 2012) and planning sophistication (Chan *et al*., 2006) were found to be significant by each study individually. Similarly the effect of ***coordination or communication*** on strategic alignment was also investigated from different perspectives; such as improved communication (Orozco *et al.*, 2015), communication between business and IT executives (Reich and Benbasat, 2000) significantly influence strategic alignment by individual studies as cited. Relationship was also investigated from different angles. Lee *et al.* (2005) found that CEO/CIO relationship has a significant impact on strategic alignment. Yayla and Hu (2009) and Reich and Benbasat (2000) found 'relationship management' and 'connections between business and IT executives' to be significant on strategic alignment respectively in individual studies. ***Knowledge and expertise*** were thought to have a major role to influence strategic alignment, therefore something related to knowledge – such as level of knowledge (Ismail and King, 2014), Level of CEO software knowledge (Hussain *et al.*, 2002) and knowledge management and centralization of IT (Kearns and Sabherwal, 2007) were found to be significant by the studies cited. Also IT expertise and level of expertise were found to have significant impact on strategic alignment by Lee *et al.* (2005) and Ismail and King (2014) respectively. IT flexibility and IT infrastructure flexibility, grouped under ***flexibility*****,** were also found to be significant in affecting strategic alignment by Tallon and Pinsonneault (2011) and Chung *et al.* (2003) respectively.

Most research on the antecedents of strategic alignment have focused on the role of IT or Information System (IS) management in the alignment process, directing less attention to the role of business managers. Few have examined the contributions of business managers in the alignment process; hence a research by Mezghani and Mezghani (2014) was carried out with the aim of identifying the contributions of business managers' skills in achieving alignment between business strategy and ERP (Enterprise Resources Planning) implementation. These results of their study are in contradiction with studies that emphasise the importance of the 'technical' skills of

business managers (IT/IS skills) to contribute to alignment. In a study by Charoensuk *et al.* (2014), it is found that shared domain knowledge, IT operational and implementation success, effective communication and planning sophistication have positive impact on strategic alignment. On the other hand, IT management sophistication had the least impact, and organisational size was found to be a moderator.

However, although appropriate enablers and inhibiters can assist in enhancing the ability of an organisation to build a strategic alignment and accordingly sustain it, this does not ensure that the organisation enhances its performance. Moreover, the findings of empirical studies on strategic alignment are limited as most of the data have been collected in the last two decades (Luftman *et al*., 1999; Reich and Benbasat, 1996; Sabherwal and Kris, 1994). Organisations today more greatly depend on IT, and investments in technology have increased remarkably; only a few studies have used sophisticated quantitative data analysis.

Reviewing the research on fit measurement (Atkins, 1994; Chan *et al*., 1997; Lefebvre *et al*., 1992; Luftman *et al*., 1999; Reich and Benbasat, 2000), assisted in understanding the processes of alignment. It has also highlighted the significant factors of strategic alignment (Luftman *et al*., 1996) and whether strategic alignment has any impact on organisational performance (Kearns and Lederer, 2004; Luftman *et al.,* 2011; Luftman and Brier 1999; Praisi, 2013). A detailed analysis including the nature of empirical research, based model used, factors found to be significant and outcomes of this review is presented in chapter 3. However, the following section presents a clear concept on organisational performance and how it is measured.

2.5 Organisational Performance

A review on the concept of organisational performance and the scales to measure it is illustrated in this section. The purpose is to analyze each of the scales critically and selecting the most suitable one that is highly aligned with the way measuring organisational performance of public organisations.

Research has shown continuous debate on organisational performance measures (Scherbaum *et al*., 2006). Organisational performance measures have been criticised for their limited perspective, with focus on only a few subjective outcome measures in most existing strategic alignment research (Chan *et al*., 2006). Furthermore, organisational performance measures have also been criticised owing to their apparent bias when assessing the effects of strategic alignment on financial indicators (Walters *et al., 2013*), as well as on the organisation's goals, satisfaction and perceived effectiveness (Chan and Reich, 2007).

Organisations adopting balanced performance measurement systems perform better than others (Lingle and Schiemann, 1996). Furthermore, employing either financial or non-financial measures will result in inadequate measures for accurately determining the impact of strategic alignment on performance; hence, when employing both financial and non-financial measures the validity of the research will increase. In sum, the quality of performance measurement is critical to determining outcomes regarding whether or not strategic alignment matters. Although not all studies have been well designed in this respect (Al-Adwan, 2014), the primary argument of this research suggests that organisational performance will be enhanced once strategic alignment is achieved.

Based on the discussion above, the following sections will present a review of the existing balanced performance measurement frameworks in order to assess in selecting the most suitable performance measurement model for public organisation, a scale which is highly aligned with the way organisational performance is measured in public organisation.

2.5.1 Performance Measurement Frameworks

Many balanced performance measurement models and frameworks have been developed to help organisations in setting performance measures that measure the development and progress. The following is a critical review of the current balanced models that were developed to measure organisational performance:

- Fitzgerald *et al*. (1991) Framework

This framework categorises measures into two groups: one relates to the results; the second relates to the determinants of the results. This suggests that the results obtained are due to past business performance factors, which reflect the concept of causality. This model highlights the need to detect drivers of performance to achieve the anticipated results. Hence, it lacks comprehensiveness and only measures the performance by results and determinants of results.

- Macro Process Model of the Organisation

Brown (1996) linked the measures in a cause and effect links in this model. The links extended in five stages namely: inputs, processing system, outputs, outcomes, and goals. He suggests that each stage is the cause of the performance of the next stage as inputs to the organisation influence processing systems and eventually influence the goals organisation.

- The Balanced Scorecard

The balanced scorecard is one of the most popular of performance measurement frameworks, it was developed by Kaplan and Norton (1992; 1996), by which they have identified and integrated four perspectives of performance, which are: financial, internal business, customer, innovation, and learning. The four perspectives of performance added strategic non-financial performance measures, which provide a more balanced view of the organisational performance. The balanced scorecard is more than just a performance measure as it provides feedback on the internal processes and external outcomes for contiguous improvement of the strategic performance of firms. Although this framework was accepted and has been used widely, research has shown various limitations associated with the balanced scorecard technique as it does not capture many of the dimensions such as the competitiveness dimension (Fitzgerald *et al*., 1991), human resources perspective, supplier performance, service quality, customer, environmental and other dimensions that indicate success (Brown, 1996; Maisel, 1992; Lingle and Schiemann, 1996). It also does not adequately capture different dimensions of performance. Such shortcomings limit the overall comprehensiveness of the balanced scorecard.

- Tableau de Bord

The Tableau de Bord was developed by Epstein and Manzoni (1997), and creates interrelated measures linked to the various organisational levels positioning those levels into the context of the company's overall strategy.

- The Performance Prism

This framework developed by Neely *et al.* (2001) measures the organisational performance in five facets: stakeholder satisfaction, stakeholder contribution, strategy, processes and capabilities. Neely *et al.* (2001) argue that previous performance management models have given a unique perspective on performance but it should be seen from multiple perspective; as a result the previous frameworks were not competent enough to address all areas of performance within an organisation. Performance prism is based on a holistic approach, viewed from multiple perspectives, which poses five different fundamental questions for management to assess the organisational performance more accurately, such as (O'Boyle and Hassan, 2013).

- Stakeholder's satisfaction: What our stakeholders' demands and wants?
- Stakeholder's contribution: What can we expect from our stakeholders?
- Strategies: Which strategy is the best to meet the stakeholder's demand?
- Process: Which processes need to be followed to satisfy stakeholder's demand?
- Capabilities: What practices, people, technology and infrastructure needed is needed for the process and strategies to be fully implemented?

Furthermore, by including measures that reflect strategies, processes and capabilities, this approach is considered to be more comprehensive than previous frameworks. It indicates that the outcomes of organisations (stakeholders' satisfaction) depend on other facets of the prism framework. This multi-dimensional framework reflects all of the aspects of performance that can influence the performance of an organisation including each level of the organisation once used through its hierarchy. It also provides a balanced view of the organisation, both externally and internally as well as using efficiency and effectiveness measures.

2.5.2 Selection of Organisational Performance Measures

While many issues are common to both public and private sector, still there are some differences between them, which must be considered while selecting the most suitable performance measures for them. The ultimate goal of private organisations is to maximize profit and hence performance could be measured from one dimension; seeking the net profit earned in the last financial year (Nakamura and Warburton 1998). However, the public sector, unlike the private sector, is largely bureaucratic with many stakeholders pursuing their individual goals and objectives. Therefore performance measurement in public sector must be seen from multiple perspectives to meet the various demands and needs of the stakeholders. (Adcroft and Willis, 2005; Dixit, 2002 cited in Propper and Wilson, 2003).

As presented in the discussion earlier, each model has its shortcomings that are addressed in this model. Therefore, performance prism has been selected, as it is suitable framework for measuring performance in public organisation because of its multidimensional view on measuring organisation performance. Although the Balanced Scorecard (BSC) (Marr and Schiuma, 2003) is the most common framework, its limitations encouraged the researcher to avoid it, rather selecting the more comprehensive multiple dimensions performance framework i.e. the Performance Prism developed by Neely *et al.*, (2001). The Performance Prism framework has been discussed further in the following chapter since this study will build on previous research to fill the literature gaps by measuring the level of alignment and linking it to multiple performance criteria (Chan and Reich, 2007). A survey questionnaire, built on performance prison framework - adopted from Neely et al. (2002), was used to measure the organisational performance in the public sector in Bahrain (Appendix 1, section D).

2.6 The Impact of Strategic Alignment on Performance

Strategic alignment refers to two fundamental and generic objectives in relation to organisational performance: to be effective by doing the right things; and to be efficient by doing things right (Drucker, 1967). When an environment is relatively

stable or placid, organisations do not greatly concern themselves with their effectiveness. However, significant changes in the business environment, as a result of deregulation (i.e. increased competition), globalisation and technological change all increased environmental turbulence, thus necessitating continuous change within the organisation. This presents a more constant 'effectiveness' challenge, and organisations need to constantly question whether or not they are doing the right thing. Such a challenge calls for creativity, risk-taking, entrepreneurial activity and the management of uncertainty; this requires dynamic, flexible, learning and adaptable organisation.

The guiding principles in any strategic management process - whether in the public or private sector- are concerned with understanding the changes needed, how such changes can be managed and implemented, and how a roadmap for sustaining improvements, subsequently leading to better performance, can be created. The difficulty associated with strategic management is the challenge of setting a roadmap for future successes by solving today's challenges. This provides a dynamic method not only a planning model concerned with assessing the success of public-sector organisations in meeting customer demands in the new public management.

Strategic control seeks to ensure progress in executing the corporate plan. The balanced scorecard approach (Kaplan and Norton, 1996) is a way of evaluating organisational performance and assuring strategy is converted into action. Many organisations now realise that no single type of measure can provide insight into all critical areas of business. The balance scorecard usually measures the organisational performance in four aspects contributes equally to performance: financial, customer, internal processes and people. Accordingly, management need to set goals and objectives related to each aspect, and subsequently measure this aspect by the achievements of those goals. Thus, the purpose of balanced scorecard is to develop a set of measures that provides a balanced view of organisations.

However, as modern organisations are becoming more responsible towards the environment and the society, managers feel the pressure of measuring sustainability also; meaning whether or not organisation's development compromises the capability

of the future generations to meet their needs (World Bank, n.d.). There are some frameworks that are used to measure the organisation's sustainability also. Triple Bottom Line (TBL), one of the performance measures, focuses on three areas such as people, planet and profit to evaluate the company's performance financially, socially and environmentally; meaning to see how social and environmental friendly the organisation is (Jackson *et al.,* 2011). There are some limitations in Triple Bottom Line also. Studies found lack of congruence between the actions and the intentions of a company in the area of sustainability. They promise to becoming more socially and ecologically accountable but that reflects in their paper only, not in their action. Reports on sustainability often are fabricated or manipulated by the corporate supremacy; as a result applying TBL may not be realistic in many cases (Jackson, *et al.*, 2011; Mitchell *et al.,* 2008; Painter-Morland, 2006).

Performance measurement or evaluation plays an important role in assessing and providing feedback for management relating to job performance. It is often used as one of the most common criterions for promotion and rewards in the business sector (Kuwaiti and Kay, 2000; Richard and Schaffer, 1982). Traditionally, the reward system in the public sector—and, to a lesser degree, in the private sector in the Arab world, has lower links to performance based on the culture theory by Hofstede (1997). In this part of the world including Bahrain, rewards and promotion are based on the uniformity of wages standard, loyalty and conformity with rules and regulations (Baker and Sinkula, 1999). Furthermore, management are oriented towards group welfare, equality, rather than individuals' performance (Baker and Abou-Ismail, 1993; Bhuian, 1997; Hofstede, 1997). Since the level of performance of public organisations is a major factor in building trust between office-holders and stakeholders, performance evaluation in the public sector may have to be adjusted in such a way so as to reflect the quality of the services provided and the level of client satisfactions towards it.

Porter and Millar (1985), in their landmark article 'How Strategic Alignment is Coherent with the Information', discuss the impact of technology on the business, the impact upon internal operations processes to create products and the relationships with other organisations is reviewed. Porter and Millar (1985) further examine how

such resources alter industry structure; support cost or differentiate strategies and spawn entirely new businesses. According to Porter and Millar (1985), 'to gain competitive advantage over a rival a company must either perform these activities at a low cost or perform them in a way that leads to differentiation and a premium price'. For example, Wal-Mart strongly bargains with its suppliers to ensure low price for its products. On the other hand Dell emphasises on differentiation strategies that allow customers to make customized order but through online only to keep its inventory low but serve them in a best a possible manner. Information resources and technology may facilitate organisation strategy by reducing costs or add value and encourage things to be done differently (Peppard *et al.,* 2014).

A large number of factors are found to be affecting organisational performance. Process improvements, energetic leadership, flattened communication and work flow structure are found to be highly influential in organisation performance (Nafarrete, 2003). Gavrea *et al.* (2011) studied 92 Romanian manufacturing firms to see which factors influence organisational performance. Strategy, leadership, structure, quality, innovation and development, IT, performance measurement, employees, corporate governance are the factors that found to be significant in affecting organisational performance. Working environment, training and skill, and management involvement were also found to be effective for the organisation to perform well (Musmuliana and Mustaffa, 2012). Another study found eight factors that significantly influence organisational performance such as business entity size, life cycle stages, technology and product innovation, organisational autonomy, centralization and formalization, market roles, and type/importance of goals (Dragnić, 2014). According to Hansen and Wernerfelt (1989) organisational performance is directly influenced by individual behaviour, which is also influenced by organisational climate such as leadership, goal emphasis, HR emphasis and job condition. Organisational climate is the result of three factors such as organisational factors (structure, system, size and history), environmental factor (sociological, economical, political and technological) and the people factor (skills, personalities and age), which indirectly affect organisational performance also.

However, Bergeron *et al.* (2004) found more misalignment between business and IT strategies in the low-performing firms than others. Another study found that the firms

with high IT alignment perform better than those with low IT alignment (King *et al*. 2000). Firms with superior IT capabilities exhibit superior performance when compared to average industry performance (Santhanam and Hartono, 2003). Strategic alignment affects organisational performance in various ways such as it results in higher returns on IT investment, increased profitability, sustain strategic performance and adding a competitive advantage to organisations (Kearns and Lederer, 2004; Luftman *et al.,* 2011; Luftman and Brier 1999; Praisi, 2013).

Consequently, the importance of the two main constituents of strategic alignment, namely IT strategies and business strategies, is highlighted in the following sections.

2.6.1 IT Strategies and Organisational Performance

The topic of IT infrastructure has been a key issue for both researchers and practising managers for some time (Davenport, 2013). The organisation's IT infrastructure integrates technology components in such a way to support business needs; the IT infrastructure concept, on the other hand, is more complicated (vom Brocke *et al.* 2014). IT adoption is proved as having the capacity to add a competitive advantage and a key factor that enhances organisational performance (Wang, 2014). IT assists management in reducing costs by adopting IT and managing processes and systems. Accordingly, products and services can be placed in the market at competitive prices. Many have emphasised that technology can increase competitiveness, but that technical incomparability is not always important (Atkins, 1994) as adopting a leading-edge technology is not indistinguishable in the creation of organisational value for three reasons: technology is accessible to everyone and it is not easy to do inimitable things; organisations need to effectively deploy the technology in order to create an added value—not only by using the right technology but also using the right portion of it; and organisations also need skilled workers who are able to use the deployed technology effectively, which further supports the alignment of IT with the business by which the effective deployment of IT will be achieved in line with the goals and objectives of the organisation (vom Brocke *et al.* 2014).

Innovation is reported as a key factor for organisations' sustainable competitiveness and survival. Innovation may be related to new processes, new strategies, new products or services, but has frequently been related to new trends, such as IT. As Porter (1996, p. 75) states, 'managers chase every new technology for its own sake'. A vast amount of research shows that organisations frequently fail for not adopting or are too late in adopting new technologies, and organisations that adopt technology have always sustained competitiveness (Moghavvemi *et al*., 2012; Damanpour and Schneider, 2006; Melville, 2010).

Thus far, it is revealed that IT is a compliant resource. Although it might be adopted with specific aims, it is not constantly used as expected or aimed. There is a lot of research intended organisational research especially pertaining to IT, showing how IT can influence the behaviour of individuals. Some of these subjects have endangered lengthy academic debates and induced controversy whilst others are emerging areas, particularly when concerning the implications of the most recent technological innovations.

There are social implications of technology, which could be realigned to business processes, such as the influence of the technology on the skills and performance of individuals. IT might have and influence on the level of control with which individuals can present their competencies, however, it can recognize different assessments as well. Some argue that individuals are monitored and controlled more closely, whereas others emphasise the democratising possibilities of some technologies available, including new developments, such as networking.

Evidence also indicates that the users of technology are rarely involved in the process of technology adoption, although they are more likely to have input during the operation stage, such as in terms of aspects such as working practices, tasks, decisions about methods, and tools and techniques (Frolich *et al., 1991*). Frolich *et al.* (1991) conducted a major cross-national survey of workplace involvement in technical change, covering over 7,000 management and employee representatives across 12 countries and five economic sectors. Overall, they found that only 20% of the respondents reported consultation or negotiation between management and

employees in the adoption stages of technological change; however, this was seen to increase to 33% in the implementation stage, which is congruent to strategic alignment in terms of technological capabilities.

IT is considered an essential factor supporting and shaping the competitive advantage of any organisation. Information systems also provide interactivity with stakeholders, ensuring the availability of and access to knowledge of both external and internal environments. This interaction creates a tool for organisations to allow the flow of information and accordingly increase the involvement in different phases of the business (Peppard *et al.*, 2014). IT is not only considered a competitive advantage but also an important element in reaching higher levels of quality, it is considered a key leading factor in achieving success in any project (Arsovki *et al.,* 2006). IT is the best way of achieving the quality sought by developing an integrated strategy using concepts of strategic management, management of technology and policy, and strategy of quality. When aligning IT with business, it is important to choose the right alignment perspective -as mentioned earlier- whether it is in a defensive or reactive manner. This will help organisations achieve their goals and objectives, and will allow them to keep up with competitors (Henderson and Venkatraman, 1993) as well as determining the right portion of IT. Based on the organisation's needs, IT should be adapted as Applegate *et al*. (1988, p. 136) state: 'Technology will not be an easy solution to serious problems and it won't guarantee competitiveness. As always, it requires thoughtful planning and responsible management. But as never before, it will tax the creative powers of the business leaders who must decide when to use it and to what end'. Hence, IT will not be sufficient and will not create an added value, as well as competitive advantage, unless coupled with skilled workforce and well built strategy.

IT adoption in many organisations can be influenced by a number of factors, both internal and external. In his study, Harindrath *et al*. (2008) highlight the influence of the beliefs and behaviours of employees towards IT, which they consider to be one of the main factors affecting the success of using IT in achieving the organisation's goals and objectives. Harindrath *et al*. (2008) focused on the use of ICT through small- and medium-sized enterprises (SMEs) in the southeast of London. The main

objective of their study was to explore the effectiveness of government policy mechanisms at national and regional levels. This highlights another factor affecting IT adoption in organisations: policies and regulations.

During recent years, the IT planning approach has been developed in a less formal but more practical way (Silvius, 2007). Silvius (2007) suggests a modern IT plan with focus on business strategy, considering IT as an enabler for the organisation's goals and objectives, and adopting this strategy in an effort to create performance indicators. The impact of IT on business strategies is changing from an efficiency factor into a business enhancement. With this noted, the following section will address the business strategies in an effort to pave the way for its coupling with strategic alignment and measuring its impact on the performance of public organisations, as presented in the following chapters.

2.6.2 Business Strategies and Organisational Performance

The rationale behind business strategy is creating a customer base (Drucker, 1954) and, consequently, focusing on customers. As stated by Ohmae (1983, p. 109), 'customer-based strategies are the basis of all strategy'. Peters (1987) and Kanter (1989) have both developed concepts that highlight organisational customer orientation. Kanter (1989) advances the notion of the 'customer-driven' organisation in which she argues that organisations should know what and how customers think, and should become entrepreneurial, learning-orientated, focused on core-skills, and willing to use new knowledge. Strategy is about continuously creating and delivering value whilst also serving customers' needs (Ohmae, 1988).

Bryson and Roering (1996, p. 4) view strategic planning as 'the disciplined effort to produce fundamental decisions and actions shaping the nature and direction of an organisation's activities within legal bound'. Further, they point out that strategic planning can help public sector organisations by 'thinking critically; clarify future direction; make today's decision in light of their future consequences; develop a coherent and defensible basis for decision making; exercise maximum discretion in the areas under organisational control; solve major organisational problems; improve

performance; deal directly with rapidly changing circumstances; and build teamwork and expertise' (Bryson and Roering, 1996, p. 78). Many definitions of strategic planning have been cited, and have attempted to identify what strategic planning really encompasses. It is noteworthy to recognise that the majority of the definitions are central to the organisation's mission, objectives, formal decisions and written documents, structure, strength, weakness, opportunities and threats (Ansoff, 1979).

Public and non-profit organisations' leaders and managers are supposed to practise strategic planning the process of generating strategies—as effective strategists by fulfilling their missions, meeting their mandates and continuously satisfy constituents (Bryson, 1988). Furthermore, according to each of Bonn and Cristdoulou (1996), Elbanna (2008) and Yusuf and Saffu (2009), the past several decades have witnessed much attention being directed towards two critical strategic organisational practices strategic planning and ICT, which has been proven to enhance an organisation's capacity to manage its environments and consequently enhance its performance.

Importantly, researchers and practitioners have debated various proposals to help business organisations, and, to a lesser degree, public organisations in coping with such trends and developments. For example, several concepts, approaches and theories have emerged following their debates; just to name a few, Management by Objectives by Drucker (1995), Strategic Management (Miles and Snow, 1978), Culture Theory by Hofstede (1980), and Technology Acceptance Model by Davis (1989). Strategic planning has been the centre of all proposed models from market-driven, customer-driven, service-driven and human resources development through to cultural changes.

There is significant positive relationship of strategic alignment with business strategies and IT strategies respectively although some argue that IT is not to be separated from the business strategy in the first place (Smaczny, 2001). According to Smaczny (2001), alignment does not arise as long as it is pervasive in business since strategic management is all about aligning the resources of organisations including IT with its internal and external environments (Andrews, 1980). According to Weill and Broadbent (1998), strategic alignment is able to provide organisations with many

advantages: one of the main is assisting them in maximising the return on IT investment. Furthermore, alignment can be useful in drawing the road map to future IT investment, highlighting the risks and opportunities to further competitive advantages (Galliers, 1991; Porter, 1987). Strategic alignment will not only enhance the development of the business plans, but will also increase organisational performance as alignment assists organisations in gaining more benefits and encourages them to invest more in IT in order to enhance its competencies and consequently efficiency (Luftman*,* 1996; Papp, 2001).

Linking business and IT in terms of strategic alignment is crucial to organisations (Basili *et al.,* 2013; Bharadwaj *et al*., 2013; Elmorshidy, 2013; Papp, 1995; Luftman, 1996), although it is also recognised that more studies need to address both the effectiveness and efficiency of strategic alignment, which is concerned with 'doing the right things right' (Lutman, 2000), and studying its impacts on organisational performance (Chan and Reich, 2007; Osman, 2012).

2.6.3 Strategic Alignment and Organisational Performance

It is important to note that organisational performance is multi-dimensional and difficult to comprehend and measure (Pennings and Goodman, 1977). Furthermore, organisations have different performance goals, and accordingly may vary based on the targets set, the phase of measurement, the criteria used, and in line with which perspective is adopted; hence, organisations are able to plan and control once the performance criteria and measures of these criteria become available (Globerson, 1985). Thus, in order to answer the calls for more research on the impact of strategic alignment on organisational performance, a set of measurement tools and criteria reflecting the strategic decisions (i.e. strategic alignment) is needed (Chakravarthy, 1986). Accordingly, based on the organisation's strategies, a set of performance measurement tools and criteria should be developed and adopted. Organisations need to align their performance measurement with their strategic goals and objectives through matching the goals of strategic alignment with organisational goals.

A wealth of research has reported that strategic alignment increases the performance of organisations (Al-Adwan, 2014; Chan *et al*., 1997; Cragg *et al*., 2002; Floyd and Woolridge, 1990; Powell, 1992; Weiss and Thorogood, 2011). Misalignment, on the other hand, can cause failures in the management of IT projects, as well as the neglect of IT when making business decisions (Sauer and Burn, 1997).

Based on the firm typology provided by Miles and Snow (1978), Sabherwal and Chan (2001) studied the impact of alignment on organisational performance, and proved a positive link between them, detailing evidence to support improved business performance. Although the study showed a significant correlation between alignment and performance, Sabherwal and Chan (2001, p. 27) concluded by, 'The processes by which alignment is accomplished (i.e. practically and effectively worked out) in organisations needs to be better understood'. Therefore, the factors that affect strategic alignment were studied to have a better understanding about the process that causes the strategic alignment before investigating its impact on organisational performance.

Others, like Sabherwal *et al*. (2001), have examined the way in which alignment evolves over time, although most research in the alignment field has treated alignment as a static end state as opposed to a dynamic situation, as noted by Henderson and Venkatraman (1993). In this vein, Sabherwal *et al*. (2001) developed the Punctuated Equilibrium Model (Sabherwal *et al*., 2001), suggesting that, once alignment is achieved, it passes through periods of stability or evolutionary change, with such evolutionary periods interrupted by short revolutionary periods. Revolutionary periods are suggested as a combination of environmental shifts, influential outsiders, sustained low performance, perceptual transformation and strong leadership. The findings of this study show that several organisations experienced low level of alignment in revolutionary periods. They concluded that a redesign is adopted, although this does not often work. Hence, they have suggested including business strategy, business structure, IS strategy, and IS structure.

Tallon and Pinsonneault (2011) also studied the relationship between alignment and firm performance using agility as a mediator under different conditions of IT

infrastructure flexibility and environmental volatility. They created a positive and significant link between alignment and agility, and between agility and firm performance; however, their contribution integrates the literature on strategic IT alignment and organisational agility, but does not provide a direct impact on organisational performance. However, strategic alignment is reported to be crucial to improve profitability from the use of technology once the integration between business and IT is achieved (Papp, 1999). Papp recognises 12 different perspectives on alignment, which offer approaches to assess or reach alignment. This involves the application of the alignment model in assessing the perspectives of the organisation, providing knowledge to identify and leverage Information Technology to the highest efficiency, with the inclusion of financial measurements.

El Mekawy *et al.* (2014) highlight the Business IT alignment potential link with organisations, measuring the influence of alignment on information security process (ISP). The in-depth literature survey, followed by a case study in two organisations, showed a clear impact of business IT alignment on IT security components. However, Tallon (2003) found that 70% of organisations reduced costs or improved sales and customer service after increasing strategic alignment; nonetheless, 30% of the sample did not witness any improvement or decline, i.e. no change was recognised. Palmer and Markus (2000) similarly did not identify a positive or negative link between alignment and performance in their study of the use of Quick Response technology in the retailing sector.

Accordingly, it may be suggested that findings from studies are inconsistent, with contradictions believed to be owing to the inflexible alignment plan and investment in different types of IT that have prevented the organisation's ability to change (Chan *et al.*, 2006). Thus, the need for investigating the link between strategic alignment and organisational performance is realized, which has become one of the objectives of the research described in this dissertation. Hence, the researcher developed a model based on SAM, explained in chapter 3, to examine the factors affecting strategic alignment in public organisation and to investigate whether strategic alignment has any significant impact on organisational performance.

2.7 Summary

A critical review of strategic alignment showed various observations. Section 2.1 suggests that although researchers have explored the relationships between strategic alignment and the factors influencing it, measures and organisational performance, and the relationships between strategic alignment factors, need to be further examined. Studies suggest that both strategic alignment enablers and dimensions of measures have an impact on organisational performance in an independent way. Ironically, most have focused mainly on business IT strategies' integration consequences, whilst few studies were focusing on how organisations can be strategic and technologically oriented, as well as what factors could drive or hinder strategies alignment, as recognised by Yusuf and Saffu (2009). Second, anomalous evidence has accumulated concerning the direct and indirect influence of strategic alignment on organisational performance and the inconsistency of the findings. This inconsistency can be justified to the cultural dimensions and individuals' beliefs and behaviours towards strategic planning and Information Technology may influence this alignment on organisational performance (Gelfand *et al*., 2007, Hofstede, 1997).

By investigating the common factors affecting strategic alignment and accordingly establishing appropriate enablers to enhance an organisation's ability to strategically align business and IT (Luftman, 1999), which can be measured using different types of measurement tool, in this study, the researcher has selected Luftman's strategic alignment maturity model (Belfo and Sousa, 2012). Organisational performance, as an output to strategic alignment, can be assessed through organisational profitability or any other financial benefits in strategic management (Andrews *et al.*, 2012).

Strategic alignment can add a competitive value to organisations (Avison *et al*., 2004), and it is also hypothesised to have a positive influence on business performance terms of effectiveness of the IT (Chan *et al*., 1993). Although a considerable number of studies of the above relationships have been carried out, few public organisations were able to link strategic alignment and organisational performance (Osman, 2012). Linking strategic alignment to organisational performance is not a simple task when considering that many factors influence this

relationship (Chao and Chandra, 2012). Moreover, many factors influence organisational performance (Palmer and Markus, 2000). Hence, it is important to select a comprehensive and multidimensional performance measure when measuring strategic alignment and organisational performance of public organisations (i.e. performance prism).

The challenge is to identify the appropriate elements and relationships describing strategic alignment within an organisation in relation to business and IT strategies, and accordingly to identify those factors impacting the use of models, such as SAM; hence, there is the need to investigate the implications of organisational performance on public organisations as a result. Based on this rationale and the literature review, a conceptual model is developed in chapter 3. The theoretical underpinnings are embedded based on these elements. This also acknowledges the importance of linking acceptance with social norms and behaviours across cultures (Triandis, 1977), and where the mediation fit perspective is used to link the strategic alignment with the organisational performance of the public organisations as highlighted that if executives and management develop and sustain the strategic alignment, their organisational performance will be enhanced (Bergeron et al., 2004 and Chen et al., 2014).

This chapter serves as a foundation to the development of the conceptual model presented in the next chapter of this thesis. The studies on strategic alignment reviewed and the concepts and theories discussed from strategic management and IT literature assisted in improving the general understanding of strategic alignment. A conceptual model provides the foundation for the encompassing research hypotheses for this study, is illustrated in the following chapter.

CHAPTER 3: Conceptual Model

3.1 Introduction

This chapter presents and justifies the process of developing the conceptual model that includes prior IS success, IT acceptance, strategic alignment and organisational performance. Section 3.2 discusses the justification and development of the conceptual model and its constructs. It critically analyses and reviews the factors affecting business IT alignment significantly to pursue any gap that can be addressed in the conceptual model satisfactorily. Section 3.3 discusses the fit perspective and proposes the conceptual model. A summary that assesses the contribution of the conceptual model and the hypotheses is presented in Section 3.4.

3.2 Conceptual Model Development

In developing the conceptual model, the factors affecting business IT alignment, as evidenced in the previous chapter, have been drawn on. Research that studied the link between business IT alignment and organisational performance were also taken into account. The Strategic Alignment Model (SAM) proposed by Henderson and Venkatramen (1993) has been found to be the most used (Balhareth *et al*, 2013; Trienekens *et al*., 2014; Fattah and Arman, 2014; Orozco *et al.*, 2015). Although the Strategic Alignment Model (SAM) is not without criticism (*Grant et al., 2012*), its applicability and potentiality is still upheld (Balhareth *et al*., 2013; Fattah and Arman, 2014). The SAM has also been used in the current study but extended with two additional factors, which are Prior IS success and IT acceptance. This section will justify the selection of the factors and their usage as the building blocks to the conceptual model.

The current study empirically tests the impact of the proposed factors on strategic alignment and the impact of this alignment on the organisational performance of public organisations using multiple performance measures (Sabherwal and Chan,

2001; Chan *et al.,* 2006). In the next sections, the constructs of the conceptual model are discussed and hypotheses are presented.

3.2.1 Prior IS Success and Strategic Alignment

This section presents the rationale behind selecting the first factor (construct) of the conceptual model. Since this research aims to depict factors influencing strategic alignment while measuring its impact on organisational performance, a review of the literature revealed the lack of theory-based empirical research which highlights both the impact of the strategic alignment on organisational performance and the factors influencing it (Burn and Szeto, 2000; Luftman *et al.*, 1999). Hence, this section addresses the factors affecting strategic alignment. Consequently, a conceptual model of the influence of those factors on alignment and its impact on organisational performance is developed and empirically tested.

A review of the literature related to the factors influencing strategic alignment a number of factors were found to be significant in affecting strategic alignment. Those factors found to be significant in affecting strategic alignment are shown in table 3.1.

Table 3.1: Factors Influencing the Alignment of Business and IT in Prior Research

Authors	Nature of Empirical Research	Purpose of the Study & model used	Factors Found Significant
Luftman, *et al.*, (1999a)	Data from 1051 business and IT executives participating in alignment classes.	Enablers and Inhibitors of Business-IT Alignment *(based on SAM model)*	-IT involvement in strategy development - IT understanding of Business -IT failure to -Senior executive's support for IT -Well prioritize IT projects -Business IT partnerships
Reich & Benbasat (2000)	57 interviews in 10 business units	Factors affecting social dimension of alignment between business and IT *(No specific model used)*	-Share domain knowledge - Successful IT history -Connections between business and IT planning -Communication between business and IT executives
Burn & Szeto (2000)	Survey of 88 firms	Success factors affecting the strategic	-Top management selection of appropriate alignment

Authors	Nature of Empirical Research	Purpose of the Study & model used	Factors Found Significant
		alignment between business and IT *(based on SAM model)*	approach to accomplish business objectives - Matching the internal IS with external market
Hussain *et al.* (2002)	Survey of 256 small manufacturing firms	Factors affecting IT Alignment in Small Firms *(based on SAM model)*	-IT maturity -Level of CEO's software knowledge
Kearns & Lederer (2003)	Survey of 161 firms	Process and outcome related to Business-IT alignment. *(generic model based on RBV)*	Information intensity of the value chain
Chung *et al.* (2003)	Survey of 200 US/Canadian firms	IT infrastructure on strategic alignment *(generic model developed from prior research)*	-IT infrastructure flexibility -Organisational size
Lee *et al.* (2005)	Survey of 202 IS executives in large Taiwanese firms	factors on the success of internet-based inter-organisational system planning *(generic model developed from prior research)*	-CEO/CIO relationship -System maturity -influences of trading partners -IT expertise
Chan *et al.* (2006)	Survey of 164 industries in Study 1; and 244 academic institutions in study 2	Antecedents of Strategic IS alignment *(generic model developed from prior research)*	-Environmental uncertainty (in academic institution, not in business firm) -Planning sophistication -Shared domain knowledge -Prior IS success -Organisational size uncertainty (in business firm, not in academic institution)
Kearns & Sabherwal (2007)	Survey of 274 senior information officiers	Factors affecting Strategic alignment between business and Information technology *(generic model developed from prior research)*	-Knowledge management and centralization of IT -Manager's participation in strategic IT planning
Yayla & Hu (2009)	Survey of 169 large organiztions	Antecedents and drivers of IT-business	-Centralization -Formalization

Authors	Nature of Empirical Research	Purpose of the Study & model used	Factors Found Significant
		strategic Alignment *(generic model ndeveloped from prior research)*	-Shared domain knowledge -Successful IT history -Relationship management
Tallon & Pinsonneault (2011).	*survey of IT and business executives in 241 firms*	Investigating the link between strategic IT alignment and Organisational agility *(generic model developed from prior research)*	Moderated by -Environmental volatility -IT flexibility -Prior IS success
Luftman *et al.* (2012)	Data collected from the survey of 2000 IT and business executives from more than 250 global organisations	Impact of IT governance to business performance *(based on SAM & SAMM model)*	Moderated by - IT strategic planning, - IT budgeting - IT reaction capacity
Yayla & Hu (2012)	Survey of 169 IT firms in Turkey	Impact of IT strategic alignment to business performance *(generic model developed from prior research)*	Moderated by - environmental uncertainty -strategic orientation
Balhareth *et al.* (2013)	The total of 106 completed surveys were used for analysis from 8 Saudi companies.	Impact of Business and IT alignment to business performance *(based on SAM & SAMM model)*	misalignment between strategy process and strategy content
Ismail & King (2014)	Survey from 214 firms	Factors influencing IS alignment *(generic model developed from prior research)*	-IT maturity -Successful IT history -Level of knowledge -Level of expertise
Trienekens *et al.* (2014)	Case study of five organisations in Netherland	Measuring Business-IT Alignment *(based on SAM model)*	-Intention and Support -Working Relationship -Shared Domain knowledge -IT Projects and Planning -IT Performance
Fattah & Arman (2014)	Hospital case study	Factors affecting Business-IT Alignment. *(based on SAM model)*	-Organisational culture -Top management support -Vision implementation
Orozco *et al.* (2015)	Twenty semi structured interview, all with	identify specific management practices	-IT Governance -Improved coordination

Authors	Nature of Empirical Research	Purpose of the Study & model used	Factors Found Significant
	managerial level	that can help to improve the process of IS/business alignment *(based on SAM & SAMM model)*	-strengthen connection of budgetary controls.

The majority of the studies were found to have used the SAM as their base model and extended that with different influential factors that affect IT business alignment; as cited in the table. A large number of additional factors, besides the original factors of the SAMM, were found to be significant in affecting strategic alignment of business and IT. The review aimed at finding factors that need further investigation and are not considered measures and been included in the SAMM. Hence, when eliminating the factors used or extended from SAMM model few factors found to be significant by various studies, such as ***prior IS success or Successful IT history*** **(**Chan *et al*., 2006; Ismail and King, 2014; Reich and Benbasat, 2000; Tallon and Pinsonneault, 2011Yayla, Hu, 2009;), ***IT expertise*** (Ismail and King, 2014; Lee *et al.*, 2005), ***environmental uncertainty*** (Chan *et al*., 2006; Yayla and Hu, 2012; Tallon and Pinsonneault, 2011) and ***organisational size*** (Chan *et al*., 2006; Chung *et al.,* 2003).

There is a need to find out the impact of these four additional factors. However, research indicated some have no significant influence on strategic alignment. For instance, IT expertise has not been included, as Hussain *et al.* (2002) reported that this factor did not have a relevant impact on strategic alignment. Organisational size also was not found to be significantly influencing strategic alignment by Gutierrez *et al*. (2009) and Luftman and Kempaiah (2007a). Chan *et al*. (2006) also reported that environmental uncertainty did not have any significant influence on strategic alignment; which allows the exclusion of that factor too. Accordingly, the factors that resulted in less or no contradictory findings, was prior IS success and successful IT history. Since both prior IS success and successful IT history have originated from a very similar concept, '***prior IS success'*** rather successful IT history has been chosen for the conceptual model.

IT success in meeting commitments increases the trust and partnership in decision-making processes between IT managers and business executives. However, IT inadequacy to meet commitments and experience failed in implementing technology together strongly hinder executives from relying on IT (Martins and Kambil, 1999). Hence, IT and IS may lose top management trust due to prior failures.

IT evaluation and success have been measured (Irani, 2008; Petter *et al*., 2008). However, there is no research linking IS success to the SAM, or measuring its impact on strategic alignment in public organisations. Moreover, there has been no study exploring the impact of the dimensions of IS success, as illustrated in the model by Delone and Mclean (2003) on the SAM. In this research, the impact of prior IS success on the strategic alignment of public organisations was measured, based on an instrument developed and validated by Sedera and Gable (2004). The instrument has been validated, and is known to comprise four dimensions that can fill the need to measure IS success in different angles. The four dimensions are system quality, information quality, individual impact and organisational impact. In this research, the impact of IS success in an organisational level is examined; hence, the dimension of organisational impact is incorporated.

To investigate the impact of prior IS success on the maturity of strategic alignment in public organisations, the first hypothesis is:

H1: Prior IS success positively influences strategic alignment.

When reviewing the literature on the factors influencing strategic alignment (Table 3.1), particularly the studies on IS success (DeLone, McLean, 1992; 2003), IS success has been found to be a prerequisite for IT acceptance. This relationship has been proven positive. However; the relationship between IT Acceptance and strategic alignment has not been investigated yet. Accordingly, the impact of IT Acceptance on strategic alignment is worthy of investigating, as discussed in the following section.

3.2.2 IT Acceptance and Strategic Alignment

Another factor, IT acceptance, was included in the conceptual model because of prior IS success, which was also found to be significant in influencing user's intention to accept IT (Chong *et al.,* 2012; Chong, 2013; Lopez-Nicolas and Soto-Acosta, 2010; Mac Callum and Jeffrey, 2013; So *et al.,* 2012; Slyke *et al.,* 2010). As 'IS prior success' significantly affects both strategic IT alignment and IT acceptance, it is assumed here that IT acceptance will also affect the strategic IT alignment. It is suggested here that cross-national variations in the success of IT strategic planning may be accounted for by the differences in individuals' attitudes towards IT. Despite research calls to investigate the role of individuals' behaviours on the effectiveness of strategic organisational practices, no empirical study has been undertaken as of yet in relation to strategic alignment. Even single-country studies of the two strategies are scarce. Few studies have been cited in the literature to deal with strategic planning in developing countries, including the Arab World (Osman, 2012; Yusuf and Saffu, 2009). This factor, IT acceptance, has never been used in any studies of strategic alignment.

In order to develop a competent conceptual model and select the most influential constructs that affect IT acceptance, it is worthwhile to brief a historical development of some well recognized models such as TRA (Theory of Reasoned Action), TAM (Technology Acceptance Model), TAM2 (Technology Acceptance Model 2), UTAUT (The Unified Theory of Acceptance and Use of Technology) and UATUT2 (The Unified Theory of Acceptance and Use of Technology 2). This critical review (Table 3.2) helped in the selection of the most influential constructs that affect IT acceptance.

Table 3.2: A Summary of IT Acceptance Models and Main Constructs Used

Model	Major constructs	Empirically studied in
TRA: TRA was proposed by Fishbein and Ajzen (1975).	• Attitude (A) • Subjective Norm (SN) • Behavioural intention (BI)	Madden, Ellen & Ajzen,1992; Chang, 1998; Sheppard, Hartwick & Warshaw, 1988 and Bang et al., 2000
TAM: Technology Acceptance Model (TAM), based on the TRA, was developed by Fred D. Davis (1989) for predicting user acceptance of computer technology (Klopping et al. 2004). TAM successfully predicting 40% of the variance in usage intention and behaviour (Venkatesh et al. 2000).	• Perceived Usefulness (PU) • Perceived ease of Use (PEOU) • Behavioural intention (BI)	Cheng & Wang, 2010; Crabbe et al., 2009; Dai & Palvia, 2009; Lu et al., 2003; Lu & Su, 2009; Jahangir & Begum, 2008; Wei et al., 2009; Wu & Wang, 2005; Chen, 2008; Cheong & Park, 2005; Chismar & Wiley-Patton, 2003; Dai & Palvia, 2009; Davis, 1989; Davis, 1993; Drennan & Wessels, 2009; Gu, Lee & Suh, 2009; Pedersen, 2005; Khalifa & Shen, 2008; Kim & Prabhakar, 2004; Pedersen, 2005; Nysveen, Pedersen & Thorbjørnsen, 2005; Mallat et al., 2009; Islam et al., 2011; Koufaris, 2002; Leong, 2003; Pavlou, 2003; Snowden et al., 2006; Taylor & Todd, 1995
TAM 2: TAM2, an extended model of the TAM, was proposed by Venkatesh and Davis (2000). TAM2 explained up to 60% of the variance in perceived usefulness (Venkatesh et al. 2000)	• Perceived Usefulness (PU) • Perceived ease of Use (PEOU) • Behavioural intention (BI) • Subjective Norm (SN) • Experience • Voluntariness • Result demonstrability • Image	Venkatesh & Davis, 2000; Chismar et al., 2003 Singletary et al., 2002; Zhang, Cocosila & Archer, 2010 ; Pai & Huang, 2011; Halawi & McCarthy, 2008; Al-Gahtani, Hubona, & Wang, 2007

Model	Major constructs	Empirically studied in
UTAUT: The Unified Theory of Acceptance and Use of Technology (UTAUT) was formulated by four proponents of different user acceptance models: V. Venkatesh, Michael G. Morris, Gordon B. Davis and Fred D. Davis (2003). UTAUT explained 69 percent, thus representing a powerful tool for measuring user intent. (Venkatesh et al. 2003)	• Performance expectancy (≈ PU) • Effort expectancy (≈ PEOU) • Social influence (≈ SN) • Facilitating condition (≈ Compatibility) • Age • Gender • Experience • Voluntariness	Islam et al., 2011; Gu, Lee & Suh, 2009; Khalifa & Shen, 2008; Luo et al., 2010; O'Reilly, Goode & Hart, 2010 ; Pedersen, 2005; Alawadhi & Morris, 2008; Venkatesh et al., 2003; Snowden et al., 2006; Marchewka & Liu, 2007 ; Yu, 2012; Alshehri, Drew, Alhussain, & Alghamdi, 2012; Escobar-Rodríguez & Carvajal-Trujillo, 2014 ; Casey & Wilson-Evered, 2012
UTAUT2: UTAUT2 was proposed by Venkatesh, Thong & Xu, 2012; which is highly aligned with UTAUT but added with some new constructs such as hedonic motivation and price value, but habit and voluntariness of use being dropped (Venkatesh et al 2012). UTAUT2 was found to be a better predictor explaining 74% of the variance in behavioral intention compared to 70%, explained by UTAUT (Venkatesh et al 2012).	• Performance expectancy (≈ PU) • Effort expectancy (≈ PEOU) • Social influence (≈ SN) • Facilitating condition (≈ Compatibility) • Age • Gender • Experience • Habit • Price value	Venkatesh, Thong & Xu, 2012; Alalwan, Dwivedi & Williams, 2014 [conceptual paper]; Slade, Williams & Dwivedi, 2014 [conceptual paper]

All the models have drawn criticism. The TRA has been criticized for its conceptual limitation in that it can explain behavioral intention only if the behaviors are volitional – which require neither great skill nor social cooperation, it fails. However, to explain intention when the behaviors are complex, require the assistance of others, or are attenuated by external constraints (Sheppard *et al*., 1988; Wright, 1998). Some recognised the need to extend or modify the TRA to overcome the barriers (Davis, 1989; Sheppard *et al*., 1988; Venkatesh *et al.,* 2000). As a result, a number of models

based on the TRA were proposed, such as the Technology Acceptance Model (TAM), TAM 2 and Unified Theory of Acceptance and Use of Technology (UTAUT).

TAM is not sufficient to explain a user's intention to accept technology using just two determinants: perceived ease-of-use and perceived usefulness as proposed by the TAM **(**Mathieson, 1991 cited in Gu *et al.* 2009). Consumer intentions to participate should be seen as a multidimensional behavioural factor (Pavlou, 2002 cited in Anckar *et al.,* 2003) and hence extensions of the TAM make the original TAM's ability to predict stronger. Venkatesh *et al.* (2000) believed that TAM2 should be extended over time to include other important theoretical constructs, such as changes in job and social environments, training and learning, correcting the misperception of usefulness and ease of use and also when alternative technologies are available and users are given a choice.

The Unified Theory of Acceptance and Use of Technology (UTAUT), a further extension of TAM2, Although the UTAUT is, comparatively a better predictor of a user's behavioral intention and usage of IT, Venkatesh et al. (2003) realized the need to extend it to account for different technologies (e.g., collaborative systems, e-commerce applications), different user groups (e.g., individual in different functional areas) and for other cases (e.g., public and government institutions). All these issues continually influence the extension and modifications of TAM, TAM2 and UTAUT.

The perceived usefulness (PU) and perceived ease of use (PEOU) are found to be the most dominant constructs of IT acceptance as these are found to be highly significant and used in all these models; although with different terminologies such as performance expectancy (PE) and effort expectancy (EE) instead of naming PU and PEOU respectively. Many have explored, investigated, linked and extended the TAM, as this model is agreed as being the most suitable model in explaining users' behaviour towards IT (Chen *et al.,* 2011). It is argued here that the most two successful constructs of TAM such as PU and PEOU can be best fitted in the current conceptual model. The definitions and scale items of perceived usefulness (PU) and perceived ease of use are adopted from Vankatesh *et al.* 2003, as shown in Table 3.3.

Table 3.3: IT Acceptance Constructs (Adopted from Venkatesh et al., 2003, pp448 & 451)

Construct	Definition	Items
Perceived Usefulness (Davis 1989; Davis et al. 1989)	The degree to which a person believes that using a particular system would enhance his or her job performance.	1. Using the system in my job would enable me to accomplish tasks more quickly. 2. Using the system would improve my job performance. 3. Using the system in my job would increase my productivity. 4. Using the system would enhance my effectiveness on the job. 5. Using the system would make it easier to do my job. 6. I would find the system useful in my job.
Perceived Ease of Use (Davis 1989; Davis et al. 1989)	The degree to which a person believes that using a system would be free of effort.	1. Learning to operate the system would be easy for me. 2. I would find it easy to get the system to do what I want it to do. 3. My interaction with the system would be clear and understandable. 4. I would find the system to be flexible to interact with. 5. It would be easy for me to become skillful at using the system. 6. I would find the system easy to use.

This extends the research on the SAM and accordingly links this to the TAM, aiming to understand the ways in which the attitudes of users towards IT influence the maturity of strategic alignment between business and IT in public organisations. The second hypothesis is:

H2: IT Acceptance positively influences strategic alignment.

3.2.3 Strategic Alignment and Organisational Performance

One of the main goals is to measure the impact of strategic alignment maturity on organisational performance, which is the third construct in this study.

In light of the definitions and models presented in chapter 2, the processes interrelating the components of the business and IT relationship is highlighted.

Measuring the extent to which these processes if were in place and well-functioning will determine the level of alignment in a given organisation. Strategic alignment involves a shared vision, goals and plans. Accordingly, this section examines the common belief that alignment is related to organisational performance (Al-Adwan, 2014; Avison *et al.,* 2004; Chan *et al*., 1997; Cragg *et al*., 2002; Parisi, 2013; Schwarz *et al.,* 2010; Sun, 2008). These studies suggest that alignment leads to the strategic use of IT, which consequently can enhance organisational performance. However, this relationship has not yet been empirically examined in public organisation using multiple performance measures (Chan and Reich, 2007; Chan *et al*., 2006).

In this research, organisational performance is recognised as the final dependent variable. This relationship is examined by linking the maturity of strategic alignment to organisational performance through the application of a multiple performance measures to capture the overall performance. Moreover, from the standpoint of the contingency theory, the impact of strategic alignment with it whole dimensions on organisational performance is examined. Hence, the components of strategic alignment between business and IT; namely, communication, competency, governance, scope and architecture and skills (Luftman, 2000) are expected to contribute to the performance.

In order to explore the impacts of strategic alignment on organisational performance (Nanni *et al*., 1992; Ittner and Larker, 2003), a multi performance measures based on the five facets of the Performance Prism framework (Neely and Adams, 2001) has been devised, as shown in Table 3.4.

Table 3.4: Organisational Performance Measures based on the Performance Prism Framework

Performance Prim Facets	Measures	Prior Research
Stakeholder Satisfaction	-Delivery of services that meet customers' needs -New Services Development -Decrease in clients' complain -Improve the outcomes/ outputs	Martin & Paterson (2009), Li *et al.* (2013)
Stakeholder Contribution	-Increase in customer retention and loyalty -Increase the level of collaboration with e-government -Increase the level of sponsorship from private organisations or NGOs -Increase the level of support from policy makers and national committees	Bridoux & Stoelhorst (2014)
Strategies	-Cost reduction -Cost control -Achievement of strategic goals -Attain timely decision making	Kefi & Kalika (2005), Broadbent & Weil (1999), Frigo & Krumweide (2000)
Processes	-Increase responsiveness to clients requirements -Enhancement in business processes -Information flow between departments -Increase in the cooperation between departments	Kefi & Kalika (2005)
Capabilities	-Increase in innovation capabilities -Increase in organisational productivity -Development of effective training programs -Increase the organisational capacity	Bernrioder (2008)

Based on the above argument, the following was hypothesised:

H3: Strategic alignment positively impacts organisational performance

3.3 Strategic Alignment Fit Perspective of the Conceptual Model

As well as the impact of strategic alignment on organisational performance based on different fit perspectives (Van de Ven and Drazin, 1985), the six different perspectives of fit are presented in Table 3.5.

Table 3.5: Perspectives of Fit in the Literature (Adapted from Kefi & Kalika 2005)

Perspective of Fit	Definition of the Perspective	Findings of Studies Related to the Fit Perspective
Matching	It is the match between two related variables (Venkatraman, 1989), or the output of managerial decisions that aims to achieve congruence to organisational context (Van de Ven & Drazin, 1985)	• Strategic alignment • Contributes to achieve higher levels of performance (Chan *et al.*, 1997) • No linkage between the two variables (Palmer& Markus, 2000).
Moderation/ Interaction	It is the conformance to a linear relationship of context and design (Van de Ven, Drazin, 1985)	-
Mediation	The intervention between an antecedent variable (business strategy or IS/IT strategy) and a consequent variable (performance). (Kefi, Kalika, 2005).	• Positive relationship exists between the two variables. (Bergeron et al. 2004; Teo, King, 1996).
Gestalt	The internal congruence of more than two contingencies and performance criteria. (Shin, 2003)	-
Co variation	The linkage amongst considered independent variables (Venkatraman, 1989).	• Higher level of alignment results in higher level of performance (Croteau *et al.*, 2001; Kefi & Kalika, 2005)
Profile Deviation	It is the degree of adherence to a specified profile and the level of fit is expected to affect performance (Shin, 2003).	• 'Alignment affects perceived business strategies, but only in certain organisations' (Sabherwal & Chan, 2001, p. 11).

The definitions and the classifications of the fit perspectives of strategic alignment, shows that the fit perspective of this research is the mediation fit perspective since it links an antecedent variable i.e. strategic alignment with a consequent variable i.e.

organisational performance of public organisations. Hence, the conceptual model will illustrate the relationships in the SAM and relates these relationships to organisational performance. The importance of the relationships within the conceptual model is presented in Chapter 2; the impact of strategic alignment on organisational performance is still a debatable issue. Hence, the process of strategic alignment maturity assessment in this research is extended to measure the impact of strategic alignment on organisational performance of public organisations and examine the impact of the factors influencing or might have an influence on this alignment, as presented in figure 3.1.

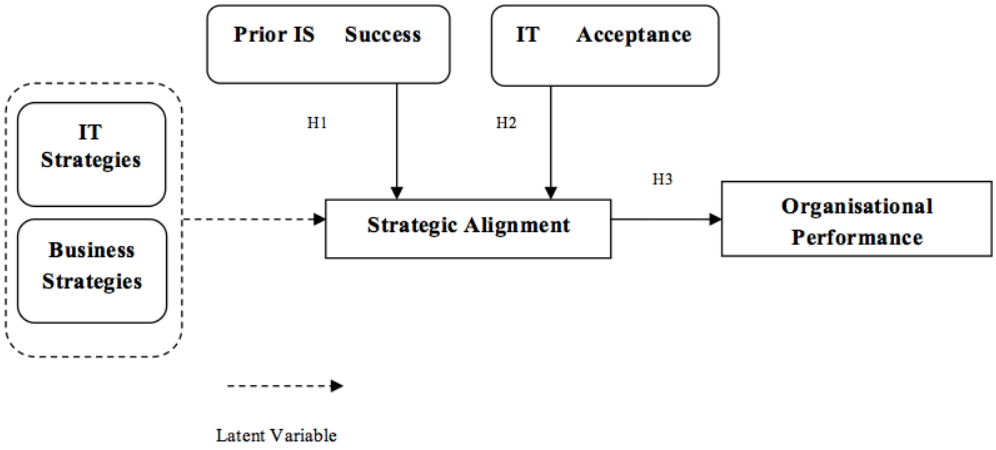


Figure 3.1: Conceptual Model for Strategic Alignment and Organisational Performance

The conceptual model aims to provide a deeper understanding and explanation of the inter-relationships between the strategic alignment of business and IT, and organisational performance. Importantly, the conceptual model is based on the strategic fit of the components of Henderson and Venkatraman's (1993), linking strategic alignment with organisational performance and assuming that the predicted enhanced performance is an outcome of the strategic alignment between business strategy and IT strategy. Business strategy and IT strategy are latent variables and measuring the impact of the strategic alignment of the two variables is one of the main arguments of this thesis along with measuring the influence of the two factors (i.e. prior IS success and IT acceptance) influencing strategic alignment. In this thesis, the researcher intends to measure this link based on Luftman's SAMM. Luftman's tool to measure the level of alignment has been used as presented in table

3.1 (Grant *et al.,* 2012, Guttierriz *et al*., 2009). It is an approach that is globally dependable on the original model of Henderson and Venkatraman (1993).

3.4 Summary

This chapter presented the conceptual model to be used to structure the empirical stage of the research and as a foundation for the research design. The model identifies the factors about which data needed to be collected.

The structure of the conceptual model defines the whole data collection process. Hence, the next chapter discusses the methodological issues related to the conceptual model, hypotheses and research questions. The philosophical background and the research design are also outlined in the following chapter, which also explains the methods used in data collection, which would provide the evidence populating the conceptual model with data for analysis. It will also provide details on the context for this study (i.e. public organisations in Bahrain).

CHAPTER 4: Research Methodology A Quantitative Approach

4.1 Introduction

The conceptual model of strategic alignment and organisational performance was presented in the previous chapter; it will be used in the public sector of Bahrain as a part of this empirical research. This chapter discusses the research methodology adopted in this thesis based on the research methods commonly adopted in examining the impact of strategic alignment on organisational performance and measuring the influence of the factors presented in the previous chapter on strategic alignment.

Section 4.2 presents the associated philosophical assumptions to justify the selection of the quantitative research method. Section 4.3, an empirical research methodology, is presented. It starts with an overview of the Bahrain public sector including Bahrain's economy and its national strategies, the context within which this study took place. It also details the sample population, stages of data collection and the tools used to collect data. Finally, Section 4.4 summarises the conclusions.

4.2 Fundamental Philosophical Assumptions

This section presents the reasoning behind selecting the research approach, justifying its appropriateness for this research. Rea and Parker (2012) highlighted the importance of selecting a proper research approach as each approach has its own weaknesses and strengths. Hence, the researcher is required to select the most appropriate approach for this research (Galliers, 1985). Accordingly, the researcher is presents the available research approaches for this study, showing the appropriate research approach, along with its strengths and weaknesses. The importance of understanding the philosophy in the business and management research is highlighted

by Easterby-Smith *et al*. (2002); hence, the presentation of the philosophy assisted the researcher in clarifying, determining and identifying the research designs.

According to Terreblanche and Durrheim (1999), the research process has major dimensions such as ontology and epistemology. According to them, a research paradigm is all-encompassing system of interrelated practice and thinking that define the nature of enquiry along these dimensions. The term ontology derives from Greek, with "onto" meaning "being", and "logos" usually interpreted as "science"; so that ontology means the science or study of being. The word being has two aspects; the first aspect is something that exists; and the second is what it is to be or to exist. It follows that if ontology is the study of being it is then both the study of what exists and what to exist; what all the things that are in common. Clearly, so conceived, ontology amounts to the study of anything and everything; for everything is a part of being (Lawson, 2004). On the other hand 'Epistemology is a theory of knowledge and concern of what is considered as acceptable knowledge in a particular discipline', as stated by Bryman (2004, p. 11). Saunders *et al*. (2009) also mention that epistemology stems from the philosophy that studies the nature of knowledge. Moreover, epistemological assumption is associated with the nature of knowledge and the methods adopted to acquire such knowledge. There are two epistemological assumptions, namely interpretivism/phenomenological and positivism. The philosophical orientation of this study (i.e. the strategic alignment of business and IT) is epistemological, particularly positivism. Positivism is accepted and acknowledged, as it is seen to refer to an empiricist approach to scientific knowledge that starts from facts and progressively rises to be generalised. It assumes that there are facts with regard to an objective reality, aside from the beliefs of the individual. Knowledge to positivists is not important unless it is based on observations of this external reality (Easterby-Smith *et al*., 2002).

However, one of the most drastic disputes to positivism has stemmed from interpretivism: as Saunders *et al*. (2009, p. 106) stated: 'epistemology that it is necessary for the researcher to understand differences between humans in our role as social actors'. The 'feeling' researchers know interpretivists because they play a role as social actors and are able to interpret their social roles of others according to their own set of meanings (Saunders *et al*., 2009). The researcher's perspectives can also influence the overall findings of an interpretive research. Therefore, and since the

researcher attempts avoid bias, especially in research carried out amongst public organisations, and also in an effort to avoid interpreting one's own values and perceptions in the research, the philosophical orientation of this study (i.e. strategic alignment of business and IT) is epistemological, particularly positivism. Importantly, this decision has also been made in mind based on research on strategic alignment.

Hence, this study employs quantitative research methods to examine the impact of strategic alignment between business and IT on organisational performance of public organisations and depicts factors affecting this alignment. And to answer the following research questions:

1) Which factors affect strategic alignment?
2) Does strategic alignment affect the performance of public organisations?

4.2.1 Research Approach

It is very important to select the most appropriate research approach, as this will be in accordance with the data collection method, which will have a direct impact on the findings of the research. Saunders *et al.,* (2009) propose two research approaches, namely inductive and deductive. The deductive approach is structured, searching for answers to the research questions. Moreover, it is concerned with the generalisation of the examined particulars, and involves collecting data and developing theory based on the data analysis. This particular approach is also classified as quantitative research. However, the inductive approach, on the other hand, is unstructured when searching for answers to the research questions. It also involves identifying the unknown particulars from its similarity with a set of known facts and developing a theory-based hypotheses and designing a research strategy to examine them; this is classified as qualitative research (Saunders *et al*., 2009). Marshall (2014) illustrated the theoretical use of both terms (inductive and deductive) as follows:

> "When researchers first begin to open up any new line of enquiry there will be no useful theories available from which to deduce propositions for testing. Knowledge has to begin with collecting facts and then trying to find some order in them. This is known as induction. Deduction is the technique by

which knowledge develops in more mature fields of enquiry. It involves a sort of logical leap. Going a stage further than the theory, data is then collected to test it" (Marshall, 2014:17).

Based on the conceptual model presented in the previous chapter, and as Punch (2000, p. 54) states, 'the conceptual status of the things being studied and their relationship to each other', he highlights the importance of how and where conceptual frameworks appear in research approaches, stating that the 'advantage of planning research in terms of research questions is that it makes explicit the idea of levels of abstraction in research' (figure 4.1).

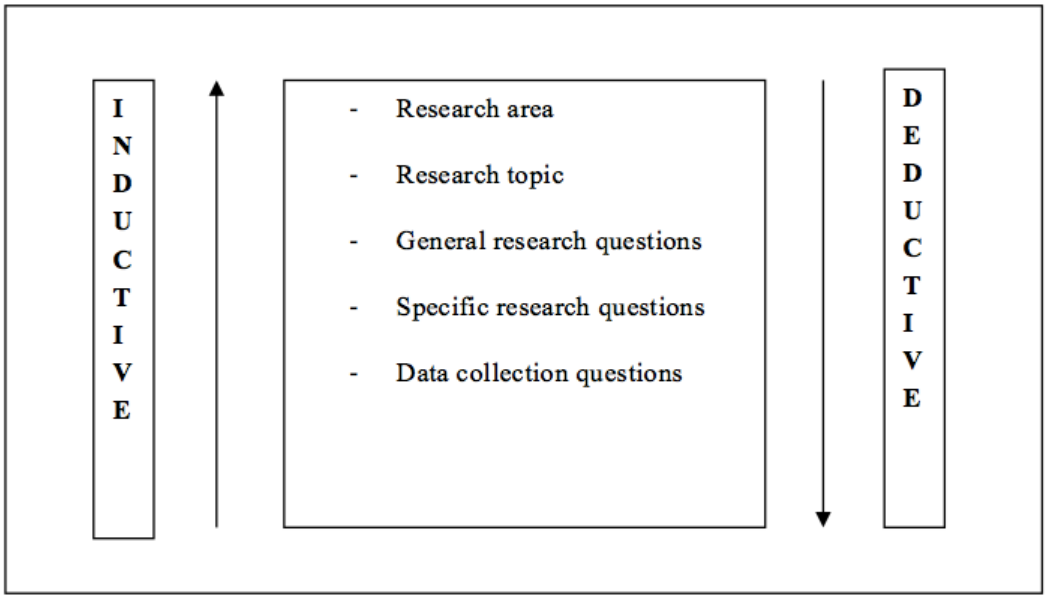


Figure 4.1: Punch's Hierarchy of Concepts (Punch, 2003)

This research, as with similar research (Burn, Szeto, 2000; Hussain *et al.,* 2002; Kearns and Lederer, 2003; Luftman *et al.,* 1999a), is confirmatory by nature; therefore, adopts a deductive approach that is appropriate in studying the strategic alignment between business and IT across public organisations.

4.2.2 Justifying the Use of Quantitative Approach

This section attempts to identify the differences between qualitative (intensive) and quantitative (extensive) research strategies, and further discusses the epistemological aspects that lead to the selected research method.

It is difficult for researchers to choose a research approach unless fully aware of the aspects of both approaches, namely intensive and extensive, which refer to 'qualitative' and 'quantitative' research, respectively. Thus, the researcher presents the aspects of both approaches in an effort to justify the selection (Sayer, 1992). As stated by Creswell (2003), qualitative research is claiming knowledge based on constructivist perspectives of the research design, which involves inquiries such as through case studies, grounded theory studies or narratives. It is more concerned with words than numbers in the collection and analysis of data (Bryman, 2004).On the other hand, quantitative research is when the researcher uses post-positivist claims for developing knowledge (Creswell, 2003). This involves the use of hypotheses to test theories. The research design usually includes surveys, and prearranged instruments in the collection and production of statistical data. The difference between quantitative and qualitative approach is given in the table below:

Table 4.1: A Comparison Between Quantitative and Qualitative Research - Adapted From Johnson & Christensen (2008)

Areas of concern	Quantitative Research	Qualitative Research
Scientific Method	Confirmatory or "top-down" The researcher tests hypotheses and theory with data.	Exploratory or "bottom-up" The researcher *generates* or *constructs* knowledge, hypotheses, and grounded theory from data collected during fieldwork.
Ontology (i.e., nature of reality/truth)	Objective, material, structural, agreed-upon.	Subjective, mental, personal, and constructed.
Epistemology (i.e., theory of knowledge)	Scientific realism; search for Truth; justification by empirical confirmation of hypotheses; universal scientific standards.	Relativism; individual and group justification; varying standards.
View of Human Thought and Behavior	Regular and predictable	Situational, social, contextual, personal, and unpredictable.

Most Common Research Objectives	Quantitative/numerical description, causal explanation, and prediction.	Qualitative/subjective description, empathetic understanding, and exploration.
Interest	Identify general scientific laws; inform national policy.	Understand and appreciate particular groups and individuals; inform local policy.
"Focus"	Narrow-angle lens, testing specific hypotheses.	Wide-angle and "deep-angle" lens, examining the breadth and depth of phenomena to learn more about them.
Nature of Observation	Study behavior under controlled conditions; isolate the causal effect of single variables.	Study groups and individuals in natural settings; attempt to understand insiders' views, meanings, and perspectives.
Form of Data Collected	Collect quantitative data based on precise measurement using structured and validated data-collection instruments.	Collect qualitative data such as indepth interviews, participant observation, field notes, and openended questions. The researcher is the primary data-collection instrument.
Nature of Data	Variables	Words, images, categories
Data Analysis	Identify statistical relationships among variables.	Use descriptive data; search for patterns, themes, and holistic features; and appreciate difference/variation.
Results	Generalizable findings providing representation of objective outsider view point of populations.	Particularistic findings; provision of insider view points.
Form of Final Report	Formal statistical report (e.g., with correlations, comparisons of means, and reporting of statistical significance of findings).	Informal narrative report with contextual description and direct quotations from research participants.

"Qualitative research aims to explore and to discover issues about the problem on hand, because very little is known about the problem. On the other hand Quantitative research makes use of questionnaires, surveys and experiments to gather data that is revised and tabulated in numbers, which allows the data to be characterized by the use of statistical analysis" (Hittleman and Simon, 1997, p. 31).

From the analysis of the above table and discussion it is obvious that this study is highly aligned with quantitative approach which is confirmatory in nature, predicted hypotheses yet to be tested with empirical study. Also research in the field of strategic alignment adopted the quantitative approach (Balhareth *et al.,* 2013; Burn and Szeto, 2000; Hussain *et al.,* 2002; Ismail and King, 2014; Kearns and Lederer, 2003; Luftman *et al.,* 1999a; Luftman *et al.,* 2012; Tallon and Pinsonneault, 2011; Yayla and Hu, 2012).

4.3 Empirical Research Methodology

An empirical research methodology is developed to show the process of the research and validate the proposed conceptual model (figure 3.1) with regard to public organisations in Bahrain as presented in section 4.3.1. Followed by the empirical research methodology, which is developed on three stages (Rudestam and Newton, 1992): research design, data collection and data analysis as discussed in the following subsections:

4.3.1 Research Context

The aim of this section is to highlight the Bahraini context including the public sector of Bahrain and its performance, national IT strategies and the economy. The Bahrain public sector will be introduced briefly in in this section followed by national IT strategies in 4.3.1.1. An overview of the national bodies concerned with public organisations' performance will be presented in section 4.3.1.2, which also summarises the section.

Eighty-one public organisations of different industries in Bahrain can be categorized as oil and gas sector, financial services, manufacturing, transport and communication, real estate and construction, trade, public health services and tourism (CRMZ, n.d.). Among them few industries are jointly operated by the government and the private sectors such as Bapco (oil, 37 percent stake in shares), Alba (aluminum, 77 percent), Gulf Air (national carrier, 50 percent) - as well as a 50 percent stake in the National

Bank of Bahrain. Oil is still the major source of foreign income for the government, with petroleum production and refining accounting for over 60 percent of Bahrain's exports and over 70 percent of the government's earnings. However, Bahrain's service and finance industry also contributes 41.5 percent and 27 percent to GDP respectively (Economy watch n.d.). Hence, the government of Bahrain developed strategies and adopted high technologies to enhance the performance of public organisations and increase the income from the service and finance industries. It is noteworthy that only 63 organisations are being ranked annually by Bahrain Centre for Excellence because they have developed strategies and are not recently established organisations. Therefore, the selection of the sample has been drawn from the 63 organisations.

4.3.1.1 National IT Strategies

The national strategies related to IT usage across public organisations are set in accordance with the economic vision 2030 developed by Bahrain Economic Development Board (2014), and managed by the Supreme Committee for Information and Communication Technology (SCICT) (eGovernment Authority 2014).

SCICT implements the directions related to the electronic government, and applies the strategies and plans for the development of ICT in the Kingdom of Bahrain. One of the main tasks this committee is responsible for is to coordinate between public and private organisations with regard to IT projects in order to prevent the duplication of efforts. SCICT aims to identify and overcome the challenges facing the development and implementation of IT in public organisations. Moreover, it coordinates with both public and private organisations to provide more support for the IT initiatives in the government. Notably, the committee aims to adopt strategies, plans and programmes to ensure the application of e-government initiatives, and proposes recommendations and legislation to speed-up the transformation to an e-society. It also supports the government and private organisations by providing the resources needed to implement plans and strategies so as to achieve organisational goals and objectives. The committee includes ministers and deputy prime ministers,

all of whom report directly to the prime minister, by submitting studies and research suggesting the best means of developing the Kingdom's experience and expertise in IT. This is very similar to IT governance, which is defined as the processes that ensure the effective and efficient use of IT in enabling an organisation to achieve its goals (Gartner, n.d.). This IT governance is part of the SAMM framework used within the conceptual model of this study and will be measured as a component that determines the level of strategic alignment.

E-Government Authority

The e-government system in Bahrain was launched by the deputy Prime Minister, H. E. Shaikh Mohammed bin Mubarak al-Khalifa, on May 23, 2007. It has been designed to transform the provision of government services to every member of Bahraini society, including citizens, expatriates, businesses, the public sector employees and visitors (eGovernment Authority, 2014). The strategy of e-government in Bahrain is focused on enhancing the overall efficiency of the services delivered to its clients. The government of Bahrain aims to improve the lives of the nation's citizens through this entity, which does much more than merely implement IT. This involves the responsibility of the multifunctional and multidisciplinary teams across the country. It also involves overcoming challenges, including legislative, regulatory and budgetary barriers, evolving common technical frameworks and infrastructure, ensuring a common vision, providing leadership at many levels, strengthening coordination, improving collaboration, clarifying public–private partnerships, and monitoring and evaluating progress and results on an ongoing basis (eGovernment Authority, 2014). The mission of the e-government in Bahrain is to realise, define and manage the implementation of IT strategies; to set and monitor the policies and standards; to facilitate the transformation of services; and to advocate the incubation of next-generation concepts in collaboration with government entities and effective partnership with the private sector.

E-Government Strategy

The e-government strategy as presented on their website can be summarised as delivering customer value through collaborative government. Recipients of government services are viewed as customers and not beneficiaries. In order to successfully provide customer value, Bahrain is committed to ensuring a collaborative government, adopting a policy of no wrong door, thus allowing citizens to benefit from services in an integrated manner where multiple agencies collaborate so as to provide service. The concept of collaborative government spans beyond the government to include the private and non-government sectors. The Kingdom is committed to leveraging the complementary skills of these sectors so as to deliver services to customers (eGovernment Authority, 2014).

The role of e-government authority can be classified into numerous categories, as follows:

1. The core role which includes project and programme monitoring, reporting, identifying and resolving interdependencies, and serving as a one-stop-shop for knowledge management and dissemination by:

    - Setting the programme's objectives and its execution strategies;
    - Ensuring the continuous provision of programme direction to the authority project implementation units;
    - Prioritising the programme-level activities and the introduction of new projects to the programme;
    - Identifying and managing the overlaps in functions and core infrastructure;
    - Formulating the Enterprise Architecture Framework (including standards and policies);
    - Monitoring and evaluating the outcome of post-implementation benefits (impact assessment);
    - Occasionally circulating guidance notes on the areas listed above; and
    - Working with implementation units to prepare transition plans for agencies that require modification to be made to existing applications and systems.

2. Undertake project appraisal and reviews in order to align projects to programme objectives.
3. Coordinate components relating to the services gateway, the National Data Set (NDS), the central infrastructure, the enterprise architecture framework, with various implementation units to undertake capacity gap assessment.
4. Support role, which includes aligning, defining project targets and intermediate milestones, coordinating the activities of different departments, identifying areas for capacity building, and defining measurable parameters on which to monitor progress.

5. The augment role allows it to provide technical assistance in project execution.

Some of the points mentioned above can be considered as measures, but as this empirical study is based on extending the research on the SAMM model, these tools, alone, are used.

4.3.1.2 Public Organisations Performance

The performance of the public organisations in Bahrain is measured using financial and non-financial measures. The Cabinet, based on two dimensions, adopts non-financial measures: one is based on excellence in delivering services to the public (Bahrain Centre for Excellence 2009). The second is through an entity that is recently initiated by H.M. King Hamad bin Isa Al Khalifa; by appointing His Royal Highness Prince Salman bin Hamad Al Khalifa, Crown Prince, Deputy Supreme Commander as a First Deputy Premier. His Royal Highness's office is mainly responsible for the enhancement of public organisation's performance by using non-financial performance management methods that are responsible for enhancing the public organisations' performance. The office manages the government performance (i.e. public organisations) based on a set of policies derived from the principals of Bahrain National Action Charter. According to those principals, they prioritise the governmental programs. Hence, successful projects and programmes are prioritised based on their importance across the public. The First Deputy Premier office, has

established a committee includes all head of public committees in order to liaise communication and increase the level of knowledge sharing between different governmental committees. Further, public organisations' performance is also monitored by the Members of the Parliament based on annual audits which adopts international financial accounting related measures produced by an independent entity, assigned by His Majesty the King of Bahrain, which is the National Audit Office (2002).

During recent times, Bahrain has announced an initiative aimed at developing national Key Performance Indicators (KPIs) for the public sector. The development and deployment of the national KPIs to assess the performance of government organisations, support decision-making and boost competitiveness. This initiative aimed at measuring the performance in a more practical approach. The national KPIs cover five areas, which are; the national economy, welfare, lifetime education, knowledge-based economy and sustainability of natural resources (Rafique, 2013). However, performance measured through the above mentioned KPIs differs from the measures of this study, which considers the influence of strategic alignment on organisational performance and captures it from five facets as presented in chapter three.

Based on the discussion above, it is clear that, in this context (i.e. Bahrain), the top management emphasises setting strategies and developing public organisations, not only by adopting IT but also through its best utilisation. Hence, it is suitable to measure the impact of the strategic alignment on public organisational performance as organisations are adopting IT and are encouraged by top authorities to adopt it to enhance the performance and provide enhanced services to the public.

4.3.2 Research Design

The research design is the overall strategy and plan of the data collection and analysis, which provides the best way to answer to the research questions (Cooper and Emory, 1995).

In this study, the main objective is to determine the relationship between strategic alignment and organisational performance of public organisations, as well as investigating key factors affecting strategic alignment, as identified in the previous chapters (figure 4.3).

Based on the hypothesised model (figure 3.1), a quantitative study has been adopted in order to provide validation to the proposed conceptual model (Creswell, 2003) and to answer the research questions. Case study was not used as that does not claim to be representative, but the emphasis is on what can be learned from a single case (Tellis, 1997). Case study research has been subject to criticism on the grounds of no representativeness and a lack of statistical generalisability. Moreover, the richness and complexity of the data collected means that the data is often open to different interpretations, and potential 'researcher bias' (Cornford and Smithson, 2006). Accordingly, the use of a questionnaire is considered to be the most appropriate way to do so.

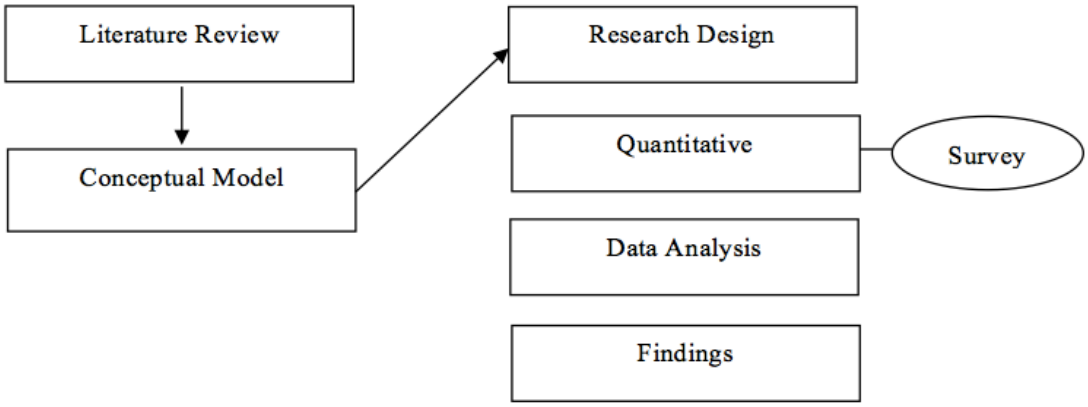


Figure 4.2: Research Design

As illustrated in the conceptual model, business strategy and IT strategy are emerging constructs. As a result, of their alignment, a mediation construct is created. As latent variables, they are considered second-order factors and will be indirectly measured these constructs. Strategic alignment, factors affecting strategic alignment, and organisational performance are measured with reflective constructs as shown in Table 4.2.

Questionnaire items, briefly mentioned here, are listed in details in appendix 1, are adopted from research (Davis, 1989; DeLone and McLean, 1992; 2003; Luftman, 2000; Neely and Adams, 2001; Vankatesh *et al.* 2003) as presented in the previous chapter.

Table 4.2: Constructs of the Conceptual Model and the Related Measurement Items

Construct	Hypotheses	Variables	Question items (Appendix 1)
Business strategy	-	-	-
IS/IT strategy	-	-	-
Strategic Alignment (Theory/Source: Luftman, 2000)	H3: Strategic alignment positively impacts organisational performance	Communication	Q3
		Competency	Q4
		Governance	Q5
		Partnership	Q6
		Scope and Architecture	Q7
		Skills	Q8
Organisational Performance (Theory/Source: Neely, Adams, 2001)		Stakeholder's satisfaction	Q11a
		Stakeholder's contribution	Q11b
		Strategies	Q11c
		Processes	Q11d
		Capabilities	Q11e
IT Acceptance (Theory/Source: Vankatesh *et al.*, 2003)	H2: IT acceptance positively influences strategic alignment	Perceived Usefulness	Q9a
		Perceived Ease of Use	Q9b
Prior IS Success (Theory/Source: Davis, 1989; DeLone, McLean, 1992; 2003)	H1: Prior IS success positively influences strategic alignment.	Prior IS success at organisational level	Q10 (a-g)

Further details on the quantitative approach are discussed in the following sections.

4.3.3 Data Collection

The questionnaire was refined through various stages from the pretests to the pilot survey. Pre-tests were conducted among six experts - three academics at tertiary level and three high officials of public organisations in Bahrain who were not included in the main survey. The purpose of pre-tests was to make sure that the actual participants would be able to understand the survey questions easily without any assistance and would be able to fill them out properly. After the pre-tests a pilot survey was conducted in four organisations. They were given a briefing about the pilot survey and then left alone to answer the questionnaire for the purpose of judging its readability and

consistency. They provided comments on how well the questions could be used to answer the research questions. They identified inconsistencies and redundancies and checked for any missing questions and advised on the best way to ask a difficult question. The result of the pilot survey helped in redesigning the questionnaire in such a way that it became more readable and understandable to the actual participants.

Data for this study were collected using a survey, which was distributed to public organisations operating in Bahrain. Non-probability convenience purposive sampling was used in the study. Although this type of sampling may not represent the whole country, it will represent the group with knowledge and experience in business strategy, IT strategy and performance of public organisations. It can be argued that the selection of the sample populations in the current survey was not based on convenience alone, but also on valid reasons and justifications that may lessen the impact of its non-representative nature. Stakeholders of strategic alignment ranging from IT, Business to both were included in the sampling to keep up with the real representative pattern. Sampling was carried out at the strategic level in an effort to address the level of maturity of the alignment of business and IT strategies. The sampling frame comprised 59 public organisations from all industries and professions. The targeted respondents of the survey were one and two levels below the head of the organisation in all cases, 47 were IT executives, 63 planning executives and 53 were responsible of both IT and business planning, making up 163 as the total number of respondents. Demographics of the sample population is presented in chapter 5

Surveys

There are two forms of survey (Lehtonen and Pahkinen, 2004): the analytical survey and the descriptive survey; the analytical survey is used to test a theory, whilst the descriptive survey is used to identify the characteristics of the specified population. It is very important to ensure that the sample selected represents the population. The survey type used in this research is the analytical survey.

In order to measure each constraint, existing multiple-item 5 Likert scales were used. The content validity is carefully addressed in an effort to define each construct, using existing scales with strong measurement properties. The scale to measure the level of

alignment has been used previously in research, and captures participation mostly with regard to private organisations and universities as shown in chapter 2.

The scale measuring overall performance was created based on previous research on strategic alignment and organisational performance, which demonstrated high internal consistency and reliability (Kalika *et al*., 2003; Kefi and Kalika, 2005; Ilhaamie, 2010).

Another issue is administering the surveys, which is highly important as, if this goes well, it could produce data that reflects the views of the selected population; hence, this stage requires a set of procedures in place to avoid survey errors (Dillman *et al*., 2009), such as those detailed below:

1. Coverage Errors: When not all members of the population have the chance of being included in the sample for the survey. This also occurs when the members who were excluded differ from those who participated.
2. Sampling Error: An incorrect estimation of the acceptable portion of population.
3. Non-response: When non-respondents are different from respondents in their views and experience.
4. Measurement: When the respondent gives inaccurate answers.

All these issues were considered while dealing the survey in the current research.

Survey Design

There are several methods available for the researcher to adopt in order to gather primary data from the respondents. Personal interviews have several of drawbacks as it takes so much time and the interviewer can influence the participants. Moreover, there is also the consideration of respondent and interviewer bias when asking questions and interpreting answers (Sekaran, 2000). On the other hand, telephone interviews are much less expensive and more reliable in hiding respondent identity.

A postal survey, which is considered less expensive than the previous methods, requires a low level of administration. Furthermore, it does not have interviewer's

bias and the method provides the respondents with the luxury of filling in the questionnaire at their own convenience.

However, in the case of postal survey questionnaires, these have shown a low response rates, and there is no opportunity to clarify questions. Moreover, a response cannot be supplemented, and responses might be influenced by others (Saunders *et al*., 2009).

The last method of gathering primary data is through electronic surveys. This method allows the researcher to run a large-scale data collection (Couper, 2000), although it is recognised as more expensive than postal surveys. However, this approach provides strong advantages, as it takes less time in managing and is available for the respondents whenever and wherever they were able to answer it (Yun and Trumbo, 2000).

There are two forms of electronic surveys, namely email survey (Kiesler and Sproull, 1986) and web-based surveys (Pitkow and Kehoe, 1996). One of the main differences across these two types is the database technology. Electronic surveys can electronically save completed surveys responses in electronic repositories; on the other hand, e-mail surveys need to be manually entered into storage. Other issues include the direct communication that e-mail surveys provide, in contrast to the web-based survey.

Dillman *et al.* (2000) highlight the main reasons for the extensive use of online survey methods and summarises these as follows:

1- Lower cost for completion;
2- Procedures of web-based surveys are simple
3- It saves time and money.

In the past, web questionnaire have faced technical issues that have limited its use; however, with new advances in technology and software, many technical limitations have been overcome (McCoy and Marks, 2001). Therefore, based on the advantages of using web-based surveys, this was selected as a method for gathering primary data in this study.

Moreover, since postal questionnaire surveys have low response rates, the web survey approach was selected since it would be distributed to all public organisations. Hence, external validity and the generalisability of the results will be increased, which can then be applied to other contexts (Dillman, 2000).

Survey Considerations

Based on the three main research steps which are; the building of the conceptual which represents the theoretical stage, the empirical stage which represents the selection of the unit of analysis and surveying technique from survey testing to collecting the data, the data analysis and results interpretation (Sekaran, 1992). At this point, the first stage was covered in chapter 3, the second stage regarding the empirical part is presented within this chapter and the third stage is discussed in the following chapters.

Survey Procedure

Based on the Total Design Method (Dillman *et al.*, 2000), a survey system of procedures was developed to increase the response rate, ensuring that the perceived benefits of responding will outweigh the perceived costs. It is considered that this approach would allow all personalisation procedures to be combined so as to positively impact the recipients by performing the following steps, which were employed by the researcher in an electronic version in this study:

- Ordering questions
- Design the survey;
- Print it and binding it as a booklet with an attractive cover;
- Reducing the regular size of the pages to make it easy to complete; and
- After sending the survey, using three spaced mailings after the original mail, with a follow-up email, and then a first replacement of the survey after, and finally a second replacement of the survey.

Regarding the pre-testing of the survey, researchers have developed and used many methods. Based on the multi-stage testing process developed by Dillman *et al.* (2000), as shown in Table 4.3, the survey developed by the researcher - which is based on previous research- was pre-tested.

Table 4.3: Survey Pre-test Procedures (Adapted from Dillman *et al.*, 2000)

Stages	Procedures
Stage 1	Discuss the survey with knowledgeable colleagues to ensure completeness, efficiency, relevancy and format.
Stage 2	Observation and 'think loud' protocols, test respondents complete survey.
Stage 3	Small pilot study that simulates the procedures proposed by the main study.
Stage 4	A review by non-researchers for typos and errors.

After getting the ethical approval to collect data (Appendix 3), researchers, academics and executives in the field of public management, strategic management and IT conducted the first stage of the pre-test shown in Table 4.3. As mentioned previously, six executives - who were not included in the main survey - gave comments on the survey. Discussion was also carried out with the researcher who originally devised the maturity model of SAM (i.e. Prof. Jerry Luftman), as well as other consultants and experts in the field of strategic alignment. The results obtained resulted in expanding the items related to organisational performance in an effort to cover efficiency. Other results were related to language simplification and clarity of the survey questions and options that is written in English to avoid translation errors and because English is used and understandable perfectly in this context and specifically by the targeted participants.

After considering all the received comments, a pilot survey was carried out across four large public organisations that have been excluded from the main survey. The researcher conducted a pilot survey via email, as well as through personal visits to four organisations, randomly selected. The questionnaire was sent as a link to the Public Relations Manager (PRM) of each organisation so that he/she could distribute to the targeted executives, i.e. those holding positions as IT executives, planning executives or both. The targeted sample was 32; the number of completed questionnaires was 28. The internal consistency was tested through coefficient alpha, correlation for each dimension and coefficient alpha when item is deleted (Field, 2013). Based on the developed scale for the strategic alignment maturity, factors affecting strategic alignment and organisational performance questions are presented in the questionnaire (Appendix 1).

It should be noted that all constructs and measurement items were based on theoretical models, as presented in chapters 3. Items related to strategic alignment are depicted from the original maturity assessment tool developed by Luftman (2000) and validated by many researchers. Measures related to prior IS success were selected based on IS success model (Delone *et al*., 2003), with measures related to IT acceptance based on the Technology Acceptance Model (TAM), as illustrated in Chapter 3. The final construct is the organisational performance, it is measured by five items captures the organisational performance based on the performance prism model.

Based on the results obtained from the cognitive pre-tests represented by the four stages in Table 4.3, the survey was updated once again by rewording the questions. Finally, the researcher sent the final version to a non-researcher reviewer for a final check and assurance that the survey was free of typing mistakes and other errors.

The main survey was then published on the following web link (https://www.surveymonkey.com/s/bhsamm), starting from May 2014. The organisations were contacted to facilitate distribution amongst the participants.

A week after sending the first email, the first follow-up email was sent, with slight modifications made to the covering letter (Appendix 2), highlighting the importance of responding and stressing the assurance of confidentiality. PRM of the participated organisations has been followed up again by sending email reminders and in some cases telephone calls or personal visits, in an effort to increase the response rate of the questionnaire. Within six weeks, 163 participants entered their responses.

4.4 Data Analysis

Statistical software packages, namely SPSS, were used to run all the statistical analysis used for this study except the Structural Equation Modelling (SEM) that was conducted via AMOS.

Since this research adopts the data analysis model devised by Bagozzi (1981), the researcher selected a variety of statistical techniques starting with the descriptive

analysis. This analysis provides details on the population and their responses (Sekaran, 2000). It shows how good the measures and items are by checking how the respondents have reacted and responded towards the survey. The maximum statistics data is found by SPSS; this data can be considered an indicator to the responses, as well as how it has ranged adequately on the multiple-item 5 Likert scales that were used. Furthermore, the means, frequency distributions and standard deviations help the researcher in acquiring the knowledge related to the variables of the study and their interrelationships.

A correlation analysis is then used to measure the level of relationship between two variables. One of the most effective evaluating methods is the correlation coefficient (r) method to measure the strengths of relationship between variables. The aim of using this analysis was to examine relationships within constructs in order to determine their appropriateness for progressing on with consequent analysis.

Consequently, the reliability and validity of the data has been tested using Cronbach's alpha. The reliability coefficient is the indicator of the positive correlation between items, whilst internal consistency reliability is considered high the closer the Cronbach's alpha is to 1. The evaluation of construct validity requires examination of the correlation of the measures (Campbell and Fiske, 1959). A correlation that matches the predictable model will increase the validity of the construct.

Then the hypotheses were tested using regression analysis, which is widely adopted in such research. While correlation, analysis assumes no causal relationship between variables; regression analysis assumes that one variable is dependent on another single variable (simple regression) or multiple variables (multiple regression). Simple regression was used, which shows the relationship between one variable that is dependent on another single independent variable.

Finally, a statistical modelling technique, namely Structural Equation Modelling (SEM) is used, which permits the instantaneous analysis of a sequence of structural equations. It has been extensively used in confirmatory, not exploratory, analysis. SEM has several advantages (Smith and Langfield-Smith, 2004), as it recognises a variety of relations between variables in the analysis. It also reports the consequences of the predictable measurement error of latent variables. The details of the analysis techniques are presented in the following chapter.

4.5 Summary

This chapter discussed the underlying philosophical assumptions and methodology adopted in addressing the aim and objectives of this thesis. It provided reasoning behind the selection of the paradigm, method and approach adopted (quantitative) to achieve the research objectives. Positivism was adopted in the research as a positivist researcher makes claims for knowledge based on their observations, assumptions and cause and effect thinking (Creswell and Clark, 2007) and undertakes research to test it (Han, 2005). As justified earlier that the quantitative approach is aligned with the nature of the study, a quantitative approach was adopted in the research. The following chapter will present the data analysis from the research.

CHAPTER 5: Data Analysis

5.1 Introduction

The findings from the quantitative data analysis are presented within this chapter. The quantitative investigation involved collecting data from the public originations of Bahrain using a web-based survey, as discussed in the previous chapter. Section 5.2 of this chapter presents the results. Section 5.3 presents the descriptive analysis and quantitative analysis is presented in Section 5.4. A summary of the conclusions is presented in Section 5.5. The implications of the results presented in this chapter are further discussed in the following chapter.

5.2 Sample and Data Collection

As discussed in the previous chapter, the data sample of this thesis was drawn from the public organisations listed and published by the Bahrain Excellence Centre. The respondents of the survey were IT executives, planning executives or both which are considered the top management in the selected organisations, all of whom are knowledgeable in IT, planning and organisational performance. This study aims to examine the impact of strategic alignment between business and IT on organisational performance of public organisations and depicts factors affecting this alignment which are IS prior success and IT acceptance. The selection of respondents in this study is justified in light of the fact that this is strategic level information and as such is only accessible to top tier hierarchy in an organisation and selecting both IT and business executives.

The link to the electronic survey was e-mailed to 59 organisations and 413 participants were expected to participate. The link was sent to an official email address belongs to the organisation's representative who distributed it to the respondents as mentioned in chapter 4. The respondents eligible to take part in the survey were ensured that the information extracted would be kept discreet and will

only be used for research purposes. It was also promised that identities of participants will not be disclosed nor the status of their participation in the survey. The respondents were given authority to contact the surveyor or quit the survey at any time if they feel uncomfortable in disclosing any information. These measures were adopted to maintain the ethical standards of data collection and to maximize the chances of receiving genuine information for analyses (Appendix. 3).

Completed surveys were obtained from 163 participants; hence, the overall response rate was 39.47% (163/413) which exceeds the average response rate of online surveys (Mirzaee, 2013; 2014). Although the researcher tried many ways to avoid nonresponse bias such as pretesting the survey before data collection, extending the data collection period and sending reminders to survey respondents, the proportion of successful and unsuccessful responses in this survey might alarm nonresponse bias. The nonresponse bias is triggered by two main factors topic and targeted audience (Mirzaee, 2014). When respondents feels that they are being asked for sensitive information or if the survey targets top tier management personnel as respondents for data collection; thus, nonresponse bias in this scenario was inevitable. Coercing the response from the respondents in this scenario might have compromised ethical standards of data collection. Therefore, the respondents were given the privilege to quit the survey when feeling uncomfortable in participating or lacking the knowledge to answer the survey questions.

Table 5.1 presents the demographic characteristics of the sample. The first section of the table represents the services offered by the organisation whose employees participated in the survey. It was observed that majority of the respondents qualifying to be the part of the survey represented organisations offering administrative services (33.7%) followed by educational services (17.8%) and legal services. The second section of the table shows the roles or responsibilities of respondents from whom the data was collected. The data shows that 38.7% of the respondents served in management, core business or as planning executives, 28.8% as IT executives and 32.5% of the respondents were holding both of the aforementioned responsibilities.

Table 5.1: Demographic Characteristics of the Research Sample

Service Provided	**Results (Frequency)**	**Results (Percent)**
Administrative Services	55	33.7%
Medical Services	8	4.9%
Educational Services	29	17.8%
Legal Services (authorisation, permissions. ext.)	25	15.3%
Financial	9	5.5%
Housing	9	5.5%
Other (that does not fit in a specific categorization)	28	17.2%
Business Unit	**Results (Frequency)**	**Results (Percent)**
IT	47	28.8%
Management/ Core Business/ Planning	63	38.7%
Both	53	32.5%

5.3 Descriptive Analysis

Different responses gathered from the study sample were analysed descriptively. The analysis shows the frequency of responses from the study sample in an effort to reveal the inclination of responses with regard to the different study variables. The variables incorporated by this study include Prior IS success, IT acceptance, Strategic alignment and organisational performance.

Communications, competency, governance, partnership, scope and architecture, and skills cumulatively represent 'strategic alignment', where the level of alignment was measured using a 5 point Likert scale. Perceived usefulness and perceived ease of use represent IT acceptance where the level of acceptance was measured using similar scaling point. Prior IS success was evaluated with the posing of a series of questions to respondents. In addition, organisational performance was measured on the basis of stakeholder satisfaction, stakeholder contribution, strategies, processes and capabilities.

In order to gather data to support each variable for analysis, a series of questions was posed to the respondents in a survey. Through the application of descriptive analysis, the frequency of responses was transformed in an organised fashion, making data more comprehensible and presentable.

5.3.1 Demographic Characteristics

The demographic characteristics of the study sample were explored through information about their belonging in an organisation and the service provided to the public. The respondents in the survey were asked about the business units to which they belong. As per the descriptive analysis, 38.7% of the study sample belonged to management, planning or business units (Table 5.2). Furthermore, the sample was asked about the services offered by their organisation to the public. The descriptive analysis reveals that most organisations offered administrative services (33.7%), followed by educational services (17.8%) as shown in table 5.3.

Table 5.2: Business Unit

Business Unit		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	IT	47	28.8	28.8	28.8
	Management/Core Business/Planning	63	38.7	38.7	67.5
	Both	53	32.5	32.5	100.0
	Total	163	100.0	100.0	

Table 5.3: Type of Service

Type of Service		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Administrative Services	55	33.7	33.7	33.7
	Medical Services	8	4.9	4.9	38.7
	Educational Services	29	17.8	17.8	56.4
	Legal Services	25	15.3	15.3	71.8
	Financial	9	5.5	5.5	77.3
	Housing	9	5.5	5.5	82.8
	Other	28	17.2	17.2	100.0
	Total	163	100.0	100.0	

Strategic Alignment

As discussed earlier, strategic alignment was examined on the basis of 6 sub-variables: communication, competency, governance, partnership, scope and architecture, and skills according the strategic alignment maturity model presented in chapter 2 (figure 2.1). Respondents in the study sample were asked a series of questions in an effort to extract reliable information for analysis that measure the level of alignment maturity in an organisation based on the SAMM (Luftman, 2000), it ranges from level 1 that indicated the lowest level of alignment to level 5 which indicates the highest level of alignment, accordingly, 3 indicates a moderate level of alignment between business and IT. The outcomes from the descriptive analysis of the data of each sub-variable are prescribed below.

- **Communications**

Whilst analysing this sub-variable of strategic alignment as shown in Table 5.4, it was found that the majority of respondents (35.6%) believe that IT understands the organisation's business environment and has a high level of alignment (level 4) (Appendix 4: Table A.2). Almost one-third of the respondents (30.1%) revealed moderate (level 3) response to business departments' understanding of IT environment and its level of alignment (Appendix 4: A.3). Another third of the respondents (31.3%) agreed that organisational learning occurs through formal, unifying, bonding methods, with feedback measures to monitor and promote effectiveness of learning. This process has a high level of alignment (level 4) (Appendix 4: Table A.4). In addition, a large portion of the respondents (35.6%) also agreed that IT and business communication style is informal and flexible, and has a high level of alignment (level 4) (Appendix 4: Table A.5).

Table 5.4 Communication Descriptive Analysis

		IT understands the organisation's business environment	Business departments understands the IT environment	Organisational learning occurs through formal, unifying, bonding methods, with feedback measures to monitor and promote effectiveness of learning	The IT and business communication style is informal and flexible	There is formal knowledge sharing at the functional unit level, at the corporate level, and with business partners/alliances	We regularly use liaisons to facilitate the transfer of IT knowledge to the business and external partners and business knowledge to IT
N	Valid	163	163	163	163	163	163
	Missing	0	0	0	0	0	0
Mean		3.5215	3.3436	3.2822	3.2822	3.2638	3.3374
Median		4.0000	3.0000	3.0000	3.0000	3.0000	3.0000
Mode		4.00	3.00	4.00	4.00	4.00	4.00
Std. Deviation		1.10742	1.10208	1.06869	1.07445	1.11016	1.09556
Variance		1.226	1.215	1.142	1.154	1.232	1.200

Almost one third of the respondents (30.7%) agreed that formal knowledge-sharing at a functional unit level, corporate level and with business partners/alliances has a high level of alignment (level 4) (Appendix 4: Table A.6). 31.3% of the respondents regularly use liaisons to facilitate the transfer of IT knowledge to business and external partners. Such liaisons also facilitate the transfer of business knowledge to IT, and are seen to have a high level of alignment (level 4) (Appendix 4: Table A.7).

- **Competency**

When analysing the competency -a sub-variable of strategic alignment- as shown in Table 5.5, many of the respondents who were asked if they use a balancing metrics by linking business and IT metrics (24.5%) revealed responses of a moderate level (level 3) (Appendix 4: Table A.8). 27.6% of the respondents had service level agreements between the IT and functional departments, along with external partners/alliances in their respective organisations (Appendix 4: Table A.9).

More than a quarter (28.2%) of the respondents also revealed responses showing moderate level of alignment (level 3) when asked if they routinely perform formal benchmarks and have a regulated process in place to take action and measure the changes (Appendix 4: Table A.10). A similar response by respondents (30.1%) was garnered regarding the assessment and review of IT investments (Appendix 4: Table A.11).

A few (28.8%) of the respondents did not choose either low or high side of strategic alignment when asked whether they have well established IT–Business, continuous improvement practices and effectiveness measures in their respective workplaces (Appendix 4: Table A.12). In addition, one-third (30.7%) of the respondents reported a moderate level of demonstrated contribution of IT function to the accomplishment of the organisation's strategic goals (Appendix 4: Table A.13).

Table 5.5: Competency Descriptive Analysis

		We use a balancing metrics by linking Business and IT metrics. These metrics are extended to our external partners	We have service level agreements between the IT and functional departments and our external partners/alliances	We routinely perform formal benchmarks and have a regulated process in place to take action and measure the changes	We routinely assess and/or review IT investments and have a formal process in place to make changes based on the results and measure	We have well established IT-Business continuous improvement practices and effectiveness measures in place	The demonstrated contribution that the IT function has made to the accomplishment of the organisation's strategic goals is very strong
N	Valid	163	163	163	163	163	163
	Missing	0	0	0	0	0	0
	Mean	3.0675	3.2086	3.2209	3.2515	3.2025	3.3865
	Median	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
	Mode	3.00	4.00	3.00	3.00	3.00	3.00
	Std. Deviation	1.26749	1.21946	1.19683	1.13499	1.16619	1.13489
	Variance	1.607	1.487	1.432	1.288	1.360	1.288

- **Governance**

The analysis of the results presented in table 5.6 related to governance, showed that almost one-third (31.9%) of the subjects reported that formal strategic business planning at the functional unit, across the enterprise, and business partners/alliances with IT participation is moderate (level 3) (Appendix 4: A.14). The same level of alignment was reported by one-third (32.5%) of the respondents about formal strategic IT planning at the functional unit, across the enterprise, and business partners/alliances (Appendix 4: Table A.15).

However, some (31.3%) of the respondents agreed that IT investment decisions are primarily based on IT's ability to create competitive advantage so as to enhance performance (Appendix 4: A.16). Nevertheless, the response of some respondents (28.8%) to formal and regular committee meetings, including IT and strategic business partners, was found to be moderate (Appendix 4: Table A.17).

Some of the respondents (31.9%) agreed that their IT project prioritisation process is usually mutually determined between senior and mid-level IT and business management, along with consideration to the business partners/alliances (Appendix 4: Table A.18). Some (25.8%) respondents also affirmed that the ability of IT function to react/respond quickly to organisational changing business needs is very strong and at high level of strategic alignment (level 4) (Appendix 4: Table A.19).

Table 5.6: Governance Descriptive Analysis

	We do formal strategic business planning at the functional unit, across the enterprise, and with our business partners/alliances with IT participation	We do formal strategic IT planning at the functional unit, across the enterprise, and with our business partners/alliances	Our IT investment decisions are primarily based on IT's ability to create competitive advantage enhance performance. Our business partners see value	We have formal, regular committee meetings with demonstrated effectiveness that include IT and strategic business partners sharing decision-making responsibilities	Our IT project prioritization process is usually mutually determined between senior and mid-level IT and business management and with consideration of the priorities of any business partners/alliances	The ability of the IT function to react/respond quickly to the organisation's changing business needs is very strong
N Valid	163	163	163	163	163	163
N Missing	0	0	0	0	0	0
Mean	3.2638	3.2454	3.3558	3.2454	3.4540	3.4601
Median	3.0000	3.0000	3.0000	3.0000	4.0000	4.0000
Mode	3.00	3.00	4.00	3.00	4.00	5.00
Std. Deviation	1.14842	1.08350	1.12041	1.11716	1.17170	1.21841
Variance	1.319	1.174	1.255	1.248	1.373	1.485

- **Partnership**

Based on the results presented in table 5.7, some respondents (33.7%) of the survey reported a moderate level concerning IT being perceived by the business as a partner that co-adapts/improvises in bringing value to the firm (Appendix 4: Table A.20). However, 38% of the respondents highly admired co-adaptive role of IT in strategic business planning in enabling/driving strategic objectives reporting high level of alignment by selecting level 4 (Appendix 4: Table A.21).

Nevertheless, 33.7% of the respondents revealed that risks and rewards being shared between IT and business in a moderate level (level 3) (Appendix 4: Table A.22). 33.7% of the respondents also reported moderate level of alignment in terms of defined programmes to manage relationships, and the compliance of both IT and business with such programmes (Appendix 4: Table A.23).

Nonetheless, some (34.4%) of the respondents agreed that the relationship between IT and business is a long-term partnership, where IT is a valued service provider (level 4) (Appendix 4: Table A.24). However, 33.7% of the respondents reported that senior-level IT managers or CEOs as the business/sponsor champion is level 3 in regard to IT-based initiatives (Appendix 4: Table A.25).

Table 5.7: Partnership Descriptive Analysis

		IT is perceived by the business as a partner with the business that co-adapts/improvises in bringing value to the firm	The role of IT in strategic business planning is co-adaptive to enable/drive strategic objectives	Risks and rewards are always shared and we have formal compensation and reward systems in place that induce managers to take risks	We have defined programs to manage our relationships and both IT and the business comply with them, and we are continuously improving them	The relationship between IT and business is a long-term partnership and IT is a valued service provider	Our IT-based initiatives often have a senior level IT and the CEO as the business/sponsor champion
N	Valid	163	163	163	163	163	163
	Missing	0	0	0	0	0	0
Mean		3.3313	3.3926	3.0675	3.2025	3.5215	3.4294
Median		3.0000	4.0000	3.0000	3.0000	4.0000	3.0000
Mode		3.00	4.00	3.00	3.00	4.00	3.00
Std. Deviation		1.00034	1.07402	1.14465	1.14482	1.17241	1.05391
Variance		1.001	1.154	1.310	1.311	1.375	1.111

- **Scope and Architecture**

Whilst gathering information about scope and architecture (Table 5.8), it was recognised that 27.6% of the study sample reported that their primary systems as business strategy enablers/drivers are in level 3 (Appendix 4: Table A.26). However, 32.5% of the respondents stated that their IT standards can be defined and enforced across functional units, as well as with joint coordination amongst strategic business partners/alliances which is a level 4 of alignment and considered high (Appendix 4: Table A.27).

One third (34.4%) of the respondents indicated that the components of the IT infrastructure and their advancements in relation to business partners is in level 3 or in a moderate level (Appendix 4: Table A.28). The same level was also reported by

(30.7%) of the respondents about business or IT change as being a transparent process across the organisation (Appendix 4: Table A.29). 27% of the respondents stated an impartial level of strategic alignment surrounding to IT infrastructure as a resource enabling and driving a fast response to business and technology changes (Appendix 4: Table A.30).

Table 5.8: Scope and Architecture Descriptive Analysis

		Our primary systems are business strategy enablers/drivers	Our IT standards are defined and enforced across functional units, and with joint coordination among our strategic business partners/alliances	The components of our IT infrastructure are evolving with our business partners	Most of the time, a business or IT change is transparent across the organisation and to our business partners/alliances	Our IT infrastructure is viewed as a resource to enable and drive fast response to business and technology changes
N	Valid	163	163	163	163	163
	Missing	0	0	0	0	0
	Mean	3.2699	3.3252	3.4110	3.4663	3.3681
	Median	3.0000	3.0000	3.0000	3.0000	3.0000
	Mode	3.00	4.00	3.00	3.00	3.00
	Std. Deviation	1.19702	1.06506	1.12618	1.14548	1.19648
	Variance	1.433	1.134	1.268	1.312	1.432

- **Skills**

When gathering data relating to skills as a significant attribute for strategic alignment (Table 5.9), it was found that 30.1% agreed that innovation is strongly encouraged at the functional unit and corporate level, along with business partners/alliances indicating a high level of alignment (level 4) (Appendix 4: Table A.31). On the other hand, respondents made remarks about their important IT decisions being made by top management across the organisation, with influence made by business partners/alliances to be moderate (level 3) (Appendix 4: Table A.32).

Change readiness programmes are in place at the corporate level and are proactively anticipated by respondents. Importantly, response to this statement was a bit confusing as 27% of the responses revealed a moderate level whilst another fraction of respondents of the same proportion of the total sample size (27%) of responses revealed high level of alignment (Appendix 4: Table A.33). Further, almost one third of the respondents (27%) reported a moderate level of the occurrence of job transfers

for all positions within the functional units and at an organisational level (Appendix 4: Table A.34).

A moderate level (level 3) was received from the majority of respondents (26.4%) relating to education and cross-training practice across the organisation and with business partners/alliances (Appendix 4: Table A.35). In addition, a large portion (38.7%) gave impartial feedback about trust and confidence across IT and business units in organisations, along with external customers and partners (Appendix 4: Table A.35).

Nevertheless, more than one-quarter (25.2%) of the respondents showed low strategic alignment level (level 2) with regard to programmes in place to attract and retain the best IT professionals with technical and business skills (Appendix 4: Table A.37)

Table 5.9: Skills Descriptive Analysis

	Innovation is strongly encouraged at the functional unit, corporate level, and with business partners/alliances	Top management makes our important IT decisions across the organisation with equal influence from our business partners/alliances	Change readiness programs are in place at the corporate level and we are proactive and anticipate change	Job transfers regularly occur for all position levels not only within the functional units but also at the organisational level	Education and cross training is practiced across the organisation, and with business partners/alliances	Trust and confidence that exist across IT and business units in our organisation, is extended to external customers and partners	Effective programs are in place to attract and retain the best IT professionals with both technical and business skills
N Valid	163	163	163	163	163	163	163
N Missing	0	0	0	0	0	0	0
Mean	3.4356	3.3374	3.2515	3.1779	3.3804	3.4479	2.9080
Median	4.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
Mode	4.00	3.00	3.00[a]	3.00	3.00	3.00	2.00
Std. Deviation	1.20204	1.16651	1.15654	1.20144	1.17173	1.06663	1.25122
Variance	1.445	1.361	1.338	1.443	1.373	1.138	1.566

a. Multiple modes exist. The smallest value is shown

IT Acceptance

IT acceptance was measured using two sub-variables: perceived usefulness and perceived ease of use. There was a series of questions posed to respondents in an effort to gather reliable data for analysis so that IT acceptance could be explored, as presented in chapter 3 the questions were based on previous research (Davis, 1989; Venkatesh *et al.,* 2003). Given below are the outcomes extracted from descriptive analysis.

- **Perceived Usefulness**

After analysing responses from the study sample through descriptive statistics (Table 5.10), it was revealed that IT increases productivity in an organisation, as many (40.5%) of the respondents strongly agree with this statement (Appendix 4: Table A.38).

In addition, more than one-third (36.8%) strongly agreed with the fact that IT increases job performance (Appendix 4: Table A.39). Not only this, IT also enhances effectiveness on the job, with a large portion (41.1%) strongly agreeing with this statement (Appendix 4: Table A.40).

Table 5.10: Perceived Usefulness Descriptive Analysis

		IT increases productivity	IT increases job performance	IT enhances effectiveness on the job
N	Valid	163	163	163
	Missing	0	0	0
Mean		3.9448	3.9387	4.0000
Median		4.0000	4.0000	4.0000
Mode		5.00	5.00	5.00
Std. Deviation		1.12355	1.04641	1.04231
Variance		1.262	1.095	1.086

- **Perceived Ease of Use**

With respect to perceived ease of use (Table 5.11), quite a few (35%) of the respondents agreed that learning to operate software, hardware and systems is easy (Appendix 4: Table A.41). 36.2% of the respondents agreed that employment of IT in doing tasks is an easy process (Appendix 4: Table A.42). Nevertheless, as per the

responses gathered from 35.6% of the study sample, it does not take a lot of effort to become skilled at using IT (Appendix 4: Table A.43).

Table 5.11: Perceived Ease of Use Descriptive Analysis

		Learning to operate software, hardware and systems is easy	It is easy to employ IT in doing tasks	It usually takes a lot of effort to be skilled at using IT
N	Valid	163	163	163
	Missing	0	0	0
	Mean	3.4540	3.4847	2.7730
	Median	4.0000	4.0000	3.0000
	Mode	4.00	4.00	2.00
	Std. Deviation	1.15043	1.03253	1.14018
	Variance	1.323	1.066	1.300

Prior IS Success

When analysing prior IS success (Table 5.12), it was found that previously adopted IS or IT projects assisted in reducing the organisation's costs, according to 38% of the study sample (Appendix 4: Table A.44). 38.7% of the respondents agreed that previously adopted IS or IT projects assisted in fulfilling staff requirements (Appendix 4: Table A.45). Such projects increased the overall productivity of the organisation, according to 39.3% of the respondents (Appendix 4: Table A.46), with 33.7% stating that the projects improved the organisation's outcomes or outputs (Appendix 4: Table A.47).

Not only this, but according to 30.1% of the study sample, previously adopted IS or IT projects increased organisational capacity (Appendix 4: Table A.48). 32.5% of respondents stated that the projects assisted in collaboration with e-governments activities (Appendix 4: Table A.49). The projects assisted in changing the business processes as some respondents (30.7%) agreed with this statement (Appendix 4: Table A.50).

Table 5.12: Prior IS Success Descriptive Analysis

		Reducing the costs of the organisation	Fulfilling staff requirements	Increasing the overall productivity	Improving the outcomes/outputs	Increasing the organisational capacity	Collaborating with e-governments activities	Changing the business processes
N	Valid	163	163	163	163	163	163	163
	Missing	0	0	0	0	0	0	0
Mean		3.3742	3.5215	3.6687	3.7239	3.5951	3.6196	3.5460
Median		4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
Mode		4.00	4.00	4.00	4.00	4.00	4.00	4.00
Std. Deviation		1.03092	1.02643	1.08898	1.10156	1.13114	1.06695	1.07842
Variance		1.063	1.054	1.186	1.213	1.279	1.138	1.163

Organisational Performance

Based on the performance prism model, organisational performance was evaluated through the use of different sub-variables, which are stakeholder satisfaction, stakeholder contribution, strategies, processes and capabilities. Those sub-variables were measured by performance indicators previously used in prior research as shown in chapter 3 (Table 3.5). The outcomes extracted from descriptive analysis of the data gathered from study sample are given below.

- **Stakeholders Satisfaction**

According to the results presented in table 5.13, 35.6% of the respondents, strategies currently adopted in the organisation have significantly assisted in the delivery of services in such a way so as to meet customers' needs (Appendix 4: Table A.51). According to 32.5% of the respondents, such strategies have assisted in new services development (Appendix 4: Table A.52), with 28.8% stating that the strategies decreased client complaints (Appendix 4: Table A.53). Nevertheless, 33.7% of the respondents declared that the strategies reflected neutral assistance in terms of improving the outcomes or outputs (Appendix 4: Table A.54). Thus, strategies currently adopted in the organisation have an overall positive effect on stakeholder satisfaction.

Table 5.13: Stakeholders Satisfaction's Descriptive analysis

		Delivery of services that meet customers' needs	New Services Development	Decrease in clients' complain	Improve the outcomes/outputs
N	Valid	163	163	163	163
	Missing	0	0	0	0
	Mean	3.5706	3.5767	3.2945	3.5031
	Median	4.0000	4.0000	3.0000	3.0000
	Mode	4.00	4.00	4.00	3.00
	Std. Deviation	1.01208	1.05348	1.15967	1.07367
	Variance	1.024	1.110	1.345	1.153

- **Stakeholder Contribution**

Based on the results from the descriptive analysis in table 5.14, 31.9 % of the respondents stated that strategies currently adopted by organisations have neutral effects in terms of increasing customer retention and loyalty (Appendix 4: Table A.55). In addition, 33.1% of the respondents declared that the strategies have a neutral effect in terms of increasing the level of collaboration with the e-government as well (Appendix 4: Table A.56).

Furthermore, 38% of the study sample stated that strategies had an impartial effect on increasing the level of sponsorship from private organisations or NGOs (Appendix 4: Table A.57). In addition, 32.5% of the respondents emphasised that strategies had a neutral impact on the level of support from policy makers and national committees (Appendix 4: Table A.58). Accordingly, the overall effect of current strategies with regard to stakeholder contribution is considered neutral.

Table 5.14: Stakeholder's Contribution Descriptive Analysis

		Increase in customer retention and loyalty	Increase the level of collaboration with/from e-government	Increase the level of sponsorship from private organisations or NGOs	Increase the level of support from policy makers and national committees
N	Valid	163	163	163	163
	Missing	0	0	0	0
	Mean	3.3681	3.6196	3.3006	3.4417
	Median	3.0000	4.0000	3.0000	3.0000
	Mode	3.00	3.00	3.00	3.00
	Std. Deviation	1.15981	1.01354	1.07804	1.08922
	Variance	1.345	1.027	1.162	1.186

- **Strategies**

According to table 5.15, 35.6% of the respondents, strategies currently adopted in the organisation have significantly assisted in cost-reduction (Appendix 4: Table A.59); their effect with regard to cost control is neutral, as shown by 33.1% of the sample (Appendix 4: Table A.60). According to 35% of the respondents, currently adopted strategies assist in achieving strategic goals (Appendix 4: Table A.61); however, 31.9% of the sample revealed that the response of strategies in attaining timely decision-making is neutral (Appendix 4: Table A.62).

Table 5.15: Strategies Descriptive Analysis

		Cost reduction	Cost control	Achievement of strategic goals	Attain timely decision making
N	Valid	163	163	163	163
	Missing	0	0	0	0
	Mean	3.3374	3.4847	3.4294	3.3926
	Median	3.0000	3.0000	4.0000	3.0000
	Mode	4.00	3.00	4.00	3.00
	Std. Deviation	1.08424	1.11862	1.11648	1.13549
	Variance	1.176	1.251	1.247	1.289

- **Processes**

According to table 5.16, 29.4% of the respondents, currently adopted strategies in the organisation significantly increase responsiveness to clients' requirements (Appendix 4: Table A.63). These strategies also assist in the enhancement of business processes, as emphasised by 34.4% of the research sample (Appendix 4: Table A.64).

30.7% of the respondents agree that currently adopted strategies assist in maintaining the efficient flow of information between departments (Appendix 4: Table A.65); however, a similar proportion of respondents revealed a neutral responses in this regard (30.7%). 35% of the respondents recognised that such strategies increase the cooperation between departments (Appendix 4: Table A.66). Hence, currently implemented strategies in the organisation have an overall positive effect with regard to the processes.

Table 5.16: Processes Descriptive Analysis

		Increase responsiveness to clients requirements	Enhancement in business processes	Efficient flow of information between departments	Increase in the cooperation between departments
N	Valid	163	163	163	163
	Missing	0	0	0	0
	Mean	3.5399	3.5092	3.5215	3.4724
	Median	4.0000	4.0000	4.0000	3.0000
	Mode	4.00	4.00	3.00[a]	3.00
	Std. Deviation	1.11247	1.08507	1.06190	1.07332
	Variance	1.238	1.177	1.128	1.152

a. Multiple modes exist. The smallest value is shown

- **Capabilities**

According to the results extracted from the descriptive analysis of the data shown in table 5.17, currently adopted strategies in the organisation are seen to have an overall neutral effect on capabilities. As per the responses extracted from 31.3% of the study sample, such strategies have a neutral impact on increasing innovation capabilities (Appendix 4: Table A.67).

However, currently adopted strategies in organisation increase organisational productivity, according to 28.8% of study sample (Appendix 4: Table A.68). These

strategies, however, have neutral effect with respect to development of effective training programmes, as said by 36.8% of respondents (Appendix 4: Table A.69). In addition, strategies have neutral impact on increasing organisational capacity, according to 30.1% of study sample (Appendix 2: Table A.70).

Table 5.17: Descriptive Analysis Capabilities

		Increase in innovation capabilities	Increase in organisational productivity	Development of effective training programs	Increase the organisational capacity
N	Valid	163	163	163	163
	Missing	0	0	0	0
	Mean	3.3067	3.4601	3.1840	3.3497
	Median	3.0000	3.0000	3.0000	3.0000
	Mode	3.00	4.00	3.00	3.00
	Std. Deviation	1.05603	1.10132	1.08434	1.10852
	Variance	1.115	1.213	1.176	1.229

5.4 Quantitative Data Analysis

The research hypothesis and SEM model are tested in this section. Correlation analysis was carried out with the aim of examining the relationships of the variables, reliability and validity tests, regression analysis and SEM model testing.

The measuring instrument adopted in this research contained 129 items, all of which were used for the operationalisation of the four constructs: Strategic Alignment, Technology Acceptance, IS Prior Success and Organisational Performance. This section discusses, in detail, missing data and normality tests (Hair *et al*., 2010). This test assists the researchers using the most suitable tests in an effort to gather better predictions and dimensionality assessment.

5.4.1 Missing Data

Some values were recognized by SPSS as missing values either due to missing responses or data entry errors (Field, 2013). As discussed in chapter 4, a web-based

survey was used, where the respondents were allowed to proceed unless all answers were completed. Hence there were no missing values.

5.4.2 Normality

The variables for normality were tested by using skewness and kurtosis tests. As per the general rule of thumb, data is believed to be perfectly normal and symmetrical when skewness is 0. However, the value of skewness to be 0 is quite hard to attain and most unlikely with respect to the real or authentic data. So, if the skewness value is less than –1 it means that the data is highly skewed towards lower end of the scale. Furthermore, if the skewness value is greater than +1 it means that the data is highly skewed towards higher end of the scale. If the value of skewness falls between –1 and –0.5, the data is believed to be moderately skewed to the lower end of the scale. If the value of skewness falls between 0.5 and 1, the data is believed to be moderately skewed to the higher end of the scale. If the value of skewness falls between –0.5 and 0.5 then the data is possibly symmetric.

Another measure to be used for normality testing is to multiply standard error of skewness with 3 and if the value of skewness is less than the value retrieved by multiplying standard error of skewness with 3 then it is considered acceptable. Kurtosis is the measure to determine how peaked or flat the data is. Analysis of kurtosis value follows the same rule. If the value of kurtosis is less than the value retrieved by multiplying standard error of kurtosis with 3 then it is considered acceptable.

For the data used in this research study for analysis, normality of the data gauged from the values of skewness and kurtosis extracted by analysing the data through SPSS. The values of skewness and kurtosis for all study variables were extracted separately for better understanding of data normality classified with respect to different study variables.

5.4.2.1 Normality of the Demographic Characteristics

First, the normality of demographic characteristics was checked through the analysis of skewness and kurtosis. For the data representing demographic characteristics of the research sample, the skewness value of 'business unit' representing the study sample was –0.065. The value of skewness representing 'business unit' is between –0.5 and 0.5. In addition, the value of skewness is less than the standard error of skewness (0.190) multiplied by 3. So, skewness representing 'business unit' is possibly symmetric. Furthermore, the value of kurtosis representing the data is –1.369. Nevertheless, the value of kurtosis is greater than the standard error of kurtosis (0.378) multiplied by 3. So, the data representing 'business unit' have slight kurtosis issues (Table 5.18).

When analysing the normality of data representing 'service provided by the organisation to public', it was noticed that skewness value is 0.427 which falls between –0.5 and 0.5. In addition, the value of skewness is less than the standard error of skewness (0.190) multiplied by 3. So, the data does not have any skewness issues and is possibly symmetric. Furthermore, kurtosis value for data representing the variable is –1.170. Furthermore, the value of kurtosis is less than the standard error of kurtosis (0.378) multiplied by 3. Thus, data representing the variable does not have any kurtosis issues (Table 5.18).

Table 5.18: Normality Test: Demographic Characteristics

		Business Unit	Type of Service
N	Valid	163	163
	Missing	0	0
Skewness		–.065	.427
Std. Error of Skewness		.190	.190
Kurtosis		–1.369	–1.170
Std. Error of Kurtosis		.378	.378

5.4.2.2 Normality of Strategic Alignment

- **Communication**

The skewness value extracted for communication after analysing the data via SPSS was .017. The value falls between –0.5 and 0.5, meaning the data is probably considered normal. Moreover, this value is less than the standard error of skewness (.190) multiplied by 3. Furthermore, the value of kurtosis (–1.181) is also less than the standard error of kurtosis (.378) multiplied by 3. Thus, there are no issues corresponding skewness or kurtosis with this study variable (Table 5.19).

- **Competency**

The skewness value for 'competency' is –.001 which falls between –0.5 and 0.5. In addition, the value of skewness is less than the standard error of skewness (.190) multiplied by 3. So, the data is possibly symmetric with respect to its skewness. Furthermore, the kurtosis value representing the variable is –1.115. This value is less than the standard error of kurtosis (.378) multiplied by 3. This means that the data does not have any kurtosis issues either (Table 5.19).

- **Governance**

The skewness value for governance was extracted to be –.076. Since the value falls between –0.5 and 0.5, the data is possibly symmetric. In addition, the value of skewness is less than the standard error of skewness (.190) multiplied by 3. Furthermore, the data seem to have kurtosis issues as well because the value of kurtosis (–1.032) is also less than the standard error of kurtosis (.378) multiplied by 3 (Table 5.19).

- **Partnership**

The value of skewness representing 'partnership' was –.094, which falls between –0.5 and 0.5. The skewness value for this variable is also less than the standard error of skewness (.190) multiplied by 3. Furthermore, the value of kurtosis is also less than the standard error of kurtosis (.378) multiplied by 3. Accordingly, there are no skewness or kurtosis issues associated with this study variable (Table 5.19).

- **Scope and Architecture**

The value of skewness for scope and architecture was extracted as –.160. The value for this study variable is between –0.5 and 0.5. Furthermore, skewness value is less than the standard error of skewness (.190) multiplied by 3. In addition, the value of kurtosis (–.841) is also less than the standard error of kurtosis (.378) multiplied by 3. Thus, the outcomes for normality tests do not show any skewness or kurtosis issues with the data collected for this study variable (Table 5.19).

- **Skills**

The value of skewness for the study variable (skills) was .060. This value falls between –0.5 and 0.5. Moreover, the value of skewness is less than the standard error of skewness (.190) multiplied by 3. Furthermore, the value of kurtosis (–.976) was also found to be less than the standard error of kurtosis (.378) multiplied by 3. Therefore, there were not any skewness and kurtosis issues associated with the study variable with respect to normality testing (Table 5.19).

Table 5.19: Normality Test- Strategic Alignment

		Competency	Governance	Partnership	Scope	Skills	Communications
N	Valid	163	163	163	163	163	163
	Missing	0	0	0	0	0	0
	Skewness	–.001	–.076	–.094	–.160	.060	.017
Std. Error of Skewness		.190	.190	.190	.190	.190	.190
	Kurtosis	–1.115	–1.032	–.951	–.841	–.976	–1.181
Std. Error of Kurtosis		.378	.378	.378	.378	.378	.378

5.4.2.3 Normality of IT Acceptance's Data

- **Perceived Usefulness**

After analysing the data for normality testing via SPSS, it was found that the value of skewness (–.824) representing 'perceived usefulness' falls between –0.5 and 0.5. In addition, the skewness value is less than the standard error of skewness (.190) multiplied by 3. Thus, there are no skewness issues with the data, and the data is possibly symmetric. The value of kurtosis (–.113), representing the study variable,

was also less than the standard error of kurtosis (.378) multiplied by 3. Hence, there are no kurtosis issues with the data (Table 5.20).

- **Perceived Ease of Use**

The skewness value (–.450) representing 'perceived ease of use' falls between –0.5 and 0.5. Therefore, there are no skewness concerns to be concerned about, and the data is possibly symmetric. In addition, the value of skewness is also less than the standard error of skewness (.190) multiplied by 3. Not only this, the data is free from any kurtosis issues because the value of kurtosis (1.085) is also less than the standard error of kurtosis (.378) multiplied by 3. Thus, the data representing 'perceived ease of use' is probably normal (Table 5.20).

Table 5.20: Normality Test- IT Acceptance

		Perceived Usefulness	Perceived Ease of Use
N	Valid	163	163
	Missing	0	0
	Skewness	–.824	–.450
	Std. Error of Skewness	.190	.190
	Kurtosis	–.113	1.085
	Std. Error of Kurtosis	.378	.378

5.4.2.4 Normality of Prior IS Success's Data

The value of skewness representing 'prior IS success' is –.419. The value falls between –0.5 and –1; thus, the data is moderately skewed (Table 5.21). Nevertheless, the value of skewness is less than the standard error of skewness (.190) multiplied by 3. Moreover, the value of kurtosis (–.779) is also less than the standard error of kurtosis (.378) multiplied by 3. Thus, data skewness is not much of a concern here.

Table 5.21: Normality Test- Prior IS Success

N	Valid	163
	Missing	0
	Skewness	–.419
	Std. Error of Skewness	.190
	Kurtosis	–.779
	Std. Error of Kurtosis	.378

5.4.2.5 Normality of Organisational Performance's Data

- **Stakeholder Satisfaction**

The skewness value for 'stakeholder satisfaction' is –.266 as this value falls between –0.5 and 0.5; thus, data is considered possibly symmetric. The value of skewness is also less than the standard error of skewness (.190) multiplied by 3. Furthermore, the value of kurtosis is also less than the standard error of kurtosis (.378) multiplied by 3. Thus, the data is perceived to be normally distributed for this variable (Table 5.22).

- **Stakeholder Contribution**

For 'stakeholder contribution', the value of skewness extracted was –.110. This value is between –0.5 and 0.5, meaning the data is considered possibly symmetric. The skewness value for this variable is also less than the standard error of skewness (.190) multiplied by 3. Furthermore, the value of kurtosis is also less than the standard error of kurtosis (.378) multiplied by 3. Accordingly, the data is normally distributed in this case (Table 5.22).

- **Strategies**

The skewness value for this variable is –.299. The value falls between –0.5 and 0.5. Furthermore, the skewness value is also less than the standard error of skewness multiplied by 3. Furthermore, the value for kurtosis (–.742) is also less than the standard error of kurtosis multiplied by 3. Hence, there is no skewness or kurtosis issue concerned with this study variable and data is possibly normally distributed (Table 5.22).

- **Processes**

The skewness value extracted for the variable 'processes' was –.226. As this value falls between –0.5 and 0.5, the data is possibly symmetric. Furthermore, the skewness value is less than the standard error of skewness multiplied by 3. In addition, the kurtosis value is also less than the standard error of kurtosis multiplied by 3. Thus, the data for this study variable is probably normally distributed (Table 5.22).

- **Capabilities**

The skewness value obtained for 'capabilities' was .027. This value falls between –0.5 and 0.5; thus, it can be classified as symmetric distribution of data. Furthermore, the value of skewness was less than the standard error of skewness multiplied by 3. Not only this, but the value of kurtosis was also less than the standard error of kurtosis multiplied by 3. Thus, there was no skewness or kurtosis issue concerning this study variable. Hence, it can be stated that the data representing this study variable is possibly symmetric and normally distributed (Table 5.22).

The results indicate that the respective values can be considered satisfactory for the acceptance of normality. After analysing the data for different study variables using SPSS, it was found that the data representing all study variables was possibly symmetric, with the exception of 'prior IS success'. The data representing 'prior IS success' was moderately skewed. Besides that, the data for all other study variables was normally distributed, as per the skewness and kurtosis values extracted from the analysis.

Further, the histogram shapes and Q-Q plots indicate reasonably normal distributions (Appendix 4: Figures A.71–A.102). They also show no real clustering on points, with most of them gathering around the zero line (Pallant, 2007, p. 62). Based on the results obtained from the previous tests, the researcher has determined that the original data should be kept, continuing on with the statistical analyses (Tabachnick and Fidell, 1996).

Table 5.22: Normality Tests- Organisational Performance

		Stakeholder Satisfaction	Stakeholder Contribution	Strategies	Processes	Capabilities
N	Valid	163	163	163	163	163
	Missing	0	0	0	0	0
	Skewness	–.266	–.110	–.299	–.226	.027
Std.	Error of Skewness	.190	.190	.190	.190	.190
	Kurtosis	–.826	–.862	–.742	–.802	–1.024
Std.	Error of Kurtosis	.378	.378	.378	.378	.378

5.4.3 Correlation Analysis

5.4.3.1 Strategic Alignment Variable Correlation

Different variables were incorporated in this study for analysis. Each variable was represented through diverse sub-variables. This representation of a study variable through other sub-variables was backed by literature (Lufman, 2014), incorporated from previously conducted studies. Nevertheless, these study variables were to be tested and analysis via SPSS in an attempt to validate their representation of a particular variable.

6 different sub-variables represented strategic alignment: communications, competency, governance, partnership, scope and architecture and skills. In an effort to test the validity of this representation, the correlation between the sub-variables was measured. The purpose of the correlation analysis was to test whether there was any relationship between the sub-variables representing strategic alignment.

The table prescribed below (Table 5.23) gives a picture of outcomes extracted from analysis of the data representing sub-variables concerning strategic alignment. After the analysis of the data via Pearson correlation, it was revealed that 'communication' (1.00) showed strong correlation between with other sub-variables: competency (.887), governance (.882), partnership (.886), scope and architecture (.862) and skills (.851).

The values neighbouring the sub-variables reflect the propensity of their relationship with 'communication'. The correlation value adjacent to 'competency' is 0.887, which means that 1 unit change in one variable can be responsible for 0.887 unit change in another. Since the value of correlation is positive, it may be inferred that the relationship between variables is directly proportional. The same applies for other correlation values adjacent to the variables analysed. Furthermore, the correlation between communications and other sub-variables (competency, governance, partnership, scope and architecture, and skills) is highly significant because the sig value is less than 0.01 (Table 5.23).

Table 5.23: Correlations Between the Sub-variables of Strategic Alignment

		Communications	Competency	Governance	Partnership	Scope	Skills
Communications	Pearson Correlation	1	.887**	.882**	.886**	.862**	.851**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	163	163	163	163	163	163
Competency	Pearson Correlation	.887**	1	.891**	.858**	.856**	.848**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	163	163	163	163	163	163
Governance	Pearson Correlation	.882**	.891**	1	.901**	.885**	.869**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	163	163	163	163	163	163
Partnership	Pearson Correlation	.886**	.858**	.901**	1	.903**	.855**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	163	163	163	163	163	163
Scope	Pearson Correlation	.862**	.856**	.885**	.903**	1	.850**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	163	163	163	163	163	163
Skills	Pearson Correlation	.851**	.848**	.869**	.855**	.850**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	163	163	163	163	163	163

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

Similarly, the correlation between competency and other sub-variables (communications, governance, partnership, scope and architecture, and skills) was measured. The analysis of the data through the application of the Pearson correlation revealed that there is a strong and positive correlation between competency (1.00) and other sub-variables: communications (.887), governance (.891), partnership (.858), scope and architecture (.856) and skills (.848). The correlation between the sub-variables was not only strong but also significant as the sig value representing each relationship between the sub-variables was less than 0.01 (Table 5.23).

The correlation between governance and other sub-variables was also strong. The Pearson correlation extracted after analysis of the data revealed that governance (1.00) was positively and strongly correlated with communications (.882),

competency (.891), partnership (.901), scope and architecture (.885) and skills (.869). Moreover, the relationship between the study variables was significant as the sig value representing each relationship was found to be less than 0.01 (Table 5.23).

The correlation analysis revealed that partnership also reflects a positive and strong correlation with other sub-variables. According to the analysis of the data through the Pearson correlation, partnership (1.00) was found to have a strong and direct relationship with communications (.886), competency (.858), governance (.901), scope and architecture (.903) and skills (.855). The sig value representing each relationship was less than 0.01; thus, the correlations can be considered significant (Table 5.23).

Scope and architecture was found to have a strong and significant correlation with other sub-variables. According to the correlation analysis, scope and architecture (1.00) was strongly correlated with communications (.862), competency (.856), governance (.885), partnership (.903) and skills (.850). As the sig value representing each relationship is less than 0.01, the correlations are considered significant (see Table 5.23).

Skills also depicted strong and positive correlation with other sub-variables. As per the results extracted after applying the correlation technique through SPSS, skills (1.00) was found to have a strong and significant correlation with communications (.851), competency (.848), governance (.869), partnership (.855) and scope and architecture (.850) (Table 5.23).

5.4.3.2 IT Acceptance Variable Correlation

IT acceptance was represented by two sub-variables (perceived usefulness and perceived ease of use). Through correlation analysis, the relationship between the sub-variables was tested. After applying the Pearson correlation to the data, it was revealed that there was positive and significant correlation between the variables. The analysis revealed that perceived usefulness is significantly correlated with perceived ease of use (.596) and vice versa. The significant value representing the relationship

was less than 0.01. Thus, the correlation can be declared highly significant (Table 5.24)

Table 5.24: Correlations Between the Sub-variables of IT Acceptance

		Perceived Usefulness	Perceived Ease of Use
Perceived Usefulness	Pearson Correlation	1	.596**
	Sig. (2-tailed)		.000
	N	163	163
Perceived Ease of Use	Pearson Correlation	.596**	1
	Sig. (2-tailed)	.000	
	N	163	163

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

5.4.3.3 Prior IS Success Variable Correlation

To measure prior IS success in the organisation, different statements were presented to the sample in order to garner their response. In an effort to validate whether the statements represent study variable adequately, they were tested through correlation analysis. Following the analysis of the data, it was revealed that the statements showed a strong and positive correlation with one another. Furthermore, the sig value representing each relationship was found to be less than 0.01. Thus, the correlations can be considered highly significant (Table 5 .25).

Table 5.25: Correlations Between the Sub-variables of Prior IS Success

		Reducing the costs of the organisation	Fulfilling staff requirements	Increasing the overall productivity	Improving the outcomes/outputs	Increasing the organisational capacity	Collaborating with e-governments activities	Changing the business processes
Reducing the costs of the organisation	Pearson Correlation	1	.707**	.721**	.679**	.692**	.568**	.676**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	163	163	163	163	163	163	163
Fulfilling staff requirements	Pearson Correlation	.707**	1	.702**	.674**	.709**	.667**	.656**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	163	163	163	163	163	163	163
Increasing the overall productivity	Pearson Correlation	.721**	.702**	1	.824**	.792**	.656**	.744**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	163	163	163	163	163	163	163
Improving the outcomes/outputs	Pearson Correlation	.679**	.674**	.824**	1	.846**	.740**	.772**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	163	163	163	163	163	163	163
Increasing the organisational capacity	Pearson Correlation	.692**	.709**	.792**	.846**	1	.767**	.810**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	163	163	163	163	163	163	163
Collaborating with e-governments activities	Pearson Correlation	.568**	.667**	.656**	.740**	.767**	1	.734**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	163	163	163	163	163	163	163
Changing the business processes	Pearson Correlation	.676**	.656**	.744**	.772**	.810**	.734**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	163	163	163	163	163	163	163

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

5.4.3.4 Organisational Performance Variable Correlation

There were different sub-variables (stakeholder satisfaction, stakeholder contribution, strategies, processes, capabilities) representing organisational performance. Thus, the relationship between the sub-variables was tested by correlation analysis to examine the relationship between the sub-variables and determine if it adequately represented the variable. Following the analysis of the data through the adoption of Pearson correlation, the outcome revealed that stakeholder satisfaction (1.00) was strongly and positively correlated with stakeholder contribution (.838), strategies (.856), processes (.842) and capabilities (.843) (Table 5.26). This means that, if 1 unit change in stakeholder satisfaction can cause 0.838 unit positive change in stakeholder contribution, then 1 unit change in stakeholder contribution can cause 0.838 unit positive change in stakeholder satisfaction, and so on. The sig value, representing each correlation, was found to be less than 0.01. Thus, it may be interpreted that the correlations between sub-variables were not only positive but also significant. Hence, sub-variables can be transformed to represent organisational performance.

Table 5.26: Correlations Between the Sub-variables of Organisational Performance

		Stakeholder Satisfaction	Stakeholder Contribution	Strategies	Processes	Capabilities
Stakeholder Satisfaction	Pearson Correlation	1	.838**	.856**	.842**	.843**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	163	163	163	163	163
Stakeholder Contribution	Pearson Correlation	.838**	1	.839**	.830**	.859**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	163	163	163	163	163
Strategies	Pearson Correlation	.856**	.839**	1	.859**	.857**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	163	163	163	163	163
Processes	Pearson Correlation	.842**	.830**	.859**	1	.877**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	163	163	163	163	163
Capabilities	Pearson Correlation	.843**	.859**	.857**	.877**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	163	163	163	163	163

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

5.4.4 Reliability Test

5.4.4.1 Cronbach's Alpha

The reliability of the data accumulated was checked via Cronbach's alpha. Cronbach's alpha is a statistical measure used to test how closely related the study variables are; in other words, Cronbach's alpha value depicts the internal consistency of variables incorporated in the model. The higher the value of Cronbach's alpha, the greater the association between the variables, thus meaning the data is highly reliable. A threshold for data reliability acceptance in this regard is .70. If the value of Cronbach's alpha retrieved from analysis of the data is higher than .70 then the reliability of the data is acceptable. In order to test the reliability of the data, transformed variables were incorporated within the reliability analysis.

The variables incorporated in the reliability analysis are business unit and type of services representing demographic characteristics; communications, communications, competency, governance, partnership, scope and architecture and skills representing strategic alignment; perceived usefulness and perceived ease of use representing IT acceptance; prior IS success; stakeholder satisfaction, stakeholder contribution, strategies, processes and capabilities representing organisational performance.

After performing the reliability analysis on the data, it was revealed that the value of Cronbach's alpha representing the variables is .932 (Table 5.27). The value extracted from the analysis of the data is much higher than .70; therefore, it can be interpreted that the data is highly reliable and the variables incorporated in the model are closely related.

Table 5.27: Reliability Test

Cronbach's Alpha	N of Items
.932	16

5.4.4.2 Factor Analysis

After testing data reliability via Cronbach's alpha, the dimensionality of the data was tested. The statistical technique selected in order to check the dimensionality of the data was factor analysis. After analysing the data through factor analysis, it was revealed that there were three factors extracted (Appendix 4: Table A.73). The table 'total variance explained' shows that the Eigen value of first factor (10.882) is much higher than the Eigen value of the next factor (1.143). Furthermore, Eigen value of second factor is also higher than Eigen value of the third factor (0.710) (Appendix 4: Table A.72).

Not only this, the first factor extracted explains 68.015% of the total variance. The second factor explains 7.145% of the total variance and the third factors accounts for 6.519% of the total variance (Table 5.28). Cumulatively, the three factors explain 81.679% of the total variance. Thus, it can be interpreted that scale items are uni-dimensional.

Table 5.28: Principal Component Analysis

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.882	68.015	68.015	10.882	68.015	68.015
2	1.143	7.145	75.160	1.143	7.145	75.160
3	1.043	6.519	81.679	1.043	6.519	81.679
4	.710	4.436	86.115			
5	.482	3.011	89.126			
6	.407	2.546	91.672			
7	.206	1.285	92.956			
8	.181	1.132	94.088			
9	.175	1.097	95.185			
10	.160	1.000	96.185			
11	.149	.930	97.115			
12	.123	.768	97.883			
13	.114	.711	98.595			
14	.089	.557	99.152			
15	.074	.461	99.613			
16	.062	.387	100.000			

Extraction Method: Principal Component Analysis.

5.4.5 Regression Analysis

Regression analysis was used to test the hypotheses. The hypotheses of this research study are prescribed below:

H1: Prior IS success positively influences strategic alignment.
H2: IT acceptance positively influences strategic alignment.
H3: Strategic alignment positively impacts organisational performance
The formulation of the research hypotheses is also explained through the conceptual model. In order to test the hypotheses for acceptance or rejection, the variables were analysed using regression analysis.

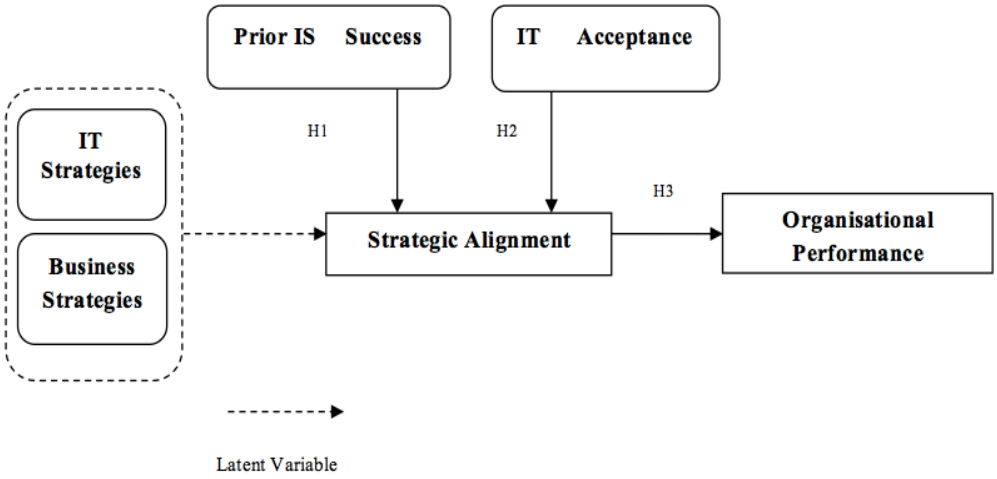


Figure 5.1: Conceptual Model for Strategic Alignment and Organisational Performance

Hypothesis 1

As the first hypothesis states, prior IS success positively influences strategic alignment. This hypothesis was first tested using the regression analysis via SPSS. The 'correlations table' was extracted by applying the regression analysis on the data, which explains that there is very strong and positive relationship between 'prior IS success' and 'strategic alignment' (Table 5.29).

Table 5.29: Correlations between Strategic Alignment and Prior IS Success

		Strategic Alignment	Prior IS Success
Pearson Correlation	Strategic Alignment	1.000	.822
	Prior IS Success	.822	1.000
Sig. (1-tailed)	Strategic Alignment	.	.000
	Prior IS Success	.000	.
N	Strategic Alignment	163	163
	Prior IS Success	163	163

The analysis reveals that there were no variables removed because there was a single predictor incorporated within the model. The 'model summary', extracted by applying the regression analysis on the data, reveals that the value of R is the same as the Pearson's correlation (.822). Moreover, the correlation of the determination or R square value obtained from the analysis of the data is .675 (Appendix 4: Table A.76). This value shows the variance in the model, as explained by the predictor variable. In this case, the predictor variable explains 67.5% of variance, meaning it is quite a good predictor. In addition, the sig value represented by the ANOVA table is 0.00, which is less than 0.05 (Table 5.29). This explains that the model is statistically significant and can be used to predict valid outcomes.

Table 5.30: Regression Between strategic Alignment and Prior IS Success

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	90.661	1	90.661	334.352	.000[b]
	Residual	43.656	161	.271		
	Total	134.316	162			

a. Dependent Variable: Strategic Alignment

b. Predictors: (Constant), Prior IS Success

The 'coefficients table' extracted from the analysis of the data reveals that 1 unit change in 'prior IS success' is responsible for .797 unit change in 'strategic alignment' Table 5.31). Moreover, the coefficients table explains that the propensity of the relationship between the variables is positive and significant as the sig value is less than 0.05. Therefore, Hypothesis 1, stating that 'prior IS success' will positively impact 'strategic alignment', can be accepted.

Table 5.31: Prior IS Success and Strategic Alignment Coefficients[a] Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.459	.161		2.849	.005
	Prior IS Success	.797	.044	.822	18.285	.000

a. Dependent Variable: Strategic Alignment

Hypothesis 2

Hypothesis 2 states that IT acceptance positively influences strategic alignment. This hypothesis was also tested using regression analysis. The 'correlations table' obtained from the regression analysis revealed a positive and significant correlation between 'IT acceptance' and 'strategic alignment', as the sig value representing the relationship was less than 0.05 (Table 5.32).

Table 5.32: Correlations Between Strategic alignment and IT Acceptance

		Strategic Alignment	IT Acceptance
Pearson Correlation	Strategic Alignment	1.000	.693
	IT Acceptance	.693	1.000
Sig. (1-tailed)	Strategic Alignment	.	.000
	IT Acceptance	.000	.
N	Strategic Alignment	163	163
	IT Acceptance	163	163

No variables were removed from the model (Appendix 4: Table A.78). In addition, the 'model summary' shows that value of R is the same as in the case of the Pearson's correlation (.693). However, the value of R square is a bit less compared with previously tested hypotheses (Appendix 4: Table A.79). The correlation of the determination representing the data here is .481, meaning that the predictor explains 48.1% of variance. Nevertheless, the sig value, as revealed by the ANOVA table, is less than 0.05, meaning that the model is statistically significant (Table 5.33).

Table 5.33: Regression Between Strategic Alignment and IT Acceptance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.545	1	64.545	148.941	.000[b]
	Residual	69.771	161	.433		
	Total	134.316	162			

a. Dependent Variable: Strategic Alignment

b. Predictors: (Constant), IT Acceptance

The 'coefficients table' obtained from the analysis of the data through the regression analysis shows that 1 unit change in 'IT acceptance' is responsible for .826 unit change in 'strategic alignment' (Table 5.34). The sig value, depicted by the coefficients table, is less than 0.05. Thus, it can be interpreted that Hypothesis 2, stating that 'IT acceptance' influences 'strategic alignment', can be accepted.

Table 5.34: Strategic Alignment and IT Acceptance Coefficients[a] Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.337	.249		1.354	.178
	IT Acceptance	.826	.068	.693	12.204	.000

a. Dependent Variable: Strategic Alignment

Hypothesis 3

Hypothesis 3 states that strategic alignment positively impacts organisational performance. This hypothesis was also tested using a similar statistical technique—namely regression analysis. The 'correlations table' after the analysis of the data revealed that there is very strong and positive correlation between 'strategic alignment' and 'organisational performance'. Furthermore, this relationship was also significant as the sig value was less than 0.05 (Table 5.35).

Table 5.35: Correlations Between Strategic alignment and Organisational Performance

		Organisational Performance	Strategic Alignment
Pearson Correlation	Organisational Performance	1.000	.894
	Strategic Alignment	.894	1.000
Sig. (1-tailed)	Organisational Performance	.	.000
	Strategic Alignment	.000	.
N	Organisational Performance	163	163
	Strategic Alignment	163	163

The model summary obtained from analysis shows that the value of R is same as the Pearson's correlation (.894). In addition, the R square value, representing the analysis, was .80 (Appendix 4: Table A.82). Seeing the value of R square, it can be interpreted that the predictor explains 80% of variance in the model, which is

extraordinary. The ANOVA table obtained from the analysis of the data shows that sig value is less than 0.05 (Table 5.36). This means that the model used for analysing the relationship between the selected variables is statistically significant.

Table 5 36: Regression Between Organisational Performance and Strategic Alignment

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	109.710	1	109.710	642.391	.000[b]
	Residual	27.496	161	.171		
	Total	137.206	162			

a. Dependent Variable: Organisational Performance

b. Predictors: (Constant), Strategic Alignment

The 'coefficients table' shows that 1 unit change in 'strategic alignment' is responsible for .904 unit change in 'organisational performance' (Table 5.37). The sig value representing this relationship is less than 0.05. Thus, it can be said that 'strategic alignment' has a positive and significant impact on 'organisational performance'. Thus, Hypothesis 3 can be accepted.

Table 5.37: Strategic Alignment and IT Acceptance Coefficients[a] Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.440	.122		3.597	.000
	Strategic Alignment	.904	.036	.894	25.345	.000

a. Dependent Variable: Organisational Performance

5.4.6 SEM Model Testing

For SEM model testing, the data were analysed using SPSS version 20 and Amos version 18. The information prescribed by the conceptual model and the hypotheses for analyses were used to formulate the SEM model.

The model formulated through the SEM model testing is below:

SEM Model:

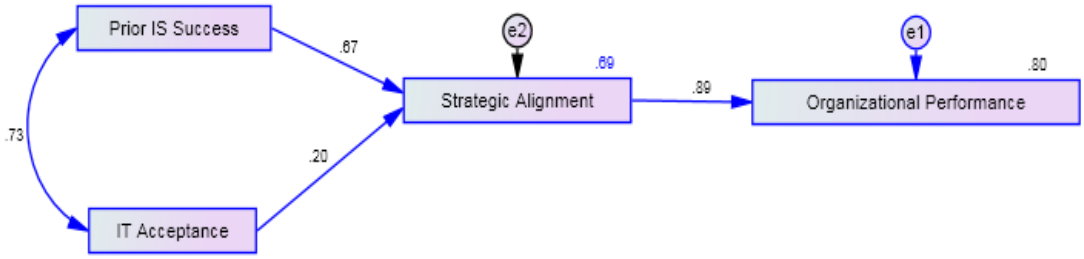


Figure 5.2: SEM Model for Strategic Alignment and Organisational Performance

The SEM model supports all three hypotheses:

H1 : Prior IS success positively influences strategic alignment.
H2: IT acceptance positively influences strategic alignment.
H3: Strategic alignment positively impacts organisational performance.

This study adopts a recursive model to test the hypotheses. The recursive statistical models represent unidirectional causal flows. This means that the effect depicted by an indicator flows in one direction only. Thus, it can be stipulated that the model does not allow reciprocal causation or feedback loops. The effect depicted by the model illustrated above is headed by the direction of single-headed arrows in the model.

The model depicts two phases of analysis here. In the first phase of analysis, 'prior IS success' and 'IT acceptance' are considered independent variables, whilst 'strategic alignment' is the dependent variable. In the second phase of analysis, 'strategic alignment' is the independent variable and 'organisational performance' is the dependent variable. This means that first the relationship between 'prior IS success' and 'IT acceptance' was tested with 'strategic alignment', then the relationship between 'strategic alignment' and 'organisational performance' was tested. As it can be seen in table 5.38, chi-square test for the model has turned out to be significant because the p-value extracted is less than 0.05.

Usually the model fit is considered acceptable if the p-value extracted is greater than 0.05. However, the goodness of fit, if to be extracted through structural equation modeling, depends on the sample or number of observations. In light of different research studies, an adequate and recommended sample to carry out structural equation modeling is 200 observations or more (Boomsma, 1983; Kline, 2011). Further, it has also been extrapolated that the outcome for model fit test is dependent on sample size and the sample to be considered for analyses should be at least 200-400 (Kenny, 2012). This explains the complexities caused in the model prescribed for this study. The core limitation to be reported here is sample size. The analyses carried out to infer goodness of fit in this study are based on 163 observations.

Table 5.38: Results for Default Model

Result (Default model)
Minimum was achieved
Chi-square = 41.973
Degrees of freedom = 2
Probability level = .000

Moving forward with the goodness of fit test, table 5.39 refers to the statistics referring to root mean square error of approximation. According to MacCallum *et al.* (1996), the model can be considered excellent and good at the extracted RMSEA values of 0.01 and 0.05 respectively. Though, in some cases, model is considered acceptable at the discretion of researcher with the RMSEA value of 0.1. Furthermore, p of close fit is used to test the null hypothesis which states that RMSEA equals 0.05. The alternative hypothesis, however, states that RMSEA is greater than 0.05.

Ideally, the desired p-value to be extracted here should be greater than 0.05; because, if the p-value is greater than 0.05 then it can be stipulated that fit of the model is close. However, if the p-value is less than 0.05, it means that the fit for model is inferior to close fitting. The RMSEA value extracted from analysis for the model of this study is 0.35 which is greater than 0.05. Further, the value representing p of close fit is less than 0.05. Thus, it can be stated that the model is inferior to close fit. The

outcome extracted here also depends upon sample size or number of observations which might affect model's goodness of fit.

Table 5.39: Root Mean Square Error of Approximation

	RMSEA			
Model	***RMSEA***	***LO 90***	***HI 90***	***PCLOSE***
Default model	***0.351***	***0.264***	***0.447***	***0.000***
Independence model	***0.793***	***0.74***	***0.846***	***0.000***

Table 5.40 prescribes goodness of fit index outcome. The goodness of fit index is close to 0.9; however, not exceeding it. Since the goodness of fit value is extremely susceptible to the sample size used in the study, most do not recommend this approach to declare model fit (Sharma *et al.,* 2005).

Table 5.40: Goodness of Fit Index

	RMR, GFI			
Model	RMR	GFI	AGFI	PGFI
Default model	0.036	0.898	0.488	0.18
Saturated model	0	1		
Independence model	0.481	0.352	-0.081	0.211

Based on the goodness of fit tests, it can be stated that the model adopted in this study and its goodness of fit is affected by the sample size. The recommended sample size to conduct goodness of fit tests lies between 200 and 400; the sample represents a lesser number. Therefore, for the future studies that might try to replicate this model a higher sample size is recommended.

For testing the aforementioned hypotheses, table 5.41 depicts that all three hypotheses of the research study can be accepted. Prior IS success shows a positive and strong relationship with strategic alignment (Estimate = .654). On the basis of this findings, it can be inferred that with every 1 unit change in prior IS success will

change strategic alignment by 0.654 units. IT acceptance also shows a positive relationship with strategic alignment (Estimate = .241). However, the estimate representing this relationship is not as strong as the one aforementioned.

Though, it can be stipulated that 1 unit change in IT acceptance will change strategic alignment by 0.241 units. Furthermore, strategic alignment shows a positive and strong relationship with organisational performance (Estimate = .904). It can be noticed that the estimate is close to 1. Thus, it can be stated that strategic alignment highly affects organisational performance because 1 unit change in strategic alignment might change organisational performance by 0.904 units. The p-values representing the relationships discussed above are less than 0.05. Thus, it can be stated that the results are highly significant.

Table 5.41: Regression Weights

Regression Weights: (Group number 1 - Default model)						
			Estimate	S.E.	C.R.	P-value
Strategic Alignment	<---	Prior IS Success	0.654	0.061	10.639	***
Strategic Alignment	<---	IT Acceptance	0.241	0.076	3.19	0.001
Organisational Performance	<---	Strategic Alignment	0.904	0.036	25.424	***

Table 5.42: Standardized Regression Weights

Standardized Regression Weights: (Group number 1 - Default model)			
			Estimate
Strategic Alignment	<---	Prior IS Success	0.674
Strategic Alignment	<---	IT Acceptance	0.202
Organisational Performance	<---	Strategic Alignment	0.894

It is noteworthy to that the analysis of the variables has also validated the correlation between prior IS success and IT acceptance, this result verifies the selection of the two variables. Table 5.43 explains the correlation structure between the two variables; as per the outcome extracted, it can be extrapolated that the correlation between the indicators is highly significant.

Table 5.43: Covariances

Covariances: (Group number 1 - Default model)						
			Estimate	S.E.	C.R.	P-value
Prior IS Success	<-->	IT Acceptance	0.519	0.069	7.492	***

5.5 Summary

In this chapter, the data extracted from the sample were analysed using different statistical techniques. There were different statistical techniques chosen for analysis and for the testing of the reliability of the data. First, the descriptive analysis was carried out to classify the responses extracted from the sample. Afterwards, the data were analysed using correlation analysis in order to gauge the relationship between different variables. Furthermore, the data's reliability was tested using Cronbach's alpha, and factor analysis was performed to test the data's dimensionality.

Lastly, the data were analysed using regression analysis. This analysis was performed to test the formulated hypotheses and to explore whether they could be rejected or accepted. After analysing the data through the regression analysis, it was identified that all three hypotheses of the research study could be accepted. The dependent variables not only showed strong impact on the dependent variable(s), but this relationship was also significant. The SEM model testing verified the results obtained from the regression analysis, and confirmed that all three hypotheses formulated for the research study could be accepted.

CHAPTER 6: Discussion

6.1 Introduction

This chapter discusses the findings from the quantitative data analysis presented in Chapter 5. Section 6.2 mainly discusses the findings and results obtained from the previous chapter. Section 6.3 summarizes the chapter.

6.2 Discussion of the Findings

This study explored the impact of strategic alignment on organisational performance. There were diverse factors considered to shed light on the concern selected for this research. Nevertheless, the variables incorporated were used in light of previous studies (Luftman 2014, Guterezz *et al*., 2011). The variables incorporated for analysis were: prior IS success, IT acceptance, strategic alignment and organisational performance. There were two other latent variables incorporated in the conceptual framework; however, these variables were not included in the analysis. The latent variables included in the conceptual framework were IT strategies and business strategies.

Research has explored strategic alignment factors mostly in private organisations, and in developed countries (Osman, 2012, Yusuf and Saffu, 2009). Research also looked at the influence of strategic alignment on organisational performance and inconsistencies were found (Chan and Reich, 2007). Hence, this research has gone in the direction to fill those gaps by exploring the impact of strategic alignment on organisational performance of public organisations in a developing country.

This study was set to answer the following research questions
Which factors affect strategic alignment?
Does strategic alignment affect the performance of public organisations?

The conceptual model, an extended SAM comprising of two factors such as Prior IS success and IT acceptance, was proposed to answer the above research questions through studying empirically the public organisations in Bahrain. As a result, the followings were hypothesized:

H1: Prior IS success positively influences strategic alignment.

H2: IT Acceptance positively influences Strategic Alignment.

H3: Strategic alignment positively impacts organisational performance

Accordingly, this thesis examines the relationship between strategic alignment of IT and business and organisational performance of the public organisation in Bahrain. To do so, a conceptual model was developed, based on the critical review of studies described in chapter 2 and chapter 3, to answer the research questions and test the hypotheses. All the hypotheses were supported. Pearson's correlation coefficient was measured between all the links; and in all cases, the ANOVA table shows that the sig value is less than 0.05, meaning significant. Therefore, all the hypotheses are supported in the study, which led to answer the above research questions by saying that prior IS success and IT acceptance significantly and positively affect strategic alignment and there is strong link between strategic alignment and organisational performance. Therefore, organisations aiming to achieve strategic alignment between business and IT should be aware of the influence of the identified factors.

Each variable included in the conceptual framework was represented by other sub-variables, the existence of which was justified by previous studies (Guterezz *et al*. 2011). Nevertheless, the validity of the sub-variables in representing a particular variable was tested by gauging the correlation between the sub-variables to establish how well they can transform to represent a particular variable.

For the variable, prior IS success, the sample was asked different questions to gauge assistance provided by previously adopted IS or IT project to different organisational dimensions. The analysis revealed assistance provided by previously adopted IT or IS projects to cost reduction, staff requirements fulfillment, overall productivity increase, improving outputs, increasing organisational capacity, and collaborating with e-governments activities. The correlation analysis showed strong relationships

with one another. Meaning that the success of previously adopted IT or IS projects could be represented by its assistance provided to different organisational function in public organisations.

Acceptance of IT in an organisation was evaluated and represented by two different sub-variables: perceived usefulness and perceived ease of use. For substantial perceived usefulness, it was necessary that IT increased organisational productivity, job performance and effectiveness on the job. Moreover, for satisfactory perceived ease of use, it was necessary that learning to operate software, hardware and systems was easy; the employment of IT in doing tasks was easy; and whether a lot of effort was required to be skilled at using IT in public organisations.

The relationship between perceived usefulness and perceived ease of use was explored in order to identify whether sub-variables were best suited to represent IT acceptance. The relationship between perceived usefulness and perceived ease of use was highly significant. Hence, it can be stated that the sub-variables were best suited to represent IT acceptance.

The study variable strategic alignment was represented by different sub-variables. These sub-variables were communications, competency, governance, partnership, scope and architecture and skills. The sub-variables depict the role adopted by IT in different organisational aspects, such as communications, competency, governance, partnership, scope and architecture and skills, which cumulatively prosper strategic alignment in public organisations. In this study, the relationship between these sub-variables was explored and found strong so it can be said that they are best suited to represent strategic alignment.

In this study, organisational performance was represented by diverse sub-variables, which are: stakeholder's satisfaction, stakeholder's contribution, strategies, processes and capabilities represented organisational performance. This representation depicted that organisational performance thrived when strategies adopted by public organisations assisted in stakeholder satisfaction, stakeholder contribution, strategies, processes and capabilities. In order to test the validity of cumulative representation

depicted by the sub-variables for organisational performance, the sub-variables were analysed via correlation analysis. The correlation was high between the sub-variables; hence, they can represent the organisational performance variable.

This research has explored the impact of strategic alignment on organisational performance in Bahrain's public organisations. The SAMM (Luftman, 2000) and the performance prism framework (Neely and Adams, 2001) were extended in order to measure the strategic alignment between business and IT and the performance of public organisations in Bahrain. Table 6.1 presents the summary of the hypotheses, the path coefficients of the regressions analysis of the model. All of the paths were statistically significant and supporting the associated hypotheses. The following sub-sections discuss the findings related to each hypothesis.

Table 6.1: Summary of Hypothesis and Paths Coefficients

Hypothesis	Expected Sign	Path Coefficient	t-value	Path Supports Hypothesis
H1: Prior IS success positively influences strategic alignment.	+	.822	18.285	Yes
H2: IT Acceptance positively influences strategic alignment.	+	.693	12.204	Yes
H3: Strategic alignment positively impacts organisational performance	+	.894	25.345	Yes

6.2.1 Findings of Prior IS Success and Strategic Alignment

This thesis examined the relationship between prior IS success and strategic alignment. This relationship shall be discussed in light of the hypothesis formulated in chapter 3. The identification and selection of measurement items were based on the Delone and McLean's (2003) IS Success Model. The hypothesis asserts that prior IS success has a positive impact on strategic alignment. This thesis supports a

statistically significant relationship between prior IS success and strategic alignment. This relationship was validated by analysing the variables via regression analysis.

H1: ***Prior IS success positively influences strategic alignment***.

The first hypothesis of the research study proposes that prior IS success has a positive impact on strategic alignment. Table 6.1 shows that prior IS success bears a strong and highly significant correlation with strategic alignment. Pearson's correlation coefficient 'R' which shows the intensity of the relationship between the ***strategic alignment and 'prior IS success***' was found to be 0.822 (table 5.27) and $R^2 = 0.675$; meaning 67.5% of the variance in the model can be explained by 'prior IS success'. Also the coefficients table (table 5.29) reveals that 1 unit change in 'prior IS success' is responsible for .797 unit changes in strategic alignment. Therefore, Hypothesis 1 *"Prior IS success positively influences strategic alignment"* is accepted. The finding is directly supported by Chan *et al*., (2006) and Tallon and Pinsonneault (2011) who also validated the same link; and indirectly supported by Yayla and Hu (2009), Reich and Benbasat (2000) and Ismail and King (2014) who validated that successful IT history, rather prior IS success although both originated from a very similar concept, positively influences strategic alignment.

Hence, it may be stated that prior IS success in Bahrain's public organisations (previously adopted IS or IT projects assisting cost reduction, staff requirements fulfilment, overall productivity increase, improving the outputs, increasing the organisational capacity and collaborating with e-governments activities) depicts positive correlation with strategic alignment within those organisations (the role played by IT in different organisational aspects: communications, competency, governance, partnership, scope and architecture and skills) which cumulatively prosper strategic alignment in public organisations of Bahrain. This suggests that the organisations that achieved higher levels of alignment have previously succeeded in implementing IS projects and witnessed improvements of their overall performance.

The analysis reveals that prior IS success strongly affects strategic alignment in Bahrain's public organisation ($\beta = .822$, $\rho = .000$). It can be noticed that the effect depicted by prior IS success over strategic alignment is positive; therefore, it may be deduced that prior IS success in Bahrain's public organisations has a positive and

significant impact on strategic alignment of those organisations based on the SAMM developed by Luftman (2000) and validated by others such as Balhareth *et al.* (2013) Gutierrez *et al*. (2009) and Luftman *et al.* (2012). Thus, Hypothesis 1 can be accepted. Accordingly, public organisations in Bahrain are encouraged to highlight their success in adopting technology and highlight the improvements and developments gained from employing IT in order to increase the level of alignment between business and IT.

6.2.2 Findings of IT Acceptance and Strategic Alignment

The second hypothesis of this research study affirms that IT acceptance influences strategic alignment. This relationship was validated by analysing the variables through regression analysis.

H2: IT Acceptance positively influences strategic alignment.

The second hypothesis proposes that IT acceptance influences strategic alignment. Table 6.1 depicts there being a positive and significant correlation between IT acceptance and strategic alignment. Pearson's correlation coefficient 'R' between the ***strategic alignment and 'IT acceptance'*** was found to be 0.693 (table 5.30) and R^2 = 0. .481; meaning 48.1% of the variance in the model can be explained by 'IT acceptance'; bit lower than prior IS success still significant. Also the coefficients table (table 5.32) reveals that 1 unit change in 'IT acceptance' is responsible for 0.826 unit changes in strategic alignment. Therefore, Hypothesis 2 *"IT acceptance positively influences strategic alignment"* is accepted. A lot of of research studied the factors that affect IT acceptance (Cheng and Wang, 2010; Crabbe *et al.,* 2009; Dai and Palvia, 2009; Lu *et al.,* 2003; Lu and Su, 2009; Jahangir and Begum, 2008; Wei *et al*., 2009; Wu and Wang, 2005; Chen, 2008; Cheong and Park, 2005; Chismar and Wiley-Patton, 2003; Dai and Palvia, 2009; Davis, 1989; 1993; Drennan and Wessels, 2009; Gu *et al*., 2009).

As presented in chapter 3, IT acceptance is measured by two dimensions. The first dimension is perceived usefulness (where IT enhances productivity, job performance

and effectiveness on the job). The second dimension is perceived ease of use (where employment of IT tasks is easy and does not require much skill to operate software, hardware and other systems) is positively correlated with strategic alignment (where IT plays significant role in different organisational aspects: communications, competency, governance, partnership, scope and architecture and skills).

The analysis of the data gathered from respondents further reveals that IT acceptance in Bahrain's public organisations has a positive and significant impact on strategic alignment in within the same organisations (β = .693, ρ = .000). Findings were not only positive but also significant. Thus, Hypothesis 2 can be accepted.

The results have confirmed that the impact depicted by IT acceptance on strategic alignment shows that public organisations in Bahrain who achieved higher levels of alignment that find IT useful in enhancing the productivity, job performance and affectivity on the job, and also find it easy to use by their employees. This research shows how the people in a given context can impact the level of alignment in organisations and as apparent in the public organisations in Bahrain the level of alignment has been influencd by how people perceived and use IT.

6.2.3 Findings of Strategic Alignment and Organisational Performance

The third hypothesis of the research study states:

H3: Strategic alignment positively impacts organisational performance

As shown in Table 6.1, there is a very strong and positive correlation to be witnessed between the study variables. Pearson's correlation coefficient 'R' between the ***strategic alignment and 'organisational performance'*** was found to be 0. .894 (table 5.33) which is considerably high when compared with prior correlations extracted and R^2 = 0. 80; meaning 80% of the variance in the model can be explained by 'organisational performance. Also the coefficients table (table 5.35) reveals that 1 unit change in 'strategic alignment' is responsible for .904 unit change in 'organisational performance'. Therefore, Hypothesis 3 *"Strategic alignment positively influences organisational performance."* is accepted. The finding is

consistent with the findings of Yayla and Hu (2012), Tallon and Pinsonneault (2011) and Balhareth *et al.* (2013) who also validated the link between strategic alignment and organisational performance. However, it also partially supports that of Luftman *et al.* (2012) who concluded that IT governance affects organisational performance.

According to the outcomes extracted, it can be deduced that 1 unit change in one variable would cause .894 unit positive change in another variable. Thus, the relationship between strategic alignment that is measured using the SAMM (Luftman, 2000), that measure the alignment in five dimensions as presented in chapter 2 and chapter 3 (communications, competency, governance, partnership, scope and architecture and skills in a public organisation) and organisational performance that has been captured through multi performance measures using the performance prism framework (Neely and Adams, 2001) (a variable concerning strategies that are currently adopted in an organisation to assist in stakeholder satisfaction, stakeholder contribution, strategies, processes and capabilities) is quite strong and significant. According, it can be stated that the strategies adopted by public organisations who achieved higher levels of alignment have assisted them in increasing the level of performance.

The analysis of the data through the application of regression analysis implicates that strategic alignment in public organisations in Bahrain has a significant impact on organisational performance ($\beta = .894$, $\rho = .000$). Hence, it can be stated that it has assisted organisations in enhancing their performance with regard to their strategies, stakeholder satisfaction, stakeholder contribution, processes and capabilities. It is noteworthy that the findings are consisted with other studies that explored this relationship (Al-Adwan, 2014; Balhareth, *et al.,* 2013; Parisi, 2013; Schwarz *et al.,* 2010; Sun, 2008; Yayla and Hu, 2012). Thus, it can be affirmed that Hypothesis 3 can be accepted.

6.3 Summary

Findings discussed in this chapter shows that the previously adopted IS or IT projects in public organisations in Bahrain, in terms of cost reduction, staff requirements fulfillment, overall productivity increases, improved outputs, increased organisational capacity and collaboration with e-governments activities positively influences strategic alignment within those organisations. Similarly, IT acceptance in Bahrain's public organisations, -in terms of perceived usefulness and perceived ease of use- positively influences strategic alignment between business and IT within those organisations. Hence, organisations are encouraged to highlight the successful previously adopted IT projects, the usefulness of adopting IT and help their employees in using it in order to achieve higher levels of alignment.

The findings of this study also confirm that strategic alignment between business and IT in different organisational processes including communications, competency, governance, partnership, scope and architecture and skills, positively influences the overall organisational performance of public organisations in Bahrain.

CHAPTER 7: Conclusions

7.1 Introduction

This chapter presents the research findings and links it to the research aim and objective and draws a roadmap to future research. Section 7.2 presents an overall summary of the research. Section 7.3 discusses the research contribution, followed by research implications (7.4) and research limitations (7.5) respectively. The chapter concluded with the section 7.6, which gives the directions for future work.

7.2 Research Summary

The literature shows that business IT alignment and alignment factors have been investigated mainly separately, with most research known to have focused on private or academic institutions, linking it to financial measures; hence, this research has widened the knowledge on strategic alignment by investigating the impact of strategic alignment on organisational performance of public organisations using a comprehensive performance measure. Hence, a model has been proposed here that illustrates the factors seen to impact the strategic alignment and accordingly impact strategic alignment on organisational performance. The proposed model embodies an integration of Technology Acceptance Model (Davis, 1989), IS success model (Delone and Mclean, 2003) and Organisational Performance Prism (Neely and Adams, 2001) as discussed below.

As presented in chapter 2, studies on strategic alignment established equilibrium; this has proven challenging to sustain. Otherwise, such studies have re-examined the factors potentially impacting alignment. This research implements a more comprehensive approach, linking strategic alignment to organisational performance whilst studying the factors influencing this alignment from the perspectives of the government officials, such as IT and business executives, who are usually involved in

planning and implementing strategies related to business and IT.

Literature focuses mainly on private organisations in the academic field, or otherwise on linking strategic alignment to financial performance measures. This research has extended the analysis to public organisations, linking it to both financial and non-financial measures. Moreover, this research has built its model on theoretical foundations—a gap in the literature highlighted by Chan and Reich (2007). The increase of IT's strategic importance will place IT projects within the competitive business environment and directly link business IT alignment with IT success and, as a result, organisational performance.

Hence, this study focused on the strategic use of IT in the public organisations of Bahrain, considering the views of both IT and business executives. Recent research has identified the importance of aligning IT and business to mediate between IT and business strategies and performance. However, public organisations have the unit of analysis in previous research on strategic alignment as presented in this thesis.

Chapter 2 illustrates the theoretical background for this thesis, which includes the three main research stems of strategic alignment: (a) influential factors, (b) measures of IT business alignment (c) impact of IT business alignment on organisational performance. The rationale and justification for the theoretical basis of the conceptual model and methods selected to measure the strategic alignment were also presented in this chapter.

Chapter 3 provided the main constructs for examination based on the SAM. Since Henderson and Venkatraman's (1993) SAM model was recognised as the most comprehensive model, which was the basic for the six variables introduced to the literature by Luftman (2000). In this research, these variables were not analysed as factors influencing strategic alignment but as measures to measure the construct of strategic alignment. Further, the researcher has proposed factors that could influence the strategic alignment of IT and business other than the factors already selected and widely adopted as variables or measures of alignment (Gutierrez *et al*., 2009).

In mind of the above, the quantitative method as presented in chapter 4 was selected in order to examine the business IT alignment in its context and accordingly to

examine the relationships proposed in the conceptual model. A survey was distributed to serve as a tool for examining the relationships between the factors illustrated in the conceptual model. A plan was designed for the collection of reliable and sufficient data from participant organisations. Since all public organisations are working on enhancing their organisational performance by adopting IT, high levels of strategic business IT alignment in public organisations which provides a good support for the proposed conceptual model.

The analysis revealed that the strategic alignment is significantly influenced by prior IS success and IT acceptance besides original factors of the SAM model. Also it has validated the significant impact of strategic alignment on organisational performance of public organisations. The research also suggests that high alignment between the business and IT is due to the positive affect of some factors such as prior IS success and IT acceptance.

7.3 Research Contributions

This research has developed and empirically tested a conceptual model including two major factors affecting alignment as well as the effects of alignment on organisational performance of public organisations. The empirical results support the positive relationship between strategic alignment and the two proposed factors; i.e. prior IS success and IT acceptance. It also contributed to the field of technology acceptance and IS success by validating the positive relationship between the two variables. This kind of research was not found to be conducted in the context of public organisations, which is also considered to be a contribution of the study.

The conceptual model, as shown in Chapter 3, represents a theoretical contribution. It was developed to examine the impact of strategic alignment organisational performance of public organisations. The validation and identification of two factors affecting business and IT strategic alignment in the proposed model is also considered a theoretical contribution. The validation of prior IS success is a factor that was selected from the field of strategic alignment. Prior IS success is a

prerequisite for the second factor, which is IT acceptance, a relationship derived from the Technology Acceptance Model. A relationship was neglected in previous research in the field of strategic alignment. Hence this was examined to add more theoretical basis to the research in the field of strategic alignment factors. The research found 'IT acceptance' significantly affects strategic alignment in public organisations.

The importance of the proposed model lies in the fact that this was developed based on theories in both IT and organisational performance. The conceptual model differentiates between the factors or variables used in the literature to measure the strategic alignment and the factors influencing this alignment. Further, it has extended the research in this field through linking strategic alignment to the organisational performance of public organisations and examining this linkage using measures built based on organisational performance theories and models, i.e. performance prism.

The empirical contribution was partially inspired by the approach adopted by Gutierrez *et al.* (2009) in selecting the factors influencing strategic alignment; however, the aim was to assess strategic alignment process and to examine the impact of such on organisational performance. The Strategic Alignment Model (SAM) by Henderson and Venkatraman (1992), the Luftman (2000) maturity model, IS success (Delone and Mclean, 2003), the Technology Acceptance Model (TAM) (Davis, 1989) and the Performance Prism (Neely and Adams, 2001) have provided theoretical foundations for this research, with all its components and relevance of public organisations recognized as units of analysis. The finding that IT acceptance affects strategic alignment will lead the stakeholders to look for those technologies which are perceived to be useful and user-friendly.

Finally, the results obtained may prove valuable for public organisations in the region. As in the context of Bahrain, the relationship between strategic alignment and organisational performance is significantly positive. This knowledge, if shared with other public organisations in the region, might act as a driver for aligning business and IT strategies in order to enhance organisational performance.

7.5 Research Implications

The failure of IT projects in public organisations is gradually increasing which requires investigation into the reasons; many of them are still unknown (Burke and Cresswell, 2006; NASCIO, 2006; Lobur, 2011).

The model developed here considered various perspectives including the factors behind the success or failure, which were then empirically tested in the context of Bahrain's public organisations. The model may help reduce the number of failures of IT projects in public organisations. One of the key factors identified in this model is 'prior IS success', it means that the knowledge, experience and encouragement gained from prior successful projects are significant assets for the future project to get succeed. Sometimes, strategies of ongoing IT projects are kept aligned with the past successful project to increase the rate of its success. As 'IT acceptance' and 'prior IS success' were found to be affecting strategic alignment significantly, managers should integrate these in their strategies including the avoidance of the technologies perceived not very useful and user-friendly.

Although the issues of public organisations were focused while developing the model, it is hoped that the managers of private organisations would also benefit.

7.6 Research Limitations

Results obtained from public organisations in Bahrain may be transferable to other regional countries but are not claimed as a universally generalized finding. Research on strategic alignment is still in its infancy in public organisations; accordingly, it is crucial to present some of the general limitations of it.

Firstly, data for this study was collected through a quantitative method approach. However, future work is needed in terms of looking at the qualitative elements, perhaps through some interviews. For example, some of the organisations provide IT or telecommunication services, which could respond differently than the participants

in less IT related organisations, such as health and education. A question may have been understood by different participants in a slightly different way based on their importance and reliance on IT.

Secondly, the selected sample only included a certain number and type of public organisations, and although all of the public organisations in this context participated, future work is needed which will look at more organisations in order to increase generalizability.

Finally, prior IS success was measured using one dimension of the instrument developed by Sedera and Gable (2004) i.e. organisational impact. Measuring the IS in its four dimensions (system quality, information quality, individual impact and organisational impact) can affect strategic alignment. Therefore, future research needs to investigate the influence of prior IS success from different angles to increase the explanation power of the research findings.

7.7 Future Work

Technology advances so rapidly, following Moore's Law (Edwards, 1994), which states that computing power will be doubled in roughly every two years. It means that the technology used heavily today may have been abandoned the next year. Therefore, future work could employ a longitudinal study spanning years of investigation in different time periods for the subject under study.

The quantitative method is not without its drawbacks. Future research needs to be conducted in a larger scale with more participants from a different context. It would also be interesting to see how far the result is affected by incorporating a qualitative case study or mixed method research in the similar context.

In the study two factors were added on SAM model, i.e. 'prior IS success' and 'IT acceptance', both were empirically tested to be affecting strategic alignment positively and significantly. However, no other factors of the SAM were added.

Therefore, future work could investigate developing generic model including other factors – especially external factors such as governmental, laws and regulations, economical and cultural issues to see how those affect strategic alignment, and their combined impact on organisational performance.

Does an increase of IT investment correlate with an increase in the financial performance of the organisation? The question has no solid answer. The future work would be to see whether the presence or absence of any factor has any influence on financial performance. This could ascertain the relative importance of each of the factors in terms of how much it influences the alignment of IT with the organisation's corporate objectives.

Further research could be to replicate this model and method in different contexts of different countries to see whether the factors identified have a different impact by industry or by country. Countries and /or organisations have different organisational structure and IT infrastructure and so it would be useful to find out what, if any, differences there might be.

Although this research has investigated and examined the factors influencing strategic alignment, further studies may explore and examine ways and methods to facilitate such factors, and the factors presented in the literature. That is, once it is known that some specific factors are highly significant in influencing strategic alignment, the next task could be nurturing an environment where these factors do coexist simultaneously within the organisation.

References

Abraham, G. A. (2006) *Successful Organisational Leadership: Effective execution through strategic management*. Available at http://www.refresher.com/Archives/agaaexecution.html (Accessed: 10 Nov 2012).

Adcroft, A. and Willis, R. (2005). 'The (un) Intended Outcome of Performance Measurement in the Public Sector', *The International Journal of Public Sector Management*, 18(5), pp. 386-400.

Agarwal, R. and Prasad, J. (1997) 'The role of innovation characteristics and perceived voluntariness in the acceptance of information technologies', *Decision Sciences*, 28(3), pp. 557– 582.

Agarwal, R. and Prasad, J. (1999) 'Are individual differences germane to the acceptance of new information technologies?' *Decision Sciences*, 30(2), pp. 361-391.

Ajzen, I. and Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. NJ: Prentice-Hall, Englewood Cliffs.

Al-Adwan, Minwer M. (2014)' The Impact of Strategic Alignment Maturity of Business and Information Technology on performance: Case Study of Jordan Public Sector Organisations', *Journal of Basic and Applied Scientific Research*, 4(5), pp. 161-174.

Alalwan, A., Dwivedi, Y. and Williams, M. (2014). 'Examining Factors Affecting Customer Intention And Adoption Of Internet Banking', *Jordan.UK Academy for Information Systems Conference Proceedings:* Bournemouth, 7th -10th July 2014. Paper 3.

AlAwadhi, S. and Morris, A. (2008). 'The Use of the UTAUT Model in the Adoption of E-government Services in Kuwait', *Hawaii International Conference on System Sciences, Proceedings of the 41st Annual :* Hawaii, 7th-10th Jan, pp. 219-219.

Al-Gahtani, S. S., Hubona, G. S. and Wang, J. (2007). 'Information technology (IT) in Saudi Arabia: Culture and the acceptance and use of IT', *Information and Management*, *44*(8), pp. 681-691.

Alshehri, M., Drew, S., Alhussain, T. and Alghamdi, R. (2012). 'The Effects of Website Quality on Adoption of E-Government Service: An Empirical Study Applying UTAUT Model Using SEM',*23rd Australian Conference on Information Systems*, Geelong, Australia: 3rd -5th Dec, pp. 1-13.

Amarilli, F. (2014), 'A Framework for Business IT Alignment in Turbulent Environments', *Athens Journal of Technology Engineering,* 1(2), pp. 103-118.

Amira, A. B., Dauzère-Pérès, S., Vialletelle, P., Lepelletier, G. and Lalevée, P. (2014) 'Methodology for Aligning Factory Information and Control Systems in a Complex and Dynamic Environment: Case of Semiconductor Manufacturing', *19th World*

Congress: The International Federation of Automatic Control Cape Town, South Africa, 24th -29th August, pp. 3309-3314.

Andrews, K. (1980) *The concept of corporate strategy*. Homewood, Ill.: Richard D. Irwin.

Andrews, R., Boyne, G. A., Meier, K. J., O'Toole, L. J. and Walker, R. M. (2012) 'Vertical Strategic Alignment and Public Service Performance', *Public Administration*, 90(1), pp. 77-98.

Anckar, B., Carlsson, C. and Walden, P. (2003). Factors Affecting Consumer Adoption Decisions of m-Commerce. *16th Bled eCommerce Conference:* Slovenia, 9th-11th June, pp. 886-902.

Ansoff, H. I. (1979) *Strategic Management.* MacMillan Press Ltd.: London and Basingstoke.

Applegate, L.M., James, I., Cash, Jr. and Donald, G.M. (1988) ' Information Technology and Tomorrow's Manager', *Harvard Business Review*, 88(6), pp. 128-136.

Arsovski, Z., Arsovski, S., Mirović, Z. and Stefanović, M. (2009) 'Simulation of quality goals: A missing link between corporate strategy and business process management', *International Journal for Quality Research*, *3*(4), pp. 317-326.

Atkins, M. (1994) 'IT and IS Perspectives on Business Strategy', *Journal of Strategic Information Systems*, 3(2), pp. 123-125.

Avison, D. E., Cuthbertson, C. and Powell, P. (1999a) 'The Paradox of Information Systems: Strategic value and low status', *Journal of Strategic Information Systems*, 8(4), pp. 419-445.

Avison, D., Lau, F., Myers, M. and Nielsen, P. (1999b) 'Action Research', *Magazine of Communications of the ACM*, 42(1), pp. 94-97.

Avison, D., Jones, J., Powell, P. and Wilson, D. (2004) 'Using and validating the strategic alignment model', *Journal of Strategic Information Systems*, 13(3), pp. 223-246.

Azab, N.A. (2005) 'Investigating IT-business alignment in an Egyptian medium-sized enterprise', *European and Mediterranean Conference on Information Systems (EMCIS)*: Cairo, Egypt, 7th -8th June, pp.1-22.

Bahrain Centre for Excellence (2009). Available at: http://www.bahrainexcellence.org.

Bahrain Economic Development Board (2014). Available at: http://www.edb.gov.bh

Bagozzi, R. P. (1981) 'Evaluating structural equation models with unobservable variables and measurement error: a comment', *Journal of Marketing Research*, 18(3), pp. 375-381.

Bajaj, A. and Nidumolu, S.R. (1998) 'A feedback model to understand information system usage', *Information and Management,* 33(4), pp. 213-224.

Bang, H. K., Ellinger, A. E., Hadjimarcou, J. and Traichal, P. A. (2000). Consumer concern, knowledge, belief, and attitude toward renewable energy: An application of the reasoned action theory. *Psychology and Marketing*, 17(6), pp. 449-468.

Baron, D.P. (2006) 'A Positive Theory of Moral Management, Social Pressure, and Corporate Social Performance', *Stanford University Graduate School of Business Research Paper No. 1940; Rock Center for Corporate Governance Working Paper No. 36.* Available at SSRN: http://ssrn.com/abstract=913808

Baer, D. M., Wolf, M. M. and Risley, T. R. (1987). 'Some still-current dimensions of applied behavior analysis', *Journal of Applied Behavior Analysis*, 20(4), pp. 313-327.

Bao, Y., Fong, E. and Zhou, K. Z. (2008) "Strategic Consensus and Firm Performance: Beyond Top Management Team," Working Paper, 2008.

Basili, V. R., Heidrich, J., Lindvall, M., Münch, J., Regardie, M., Rombach, D. and Trendowicz, A. (2013). 'Linking software development and business strategy through measurement', *IEEE Computer,* 43(4), pp.57-65.

Bergeron, F., Raymond, L. and Rivard, S. (2004) 'Ideal Patterns of Strategic Alignment and Business Performance', *Information and Management*, 41(8), pp. 1003-1020.

Bergeron, F. and Raymond, L. (1995) 'The Contribution of Information Technology to the Bottom Line: A Contingency Perspective of Strategic Dimensions' *Proceedings of International Conference on Information Systems*: Amesterdam, 10th-13th Dec, pp. 167-181.

Belfo, F., Sousa, R. (2012) 'A Critical Review of Luftman's Instrument for Business-IT Alignment'. *7th Mediterranean Conference on Information Systems*, MCIS 2012, Guimarães, Portugal, 8th -10th September, 2012.

Bernroider, E. (2008) 'IT governance for enterprise resource planning supported by the DeLone-McLean model of information systems success', *Information and Management,* 45(5), pp. 257-269.

Bharadwaj, A., El Sawy, O. A., Pavlou, P. A. and Venkatraman, N. (2013) 'Digital business strategy: toward a next generation of insights' *MIS Quarterly*, 37(2), pp. 471-482.

Bingle, B. S., Meyer, C. K. and Taylor, A. (2013). 'Nonprofit And Public Sector Human Resources Management: A Comparative Analysis', *International Journal of Management and Information Systems (IJMIS)*, 17(3), pp. 135-162.

Bonn, I. and Christodoulou, C. (1996) 'From strategic planning to strategic management' *Long Range Planning*, 29(4), pp. 543-551.

Boomsma, A. (1983) On the robustness of LISREL (maximum likelihood estimation) against small sample size and non-normality. University of Groningen: Doctoral dissertation.

Bostrom, P. R. and Heinen, J. S. (1977) 'MIS Problems and Failures: A Socio-Technical Perspective Part I: The Causes', *MIS Quarterly,* 1(1), pp. 17-32.

Brady, M., Fellenz, M. and Brooks, R. (2008) 'Researching the role of information and communications technology (ICT) in contemporary marketing practices', *The Journal of Business and Industrial Marketing*, 23(2), pp. 108-114.

Bridoux, F. and Stoelhorst, J. W. (2014) 'Microfoundations for stakeholder theory: Managing stakeholders with heterogeneous motives', *Strategic Management Journal*, 35(1), pp. 107-125.

Broadbent, M. and Weill, P. (1993) 'Improving Business and Information Strategy Alignment: Learning from the Banking Industry', *IBM Systems Journal,* 32(1), pp. 162-179.

Broadbent, M. and Weill, P. (1999) 'The Implications of Information Technology Infrastructure for Business Process Redesign', *MIS Quarterly*, 23(2), pp. 159-182.

Brown, M.G. (1996) *Keeping Score: Using the Right Metrics to Drive World-Class Performance*. New York: Quality Recourses.

Bruce, K. (1998) 'Can you align business with strategy', *Strategy and Leadership*, 26(5), pp. 16-21.

Bryman, A. (2004) *Social Research Methods* (2nd edition). Oxford: Oxford University Press.

Bryson, J., (1988) 'Strategic Planning Process for Public and Non-Profit Organisations', *Long Range Planning*, 21(1), pp. 73-82.

Bryson, J. M. and Roering, W. D. (1996) 'Strategic Planning Options for the Public Sector', *in* J. L. Perry (Ed.) *Handbook of Public Administration*, 2nd edition. San Francisco, Jossey-Bass, CA.

Burke, G. B. and A. M. Cresswell (2006). *The Austrian Federal Budgeting and Bookkeeping System. Public ROI - Advancing Return on Investment Analysis for Government IT: Case Study Series*. NY, University at Albany, SUNY: 12.

Burn, J. M. (1997) 'A Professional Balancing Act: Walking the Tightrope of Strategic Alignment', In Sauer, C., Yetten, P. and Alexander, L. (Eds) *Steps to the future - fresh thinking on the management of IT-based organisational transformation*, The Jossey-Bass Inc.

Burn, J.M. and Szeto, C. (2000) 'A comparison of the views of business and IT management on success factors for strategic alignment', *Information and Management*, 37(4) pp. 197-216.

Campbell, D. T. and Fiske, D. W. (1959) 'Convergent and discriminant validation by the multitrait-multimethod matrix', *Psychological Bulletin*, 56(2), pp. 81-105.

Casey, T. and Wilson-Evered, E. (2012) 'Predicting uptake of technology innovations in online family dispute resolution services: An application and extension of the UTAUT', *Computers in Human Behavior*, 28(6), pp. 2034-2045.

Cataldo, A., McQueen, R. J. and Hardings, J. (2012). 'Comparing Strategic IT Alignment versus Process IT Alignment in SMEs', *Journal of Research and Practice in Information Technology*, 44(1), pp. 43-57.

Chae, H. C., Koh, C. E. and Prybutok, V. R. (2014) 'Information technology capability and firm performance: contradictory findings and their possible causes', *Mis Quarterly*, 38(1), pp. 305-326.

Chakravarthy, B. S. (1987) 'On tailoring a strategic planning systems to its context: some empirical evidence', *Strategic Management Journal,* 8(6), pp. 517-534.

Chan, Y. E. and Huff, S.L. (1993) 'Strategic information systems alignment', *Business Quarterly*, 58 (1), pp. 51–55.

Chan, Y., Huff, S., Barclay, D. and Copeland, D. (1997) 'Business strategic orientation, information strategic orientation and strategic alignment', *Information Systems Research*, 8(2), pp. 125–150.

Chan, Y. and Reich, B. (2007a) 'State of the art IT alignment, what have we learned?' *Journal of Information Technology*, 22(4), pp. 297–315.

Chan, Y. E., Sabherwal, R., Bennett, J. and Thatcher, W. (2006) 'Antecedents and Outcomes of Strategic IS Alignment: An Empirical Investigation', *IEEE Transactions On Enjeneering Management*, 53(1), pp. 27-47.

Chang, M. K. (1998) 'Predicting unethical behavior: a comparison of the theory of reasoned action and the theory of planned behavior', *Journal of Business Ethics*, 17(16), pp. 1825-1834.

Charoensuk, S., Winai, W. and Khang, D. B. (2014) ' Business IT Alignment: A Practical Research Approach', *The Journal of High Technology Management Research*, 25(2), pp. 132-147.

Chau, P.Y.K. and Hu, P.J. (2002) 'Examining a model of information technology acceptance by individual professionals: an exploratory study', *Journal of Management Information Systems*, 18(4), pp. 191-230.

Chau, P.Y.K. (1996) 'An empirical investigation on factors affecting the acceptance of CASE by systems developers', *Information and Management*, 30(6), pp. 269-280.

Chege, S. (2014) 'IT Strategic Alignment Maturity levels in Kenya', *Journal of Business Theory and Practice*, 2(2), pp. 203-220.

Chao, C.A. and Chandra, A. (2012) 'Impact of owner's knowledge of information technology (IT) on strategic alignment and IT adoption in US small firms', *Journal of Small Business and Enterprise Development*, 19(1), pp. 114-131.

Chen, L.-D. (2008) 'A model of consumer acceptance of mobile payment', *Inderscience Enterprises Ltd*., 6(1), pp. 32-*52.*

Chen, L. (2010) ' Business-IT Alignment Maturity of Companies in China', *Journal of Information and Management,* 47(1), pp.9-16.

Chen,S-C., Li, S-J. and Li, C-Y. (2011) 'Recent related research in technology acceptance model: a literature review', *Australian Journal of Business and Management Research*, 1(9), pp.124-127.

Chen, Y., Wang, Y., Nevo, S., Jin, J., Wang, L. and Chow, W. S. (2014) 'IT capability and organizational performance: the roles of business process agility and environmental factors', *European Journal of Information Systems*, 23(3), pp. 326-342.

Cheng, X. and Wang, L. (2010) 'A comparative study of consumers' acceptance model in mobile-commerce', *Computer Engineering and Technology (ICCET), 2010 2nd International Conference* : Shanghai, 16th-18th April,7, pp. pp. 4891-4896.

Cheong, J. and Park, M., (2005) 'Mobile Internet acceptance in Korea', *Internet Research,* 15(2), pp. 125-140.

Ciborra, C. U. (1997) 'De profundis? Deconstructing the concept of strategic alignment', *Scandinavian Journal of Information Systems*, 9(1), pp. 67-82.

Chismar, W.G. and Wiley-Patton, S. (2003) 'Does the extended technology acceptance model apply to physicians', *Proceedings of the 36th Hawaii International Conference on System Sciences*: Big Island, HI, USA, 6th-9th Jan, pp. 1-8.

Chong, A. Y. L., Chan, F. T. and Ooi, K. B. (2012) 'Predicting consumer decisions to adopt mobile commerce: Cross country empirical examination between China and Malaysia', *Decision Support Systems*, 53(1), pp. 34-43.

Chong, A. Y. L. (2013) 'Predicting m-commerce adoption determinants: A neural network approach', *Expert Systems with Applications*, 40(2), pp. 523-530.

Colbert, A. E., Kristof-Brown, A. L., Bradley, B. H. and Murray, R. B. (2008) 'CEO Transformational Leadership: The Role of Goal Importance Congruence in Top Management Teams', *Academy of Management Journal,* 51(1), pp. 81-96.

Cooper, D. and Emory, C. (1995) *Business Research Methods*, 5th ed., Irwin, Sydney.

Couper, M. P. (2000) 'Review: Web surveys: A review of issues and approaches', *Public Opinion Quarterly*, 64(4), pp. 464-494.

Chung, S.H., Rainer, R.K. and Lewis, B.R. (2003) 'The impact of information technology infrastructure flexibility on strategic alignment and applications implementation', *Communications of AIS*, 11(1), pp.191-206.

Crabbe, M., Standing, C., Standing, S. and Karjaluoto, H. (2009) 'An adoption model for mobile banking in Ghana', *International Journal of Mobile Communications*, 7(5), pp. 515-543.

Cragg, P., King, M. and Hassin, H. (2002) 'IT Alignment and Firm Performance in Small Manufacturing Firms' *Strategic Information Systems*, 11(2), pp. 109-132.

Creswell J.W. and Clark V.L.P. (2007). *Designing and Conducting Mixed Method Research.* Sage Publications, Inc.

Creswell, J. W. (2003). *Research design: Qualitative, Quantitative, and Mixed Methods Approaches* (2nd ed.). Thousand Oaks, CA: Sage.

CRMZ, n.d. Available at http://www.crmz.com/Directory/CountryBH.htm (Accessed: 27th june 2015).

Croteau, A. M., Solomon, S., Raymond, L. and Bergeron, F. (2001) 'Organisational and Technological Infrastructures Alignment'. *Proceedings of the Hawaii 34th International Conference on System Sciences*: Maui, Hawaii, 6th -9th Jan, pp. 1-10.

Dai, H. and Palvia, P. C. (2009) 'Mobile Commerce Adoption in China and the United States: A Cross-Cultural Study', *The DATA BASE for Advances in Information Systems,* 40(4), pp. 43-61.

Damanpour, F. and Schneider. M. (2006) 'Phases of the Adoption of Innovation in Organizations: Effects of Environment, Organization and Top Managers', *British Journal of Management,* 17(3), pp. 215-236.

Davenport, Thomas H. (2013) *Process Innovation: Reengineering Work through Information Technology*. Harvard Business Press.

Davies, J., Janowski, T. and Shukla, A. (2007) 'Technological Foundations of Electronic Governance', *Proceedings of the 1st International Conference on the Theory and Practice of Electronic Governance, Macao, 2007*. Macao, ACM.

Davis, F. D. (1989) ' Perceived usefulness, perceived ease of use and user acceptance of Information Technology'. *MIS Quarterly*, 13(3), pp. 319-340.

Davis, F.D. (1993) 'User acceptance of information technology: system characteristics, user perceptions, and behavioral impacts', *International Journal of Man Machine Studies*, 38(3), pp. 475-487.

Davis, F.D., Bagozzi, R. and Warshaw, P.R. (1989) 'User acceptance of computer technology: a comparison of two theoretical models', *Management Science*, 35(8), pp.982-1003.

DeLone, W.H. and McLean, E.R. (1992) 'Information systems success: The quest for the dependent variable', *Information Systems Research*, 3(1), pp.60-95.

DeLone, W.H. and McLean, E.R. (2003) 'The DeLone and McLean Model of Information Systems Success: A ten-Year Update', *Journal of Management Information Systems*, 19(4), pp. 9-30.

Dillman, D. A., Phelps, G., Tortora, R., Swift, K., Kohrell, J., Berck, J. and Messer, B. L. (2009) 'Response rate and measurement differences in mixed-mode surveys using mail, telephone, interactive voice response (IVR) and the Internet', *Social Science Research*, 38(1), pp. 1-18.

Dillon, A. (2001) 'User Acceptance of Information Technology', In W. Karwowski (ed). *Encyclopedia of Human Factors and Ergonomics*. London: Taylor and Francis.

Dillon, A. (2000) 'Spatial-Semantics: How Users Derive Shape From Information Space', *Journal of the American Society for Information Science,* 51(6), pp. 521-528.

Dishaw, M.T. and Strong, D.M. (1999) 'Extending the technology acceptance model with task-technology fit constructs', *Information and Management*, 36(1), pp. 9-21.

Dragnić, D. (2014) 'Impact of internal and external factors on the performance of fast-growing small and medium businesses', *Management-Journal of Contemporary Management Issues*, 19(1), pp.119-159.

Drennan, J. and Wessels, L. (2009) 'An investigation of consumer acceptance of M-Banking in Australia', *Proceedings of Australian and New Zealand Marketing Academy Conference 2009. Sustainable Management and Marketing,* 30 November - 2 December 2009, Monash University, Melbourne, Victoria, Australia.

Drucker, P. F. (1954) *The Practice of Management*, New York: Harper and Brothers.

Drucker, P. F. (1967). *The Effective Executive*. London: Heinemann.

Drucker, P. (1995) *Innovation and Entrepreneurship*. New York: Harper and Row Publisher.

Easterby-Smith M., Thorpe R. and Lowe A. (2002) *Management Research – an Introduction.* London: Sage .

Economy watch n.d. vailable at http://www.economywatch.com/world_economy/bahrain (Accessed: 27th June 2015).

Edwards, Owen (1994), 'Gordon Moore', *Forbes*, December 5, pp. 158-159.

eGovernment Authority 2014. Available at http://www.bahrain.bh .

Elbanna, S. (2008), 'Planning and participation as determinants of strategic planning effectiveness', *Management Decision*, 46(5), pp. 779-96.

El Mekawy, M., AlSabbagh, B. and Kowalski, S. (2014), 'The Impact of Business-IT Alignment of Information Security Process', *Lecture Notes in Computer Science*, 8527, pp. 25-36.

Elmorshidy, A. (2013) 'Aligning IT With Business Objectives: A Critical Survival And Success Factor In Today's Business', *Journal of Applied Business Research (JABR)*, 29(3), pp. 819-828.

Epstein, M. J. and Manzoni, J. F. (1997), *The Balanced Scorecard and Tableau de Bord: a global perspective on translating strategy into action*, Fontainebleau: Insead.

Escobar-Rodríguez, T. and Carvajal-Trujillo, E. (2014) 'Online purchasing tickets for low cost carriers: An application of the unified theory of acceptance and use of technology (UTAUT) model' *Tourism Management*, 43(1), pp. 70-88.

Farrell, I. J. (2003) *Aligning IT to Corporate Objectives: Organisational factors in use.* Doctoral Dissertation, Macquarie University, Australia.

Fattah, F. and Arman, A. A. (2014) 'Business-IT Alignment: Strategic Alignment Model for healthcare (case study in hospital bandung area)', *ICT For Smart Society (ICISS) 2014 International Conference:* Bandung, 24th-25th Sep, pp. 256-259.

Field, A. (2013) *Discovering Statistics using IBM SPSS Statistics*. Sage.

Fitzgerald, L., Johnson, R., Brignall, S., Silvestro, R. and Vos, C. (1991) *Performance Measurement in Service Businesses*. London: The Chartered Institute of Management Accountants.

Freeman, R. (1984) *Strategic Management: A Stakeholder Approach*. Marshall, MA, Pitman.

Friesk, J, Bannister, F. and Lindgrin, R (2015) 'Evaluation of information system investments: a value dials approach to closing the theory-practice gap', *Journal of Information Technology,* 30(3), pp. 276-292.

Frigo, M.L. and Krumwiede, K.R. (2000) 'The balance scorecard', *Strategic Finance*, 81(7), pp. 50-54.

Fröhlich, D., Gill, C. and Krieger, H. (1991). *Roads to participation in the European Community: increasing prospects of employee representatives in technological change*. Dublin: European Foundation for the Improvement of Living and Working Conditions.

Floyd, S. W. and Woolridge, B. (1990) 'Path Analysis of the Relationship between Competitive Strategy, Information Technology and Financial Performance', *Journal of Management Information Systems*, 7(1), pp. 47-64.

Galliers, R. (1992). 'Choosing Information Systems Research Approaches', In Galliers, R. (Ed.) *Information Systems Research: Issues, Methods and Practical Guidelines*. Blackwell Scientific Publications, pp. 144-166.

Galliers, R. D. (1991) 'Strategic information systems planning: myths, reality and guidelines for successful implementation', *European Journal of Information Systems*, 1(1), pp. 55-64.

Galliers, R. D. (1985). *In Search for a Paradigm for Information System Research*. IFIP WG 8.2 Colloquium, Manchester, Amsterdam, North Holland.

Gartner, n.d. http://www.gartner.com/it-glossary/it-governance (Accessed: 27th June 2015.

Gavrea, C., Ilies, L. and Stegerean, R. (2011) 'Determinants of organizational performance: the case of Romania' *Management and Marketing*, 6(2), pp. 285-300.

Gelfand, M. J., Erez, M. and Aycan, Z. (2007) 'Cross-cultural organizational behavior', *Annual Review of Psychology*, 58(1), pp. 479-514.

Gerow, J., Bennett, Thatcher, J. and Grover, V. (2015) 'Six types of IT-business strategic alignment: an investigation of the constructs and their measurement', *European Journal of Information Systems*, 24(5), pp. 465-491.

Globerson, S. (1985) 'Issues in developing a performance criteria system for an organization', *International Journal of Production Research*, 23(4), pp. 639-646.

Grant, K., Hackney, R. and Edgar, D. (2012) 'Aligning IT/IS with business strategy re-visited: a view from complex adaptive systems', *International Journal on IT/Business Alignment and Governance,* 1(3), pp. 1-18.

Greenley, G. (1995) 'Market orientation and company performance: empirical evidence from UK companies', *British Journal of Management*, 6(1), pp.1-13.

Gefen, D. and Keil, M. (1998) 'The impact of developer responsiveness on perceptions of usefulness and ease of use: an extension of the technology acceptance model', *The Database for Advances in Information Systems*, 29(2), pp. 35-49.

Goedvolk, J. G. (1999) 'Integrated Architecture Framework', *White Paper,* Cap Gemini White Paper, Cap Gemini.

Gutierrez, A. and Lycett, M. (2011) IS Alignment Factors: Dynamic Relationships at Strategic, Tactical and Operational Level. *UK Academy for Information Systems Conference Proceedings*: 12th-13th April, Oxford, UK.

Gu, J.-C., Lee, S.-C. and Suh, Y.-H. (2009) 'Determinants of behavioral intention to mobile banking', *Expert Systems with Applications,* 36(9), pp.11605-11616.

Gutierrez, A., Orozco, J. and Serrano, A. (2009) 'Factors affecting IT and business alignment: a comparative study in SMEs and large organisations', *Journal of Enterprise Information Management*, 22(2), pp. 197–211.

Hackney, R., Burn, J., Dhillon, G. (2000) 'Challenging Assumptions for strategic information systems planning: Theoretical perspectives', *Association of Information Systems,* 3(9), pp. 2-24.

Hair, J. F., Black, W. C., Babin, B. J. and Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). Englewood Cliffs: Prentice Hall.

Halawi, L. and McCarthy, R. (2008) 'Measuring students perceptions of blackboard using the technology acceptance model: a PLS approach', *Issues in Informaton Systems*, 6(2), pp. 95-102.

Han, S. (2005) *Understanding User Adoption of Mobile Technology: Focusing on Physicians in Finland*, Doctoral dissertation*,* Abo Akademi University Turku Centre for Computer Science; Finland.

Hansen, G. S. and Wernerfelt, B. (1989) 'Determinants of firm performance: The relative importance of economic and organizational factors', *Strategic Management Journal*, 10(5), pp. 399-411.

Harindrath.G, et al, (2008) *ICT in Small Firms: Factors Affecting the Adoption and Use of ICT in Southeast England SMEs.* England:University of London.

Henderson, J. C. and Venkatraman, N. (1993) 'Strategic Alignment: Leveraging Information Technology for Transforming Organisations,' *IBM Systems Journal*, 32(1), pp. 472-484.

Henderson, J. and Venkatraman, N. (1999) 'Strategic alignment: leveraging Information Technology for transforming organisations', *IBM Systems Journal*, 38(2), pp. 472-484.

Hittleman, D. R. and Simon, A. J. (1997). *Interpreting educational research: An introduction for consumers of research*. Prentice-Hall, Inc., One Lake St., Upper Saddle River, NJ 07458.

Hsaio, R. and Ormerod, R., (1998) 'A New Perspective on the Dynamics of IT-Enabled Strategic Change', *Information Systems Journal*, 8(1), pp. 21-52.

Hofstede, G. (1997) *Cultures and rganisations: Software of the Mind*. London: Mc Graw Hill.

Hofstede, G. (1980) *Culture's Consequences: International Differences in Work Related Values*, Sage, Beverly Hills, CA.

Hu, P.J., Chau, P.Y.K., Liu, O.R., Sheng, K. and Yan T., (1999) 'Examining the technology acceptance model using physician acceptance of telemedicine technology', *Journal of Management Information Systems*, 16(2), pp. 91-112.

Hussain, H., King, M. and Cragg, P. (2002) 'IT Alignment in Small Firms', *European Journal of Information Systems*, 11(1), pp.108–127.

Igbaria, M., Zinatelli, N., Cragg, P. and Cavaye, A. (1997) 'Personal computing acceptancefactors in small firms: a structural equation model', *MIS Quarterly*, 21(3), pp. 279-302.

Ilhaamie, A. G. A. (2010) 'Service quality in Malaysian public service: some findings', *International Journal of Trade, Economics and Finance*, 1(1), pp. 40-45.

Irani, Z. (2002) 'Information systems evaluation: Navigating through the problem domain', *Information Management,* 40(1), pp.11–24.

Irani, Z. (2008) 'Editorial: Information systems evaluation: what does it mean?', *Construction Innovation: Information, Process, Management*, 8(2), pp. 88-91.

Islam, A., Khan, M., Ramayah, T. and Hossain, M. (2011) 'The Adoption of Mobile Commerce Service among Employed Mobile Phone Users in Bangladesh: Self-efficacy as A Moderator'*, International Business Research,* 4(2), pp. 80-89.

Ismail, N. A. and King, M. (2014) 'Factors influencing the alignment of accounting information systems in small and medium sized Malaysian manufacturing firms', *Journal of Information Systems and Small Business*, 1(1-2), pp. 1-20.

Ittner, C.D. and Larker, D.F. (2003) 'Coming up short on financial performance measurement', *Harvard Business Review*, November, pp. 88-95.

Jahangir, N. and Begum, N. (2008) 'The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking' *African Journal of Business Management,* 2(1), pp. 32-40.

Jackson, A., Boswell, K. and Davis, D. (2011) 'Sustainability and triple bottom line reporting– What is it all about', *International Journal of Business, Humanities and Technology*, 1(3), pp. 55-59.

Jakson, C.M., Chow, S. and Leitch, R.A. (1997) 'Toward an understanding of the behavioral intention to use an information system', *Decision Sciences*, 28(2), pp.357-389.

Jarvenpaa, S. L. and Ives, B., (1994) 'The global network organisation of the future: Information management opportunities and challenges', *Journal of Management Information Systems*, 10(4), pp. 25-57.

Johnson, B. and Christensen, L. (2008) *Educational research: Quantitative, qualitative, and mixed approaches*. Sage.

Johnston, K. D. and Yetton, P. W. (1996) 'Integrating Information Technology divisions in a fit, compatibility and models of change', *Journal of Strategic Information Systems*, 5(3), pp. 189–211.

Karahanna, E., Straub, D.W. and Chervany, N.L. (1999) 'Information technology adoption across time: a cross-sectional comparison of pre-adoption and post-adoption beliefs', *MIS Quarterly*, 23(2), pp.183–213.

Kalika, M., Ledru, M., Isaac, H., Beyou, C., and Josserand, E., (2003) *Le e-management: quelles transformations pour l' entreprise ?,* Editions Liaisons.

Kanter, R. M. (1989) 'The new managerial work', *Harvard Business Review*, 67(6), pp. 85-92.

Kaplan, R.S. and Norton, D.P. (1992) 'The balanced scorecard – measures that drive performance'. *Harvard Business Review*, January–February, Boston, MA: Harvard Business School Press.

Kaplan, R.S. and Norton, D. P. (1996). *Balanced Scorecard – Translating Strategy into Action*. Boston, MA: Harvard Business School Press.

Kast, F. and Rosenzweig, J. (1973) *Contingency Views of Organisation and Management*. Chicago: Science Research Associates.

Kearns, G. S. and Lederer A. L. (2003) 'A resource-based view of strategic IT alignment: How knowledge sharing creates competitive advantage', *Decision Sci*ences, 24(1), pp. 1-29.

Kearns, G. and Lederer, A. (2000) 'The effect of strategic alignment on the use of IS-based resources for competitive advantage', *Journal of Strategic Information Systems*, 9(4), pp. 265–293.

Kearns, G., and Sabherwal, R. (2007) 'Strategic alignment between business and Information technology: a knowledge-based view of behaviors, outcome, and consequences', *Journal of Management Information System*, 23(3), pp. 129-163.

Kefi, H. and Kalika, M. (2005) 'Survey of Strategic Alignment Impacts on Organisational Performance in International European Companies', *Proceedings of the 38th Hawaii International Conference on System Sciences*, Hawaii, 2005.

Keil, M., Beranek, P.M. and Konsynski, B.R. (1995) 'Usefulness and ease of use: field study evidence regarding task considerations', *Decision Support Systems*, 13(1), pp.75-91.

Kenny, D. (2012) 'Meaasuring Model fit', *Davied Kenny Blog*, 24th Nov. Available at http://davidakenny.net/cm/fit.htm

Khalifa, M. and Shen, N.K. (2008) 'Explaining the adoption of transactional B2C mobile commerce', *Journal of Enterprise Information Management,* 21(2), pp. 110-124.

Khan, A. M. (2013) 'An Integrated Framwork to Bridging the Gap Between Business and Information Technology: A Co-Evolutionary Approach', *Canadian Journal of Pure and Applied Sciences*, 7(3), pp. 2611-2618.

Kim, K.K. and Prabhakar, B. (2004) 'Initial trust and the adoption of B2C e-commerce: The case of internet banking' *ACM SIGMIS Database*, 35(2), pp. 50-64.

King, M., Cragg, P. and Hussain, H. (2000) 'IT Alignment and Organizational Performance in Small Firms', *Proceedings of 8th European Conference on Information Systems:Vienna, 3rd-5th July,* pp. 151-157.

Kline, R. (2011*) Principles and Practice of Structural Equation Modeling, Third Edition (Methodology in the Social Sciences)*. New York: Guilford Press.

Knight, D., Pearce, C. L., Smith, K. G., Olian, J. D., Sims, H. P., Smith, K. A. and Flood, P. (1999) 'Top Management Team Diversity, Group Process, and Strategic Consensus', *Strategic Management Journal,* 20(5), pp. 445-465.

Koufaris, M. (2002) 'Applying the technology acceptance model and flow theory to online consumer behavior', *Information Systems Research,* 13(2), pp. 205–223.

Kurniawan, N. B.; Suhardi (2013) 'Enterprise Architecture design for ensuring strategic business IT alignment (integrating SAMM with TOGAF 9.1)', *Rural Information and Communication Technology and Electric-Vehicle Technology (rICT and ICeV-T) Joint International Conference: Bandung, 26th-28th Nov,* pp. 1-7.

Kurti, I., Barolli, E. and Sevrani, K. (2014) 'The effective IT Governance in the Albanian Public Sector- A Critical Success Factors Approach', *The Electronic Journal of Information Systems in Developing Countries*, 63(6), pp. 1-22.

Kuwaiti, M. and Kay, J. (2000) 'The role of performance measurement in business process re-engineering', *International Journal of operation and production management*, 20(12), pp. 1411-1423.

Lawson, T. (2004) *A conception of Ontology*, Unpublished manuscript, University of Cambridge, Cambridge, UK.

Lee, G.G., Lin, H.F. and Pai, J.C. (2005) 'Influence of environmental and organizational factors on the success of internet-based inter-organizational system planning', *Internet Research: Electronic Networking Applications and Policy*, 15(5), pp. 527-543.

Lefebvre, L., Langley, A., Harvey, J. and Lefebvre, E. (1992) 'Exploring the Strategy-Technology Connections in Small Manufacturing Firms', *Production and Operations Management*, 1(3), pp.1-17.

Legris, P., Ingham, J. and Collerette, P. (2003) 'Why do people use information technology? A critical review of the technology acceptance model', *Information and Management*, 40(3), January, pp. 191-204.

Lehtonen, R., and Pahkinen, E. (2004). *Practical Methods for Design and Analysis of Complex Surveys*. John Wiley and Sons.

Leonard, J., and Seddon, P. (2012) 'A Meta-Model of Alignment', *Communications of the Association for Information Systems*, 31(1), pp. 231-258.

Leong, L. (2003) 'Theoretical Models in IS Research and the Technology Acceptance Model (TAM)', *Idea Group Inc*, pp.1-31.

Levy, M., Powell, P., and Yetton, P. (2011) 'Contingent Dynamics of IS Strategic Alignment in Small and Medium-Sized Enterprises', *Journal of Systems and Information Technology*, 13(2), pp.106-124.

Li, T. H., Ng, S. T. and Skitmore, M. (2013) 'Evaluating stakeholder satisfaction during public participation in major infrastructure and construction projects: A fuzzy approach', *Automation in Construction*, 29(1), pp. 123-135.

Lingle, J. H., and William A. S. (1996) 'From balanced scorecard to strategic gauges: is measurement worth it?', *Management review,* 85(3), pp. 56-61.

Lobur, J. M. (2011) 'The success of a COTS caseload management system in State Government', *IEEE Software*, 28(2), pp. 10-14.

Lopez-Nicolas, C. and Soto-Acosta, P. (2010) 'Analyzing ICT adoption and use effects on knowledge creation: An empirical investigation in SMEs', *International Journal of Information Management*, 30(6), pp. 521-528.

Lu, J., Liu, C., Yu, C.-S. and Yao, J.E. (2003) 'Exploring Factors Associated with Wireless Internet via Mobile Technology Acceptance in Mainland China', *Communications of the International Information Management Association,* 3(1), pp. 101-120.

Lu, H.P. and Su, P.Y.J. (2009) 'Factors affecting purchase intention on mobile shopping web sites', *Internet Research*, 19(4), pp. 442-458.

Luftman, J. (2014) *Strategic Alignment Maturity, Handbook on Business Process Management,* 2nd Ed, Berlin: Springer.

Luftman, J. N., Ben-Zvi, T., Dwivedi, R. and Rigoni, E. H. (2012) 'IT Governance: An alignment maturity perspective.', In W. Van Grembergen & S. De Haes (Eds.), *Business Strategy and Applications in Enterprise IT Governance,* pp. 87-101. Hershey, PA, USA: IGI Global.

Luftman, J., and Derksen, B. (2012) 'Key Issues for IT Executives 2012: Doing More with Less', *MIS Quarterly Executive*, 11(4), pp. 207-218.

Luftman, J. and Ben-Zvi, T. (2011) 'Key Issues for IT Executives 2011: Cautious Optimism in Uncertain Economic Times', *MIS Quarterly Executive*, 10(4), pp. 203-212.

Luftman, J. (1996) *Competing in the Information Age–Strategic Alignment in Practice*, Ed., New York: Oxford University press.

Luftman, J. N., Lewis, P. R. and Oldach, S. H. (1993) 'Transforming the Enterprise: The alignment of business and Information Technology strategies', *IBM Systems Journal*, 32(1), pp. 198–221.

Luftman, J. and Papp, R., (1995) 'Achieving and Sustaining Business-IT Alignment', *California Management Review*, 42 (1), 109-122.

Luftman, J. N., Papp, R. and Brier, T. (1999a) 'Enablers and Inhibitors of Business-IT Alignment', *Communications of the Association for Information Systems*, 1(11), pp. 1-33.

Luftman, J. N. (2000) 'Assessing Business-IT Alignment Maturity', *Communications of the Association for Information Systems*, 4(14), pp. 1-50.

Luftman, J., Bullen, C. V., Liao, D., Nash, E. and Neumann, C. (2004) *Managing the Information Technology Resource—Leadership in the Information Age*. Harlow: Pearson Education.

Luftman, J. and Kempaiah, R. (2007a) 'An update on Business-IT alignment: 'a line' has been drawn', *MIS Quarterly Executive*, 6(3), pp. 165-177.

Luo, X., Li, H., Zhang, J. and Shim, J.P. (2010) 'Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: an empirical study of mobile banking services', *Decision Support Systems*, 49(2), pp. 222-234.

Lynch, R. and Cross, K. (1991). *Measure Up – The Essential Guide to Measuring Business Performance*. London: Mandarin.

Mac Callum, K. and Jeffrey, L. (2013) 'The influence of students' ICT skills and their adoption of mobile learning', *Australasian Journal of Educational Technology*, 29(3), pp. 303-314.

MacCallum, R. C., Browne, M. W., and Sugawara, H. M. (1996) 'Power analysis and determination of sample size for covariance structure modeling', *Psychological Methods*, 1(1), pp. 130-149.

Madden, T. J., Ellen, P. S. and Ajzen, I. (1992) 'A comparison of the theory of planned behavior and the theory of reasoned action', *Personality and social psychology Bulletin*, 18(1), pp. 3-9.

Maes, R. (1999) 'A generic framework for Information Management', *Prima Vera Working Paper*, 3. [online] http://imwww.fee.uva.nl/~pv/PDFdocs/99-03.pdf (Accessed: 27 November 2012).

Maes, R., Rijsenbrij, D.,Truijens, O. and Goedvolk, H. (2000) 'Redefining business – IT alignment through a unified framework' *PrimaVera Working Paper, 19*. [online] http://dare.uva.nl/ar/record/92240 (Accessed 27 November 2012).

Mallat, N., Rossi, M., Tuunainen, V.K. and Oorni, A. (2009) 'The impact of use context on mobile service acceptance: the case of mobile ticketing', *Information and Management,* 46(3), pp. 190-195.

Marchewka, J.T. and Liu, C. (2007) 'An application of UTAUT Model for Understanding students perceptioin using Management software', *Communications of the IIMA,* 7(2), pp. 93-104.

Martinez, C. and Williams, C. (2010) 'National institutions, entrepreneurship and global ICT adoption: a cross-country test of competing theories', *Journal of Electronic Commerce Research*, 11(1), pp. 73-92.

Maisel, L. S. (1992) 'Performance measurement: the balanced scorecard approach', *Journal of Cost Management*, 6(2), pp. 47-52.

Marr, B., and Schiuma, G. (2003) 'Business performance measurement–past, present and future', *Management Decision*, 41(8), pp. 680-687.

Marshall, P. (2014). *Research Methods: How to Design and Conduct a Successful Project*. Hachette UK.

Marshall, M. N. (1997) 'Improving quality in general practice: Qualitative case study of barriers faced by health authorities', *British Medical Journal*, 319(1), pp. 164-167.

Martins, L. L. and Kambil, A. (1999) 'Looking Back and Thinking Ahead: Effects of Prior Success on Managers. Interpretations of New York Technology.' *Academy of Management Journal*, 42(6), pp. 652-661.

Martin, P. R. and Patterson, J. W. (2009) 'On measuring company performance within a supply chain', *International Journal of Production Research*, 47(9), pp. 2449-2460

Mathieson, K. (1991) 'Predicting user intentions: comparing the technology acceptance model with the theory of planned behavior', *Information Systems Research*, 2(3), pp.173-191.

McCoy, S. and Marks, P. (2001) 'Using electronic surveys to collect data: experiences from the field', 17th *AMCIS Proceedings*: Boston, 31st Dec, Paper 290.

McKeen, J. D. and Smith, H. (2003) *Making IT Happen: Critical issues in IT Management*, Chichester, Hoboken, NJ: Wiley.

Melville, N.P. (2010) 'Information systems innovation for environmental sustainability', *MIS Quarterly*, 34(1), pp. 1-21.

Mezghani, K. and Mezghani, L. (2014) 'Effects of Business Managers' Skills on Enterprise Resources Planning Strategic Alignment', *American Journal of Business and Management*, 3(1), pp. 15-20.

Mikalef, P, Pateli, A., Batenburg, R. and Wetering, R. (2014) 'Business alignment in the procurement domain: a study of antecedents and determinants of supply chain performance', *International Journal of Information Systems and Project Management*, 2(1), pp. 43-59.

Miller, C. and Cardinal, L. (1994) 'Strategic planning and firm performance: a synthesis of more than two decades of research', *Academy of Management Journal*, 37(1), pp. 49-65.

Miles, R. E. and Snow, C.C (1978) *Organisational Strategy, Structure and Processes*. McGraw-Hill, NY.

Mirzaee, A. (2014) 'Response Rate Statistics for Online Surveys- What Number You Should be Aiming For?', Fluid Surveys University, 8th Oct, Available at: http://fluidsurveys.com/university/response-rate-statistics-online-surveys-aiming/ (Accessed: 25th June 2015)

Mitchell, M., Curtis, A. and Davidson, P. (2008) 'Evaluating the Process of Triple Bottom Line Reporting; Increasing the Potential For Change', *Local Environment,* 13(2), pp. 67-80.

Moghavvemi, S., Hakimian, F., Feissal, T. and Faziharudean, T. M. (2012) 'Competitive Advantages Through It Innovation Adoption By SMEs'. *Socialinės technologijos/Social Technologies*, 2(1), pp. 24-39.

Morton, S. (1991) *The Corporation of the 1990s: Information Technology and Organisational Transformation*, New York: Oxford University Press.

Musmuliana, Y. and Mustaffa, Y. (2012) *Factors Influencing Organizational Performance in Metro Specialist Hospital, Sungai Petani, Kedah Darul Aman*, Doctoral dissertation, University Utara Malaysia, Malaysia.

Nafarrete, R. B. (2003). *Factors Affecting Organizational Performance NRD San Diego FY 1997-2000: A Systems Analysis*. Naval Postgraduate School Monterey CA.

Nakamura, A. and Warburton, W. (1998) '*Performance Measurement in the Public Sector', Canadian Business Economics*, 6(2), pp. 37-48.

Naryan S. and Awashti, H. (2014) 'IT Strategy: A Present Business Need', *International Journal of Engineering And Computer Science,* 3(5), pp. 5769-5772.

NASCIO (2006). '*Looking to the future:* Challenges and opportunities for government IT project management officers', *NASCIO Publications.* Available online at http://www.nascio.org/Publications/ArtMID/485/ArticleID/223/Looking-to-the Future-Challenges-Opportunities-for-Government-IT-Project-Management-Offices.

NASCIO (2007). 'IT Security Awareness and Training: Changing the Culture of State Government', *NASCIO Publications*. Available online at http://www.nascio.org/Publications/ArtMID/485/ArticleID/208/IT-Security-Awareness-and-Training-Changing-the-Culture-of-State-Government.

National Audit Office 2002. Available at http://www.nac.gov.bh.

Nanni, A.J., Dixon, J.R. and Vollmann, T.E. (1992) 'Integrated performance measurement: management accounting to support the new manufacturing realities', *Journal of Management Accounting Research*, 4, Fall, pp.1-19.

Neely, A., Adams, C. and Crowe, P. (2001) 'The performance prism in practice', *Measuring Business Excellence*, 5(2), pp. 6-13.

Neely, A. and Adams, C. (2001) 'The performance prism perspective', *Journal of Cost Management*, 15(1), pp.7-15.

Nysveen, H., Pedersen, P.E. and Thorbjørnsen, H. (2005) 'Intentions to use mobile services: antecedents and cross-service comparisons', *Journal of the Academy of Marketing Science*, 33(3), pp. 330-346.

O'Boyle, I. and Hassan, D. (2013) 'Organizational performance management: Examining the practical utility of the performance prism', *Organization Development Journal*, 31(3), pp. 51.

Odiit, Mary C. A., Mayoka, Geoffrey K., Rwashna, Agnes S., and Ochara, Nixon M. (2014) 'Alignment of Information Systems to Strategy in Health Sector Using a System Dynamic Approach', *Proceedings of the SAICSIT Annual Conference*: Centurion, South Africa, 29th Sep- 1st Oct, pp. 38-49.

Ojo, A., Shah, B. P. and Janowski, T. (2009) *Strategic IT Planning for Public Organisations*. Macao: United Nations University, International Institute for Software Technology.

Ohmae, K. (1983). *The Mind of the Strategist*. Harmondsworth: Penguin.

Ohmae, K. (1988) 'Planting for a global harvest', *Harvard Business Review*, 67(4), pp. 136-145.

O'Reilly, K., Goode, S. and Hart, D. (2010) 'Exploring mobile commerce intention: Evidence from Australia', *International Symposium on Communications and Information Technologies (ISCIT)*: Tokyo, 26th-29th Oct, pp. 1120-1125.

Orozco, J., Tarhini, A. and Tarhini, T. (2015) 'A framework of IS/business alignment management practices to improve the design of IT Governance architectures', *International Journal of Business and Management*, 10(4), pp.1-12

Osman, E. (2012) *Developing strategic information system planning model in Libya organisations* . Doctoral Dissertation, Plymouth University, Plymouth, UK.

Pai, F. Y. and Huang, K. I. (2011) 'Applying the Technology Acceptance Model to the introduction of healthcare information systems', *Technological Forecasting and Social Change*, 78(4), pp. 650-660.

Painter-Morland, M. (2006) 'Triple Bottom-Line Reporting as Social Grammar: Integrating Corporate Social responsibility and Corporate Codes of Conduct', *Business Ethics: A European Review,* 15(4), pp.352-364.

Palmer, J. W. and Markus, M. L. (2000) 'The Performance Impacts of Quick Response and Strategic Alignment in Specialty Retailing', *Information Systems Research*, 11(3), pp. 241–259.

Pan, S. L. and Scarbrough, H. (1998) 'A Socio- Technical View of Knowledge-Sharing at Buckman Laboratories', *Journal of Knowledge Management*, 2(1), pp. 55-66.

Papp, R. (1995) *Determinants of Strategically Aligned Organisations: A Multiindustry, Multi-perspective Analysis*, PhD Dissertation, Hoboken. New Jersey: Stevens Institute of Technology.

Papp, R. (1999) 'Business-IT alignment: productivity paradox', *Industrial Management and Data Systems*, 99(8), pp. 367-373.

Papp, R. (2001) *Strategic Information Technology: Opportunities for Competitive Advantage*. IDEA Publishing Group.

Parasuraman, R. (1986) 'Vigilance, Monitering and Search', In Boff, K., Kaufman, L. and Thomas, J. (Eds), Handbook of Perception and Human Performance: New York, Wiley, pp. 43-49.

Parasuraman, A., Zeithaml, V. A. and Berry, L. L. (1994) 'Alternative scales for measuring service quality: a comparative assessment based on psychometric and diagnostic criteria', *Journal of retailing*, 70(3), pp. 201-230.

Parisi, C. (2013) 'The impact of organisational alignment on the effectiveness of firms' sustainability strategic performance measurement systems: an empirical analysis', *Journal of Management and Governance*, 17(1), pp. 71-97.

Pavlou, P.A. (2003) 'Consumer acceptance of electronic commerce – integrating trust and risk with the technology acceptance model', *International Journal of Electronic Commerce,* 7(3), pp. 101-34.

Pedersen, P.E. (2005) 'Adoption of mobile internet services: an exploratory study of mobile commerce early adopter', *Journal of Organizational Computing and Electronic Commerce,* 15(3), pp. 203-221

Pereira, J., Martins, J., Santos, V. and Gonçalves, R. (2014) 'CRUDi framework proposal: financial industry application', *Behaviour and Information Technology*, 2014 [online] DOI:10.1080/0144929X.2014.914976 (Accessed 23 May 2014).

Pennings, J. M. and Goodman, P. S. (1977) 'Toward a workable framework'. In Goodman, P.S. and Pennings, J.M. (Eds.), *New Perspectives on Organisational Effectiveness*. San Francisco: Jossey-Bass.

Pelletier, c. and Raymon, L. (2014) 'IT Strategic Alignment Process: A Dynamic Capabilities Conceptualization', *Twentieth Americas Conference on Information Systems,* Savannah: Georgia, 7th-9th Aug, pp. 1-11.

Peppard, J., Galliers, R. D. and Thorogood, A. (2014) 'Information systems strategy as practice: Micro strategy and strategizing for IS' *Journal of Strategic Information Systems*, 23(1), 1-10.

Petter, S., DeLone, W. and McLean, E. (2008) 'Measuring information systems success: models, dimensions, measures, and interrelationships', *European Journal of Information Systems*, 17(3), pp. 236-263.

Powell, T. C. (1992) 'Organisational Alignment as Competitive Advantage', *Strategic Management Journal*, 13(2), pp. 119-134.

Porter, M. E., (1987) 'From competitive advantage to corporate strategy', *Harvard Business Review,* 65(3), pp. 43-59.

Porter, M.E. (1996) 'What is strategy?', Harvard Business Review, November–December, 74(6), pp. 61-78.

Porter, M.E. and Millar, V., (1985) 'How information gives you competitive advantage', *Harvard Business Review,* 63(4), pp. 149-160.

Potnis, D.D. (2010) 'Measuring e-Governance as an Innovation in the Public Sector', *Government Information Quarterly*, 27(1), pp. 41-48.

Punch, K. (2003). *Survey Research: The Basics*. Sage, London, UK.

Propper, C. and Wilson, D. (2003) 'The use and usefulness of performance measures in the public sector', *Oxford Review of Economic Policy*, 19(2), pp. 250-267.

Rafique, M. (2013) 'Bahrain Adopts Unified Benchmarking for KPIs', Available online http://www.twentyfoursevennews.com/headline/bahrain-adopts-unified-benchmarks-for-kpis/

Ramos-Garza, C. (2009) 'TMT Strategic Consensus in Mexican Companies', *Journal of Business Research,* 62(9), pp. 854-60.

Rea, L. M. and Parker, R. A. (2012). *Designing and Conducting Survey Research: A Comprehensive Guide*. John Wiley and Sons, US.

Reich, B. and Benbasat, I. (1996) 'Measuring the linkage between business and IT objectives' *MIS Quarterly*, 20(1), pp. 767–783.

Reich, B. and Benbasat, I. (2000) 'Factors that influence the social dimension of alignment between business and Information Technology objectives', *MIS Quarterly*, 24(1), pp. 81-113.

Reix, R. (2002) 'Systèmes d'information et performance de l'entreprise étendue', Chapter 19, in Rowe, F. (2002) *Faire de la recherche en système d'information*, Vuibert.

Richard, B. and Schaffer, R. (1982) 'Want productivity improvement? Manage it', *Administrative Management*, 43(8), pp. 22-27.

Richard, P. J., Devinney, T. M., Yip, G. S. and Johnson, G. (2009) 'Measuring organizational performance: Towards methodological best practice', *Journal of Management*, 35(3), pp. 718-804.

Rosemann M and vom Brocke J. (2014) 'The six core elements of business process management', In: vom Brocke J, Rosemann M (eds) *Handbook on Business Process Management*, vol.1, 2nd edn. Springer, Heidelberg, pp. 105-122.

Rudestam, K.E. and Newton, R.R., 1992. *Surviving your dissertation: a comprehensive guide to content and process*. Newbury Park, CA : Sage.

Sabherwal, R. and P. Kris, (1994) 'The Alignment between Organisational Critical Success Factors and Information Technology Capability in Academic Institutions', *Decision Sciences*, 25(2), pp. 301- 330.

Sabherwal, R. and Chan, Y. E. (2001) 'Alignment between business and IS strategies: a study of prospectors, analyzers and defenders', *Information Systems Research*, 12(1), pp. 11-33.

Sabherwal, R., Hirschheim, R. and Goles, T. (2001) 'The Dynamics of Alignment: Insights from a Punctuated Equilibrium Model', *Organisational Science*, 12(2), pp. 179–192.

Salim, A. and Arman, A. A. (2014) 'Development of assessment method for information technology and business', *Electrical Engineering and Computer Science (ICEECS), 2014 International Conference:* Hong Kong, 29th-31st Dec, pp. 53-58.

Santhanam, R. and Hartono, E. (2003) 'Issues in linking information technology capability to firm performance', *MIS Quarterly*, 27(1), pp.125-153.

Sekaran, U. (2000), *Research Methods for Business* (3ed). New York: New York: John Wiley and Sons, Inc.

Sarason, Y. and Tegarden, F. (2003) 'The erosion advantage of strategic planning', *Journal of Business and Management,* 9(1), pp. 1-21.

Sauer, C. and Burn, J. (1997) 'The Pathology of Strategic Alignment,' in Sauer, C.; Yetton, P.W. (1997) *Steps to the Future: Fresh Thinking on the Management of IT-*

Based Organisational Transformation, (eds.), Jossey-Bass, San Francisco, pp. 89-111.

Sayer, A. (1992). *Method in social science: A Realist Approach*. Routledge, London, UK.

Schwarz, C., Kefi, H., Schwarz, A., and Kalika, M. (2010). 'A Dynamic Capabilities Approach to Understanding the Impact of IT-Enabled Businesses Processes and IT-Business Alignment on the Strategic and Operational Performance of the Firm,' *Communications of the Association for Information Systems,* 26(1), pp. 57-84.

Scherbaum, C. A., Cohen-Charash, Y. and Kern, M. J. (2006) 'Measuring general self-efficacy A comparison of three measures using item response theory', *Educational and Psychological Measurement*, 66(6), pp. 1047-1063.

Sedera, D. and Gable, G. (2004) 'A factor and structural equation analysis of the enterprise systems success measurement model', *Proceedings of the Twenty-Fifth International Conference on Information Systems:* New york, 12th-15th Dec, pp. 676-682.

Segev, E. (1987) 'Strategy, strategy making, and performance in a business game', *Strategic Management Journal*, 8(6), pp. 565-577.

Sharma, S., Mukherjee, S., Kumar, A. and Dillon, W.R. (2005) 'A simulation study to investigate the use of cutoff values for assessing model fit in covariance structure models', *Journal of Business Research*, 58(1), pp. 935-943.

Sheppard, B. H., Hartwick, J. and Warshaw, P. R. (1988) 'The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research', *Journal of Consumer Research*, 15(3), pp. 325-343.

Shin, B. (2003) 'Telework Effectiveness: Task, Technology and Communication Fit Perspective', In K. Kangas (Ed.) *Business Strategies for Information Technology Management*. Hershey, PA: IRM Press, pp. 1-13.

Silvius, G. (2009) '*Alignment and strategy; the chicken or the egg*?', *CONF-IRM 2009 Proceedings.* Paper 5. [online] http://aisel.aisnet.org/confirm2009/5

Silvius G. (2007) 'Business and IT Alignment in theory and practice', Proceedings *of the 40th Hawaii International Conference on System Sciences,* Hawaii, 1st – 6th Jan, pp. 211-220.

Singletary, L.L.A., Akbulut, A.Y. and Houston, A.L. (2002) 'Innovation software used after mandatory adoption', *Eighth Americas Conference on Information Systems*: Dallas, 31st Dec, pp.1135-1138.

Slade, E. L., Williams, M. D., and Dwivedi, Y. K. (2014) 'Devising a research model to examine adoption of mobile payments: An extension of UTAUT2', *Marketing Review*, 14(3), pp. 311-336.

Slyke, C. V., Bélanger, F., Johnson, R. D. and Hightower, R. (2010) 'Gender-based differences in consumer e-commerce adoption', *Communications of the Association for Information Systems*, 26(1), pp. 18-34.

Smaczny, T. (2001) 'IS an alignment between business and IT the appropriate paradigm to manage IT in today's organization?', *Management Decision*, 39(10), pp. 797-802.

Smith, D. and Langfield-Smith, K. (2004) 'Structural equation modeling in management accounting research: critical analysis and opportunities', *Journal of Accounting Literature*, 23(1), pp. 49-86.

Snowden, S., Spafford, J., Michaelides, R. and Hopkins, J. (2006) 'Technology acceptance and m-commerce in an operational environment', *Journal of Enterprise Information Management,* 19(5), pp. 525-539.

So, H. J., Choi, H., Lim, W. Y. and Xiong, Y. (2012) 'Little experience with ICT: Are they really the Net Generation student-teachers?', *Computers and Education*, 59(4), pp. 1234-1245.

Sorrentino, M., (2004) 'The implementation of ICT in Public Sector Organisations', *17th Bled e-Commerce Conference,* Bled, June 21st – 23rd. Slovenia: e-global, pp. 1-11.

Sproull, L. and Kiesler, S. (1986) 'Reducing social context cues: Electronic mail in organizational communication', *Management Science*, 32(11), pp.1492-1512.

Stewart, R. A. (2008) 'A framework for the life cycle management of information technology projects: Project IT', *International Jounal of Project Management*, 26(2), pp. 203-212.

Subramanian, A.K., McAfee, A.T. and Getzinger, J.P. (1997) 'Use of the World Wide Web for multisite data collection', *Academic Emergency Medicine*, 4(8), pp.811-817.

Sun, S-Y. and Chen, Y-Y. (2008) 'Consolidating the strategic alignment model in knowledge management', *International Journal of Innovation and Learning*, 5(1), pp. 51-65.

Saunders, M., Lewis, P. and Thornhill, A. (2009), *Research Methods for Business Students*. 5th ed., Harlow: Prentice Hall.

Szajna, B. (1996) 'Empirical evaluation of the revised technology acceptance model', *Management Science*, 42(1), pp. 85-92.

Taiwo, A. A. and Downe, A. G. (2013). 'The Theory of User Acceptance and Use of Technology (UTAUT): A Meta-Analytic Review of Empirical Findings'. *Journal of Theoretical and Applied Information Technology*, 49(1), pp. 38-58.

Tallon, P. P. and Pinsonneault, A. (2011). 'Competing perspectives on the link between strategic information technology alignment and organizational agility: insights from a mediation model', *Mis Quarterly*, 35(2), pp. 463-486.

Tallon, P. P., Kraemer, K. L. and Gurnaxani, V. (2000) 'Executives Perceptions of the Business Value of Information Technology: A process-Oriented Approach', *Journal of Management Information Systems*, 16(4), pp. 145-173.

Taylor, S. and Todd, P.A. (1995), 'Assessing IT usage: The role of prior experience', *MIS Quarterly*, 19(4), pp. 561-570.

Taylor, S. and Todd, P. (1995) 'Understanding information technology usage: a test of competing models', *Information Systems Research*, 6(2), pp. 144-176.

Tellis, W. M. (1997) 'Application of a case study methodology', *The qualitative Report*, 3(3), pp. 1-19.

Teo, T. and King, W. (1996) 'Assessing the Impact of Integrating Business Planning and IS planning', *Information and Management*, 30(1), pp. 309-321.

Thompson, H. and Teo. (2004) 'Adel for web adoption', *Information Management*, 41(1), pp. 457-468.

Terre Blanche, M. and Durrheim, K. (1999) *Social constructionist methods*. In Terre Blanche, M. and Durrheim, K. Eds. *Research in Practice: Applied Methods for the Social Sciences*. Cape Town: University of Cape Town Press.

Cornford, T. and Smithson T. (2006) *Project Research in Information Systems: a Student's Guide*, Palgrave Macmillan, Basingstoke, UK.

Triandis, H. C. (1977) *Interpersonal Behavior*. Monterey: Brooks/Cole.

Trienekens, J.J.M., Kusters, R.J. and Cuenca, L. (2014) *Measuring business-IT alignment, framework development and case study results*. In Escalana, M.J., Aragón, G., Linger, H., Lang, M., Barry, C. and Schneider, C. (eds). *Information Systems Development: Improving Enterprise Communication.* Switzerland: Springer: 1-16.

Van de Ven, A. H. and Drazin, R. (1985) 'The Concept of Fit in Contingency Theory' *Research in Organisational Behavior*, 7(1), pp. 333-365.

Vargas, N., Johannesson, P. and Rusu, L. (2010) 'A unified strategic business and IT alignment model: A study in the public universities of Nicaragua', *AMCIS*: Lima, Peru, 12th-15th Aug, paper 212.

Venkatesh, V., Thong, J. Y. and Xu, X. (2012). 'Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology', *MIS quarterly*, 36(1), pp. 157-178.

Venkatesh, V., Morris, M. G., Davis, G. B. and Davis, F. D. (2003) 'User acceptance of Information Technology: toward a unified view', *MIS Quarterly*, 27(3), pp. 425-478.

Venkatesh, V. and Davis, F. D. (2000) 'A theoretical extension of the technology acceptance model: Four longitudinal field studies', *Management Science*, 46(2), pp. 186-204.

Venkatesh, V. and Morris, M.G. (2000) 'Why do not men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior', *MIS Quarterly*, 24(1), pp. 115-139.

Venkatesh, V. and Davis, F.D. (1996) 'A model of the antecedents of perceived ease of use: development and test', *Decision Sciences* 27(3), pp. 451-481.

Venkatraman, N. (1989) 'The Concept of Fit in Strategy Research: Toward Verbal and Statistical Correspondence', *Academy of Management Review*, 14(3), pp. 423-444.

Venkatraman, N. (1985) 'Strategic Orientation of Business Enterprises: The Construct and its Measurment', *Management Science*, 35(8), pp. 942-962.

vom Brocke, J., Schmiedel T., Recker J., Trkman P., Mertens W. and Viaene S. (2014) 'Ten principles of good business process management', *Business Process Management* Journal , 20(4), pp. 530-548.

Walter, J., Kellermanns, F. W., Floyd, S. W., Veiga, J. F., and Matherne, C. (2013). Strategic alignment: A missing link in the relationship between strategic consensus and organizational performance. *Strategic Organization*, 11(3), pp. 304-328.

Wang, H. (2014) 'Theories for competitive advantage', In H. Hasan (Eds.), *Being Practical with Theory: A Window into Business Research*. Australia: Wollongong, pp. 33-43.

Wei, T.T., Marthandan, G., Chong, A.Y.-L., Ooi, K.-B. and Arumugam, S. (2009) 'What drives Malaysian m-commerce adoption-An empirical analysis', *Industrial Management and Data Systems,* 109(3), pp. 370-388.

Weiss, J. W. and Thorogood, A. (2011) 'Information technology (IT) / business alignment as a strategic weapon: A diagnostic tool'. *Engineering Management Journal,* 23(2), pp. 30-41.

Weill, P. and Broadbent, M. (1998) *Levering the New Infrastructure: How Market Leaders Capitalize on Information Technology*. Cambridge, MA. Harvard Business School Press.

Wild**,** K. and MnCube**,** S. (1996) **'**Information and communication policy: Issues and initiatives on South Africa**',** *Information Technology for Development***,** 7(4), pp. 183-194.

Wilkinson, A. and Willmott, H. (1995) 'Introduction'. In Wilkinson, A. and Willmott, H. (Eds.) *Making Quality Critical: New Perspectives on Organizational Change.* London: Routledge, pp. 1-32.

Wilson, A. D., Baptista, J. J. and Galliers, R. D. (2013) 'Performing Strategy: Aligning Processes in Strategic IT', *Proceedings of the 34th International Conference on Information Systems*: Milan, Italy, 15th-18th Dec, pp. 1-16.

World Bank (n.d.) http://www.worldbank.org/depweb/english/sd.html viewed on 18th November 2015.

Wright, B.R.E. (1998) 'Behavioral Intentions and Opportunities among Homeless Individuals: A Reinterpretation of the Theory of Reasoned Action', *Social Psychology Quarterly,* 61(4), pp. 271-286.

Wu, J. and Wang, S. (2005) 'What drives mobile commerce? An empirical evaluation of the revised technology acceptance model Science Direct', *Information and Management,* 42(1), pp. 719-729.

Xia, W. and King, W.R. (2002) 'Determinants of Organizational IT Infrastructure Capabilities', *University of Minnesota, MIS Research Center Working Papers*.

Xue, L., Ray, G. and Sambamurthy, V. (2012) 'Efficiency of Innovation: How do industry environments moderate the effects of firms' IT asset portfolios?', *MIS Quarterly,* 36(2), pp. 509-528.

Yayla, A. A. and Hu, Q. (2012). 'The impact of IT-business strategic alignment on firm performance in a developing country setting: exploring moderating roles of environmental uncertainty and strategic orientation'. *European Journal of Information Systems*, 21(4), pp. 373-387.

Yayla A. A. and Hu, Q. (2009) 'Antecedents and drivers of IT-business strategic alignment: Empirical validation of a theoretical model' *ECIS Proceedings*, Verona, June 8-10. pp. 158-169. Available at http://aisel.aisnet.org/ecis2009/56/ (Assessed: 14 May 2013).

Yu, C. S. (2012) 'Factors affecting individuals to adopt mobile banking: Empirical evidence from the UTAUT model', *Journal of Electronic Commerce Research*, 13(2), pp. 104-121.

Yun, G. W. and Trumbo, C. W. (2000) 'Comparative Response to a Survey Executed by Post, E‐mail, and Web Form', *Journal of Computer‐Mediated Communication*, 6(1), pp.1-19.

Yusuf, A. and Saffu, K. (2009) 'Planning practices, strategy types and firm performance in the Arabian Gulf region', *Education, Business and Society, Contemporary Middle Eastern Issues*, 2(3), pp. 203-218.

Zaid, Abdel Nasser H. (2012) 'Success Model for Evaluating Information System in Public Sectors', *Journal of Emerging Trends in Computing and Information Sciences*, 3(6), pp. 814-825.

Zajac, E. J., Kraatz, M. S. and Bresser, R. K. F. (2000) 'Modeling the Dynamics of Strategic Fit: A Normative Approach to Strategic Change', *Strategic Management Journal,* 21(4), pp. 429-453.

Zhang, H., Cocosila, M. and Archer, N. (2010). 'Factors of adoption of mobile information technology by homecare nurses: a technology acceptance model 2 approach', *Computers Informatics Nursing*, 28(1), pp. 49-56.

Appendices

Appendix (1) Survey

Introduction to the survey

The strategic alignment of business strategies and information technology strategies has become very important for organisations. This research aims to measure the level of this alignment and the factors affecting it.

Your full participation is crucial for the validity of the results and your response will reduce the percentage of errors related to the survey. Individuals will not be identified by name in any analyses or reports pertaining to the study.

The survey includes four sections as follow:

Section A – General Information

Q.1 To which of the following business units you belong?

- IT
- Management/ Core Business/ Planning
- Both

Q.2 Service Provided by your organisation to the Public (Please select from the following):

- Administrative Services
- Medical Services
- Educational Services
- Legal Services (authorization, permissions.. ext.)
- Financial
- Housing
- Other _____

Section B - The level of Strategic alignment of business and information technology

This section seeks to measure the alignment of IT strategies and business strategies in your organisation. Please select the level that best evaluate the situation in your organisation by using a 1 to 5 Likert scale, Where 1= Very low, 5= Vey High.

Strategic Alignment	Level of Alignment

Q.3 COMMUNICATIONS	1	2	3	4	5
IT understands the organisation's business environment (e.g., its customers, competitors, processes, partners/alliances)					
Business departments understands the IT environment (e.g., its current and potential capabilities, systems, services, processes)					
Organisational learning occurs through formal, unifying, bonding methods, with feedback measures to monitor and promote effectiveness of learning.					
The IT and business communication style is informal and flexible					
There is formal knowledge sharing at the functional unit level, at the corporate level, and with business partners/alliances.					
We regularly use liaisons to facilitate the transfer of IT knowledge to the business and external partners and business knowledge to IT.					

Q.4 COMPETENCY	1	2	3	4	5
We use a balancing metrics by linking Business and IT metrics. These metrics are extended to our external partners (e.g., vendors, outsourcers, customers).					
We have service level agreements between the IT and functional departments and our external partners/alliances.					
We routinely perform formal benchmarks and have a regulated process in place to take action and measure the changes. (e.g., environmental scanning, data gathering and analysis, determining best practices)					
We routinely assess and/or review IT investments and have a formal process in place to make changes based on the results and measure					
We have well established IT-Business continuous improvement practices and effectiveness measures in place					
The demonstrated contribution that the IT function has made to the accomplishment of the organisation's strategic goals is very strong					

Q.5 GOVERNANCE	1	2	3	4	5
We do formal strategic business planning at the functional unit, across the enterprise, and with our business partners/alliances with IT participation.					
We do formal strategic IT planning at the functional unit, across the enterprise, and with our business partners/alliances.					
Our IT investment decisions are primarily based on IT's ability to create competitive advantage enhance performance. Our business partners see value.					
We have formal, regular committee meetings with demonstrated effectiveness that include IT and strategic business partners sharing decision-making responsibilities.					
Our IT project prioritization process is usually mutually determined between senior and mid-level IT and business management and with consideration of the priorities of any business partners/alliances					
The ability of the IT function to react/respond quickly to the organisation's changing business needs is very strong					

Q.6 PARTNERSHIP	1	2	3	4	5
IT is perceived by the business as a partner with the business that co-adapts/improvises in bringing value to the firm					
The role of IT in strategic business planning is co-adaptive to enable/drive strategic objectives					
Risks and rewards are always shared and we have formal compensation and reward systems in place that induce managers to take risks.					
We have defined programs to manage our relationships and both IT and the business comply with them, and we are continuously improving them.					
The relationship between IT and business is a long-term partnership and IT is a valued service provider.					
Our IT-based initiatives often have a senior level IT and the CEO as the business/sponsor champion					

Q.7 SCOPE & ARCHITECTURE	1	2	3	4	5
Our primary systems are business strategy enablers/drivers (IT is a catalyst for changes in the business strategy)					
Our IT standards are defined and enforced across functional units, and with joint coordination among our strategic business partners/alliances					
The components of our IT infrastructure are evolving with our business partners					
Most of the time, a business or IT change is transparent across the organisation and to our business partners/alliances					
Our IT infrastructure is viewed as a resource to enable and drive fast response to business and technology changes					

Q.8 SKILLS	1	2	3	4	5
Innovation is strongly encouraged at the functional unit, corporate level, and with business partners/alliances					
Top management makes our important IT decisions across the organisation with equal influence from our business partners/alliances.					
Change readiness programs are in place at the corporate level and we are proactive and anticipate change.					
Job transfers regularly occur for all position levels not only within the functional units but also at the organisational level.					
Education and cross training is practiced across the organisation, and with business partners/alliances.					
Trust and confidence that exist across IT and business units in our organisation, is extended to external customers and partners.					
Effective programs are in place to attract and retain the best IT professionals with both technical and business skills					

Section C – The Factors Affect Strategic Alignment

This section seeks to assess the factors that affect the alignment of information technology strategies and business strategies in public organisations. Please response by indicating the extent to which each statement is applicable in your organisation. Where 1= strongly disagree, 5= strongly agree.

	Q.9 IT Acceptance	1	2	3	4	5
Perceived Usefulness	IT increases productivity					
	IT increases job performance					
	IT enhances effectiveness on the job					
Perceived Ease of Use	Learning to operate software, hardware and systems is easy					
	It is easy to employ IT in doing tasks					
	It usually takes a lot of effort to be skillful at using IT					

Q.10 Prior IS success: The **PREVIOUSLY** adopted IS or IT projects have assisted in:	1	2	3	4	5
a) Reducing the costs of the organisation					
b) Fulfilling staff requirements					
c) Increasing the overall productivity					
d) Improving the outcomes/ outputs					
e) Increasing the organisational capacity					
f) Collaborating with e-governments activities					
g) Changing the business processes					

Section D – Organisational Performance

This section seeks to assess the organisational performance of your organisations. Please response by indicating the extent to which you agree or disagree with each statement. Where 1= strongly disagree, 5= strongly agree.

Q. 11 **Organisational Performance:** Strategies that are **CURRENTLY** adopted in your organisation have assisted in:		1	2	3	4	5
Stakeholder Satisfaction	Delivery of services that meet customers' needs					
	New Services Development					
	Decrease in clients' complain					
	Improve the outcomes/ outputs					
Stakeholder Contribution	Increase in customer retention and loyalty					
	Increase the level of collaboration with/from e-government					
	Increase the level of sponsorship from private organisations or NGOs					
	Increase the level of support from policy makers and national committees					
Strategies	Cost reduction					
	Cost control					
	Achievement of strategic goals					
	Attain timely decision making					
Processes	Increase responsiveness to clients requirements					
	Enhancement in business processes					
	Efficient flow of information between departments					
	Increase in the cooperation between departments					
Capabilities	Increase in innovation capabilities					
	Increase in organisational productivity					
	Development of effective training programs					
	Increase the organisational capacity					

Appendix (2) Letter to the Organisations

Dear _____

Based on the telephone conversation we had this morning, I would like to thank you for your kind cooperation and willingness to assist in providing the views of _____ respected executives regarding a research I am honored to conduct in the context of Bahrain's public organisations.

I would like to inform that the research currently conducted is titled "The Impact of Strategic Alignment on Organisational Performance". The research is carried out for the purposes of a PhD thesis. As part of it I am required to collect data from the selected context (i.e. Bahrain).

Hence, I am sending this e-mail to get your kind approval to collect data through the attached questionnaire. It would be of invaluable help if **the directors and/or the respected head of departments and executives** could kindly participate by providing me with responses. The questionnaire was designed to be answered by planning executives and other executives or seniors who are responsible for planning, budgeting and allocating IT resources.

By sending this I am also confirming that the questionnaire is **ethically approved** by the ethical committee in Brunel University by which -as a researcher- I am obligated to ensure that all participants and organisations will be **completely anonymous, and all replies will be used solely for the purposes of this research.**

Although entirely optional, participation would be highly appreciated.

Sincerely,

Muneera Mohamed Al Khalifa

PhD Researcher

Brunel University London

Appendix (3) Ethical Approval

Below is the Ethical Approval received via an email letter from Brunel Business School Research Ethics Committee.

RE: ethics

Natasha Slutskaya on behalf of bbs-srec **Sent:**Tuesday, January 07, 2014 11:20 PM **To:** Muneera Al-Khalifa

Dear Muneera

The school's research ethics committee has considered the form resubmitted by you. Acting under delegated authority, the committee is satisfied that there is no objection on ethical grounds to the proposed study. Approval is given on the understanding that you will adhere to the terms agreed with participants and to inform the committee of any change of plans in relations to the information provided in the application form.

Best regards

Natasha

https://cas.brunel.ac.uk/owa/?ae=Item&t=IPM.Note&id=RgAAAAC45...ySfmTaKWEAAAAAPaPAAAJ&a=Print&pspid=_1448741913205_718323638 Page 1 of 1

Appendix (4) Quantitative Analysis Results

Demographic Characteristics of the Research Sample

Table A.1:
Statistics

		Business Unit	Type of Service
N	Valid	163	163
	Missing	0	0
Mean		2.0368	3.3926
Median		2.0000	3.0000
Mode		2.00	1.00

Figure A.1

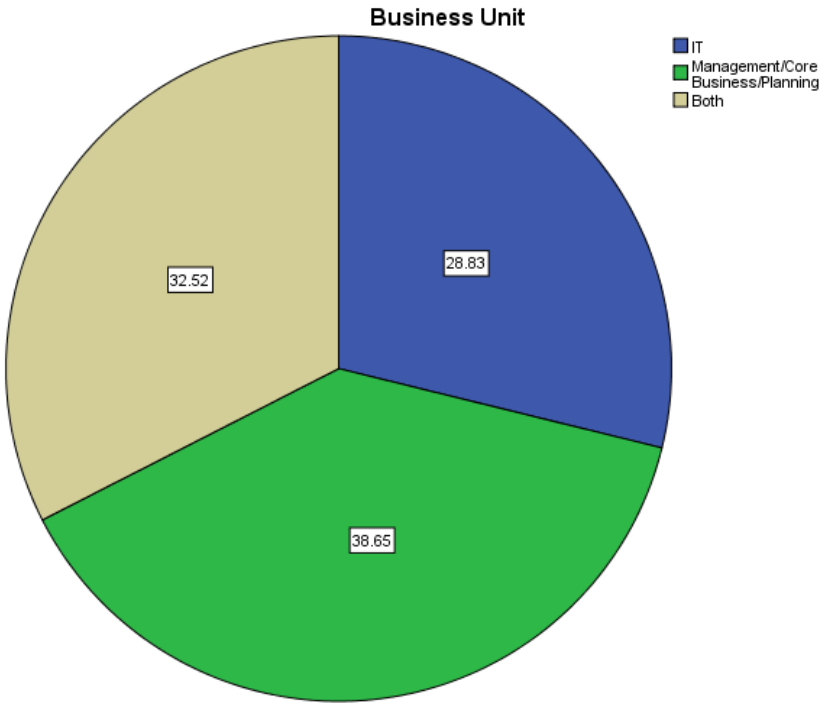
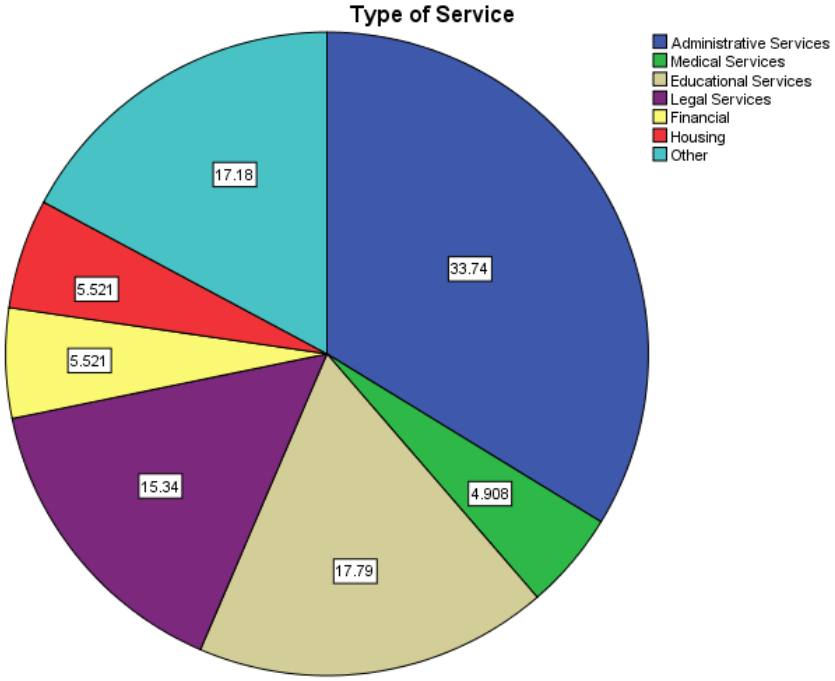


Figure A.2


Type of Service
Administrative Services
Medical Services
Educational Services
Legal Services
Financial
Housing
Other
33.74
4.908
17.79
15.34
5.521
5.521
17.18

Descriptive Analysis

Communications

Table A.2
IT understands the organisation's business environment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	7	4.3	4.3	4.3
	Low	25	15.3	15.3	19.6
	Moderate	40	24.5	24.5	44.2
	High	58	35.6	35.6	79.8
	Very high	33	20.2	20.2	100.0
	Total	163	100.0	100.0	

Table A.3
Business departments understands the IT environment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	6	3.7	3.7	3.7
	Low	34	20.9	20.9	24.5
	Moderate	49	30.1	30.1	54.6
	High	46	28.2	28.2	82.8
	Very high	28	17.2	17.2	100.0
	Total	163	100.0	100.0	

Table A.4
Organisational learning occurs through formal, unifying, bonding methods, with feedback measures to monitor and promote effectiveness of learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	5	3.1	3.1	3.1
	Low	39	23.9	23.9	27.0
	Moderate	46	28.2	28.2	55.2
	High	51	31.3	31.3	86.5
	Very high	22	13.5	13.5	100.0
	Total	163	100.0	100.0	

Table A.5
The IT and business communication style is informal and flexible

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	8	4.9	4.9	4.9
	Low	34	20.9	20.9	25.8
	Moderate	44	27.0	27.0	52.8
	High	58	35.6	35.6	88.3
	Very high	19	11.7	11.7	100.0
	Total	163	100.0	100.0	

Table A.6
There is formal knowledge sharing at the functional unit level, at the corporate level, and with business partners/alliances

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	5	3.1	3.1	3.1
	Low	45	27.6	27.6	30.7
	Moderate	39	23.9	23.9	54.6
	High	50	30.7	30.7	85.3
	Very high	24	14.7	14.7	100.0
	Total	163	100.0	100.0	

Table A.7
We regularly use liaisons to facilitate the transfer of IT knowledge to the business and external partners and business knowledge to IT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	8	4.9	4.9	4.9
	Low	30	18.4	18.4	23.3
	Moderate	49	30.1	30.1	53.4
	High	51	31.3	31.3	84.7
	Very high	25	15.3	15.3	100.0
	Total	163	100.0	100.0	

Figure A.3

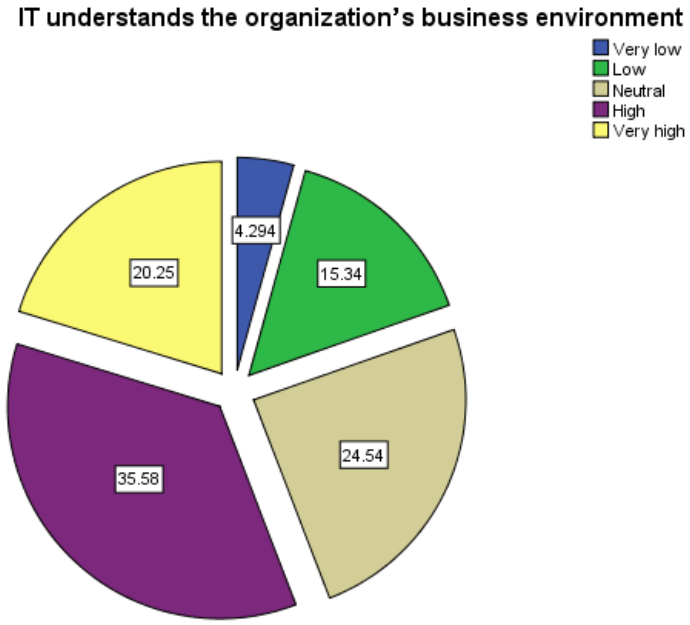


Figure A.4

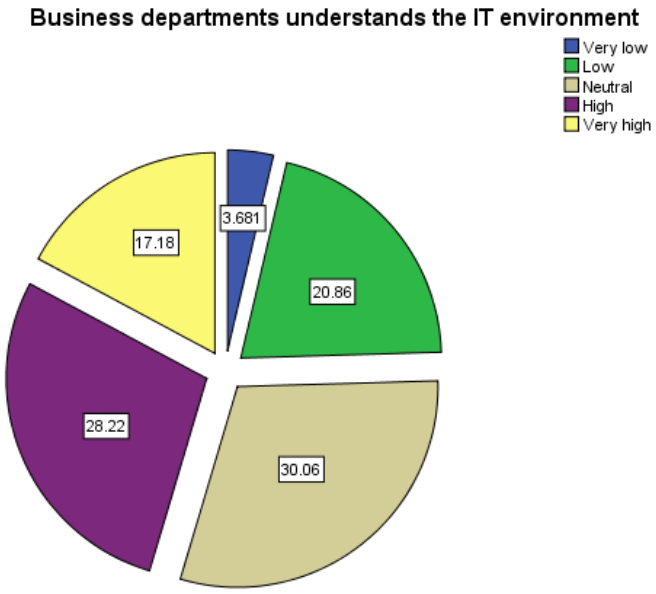


Figure A.5

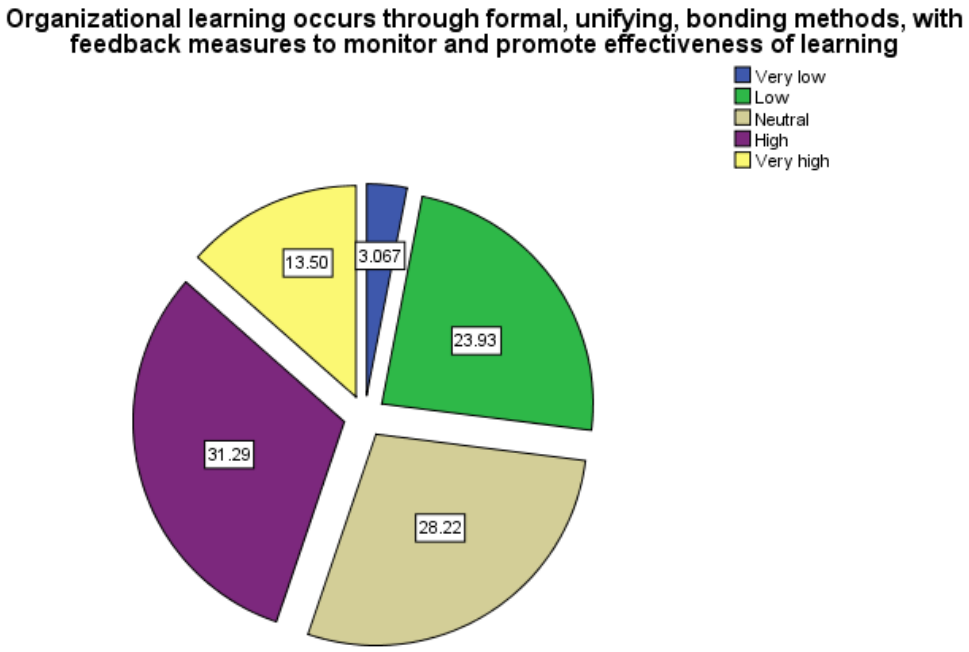


Figure A.6

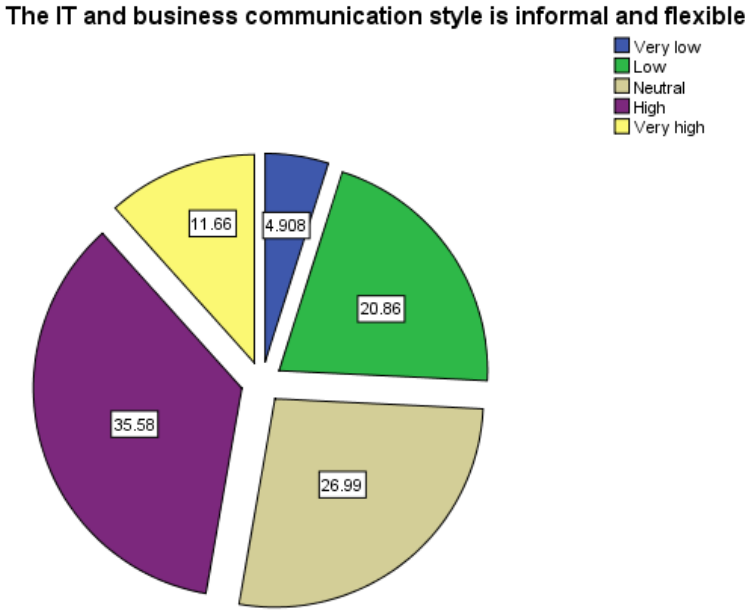


Figure A.7

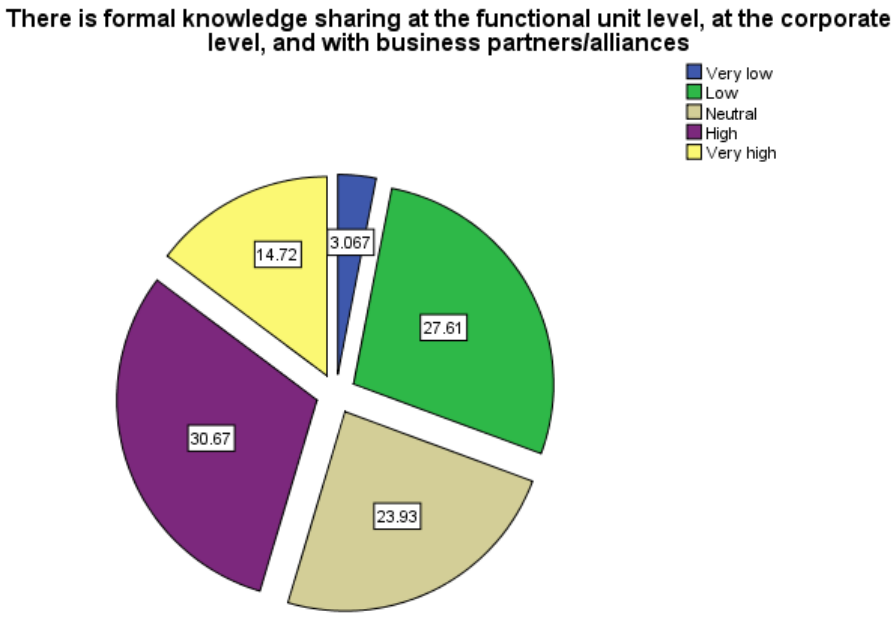
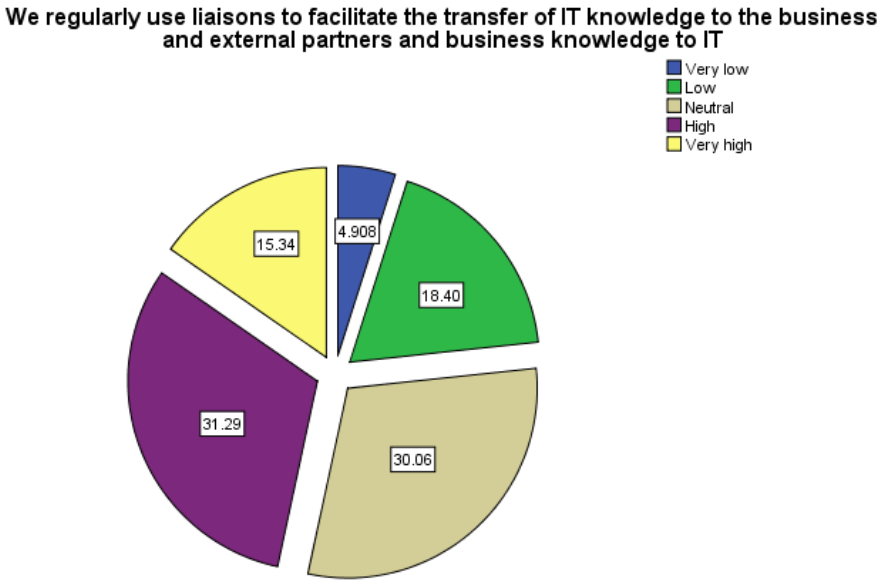


Figure A.8



Competency

Table A.8
We use a balancing metrics by linking Business and IT metrics. These metrics are extended to our external partners

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	20	12.3	12.3	12.3
	Low	39	23.9	23.9	36.2
	Moderate	40	24.5	24.5	60.7
	High	38	23.3	23.3	84.0
	Very high	26	16.0	16.0	100.0
	Total	163	100.0	100.0	

Table A.9
We have service level agreements between the IT and functional departments and our external partners/alliances

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	15	9.2	9.2	9.2
	Low	35	21.5	21.5	30.7
	Moderate	41	25.2	25.2	55.8
	High	45	27.6	27.6	83.4
	Very high	27	16.6	16.6	100.0
	Total	163	100.0	100.0	

Table A.10
We routinely perform formal benchmarks and have a regulated process in place to take action and measure the changes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	13	8.0	8.0	8.0
	Low	35	21.5	21.5	29.4
	Moderate	46	28.2	28.2	57.7
	High	41	25.2	25.2	82.8
	Very high	28	17.2	17.2	100.0
	Total	163	100.0	100.0	

Table A.11
We routinely assess and/or review IT investments and have a formal process in place to make changes based on the results and measure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	10	6.1	6.1	6.1
	Low	34	20.9	20.9	27.0
	Moderate	49	30.1	30.1	57.1
	High	45	27.6	27.6	84.7
	Very high	25	15.3	15.3	100.0
	Total	163	100.0	100.0	

Table A.12
We have well established IT-Business continuous improvement practices and effectiveness measures in place

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	11	6.7	6.7	6.7
	Low	38	23.3	23.3	30.1
	Moderate	47	28.8	28.8	58.9
	High	41	25.2	25.2	84.0
	Very high	26	16.0	16.0	100.0
	Total	163	100.0	100.0	

Table A.13
The demonstrated contribution that the IT function has made to the accomplishment of the organisation's strategic goals is very strong

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	8	4.9	4.9	4.9
	Low	29	17.8	17.8	22.7
	Moderate	50	30.7	30.7	53.4
	High	44	27.0	27.0	80.4
	Very high	32	19.6	19.6	100.0
	Total	163	100.0	100.0	

Figure A9

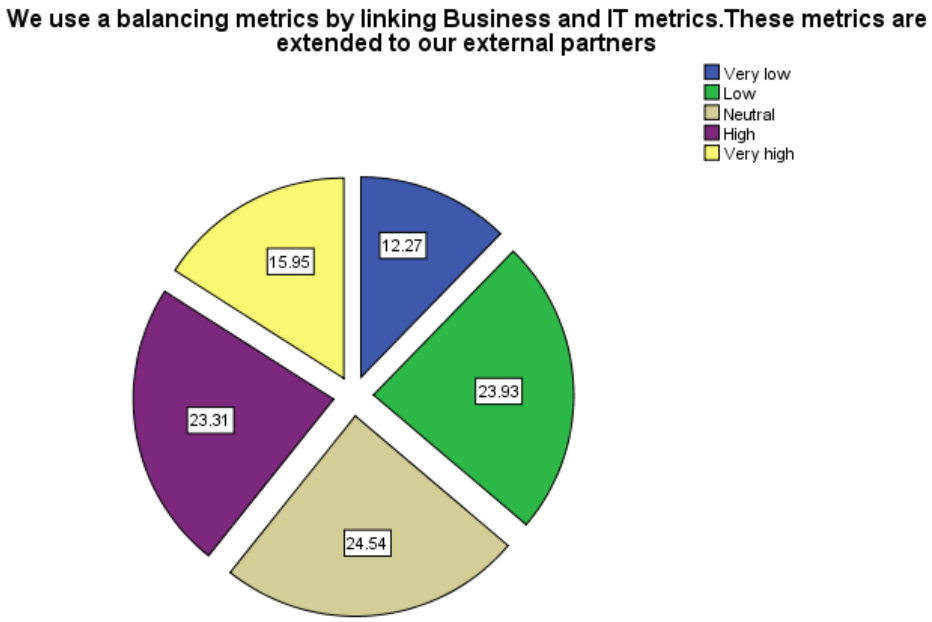


Figure A.10

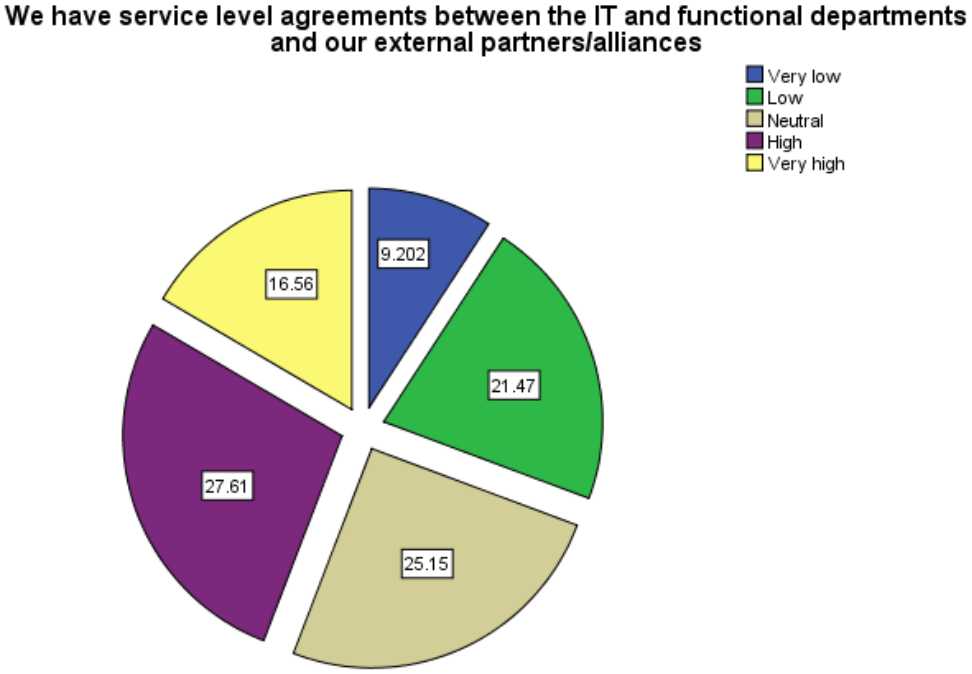


Figure A.11

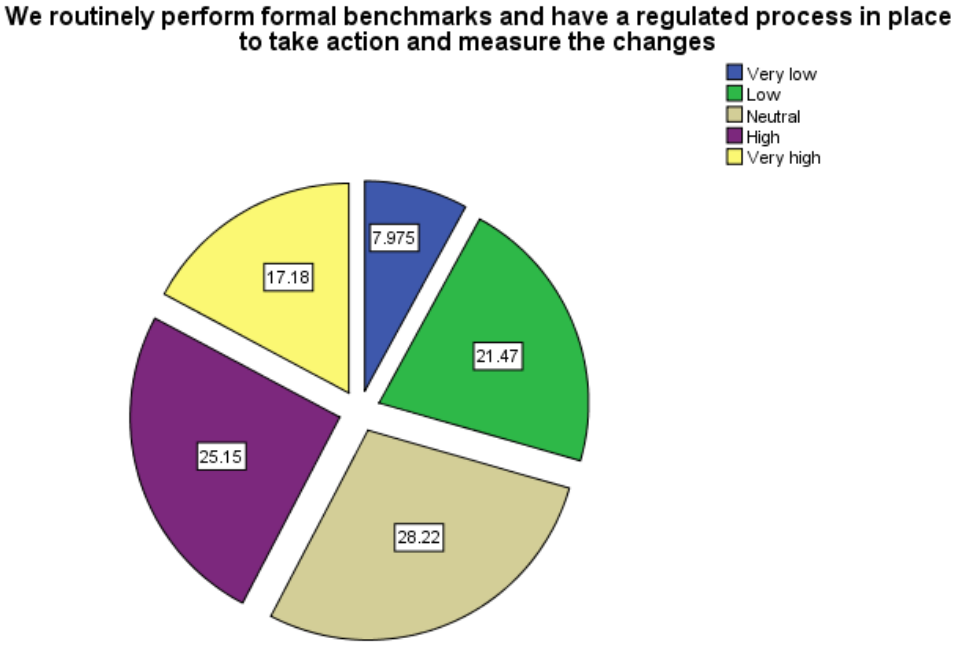

We routinely perform formal benchmarks and have a regulated process in place to take action and measure the changes
Very low
Low
Neutral
High
Very high
7.975
21.47
28.22
25.15
17.18

Figure A.12

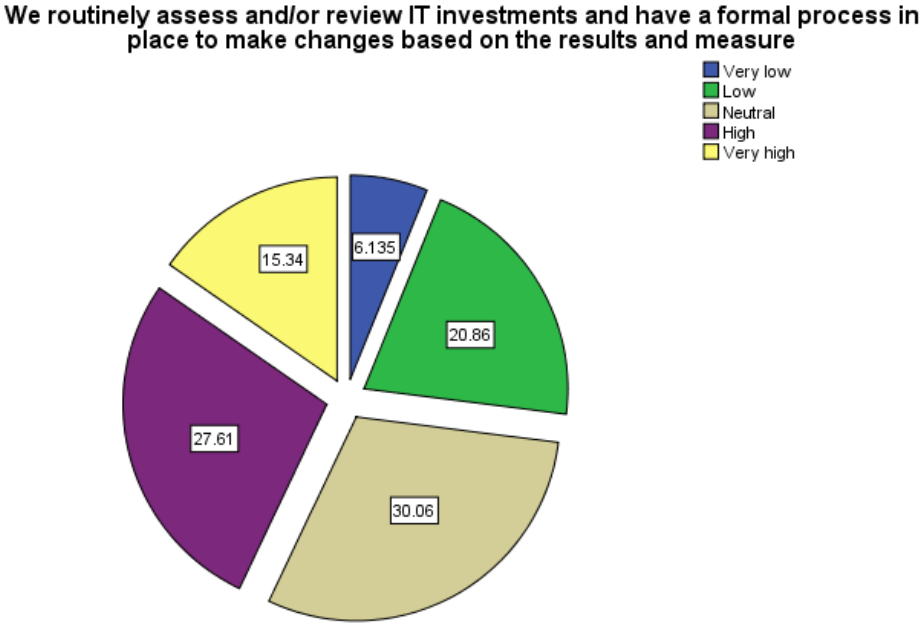

We routinely assess and/or review IT investments and have a formal process in place to make changes based on the results and measure
Very low
Low
Neutral
High
Very high
6.135
20.86
30.06
27.61
15.34

Figure A.13

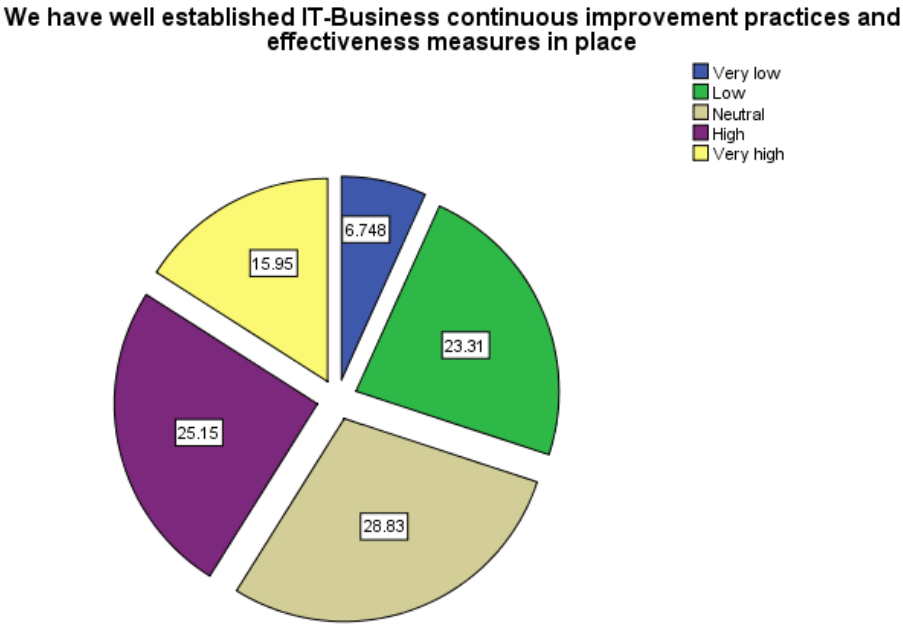
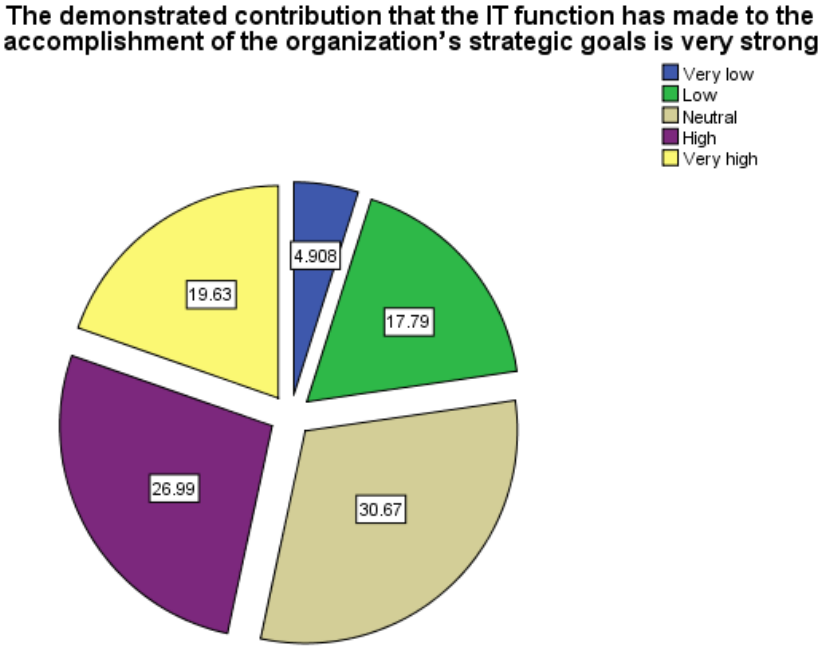


Figure A.14



Governance

Table A.14
We do formal strategic business planning at the functional unit, across the enterprise, and with our business partners/alliances with IT participation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	7	4.3	4.3	4.3
	Low	39	23.9	23.9	28.2
	Moderate	52	31.9	31.9	60.1
	High	34	20.9	20.9	81.0
	Very high	31	19.0	19.0	100.0
	Total	163	100.0	100.0	

Table A.15
We do formal strategic IT planning at the functional unit, across the enterprise, and with our business partners/alliances

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	7	4.3	4.3	4.3
	Low	36	22.1	22.1	26.4
	Moderate	53	32.5	32.5	58.9
	High	44	27.0	27.0	85.9
	Very high	23	14.1	14.1	100.0
	Total	163	100.0	100.0	

Table A.16
Our IT investment decisions are primarily based on IT's ability to create competitive advantage enhance performance. Our business partners see value

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	6	3.7	3.7	3.7
	Low	37	22.7	22.7	26.4
	Moderate	41	25.2	25.2	51.5
	High	51	31.3	31.3	82.8
	Very high	28	17.2	17.2	100.0
	Total	163	100.0	100.0	

Table A.17
We have formal, regular committee meetings with demonstrated effectiveness that include IT and strategic business partners sharing decision-making responsibilities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	6	3.7	3.7	3.7
	Low	42	25.8	25.8	29.4
	Moderate	47	28.8	28.8	58.3
	High	42	25.8	25.8	84.0
	Very high	26	16.0	16.0	100.0
	Total	163	100.0	100.0	

Table A.18
Our IT project prioritization process is usually mutually determined between senior and mid-level IT and business management and with consideration of the priorities of any business partners/alliances

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	8	4.9	4.9	4.9
	Low	32	19.6	19.6	24.5
	Moderate	36	22.1	22.1	46.6
	High	52	31.9	31.9	78.5
	Very high	35	21.5	21.5	100.0
	Total	163	100.0	100.0	

Table A.19
The ability of the IT function to react/respond quickly to the organisation's changing business needs is very strong

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	8	4.9	4.9	4.9
	Low	34	20.9	20.9	25.8
	Moderate	38	23.3	23.3	49.1
	High	41	25.2	25.2	74.2
	Very high	42	25.8	25.8	100.0
	Total	163	100.0	100.0	

Figure A.15

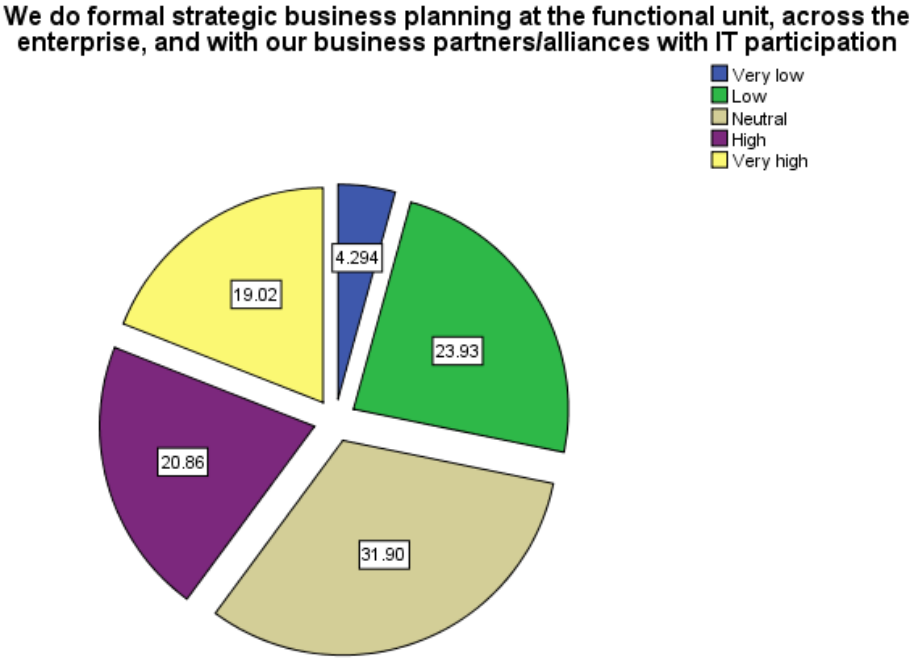


Figure A.16

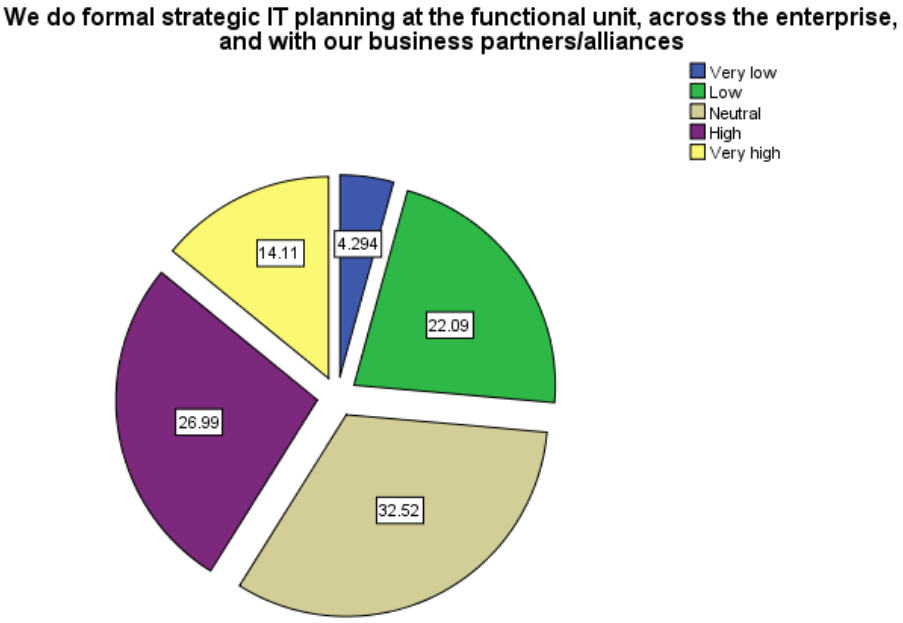


Figure A.17

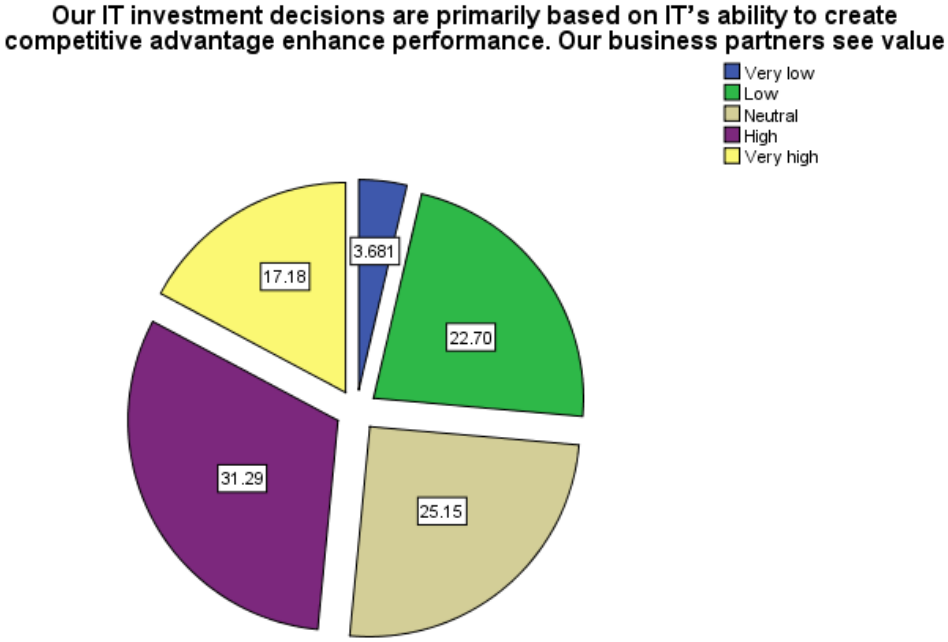


Figure A.18

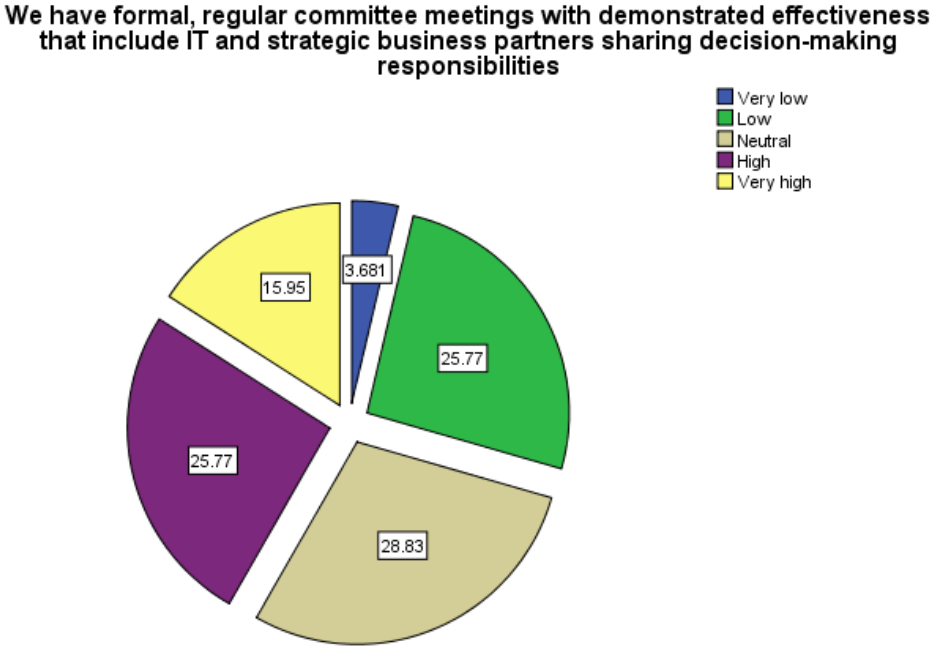


Figure A.19

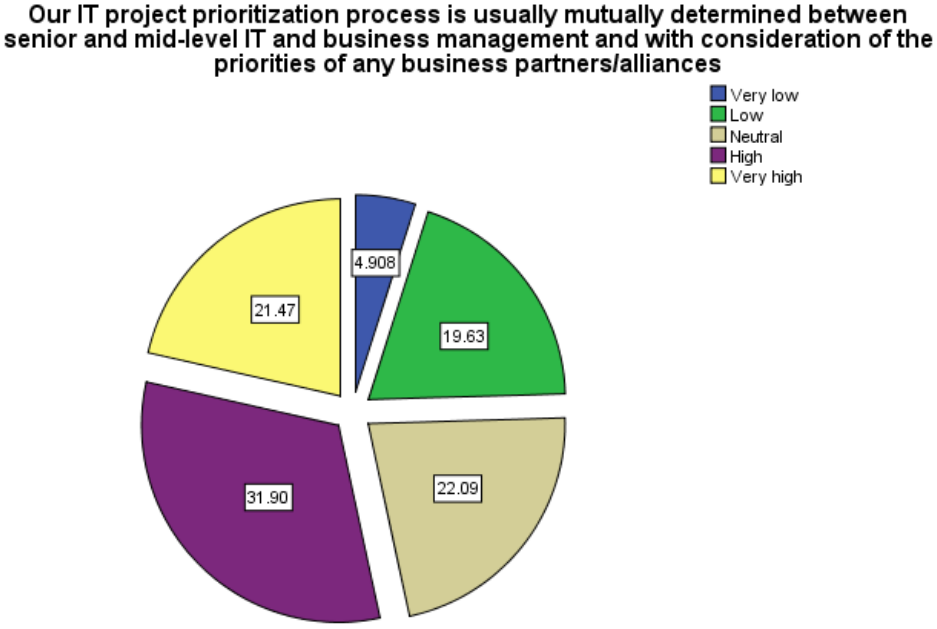
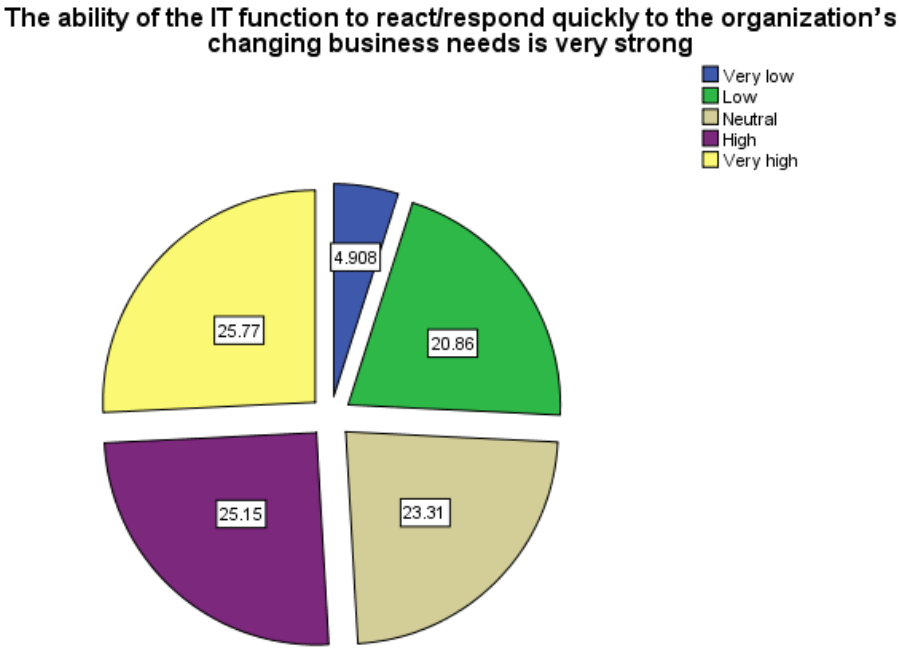


Figure A.20



Partnership

Table A.20
IT is perceived by the business as a partner with the business that co-adapts/improvises in bringing value to the firm

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	4	2.5	2.5	2.5
	Low	31	19.0	19.0	21.5
	Moderate	55	33.7	33.7	55.2
	High	53	32.5	32.5	87.7
	Very high	20	12.3	12.3	100.0
	Total	163	100.0	100.0	

Table A.21
The role of IT in strategic business planning is co-adaptive to enable/drive strategic objectives

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	4	2.5	2.5	2.5
	Low	38	23.3	23.3	25.8
	Moderate	35	21.5	21.5	47.2
	High	62	38.0	38.0	85.3
	Very high	24	14.7	14.7	100.0
	Total	163	100.0	100.0	

Table A.22
Risks and rewards are always shared and we have formal compensation and reward systems in place that induce managers to take risks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	16	9.8	9.8	9.8
	Low	34	20.9	20.9	30.7
	Moderate	55	33.7	33.7	64.4
	High	39	23.9	23.9	88.3
	Very high	19	11.7	11.7	100.0
	Total	163	100.0	100.0	

Table A.23
We have defined programs to manage our relationships and both IT and the business comply with them, and we are continuously improving them

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	9	5.5	5.5	5.5
	Low	38	23.3	23.3	28.8
	Moderate	55	33.7	33.7	62.6
	High	33	20.2	20.2	82.8
	Very high	28	17.2	17.2	100.0
	Total	163	100.0	100.0	

Table A.24
The relationship between IT and business is a long-term partnership and IT is a valued service provider

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	9	5.5	5.5	5.5
	Low	27	16.6	16.6	22.1
	Moderate	34	20.9	20.9	42.9
	High	56	34.4	34.4	77.3
	Very high	37	22.7	22.7	100.0
	Total	163	100.0	100.0	

Table A.25
Our IT-based initiatives often have a senior level IT and the CEO as the business/sponsor champion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	6	3.7	3.7	3.7
	Low	24	14.7	14.7	18.4
	Moderate	55	33.7	33.7	52.1
	High	50	30.7	30.7	82.8
	Very high	28	17.2	17.2	100.0
	Total	163	100.0	100.0	

Figure A.20

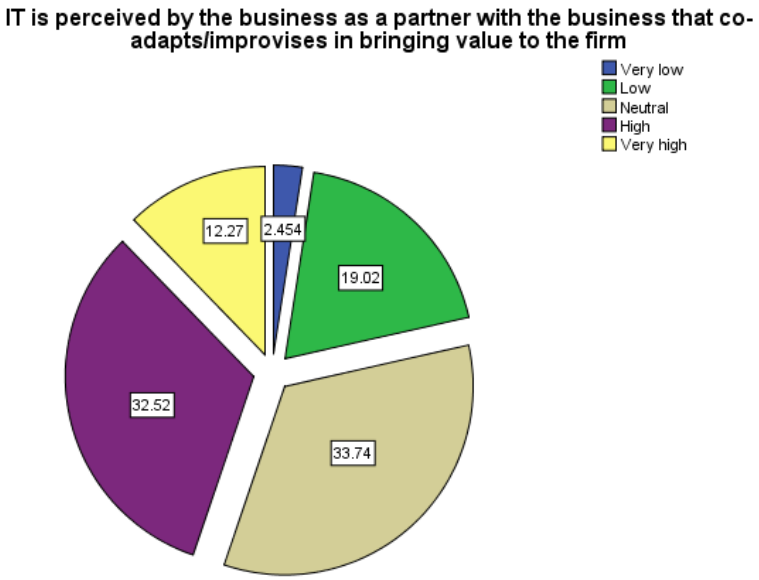


Figure A.21

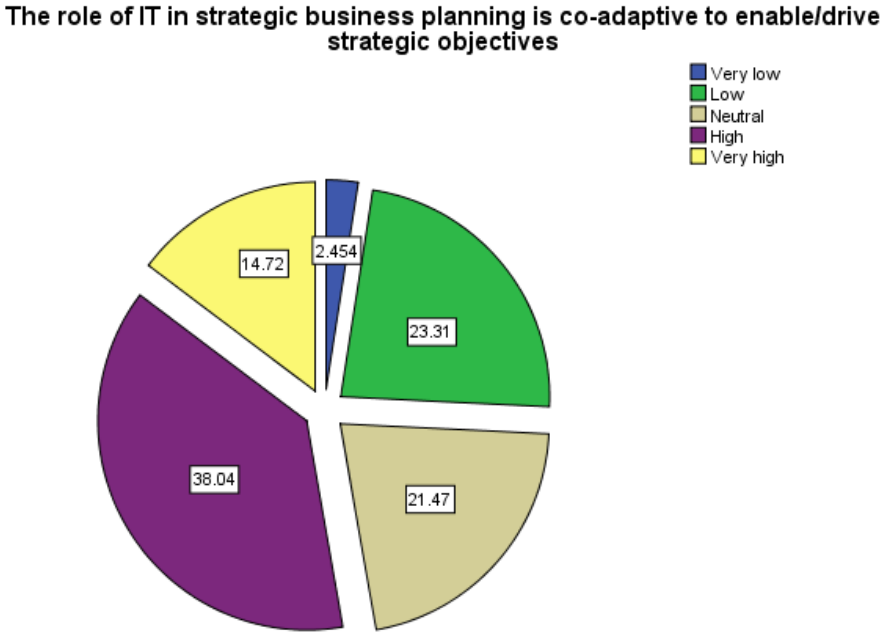


Figure A.22

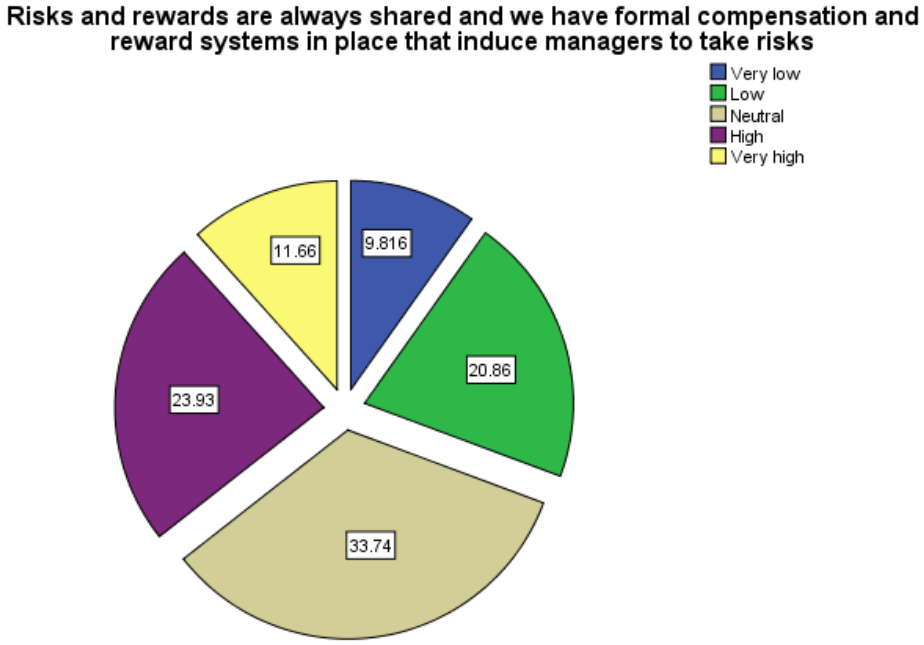

Risks and rewards are always shared and we have formal compensation and reward systems in place that induce managers to take risks
Very low
Low
Neutral
High
Very high
9.816
20.86
33.74
23.93
11.66

Figure A.23

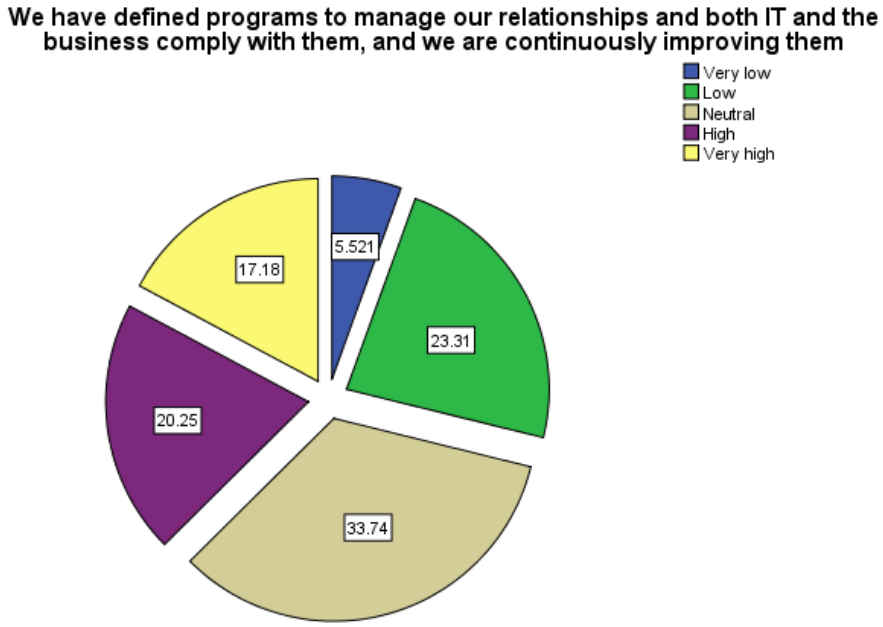

We have defined programs to manage our relationships and both IT and the business comply with them, and we are continuously improving them
Very low
Low
Neutral
High
Very high
5.521
23.31
33.74
20.25
17.18

Figure A.24

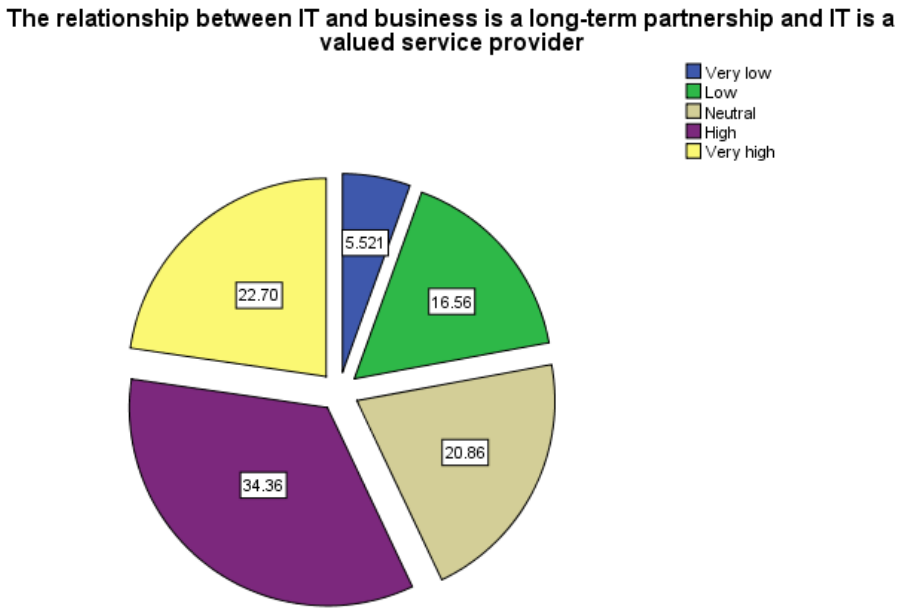
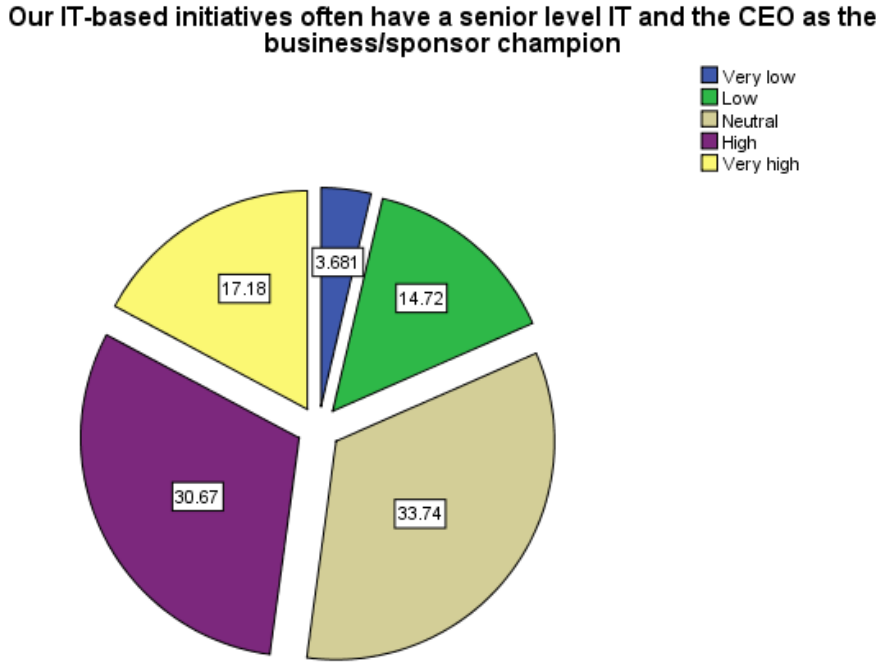


Figure A.25



Scope and Architecture

Table A.26
Our primary systems are business strategy enablers/drivers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	8	4.9	4.9	4.9
	Low	42	25.8	25.8	30.7
	Moderate	45	27.6	27.6	58.3
	High	34	20.9	20.9	79.1
	Very high	34	20.9	20.9	100.0
	Total	163	100.0	100.0	

Table A.27
Our IT standards are defined and enforced across functional units, and with joint coordination among our strategic business partners/alliances

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	8	4.9	4.9	4.9
	Low	28	17.2	17.2	22.1
	Moderate	52	31.9	31.9	54.0
	High	53	32.5	32.5	86.5
	Very high	22	13.5	13.5	100.0
	Total	163	100.0	100.0	

Table A.28
The components of our IT infrastructure are evolving with our business partners

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	8	4.9	4.9	4.9
	Low	25	15.3	15.3	20.2
	Moderate	56	34.4	34.4	54.6
	High	40	24.5	24.5	79.1
	Very high	34	20.9	20.9	100.0
	Total	163	100.0	100.0	

Table A.29
Most of the time, a business or IT change is transparent across the organisation and to our business partners/alliances

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	8	4.9	4.9	4.9
	Low	25	15.3	15.3	20.2
	Moderate	50	30.7	30.7	50.9
	High	43	26.4	26.4	77.3
	Very high	37	22.7	22.7	100.0
	Total	163	100.0	100.0	

Table A.30
Our IT infrastructure is viewed as a resource to enable and drive fast response to business and technology changes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	10	6.1	6.1	6.1
	Low	32	19.6	19.6	25.8
	Moderate	44	27.0	27.0	52.8
	High	42	25.8	25.8	78.5
	Very high	35	21.5	21.5	100.0
	Total	163	100.0	100.0	

Figure A.26

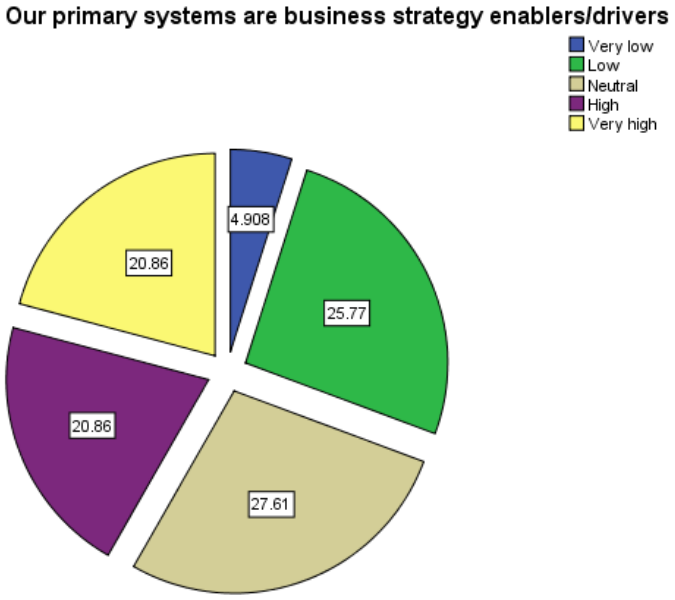


Figure A.27

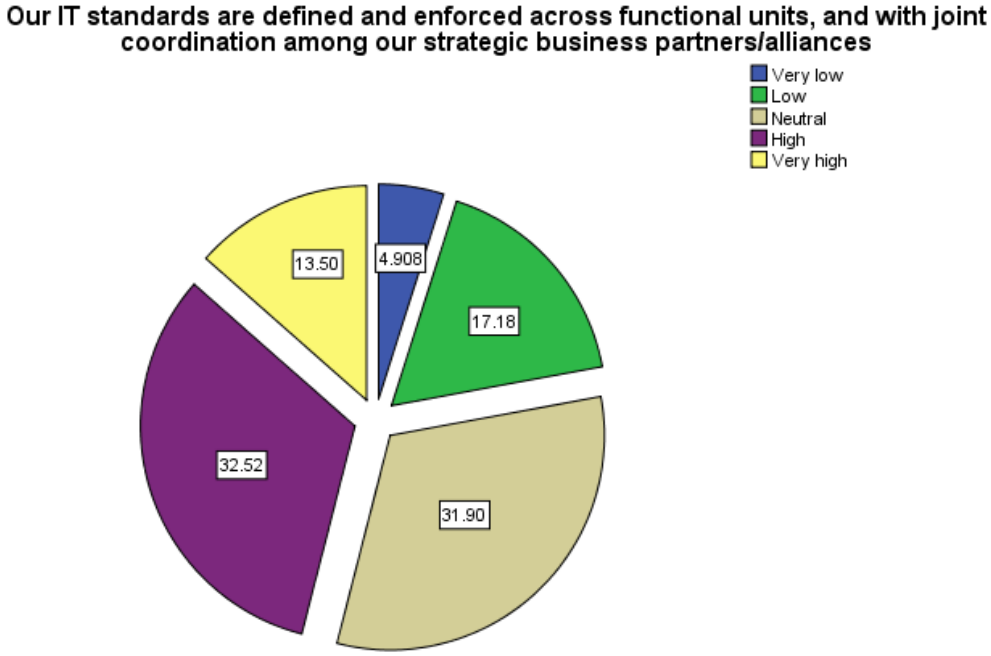


Figure A.28

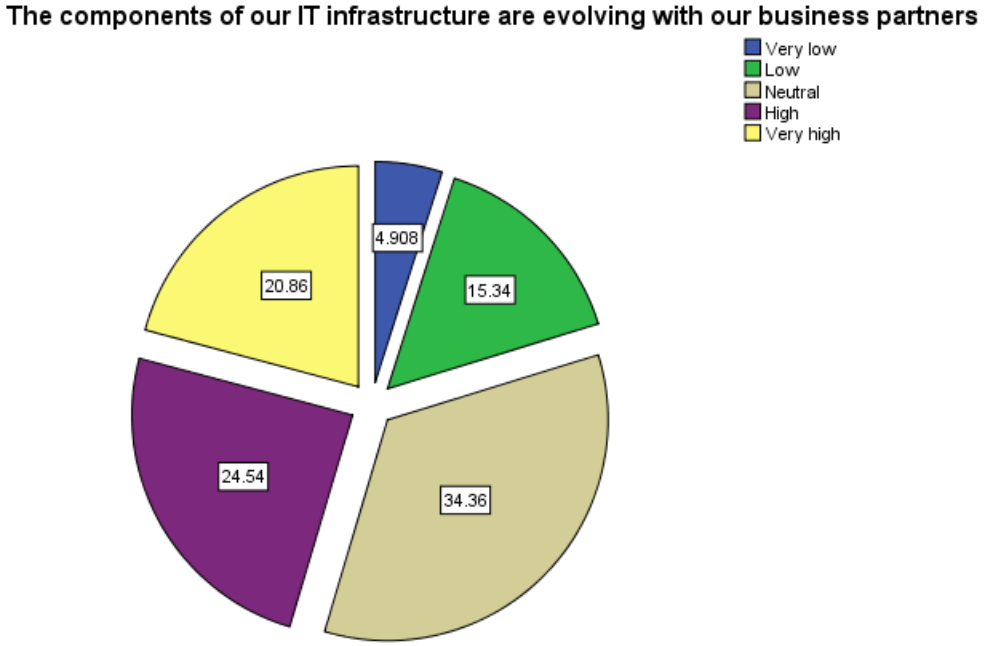


Figure A.29

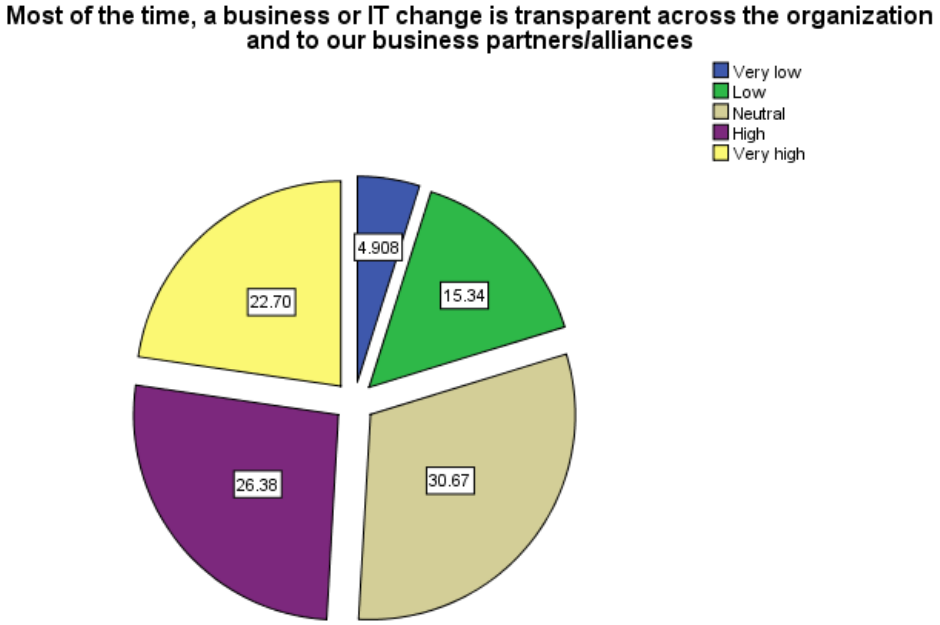
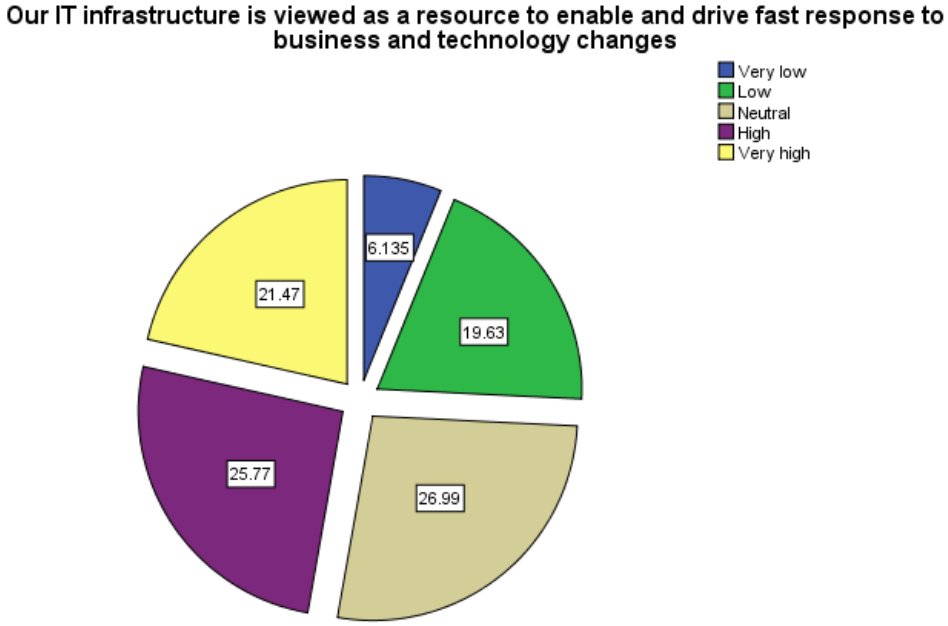


Figure A.30



Skills

Table A.31
Innovation is strongly encouraged at the functional unit, corporate level, and with business partners/alliances

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	11	6.7	6.7	6.7
	Low	28	17.2	17.2	23.9
	Moderate	39	23.9	23.9	47.9
	High	49	30.1	30.1	77.9
	Very high	36	22.1	22.1	100.0
	Total	163	100.0	100.0	

Table A.32
Top management makes our important IT decisions across the organisation with equal influence from our business partners/alliances

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	10	6.1	6.1	6.1
	Low	31	19.0	19.0	25.2
	Moderate	47	28.8	28.8	54.0
	High	44	27.0	27.0	81.0
	Very high	31	19.0	19.0	100.0
	Total	163	100.0	100.0	

Table A.33
Change readiness programs are in place at the corporate level and we are proactive and anticipate change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	9	5.5	5.5	5.5
	Low	39	23.9	23.9	29.4
	Moderate	44	27.0	27.0	56.4
	High	44	27.0	27.0	83.4
	Very high	27	16.6	16.6	100.0
	Total	163	100.0	100.0	

Table A.34
Job transfers regularly occur for all position levels not only within the functional units but alsoat the organisational level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	13	8.0	8.0	8.0
	Low	39	23.9	23.9	31.9
	Moderate	44	27.0	27.0	58.9
	High	40	24.5	24.5	83.4
	Very high	27	16.6	16.6	100.0
	Total	163	100.0	100.0	

Table A.35
Education and cross training is practiced across the organisation, and with business partners/alliances

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	6	3.7	3.7	3.7
	Low	38	23.3	23.3	27.0
	Neutral	43	26.4	26.4	53.4
	High	40	24.5	24.5	77.9
	Very high	36	22.1	22.1	100.0
	Total	163	100.0	100.0	

Table A.36
Trust and confidence that exist across IT and business units in our organisation, is extended to external customers and partners

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	6	3.7	3.7	3.7
	Low	21	12.9	12.9	16.6
	Moderate	63	38.7	38.7	55.2
	High	40	24.5	24.5	79.8
	Very high	33	20.2	20.2	100.0
	Total	163	100.0	100.0	

Table A.37
Effective programs are in place to attract and retain the best IT professionals with both technical and business skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	25	15.3	15.3	15.3
	Low	41	25.2	25.2	40.5
	Moderate	40	24.5	24.5	65.0
	High	38	23.3	23.3	88.3
	Very high	19	11.7	11.7	100.0
	Total	163	100.0	100.0	

Figure A.31

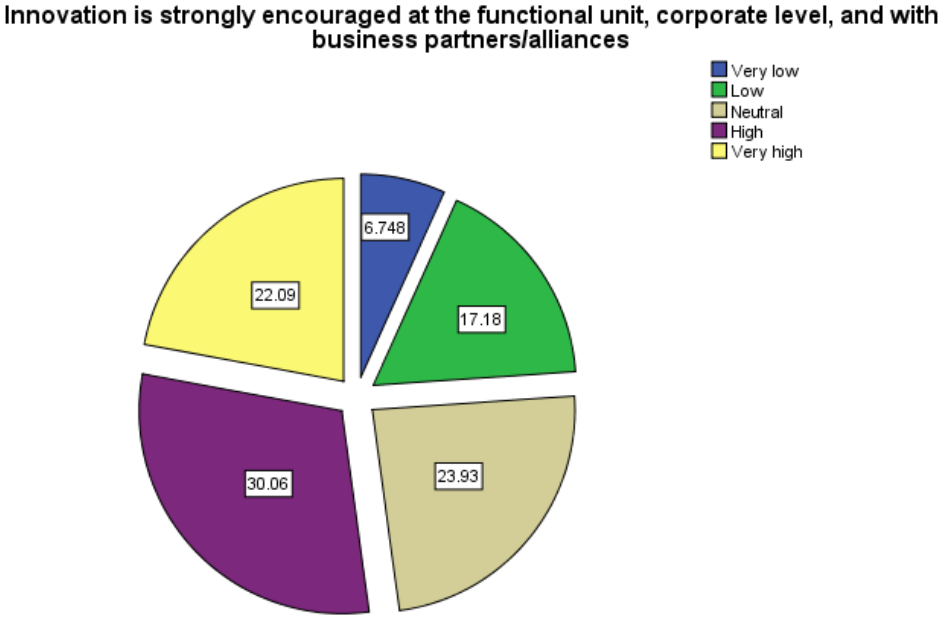


Figure A.32

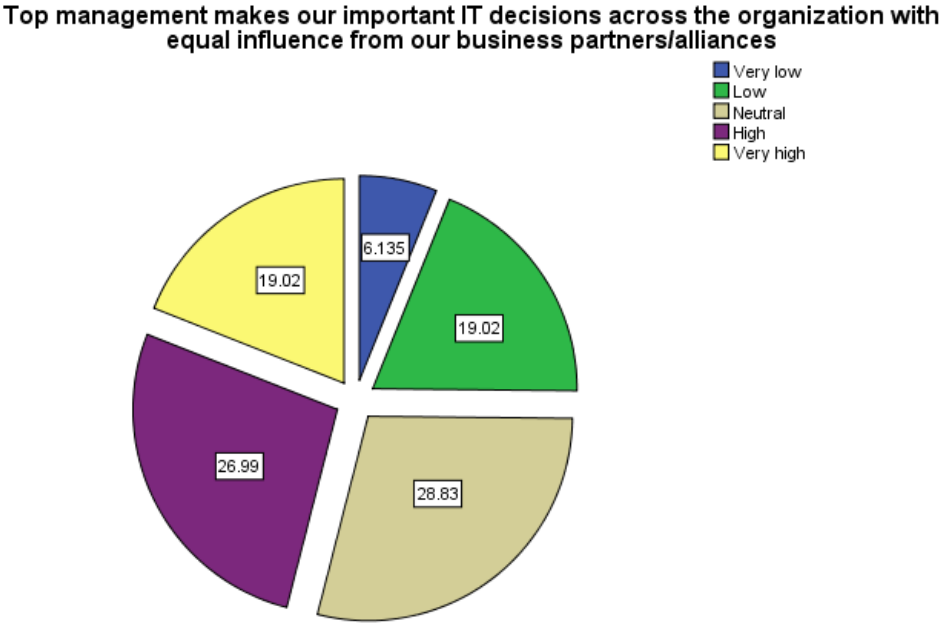


Figure A.33

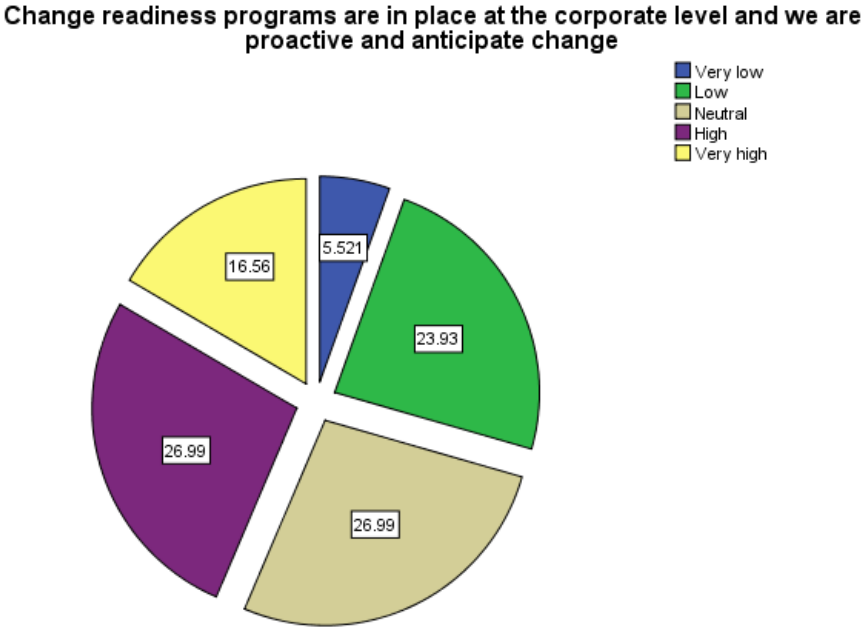


Figure A.34

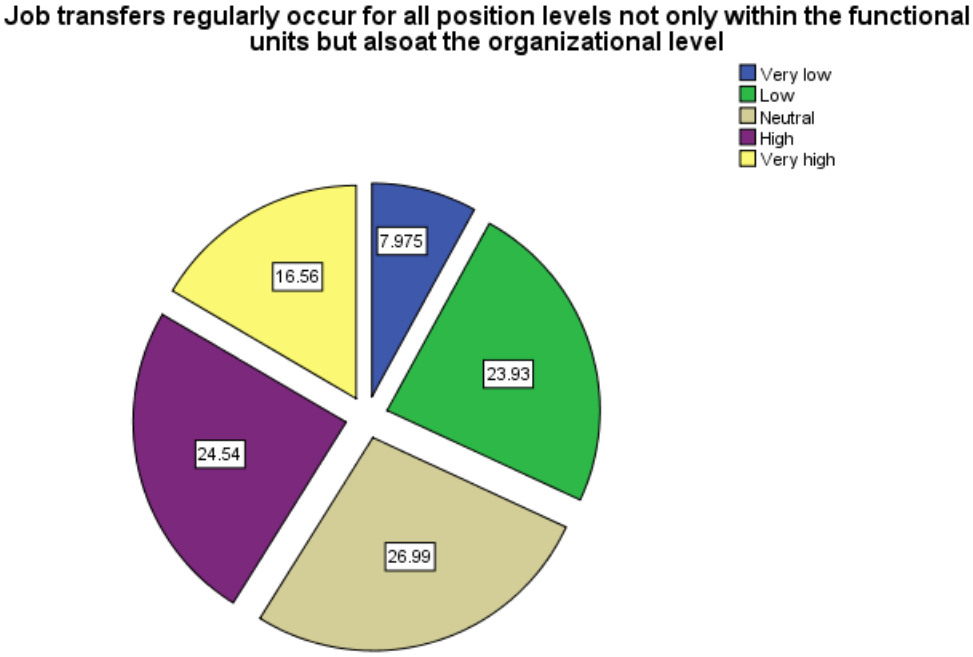


Figure A.35

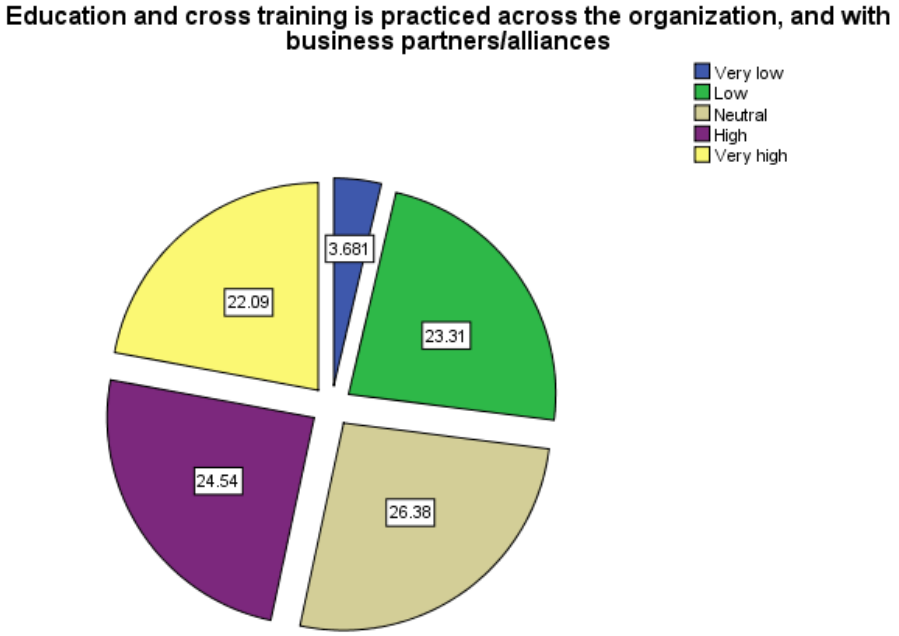


Figure A.36

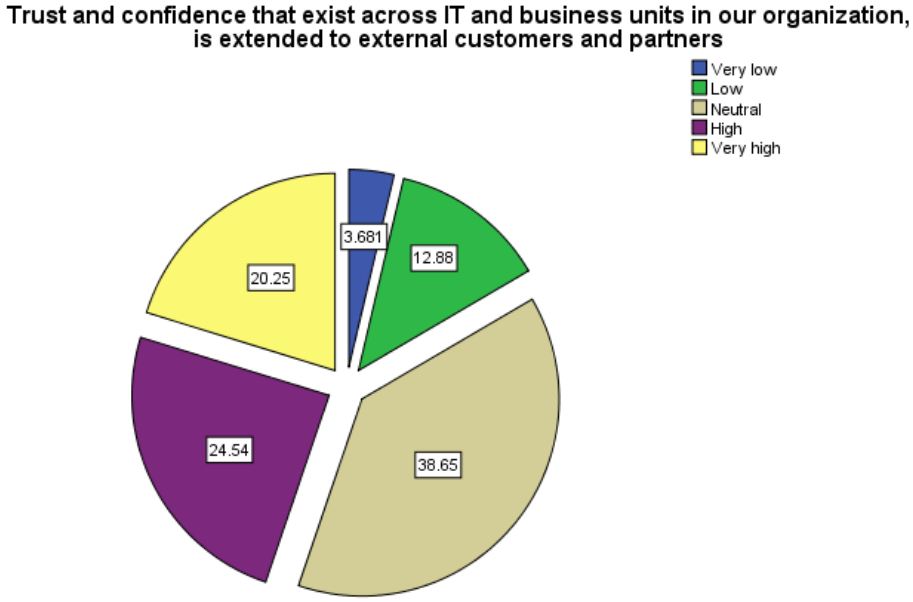


Figure A.37

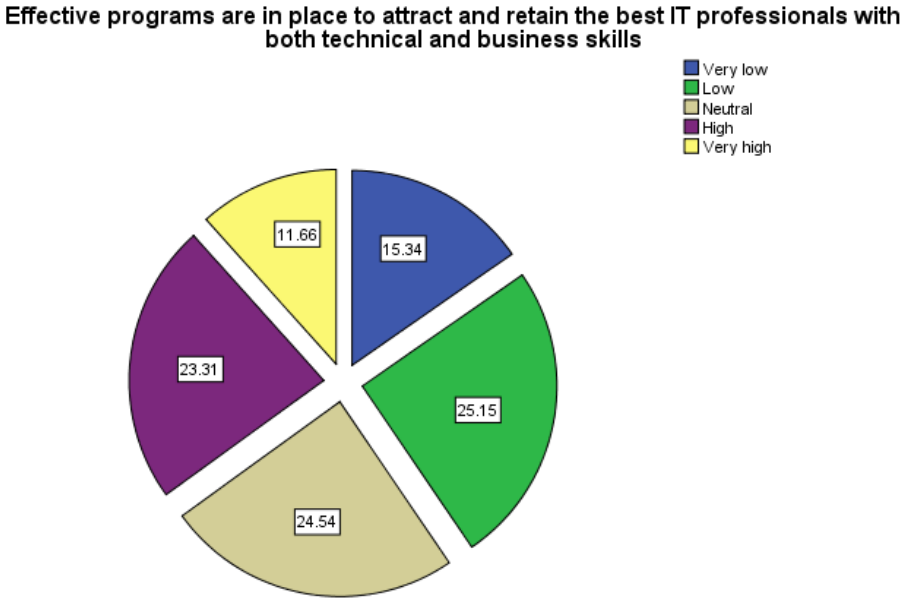

Effective programs are in place to attract and retain the best IT professionals with both technical and business skills
Very low
Low
Neutral
High
Very high
11.66
15.34
23.31
25.15
24.54

Table A.38
IT increases productivity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	2.5	2.5	2.5
	Disagree	20	12.3	12.3	14.7
	Neutral	23	14.1	14.1	28.8
	Agree	50	30.7	30.7	59.5
	Strongly agree	66	40.5	40.5	100.0
	Total	163	100.0	100.0	

Table A.39
IT increases job performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	2.5	2.5	2.5
	Disagree	12	7.4	7.4	9.8
	Neutral	34	20.9	20.9	30.7
	Agree	53	32.5	32.5	63.2
	Strongly agree	60	36.8	36.8	100.0
	Total	163	100.0	100.0	

Table A.40
IT enhances effectiveness on the job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	1.8	1.8	1.8
	Disagree	12	7.4	7.4	9.2
	Neutral	34	20.9	20.9	30.1
	Agree	47	28.8	28.8	58.9
	Strongly agree	67	41.1	41.1	100.0
	Total	163	100.0	100.0	

Figure A.38

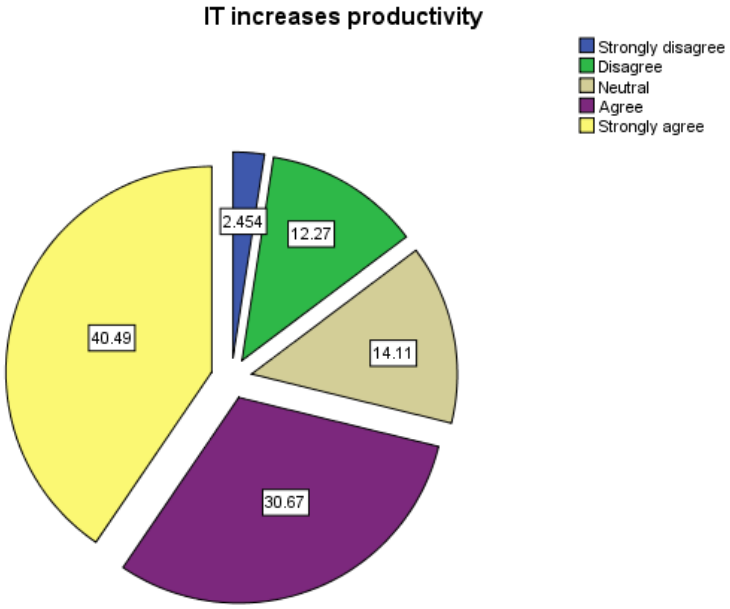


Figure A.39

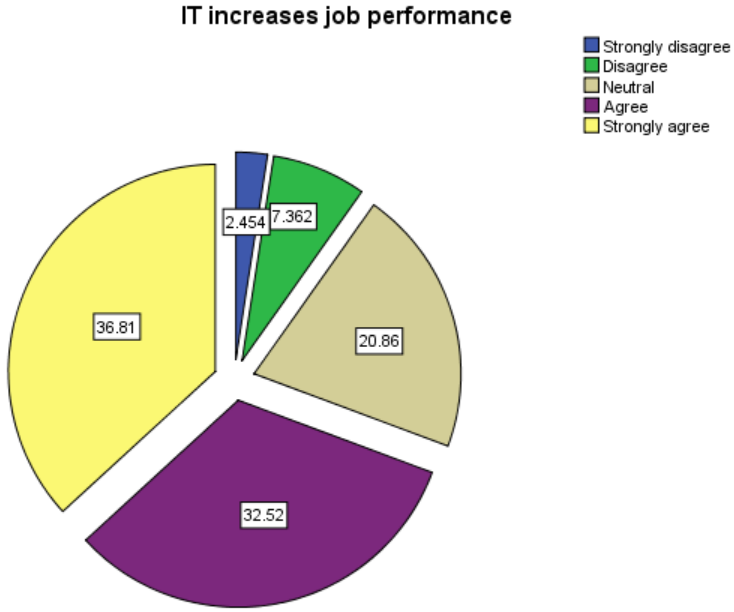
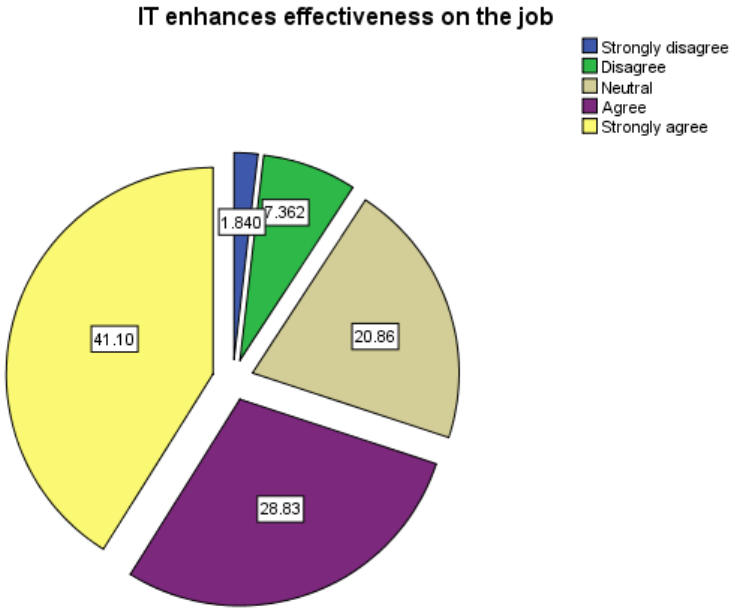


Figure A.40



Perceived Ease of Use

Table A.41
Learning to operate software, hardware and systems is easy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	11	6.7	6.7	6.7
	Disagree	23	14.1	14.1	20.9
	Neutral	41	25.2	25.2	46.0
	Agree	57	35.0	35.0	81.0
	Strongly agree	31	19.0	19.0	100.0
	Total	163	100.0	100.0	

Table A.42
It is easy to employ IT in doing tasks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	5	3.1	3.1	3.1
	Disagree	24	14.7	14.7	17.8
	Neutral	48	29.4	29.4	47.2
	Agree	59	36.2	36.2	83.4
	Strongly agree	27	16.6	16.6	100.0
	Total	163	100.0	100.0	

Table A.43
It usually takes a lot of effort to be skilled at using IT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	19	11.7	11.7	11.7
	Disagree	58	35.6	35.6	47.2
	Neutral	40	24.5	24.5	71.8
	Agree	33	20.2	20.2	92.0
	Strongly agree	13	8.0	8.0	100.0
	Total	163	100.0	100.0	

Figure A.41

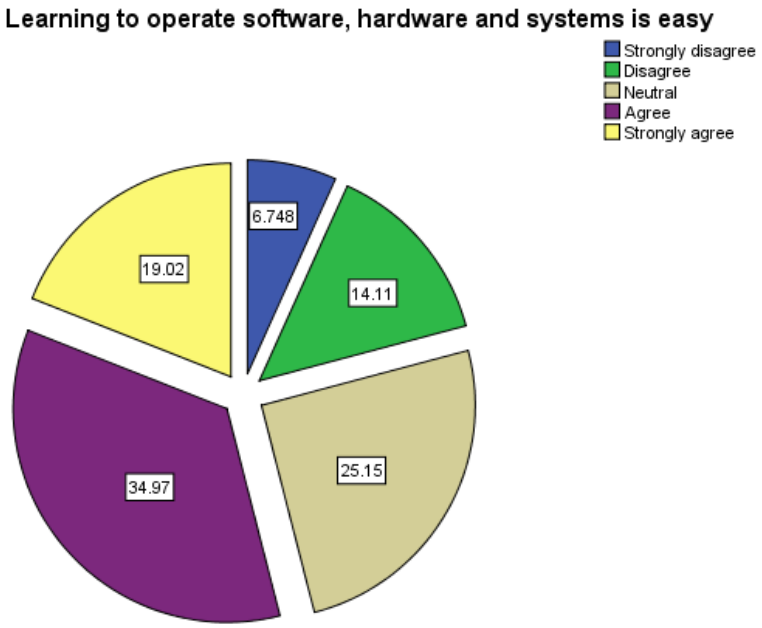


Figure A.42

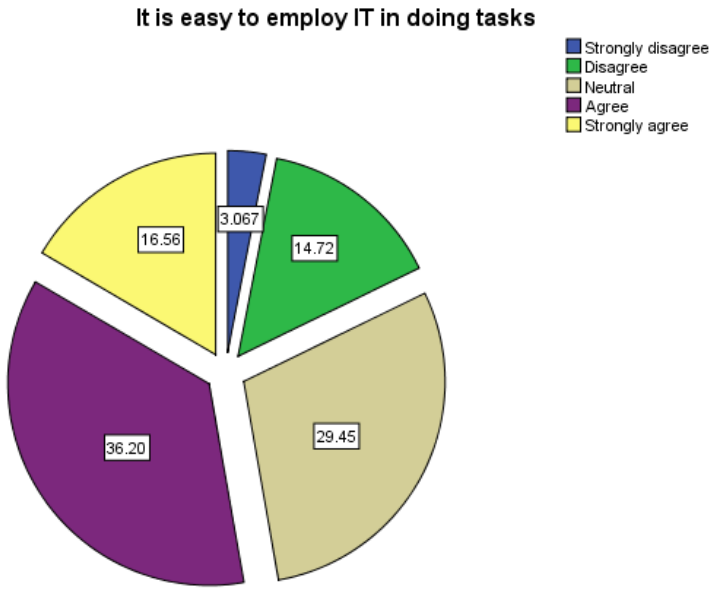
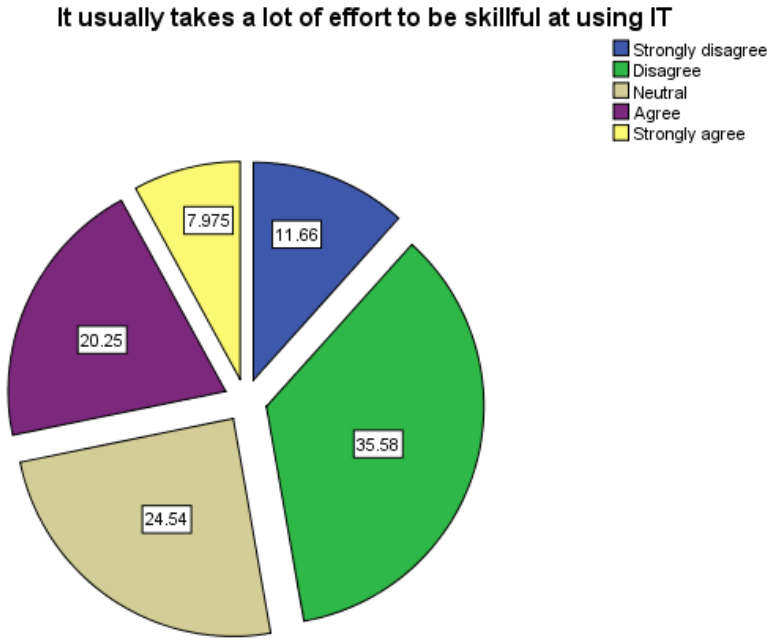


Figure A.43



Prior IS Success

Table A.44
Reducing the costs of the organisation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	3.7	3.7	3.7
	Disagree	29	17.8	17.8	21.5
	Neutral	46	28.2	28.2	49.7
	Agree	62	38.0	38.0	87.7
	Strongly agree	20	12.3	12.3	100.0
	Total	163	100.0	100.0	

Table A.45
Fulfilling staff requirements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	3.7	3.7	3.7
	Disagree	20	12.3	12.3	16.0
	Neutral	47	28.8	28.8	44.8
	Agree	63	38.7	38.7	83.4
	Strongly agree	27	16.6	16.6	100.0
	Total	163	100.0	100.0	

Table A.46
Increasing the overall productivity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	3.7	3.7	3.7
	Disagree	21	12.9	12.9	16.6
	Neutral	33	20.2	20.2	36.8
	Agree	64	39.3	39.3	76.1
	Strongly agree	39	23.9	23.9	100.0
	Total	163	100.0	100.0	

Table A.47
Improving the outcomes/outputs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	2.5	2.5	2.5
	Disagree	23	14.1	14.1	16.6
	Neutral	34	20.9	20.9	37.4
	Agree	55	33.7	33.7	71.2
	Strongly agree	47	28.8	28.8	100.0
	Total	163	100.0	100.0	

Table A.48
Increasing the organisational capacity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	1.8	1.8	1.8
	Disagree	32	19.6	19.6	21.5
	Neutral	36	22.1	22.1	43.6
	Agree	49	30.1	30.1	73.6
	Strongly agree	43	26.4	26.4	100.0
	Total	163	100.0	100.0	

Table A.49
Collaborating with e-governments activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	1	.6	.6	.6
	Disagree	30	18.4	18.4	19.0
	Neutral	39	23.9	23.9	42.9
	Agree	53	32.5	32.5	75.5
	Strongly agree	40	24.5	24.5	100.0
	Total	163	100.0	100.0	

Table A.50
Changing the business processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	1.2	1.2	1.2
	Disagree	31	19.0	19.0	20.2
	Neutral	43	26.4	26.4	46.6
	Agree	50	30.7	30.7	77.3
	Strongly agree	37	22.7	22.7	100.0
	Total	163	100.0	100.0	

Figure A.44

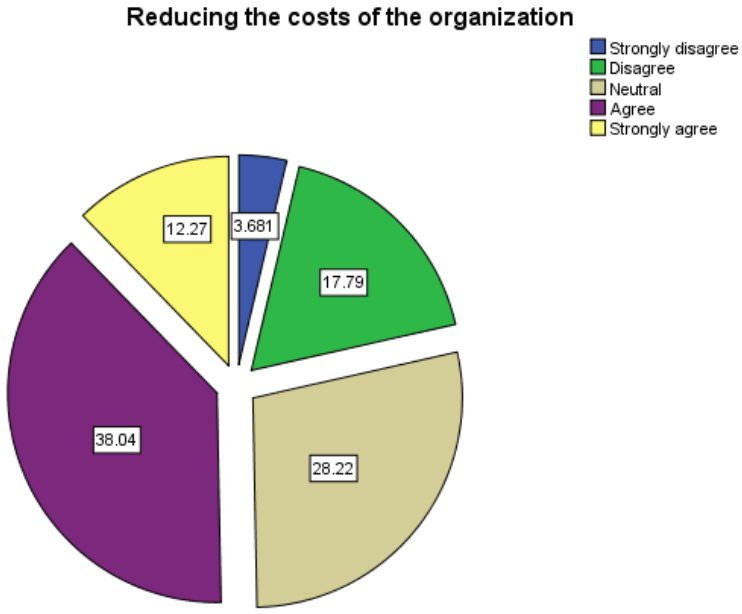


Figure A.45

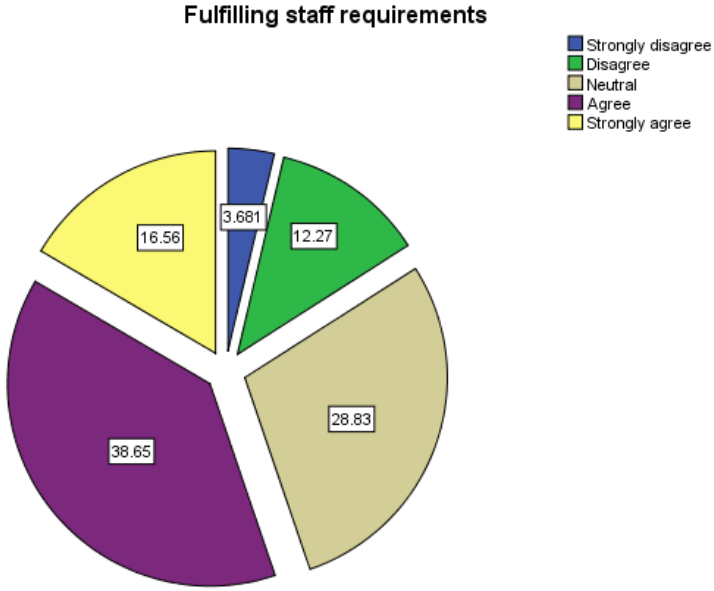


Figure A.46

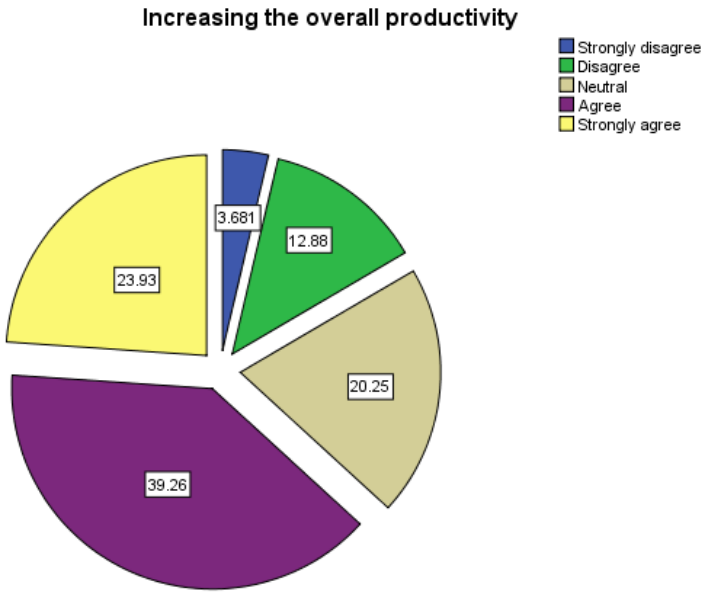


Figure A.47

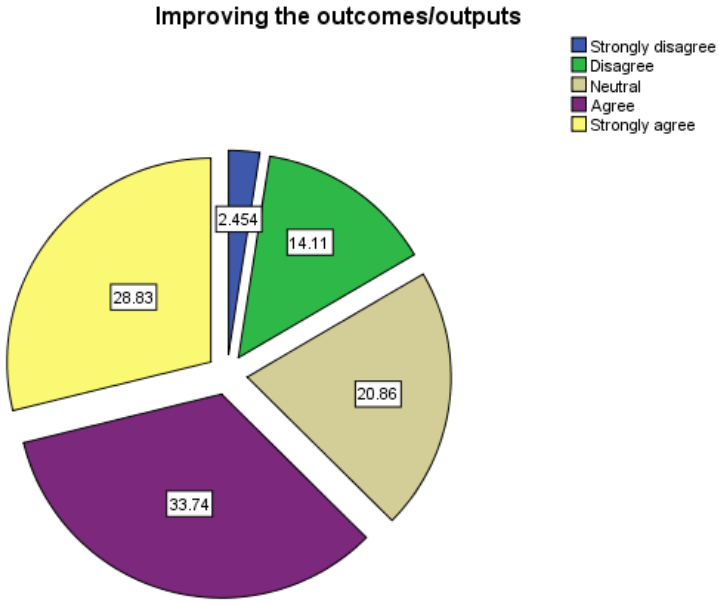


Figure A.48

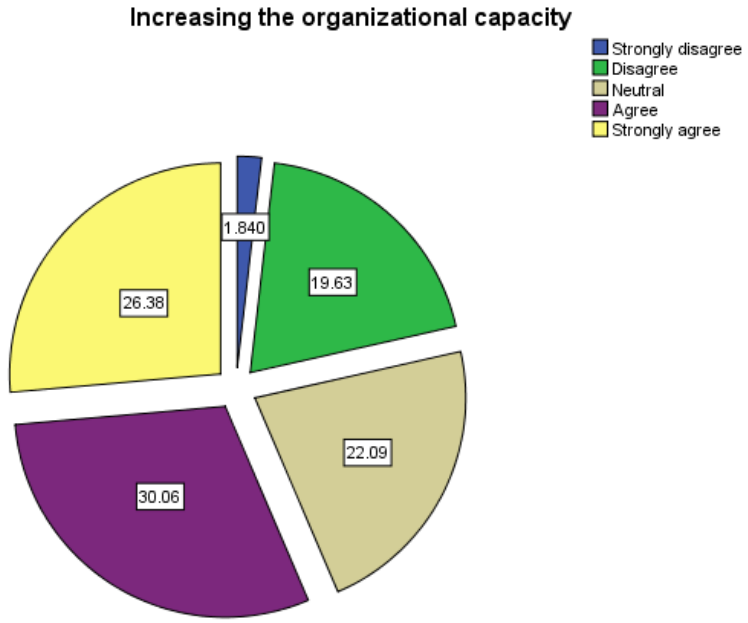


Figure A.49

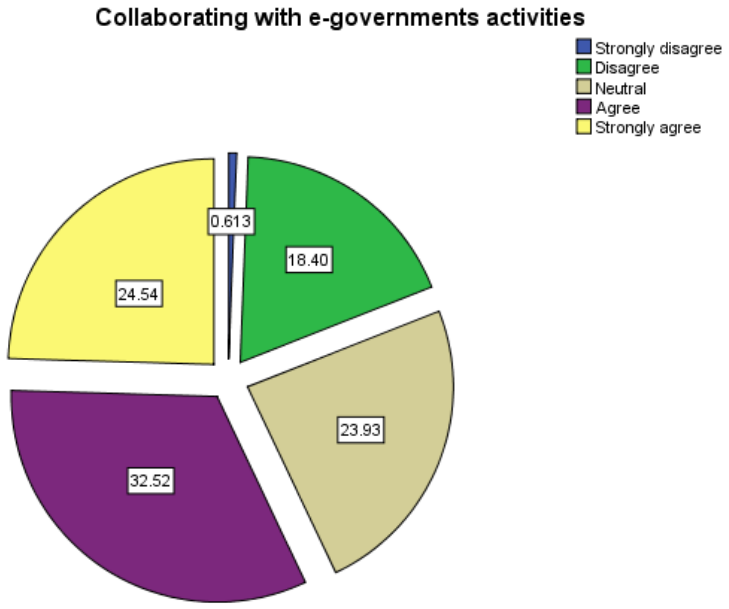
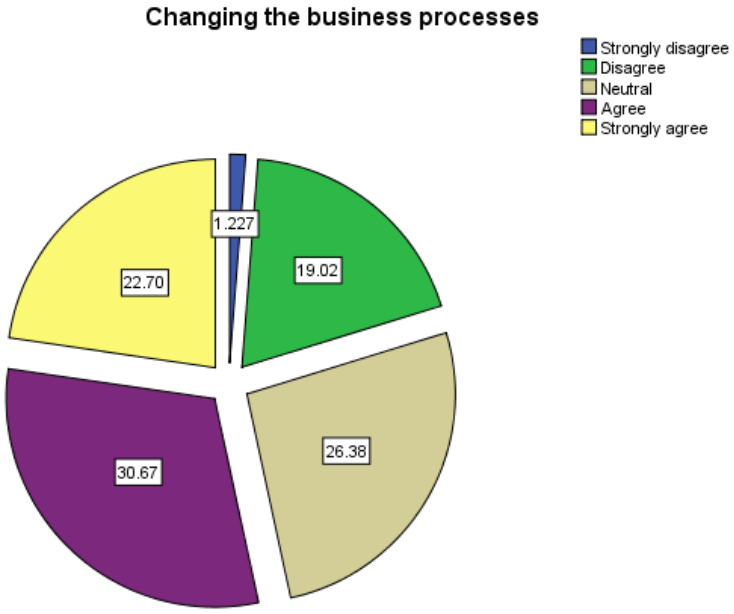


Figure A.50



Stakeholders Satisfaction

Table A.51
Delivery of services that meet customers' needs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	5	3.1	3.1	3.1
	Disagree	17	10.4	10.4	13.5
	Neutral	52	31.9	31.9	45.4
	Agree	58	35.6	35.6	81.0
	Strongly agree	31	19.0	19.0	100.0
	Total	163	100.0	100.0	

Table A.52
New Services Development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	1.8	1.8	1.8
	Disagree	25	15.3	15.3	17.2
	Neutral	46	28.2	28.2	45.4
	Agree	53	32.5	32.5	77.9
	Strongly agree	36	22.1	22.1	100.0
	Total	163	100.0	100.0	

Table A.53
Decrease in clients' complain

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	5.5	5.5	5.5
	Disagree	37	22.7	22.7	28.2
	Neutral	42	25.8	25.8	54.0
	Agree	47	28.8	28.8	82.8
	Strongly agree	28	17.2	17.2	100.0
	Total	163	100.0	100.0	

Table A.54
Improve the outcomes/outputs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	3.7	3.7	3.7
	Disagree	21	12.9	12.9	16.6
	Neutral	55	33.7	33.7	50.3
	Agree	47	28.8	28.8	79.1
	Strongly agree	34	20.9	20.9	100.0
	Total	163	100.0	100.0	

Figure A.51

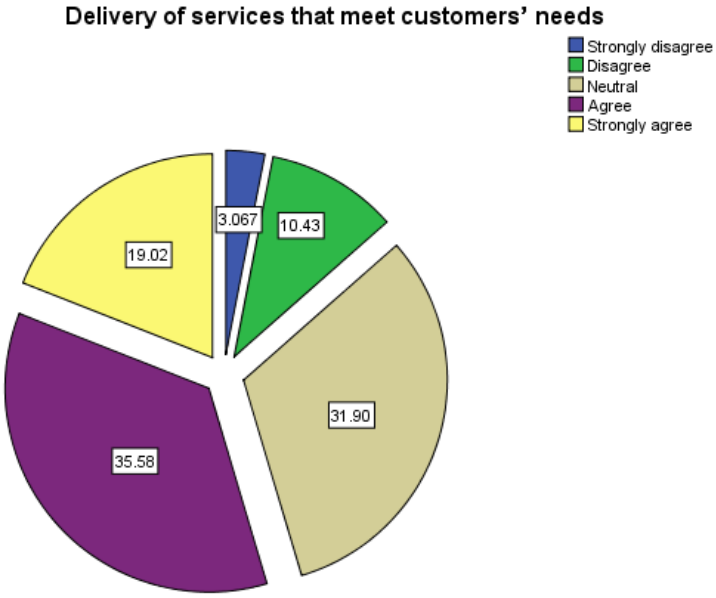


Figure A.52

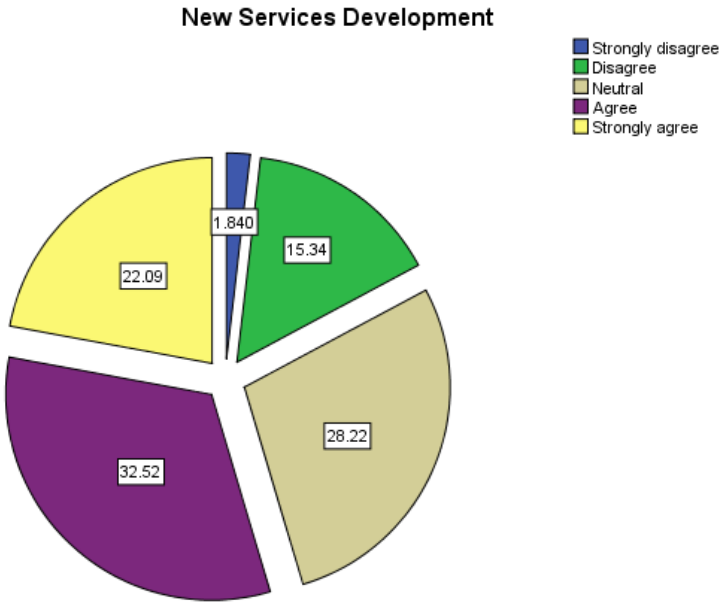


Figure A.53

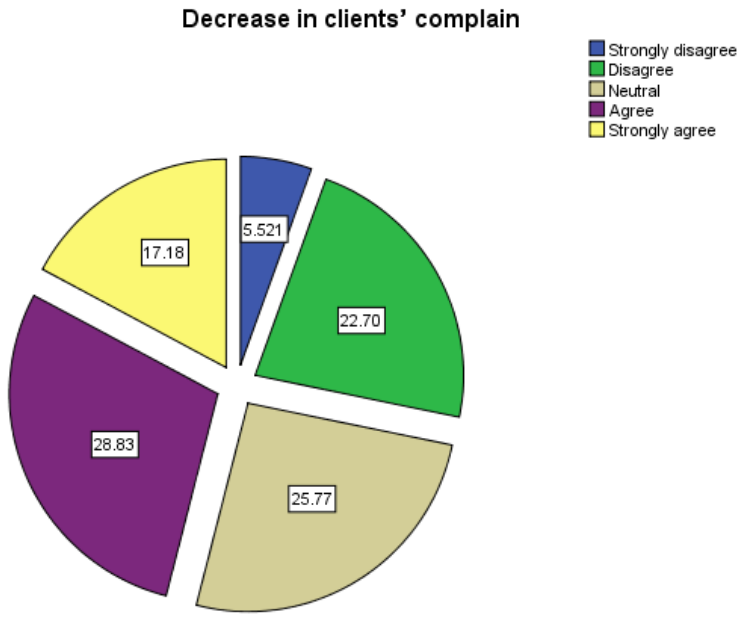
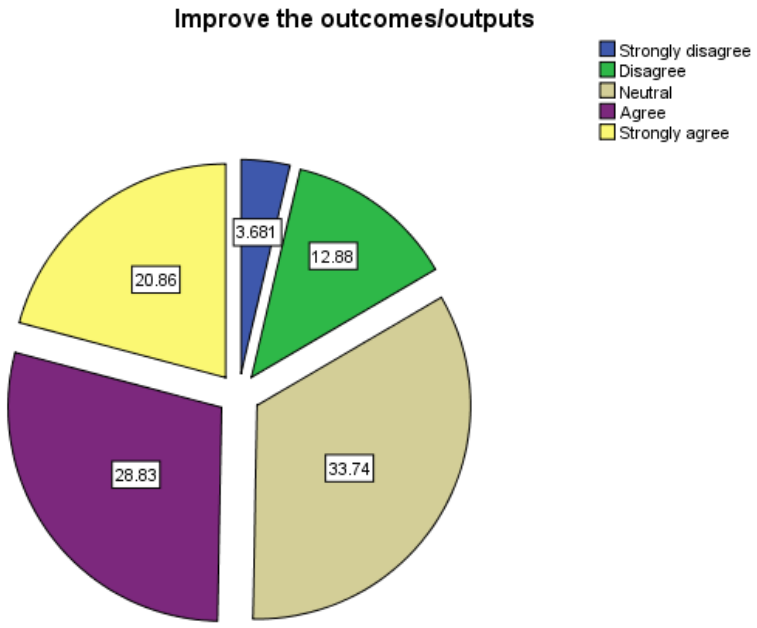


Figure A.54



Stakeholder's Contribution

Table A.55
Increase in customer retention and loyalty

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	11	6.7	6.7	6.7
	Disagree	25	15.3	15.3	22.1
	Neutral	52	31.9	31.9	54.0
	Agree	43	26.4	26.4	80.4
	Strongly agree	32	19.6	19.6	100.0
	Total	163	100.0	100.0	

Table A.56
Increase the level of collaboration with/from e-government

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	1.2	1.2	1.2
	Disagree	20	12.3	12.3	13.5
	Neutral	54	33.1	33.1	46.6
	Agree	49	30.1	30.1	76.7
	Strongly agree	38	23.3	23.3	100.0
	Total	163	100.0	100.0	

Table A.57
Increase the level of sponsorship from private organisations or NGOs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	5.5	5.5	5.5
	Disagree	25	15.3	15.3	20.9
	Neutral	62	38.0	38.0	58.9
	Agree	42	25.8	25.8	84.7
	Strongly agree	25	15.3	15.3	100.0
	Total	163	100.0	100.0	

Table A.58
Increase the level of support from policy makers and national committees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	4.3	4.3	4.3
	Disagree	24	14.7	14.7	19.0
	Neutral	53	32.5	32.5	51.5
	Agree	48	29.4	29.4	81.0
	Strongly agree	31	19.0	19.0	100.0
	Total	163	100.0	100.0	

Figure A.55

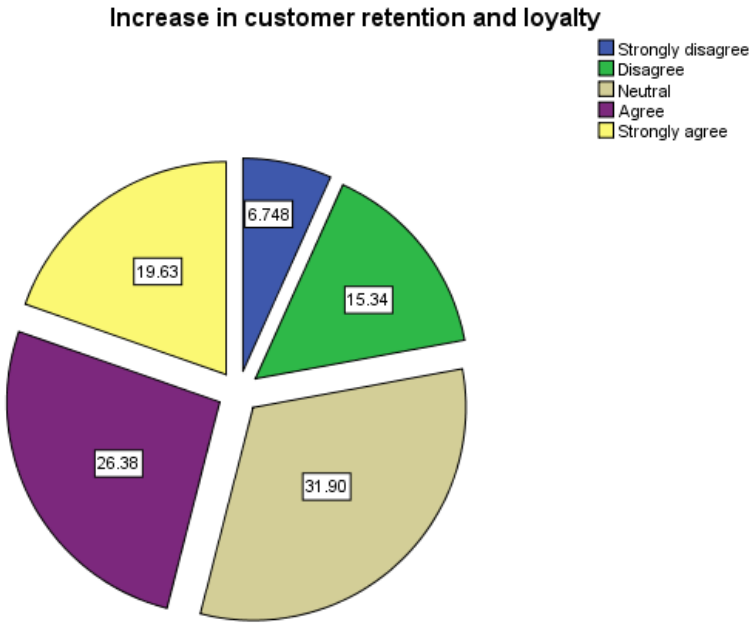


Figure A.56

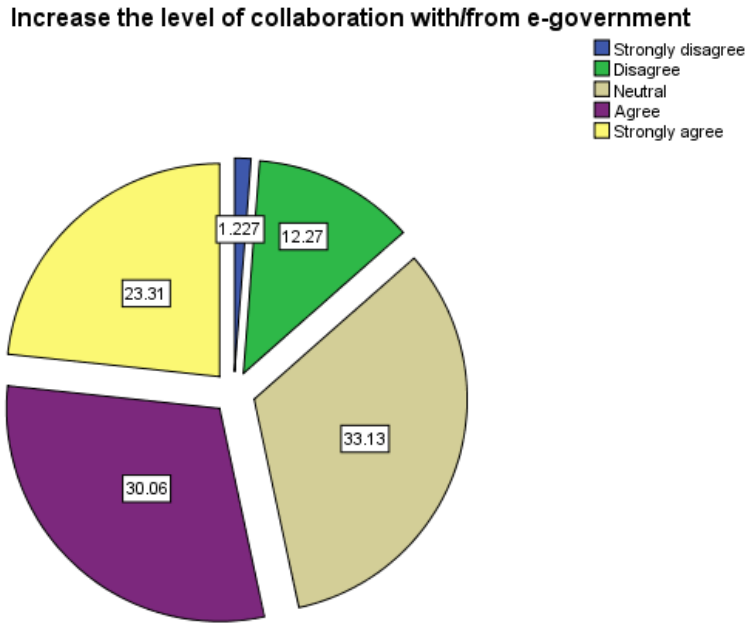


Figure A.57

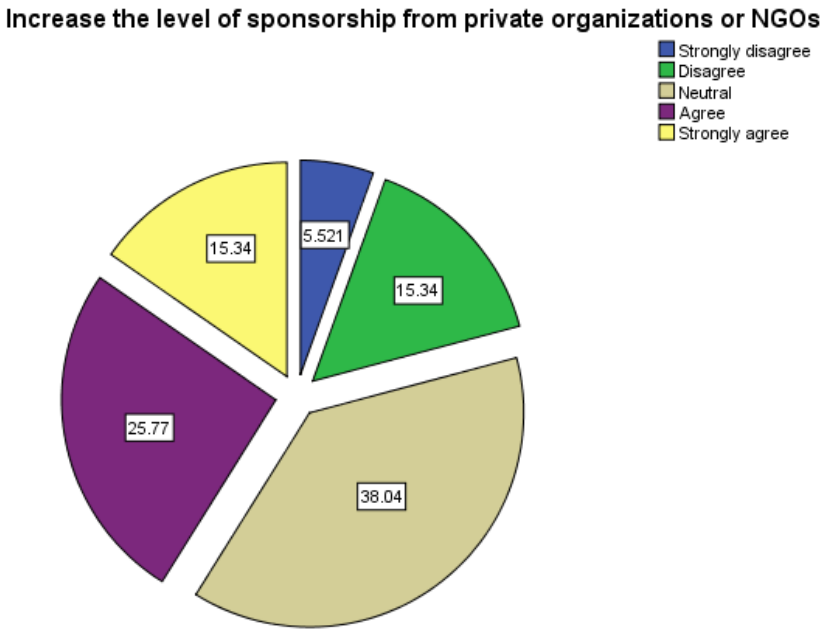


Figure A.58

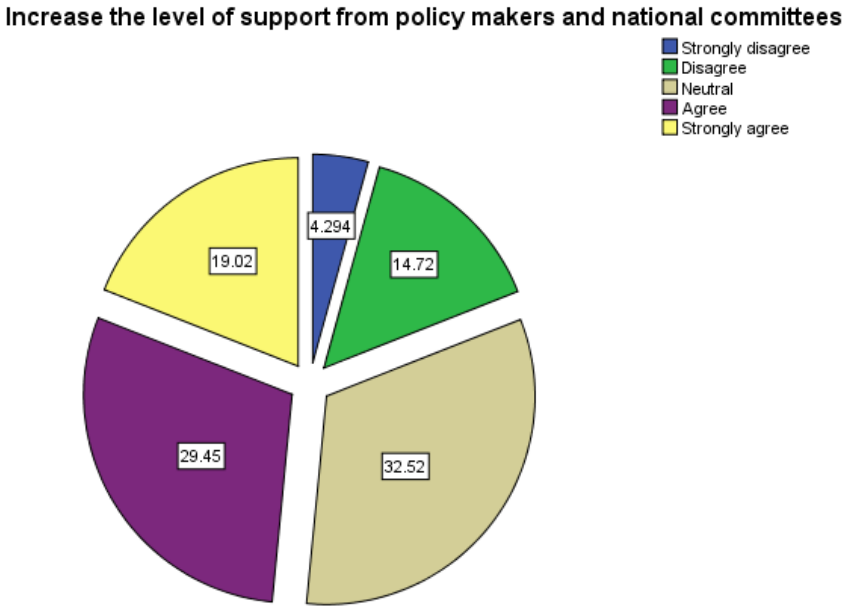


Table A.59
Cost reduction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	11	6.7	6.7	6.7
	Disagree	23	14.1	14.1	20.9
	Neutral	50	30.7	30.7	51.5
	Agree	58	35.6	35.6	87.1
	Strongly agree	21	12.9	12.9	100.0
	Total	163	100.0	100.0	

Table A.60
Cost control

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	4.3	4.3	4.3
	Disagree	23	14.1	14.1	18.4
	Neutral	54	33.1	33.1	51.5
	Agree	42	25.8	25.8	77.3
	Strongly agree	37	22.7	22.7	100.0
	Total	163	100.0	100.0	

Table A.61
Achievement of strategic goals

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	4.3	4.3	4.3
	Disagree	31	19.0	19.0	23.3
	Neutral	39	23.9	23.9	47.2
	Agree	57	35.0	35.0	82.2
	Strongly agree	29	17.8	17.8	100.0
	Total	163	100.0	100.0	

Table A.62
Attain timely decision making

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	10	6.1	6.1	6.1
	Disagree	24	14.7	14.7	20.9
	Neutral	52	31.9	31.9	52.8
	Agree	46	28.2	28.2	81.0
	Strongly agree	31	19.0	19.0	100.0
	Total	163	100.0	100.0	

Figure A.59

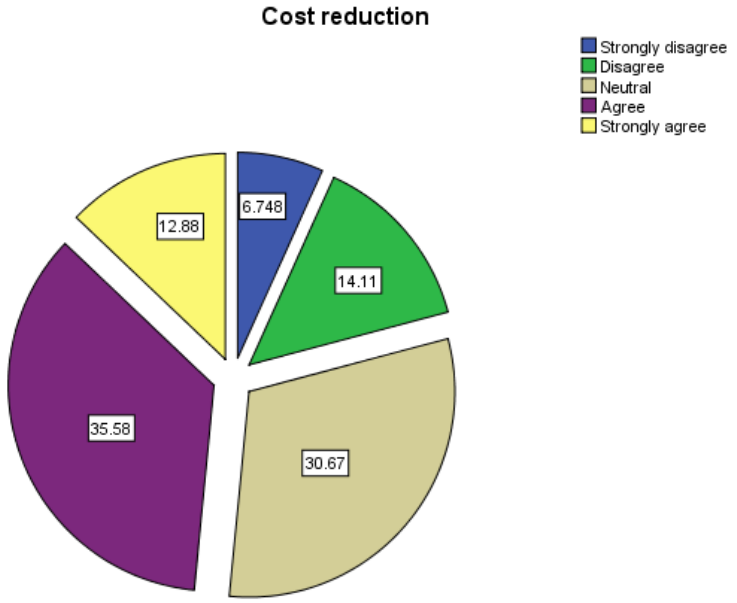


Figure A.60

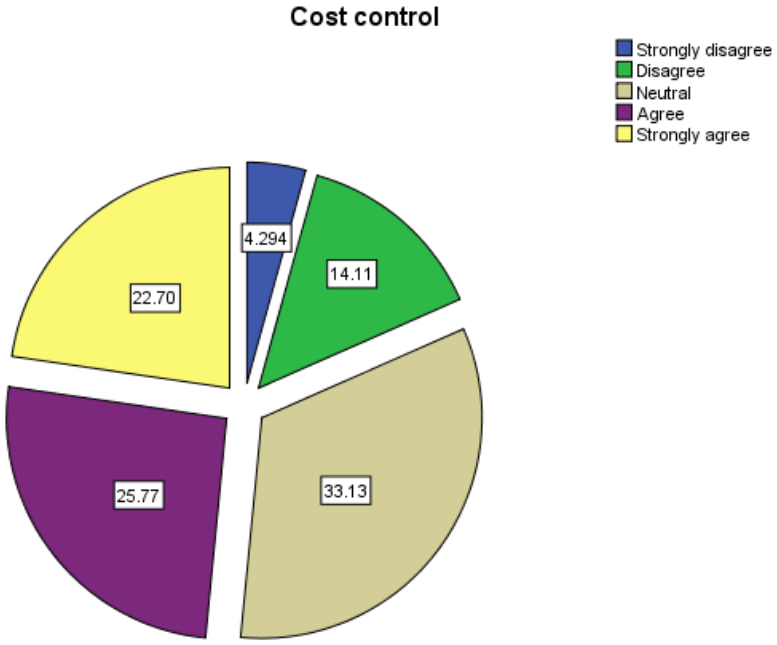


Figure A.61

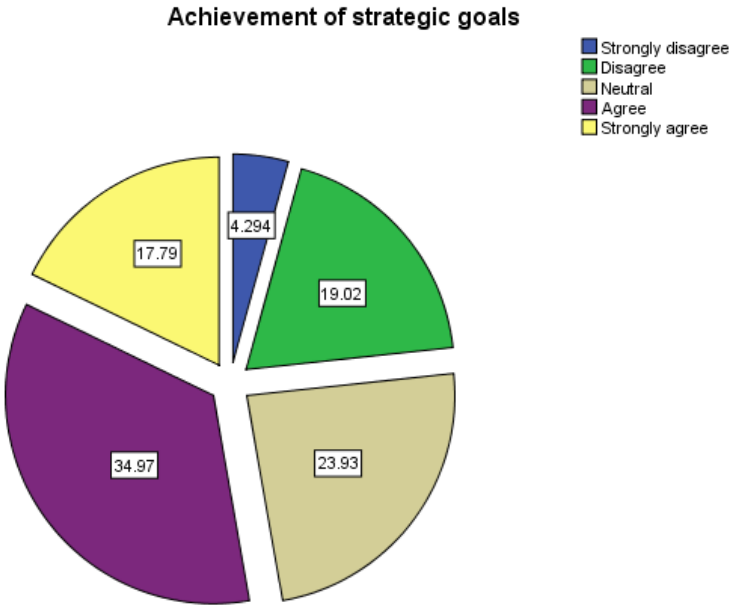
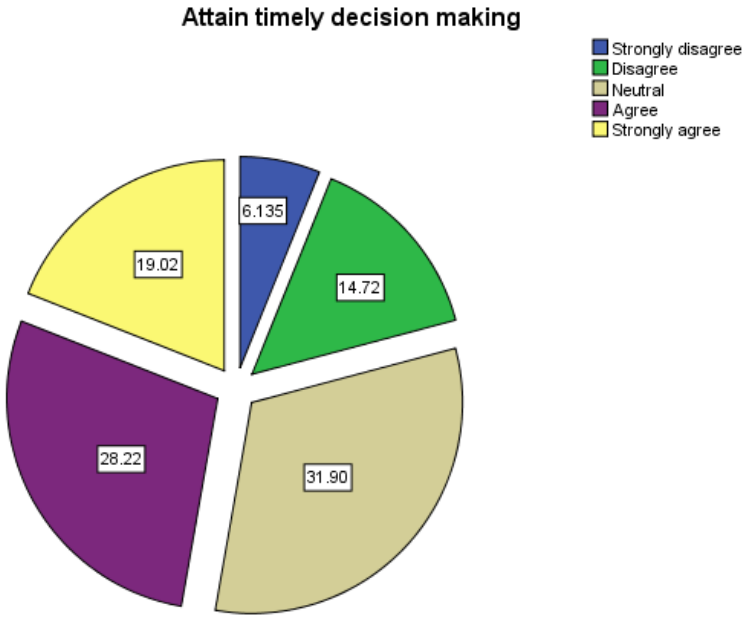


Figure A.62



Processes

Table A.63
Increase responsiveness to clients requirements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	3.7	3.7	3.7
	Disagree	24	14.7	14.7	18.4
	Neutral	47	28.8	28.8	47.2
	Agree	48	29.4	29.4	76.7
	Strongly agree	38	23.3	23.3	100.0
	Total	163	100.0	100.0	

Table A.64
Enhancement in business processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	3.7	3.7	3.7
	Disagree	25	15.3	15.3	19.0
	Neutral	44	27.0	27.0	46.0
	Agree	56	34.4	34.4	80.4
	Strongly agree	32	19.6	19.6	100.0
	Total	163	100.0	100.0	

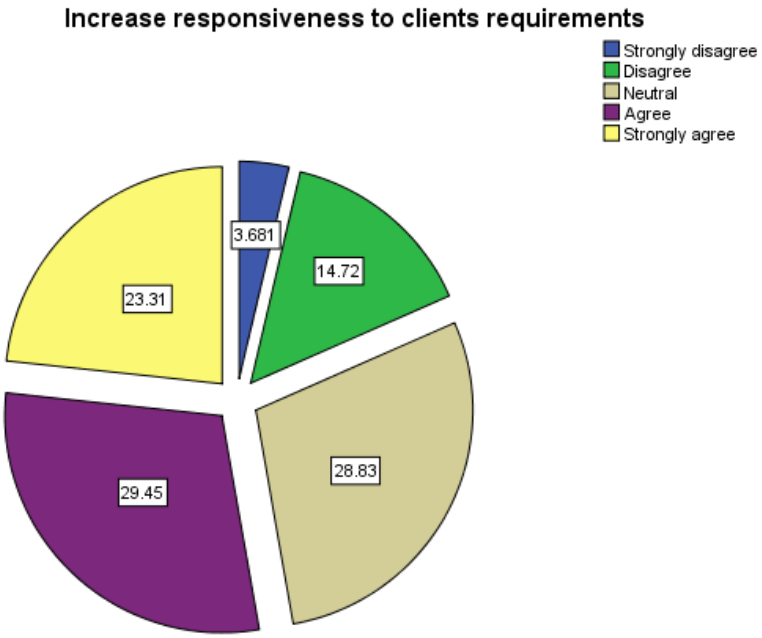
Table A.65
Efficient flow of information between departments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	2.5	2.5	2.5
	Disagree	25	15.3	15.3	17.8
	Neutral	50	30.7	30.7	48.5
	Agree	50	30.7	30.7	79.1
	Strongly agree	34	20.9	20.9	100.0
	Total	163	100.0	100.0	

Table A.66
Increase in the cooperation between departments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	2.5	2.5	2.5
	Disagree	26	16.0	16.0	18.4
	Neutral	57	35.0	35.0	53.4
	Agree	41	25.2	25.2	78.5
	Strongly agree	35	21.5	21.5	100.0
	Total	163	100.0	100.0	

Figure A.63



—

Figure A.64

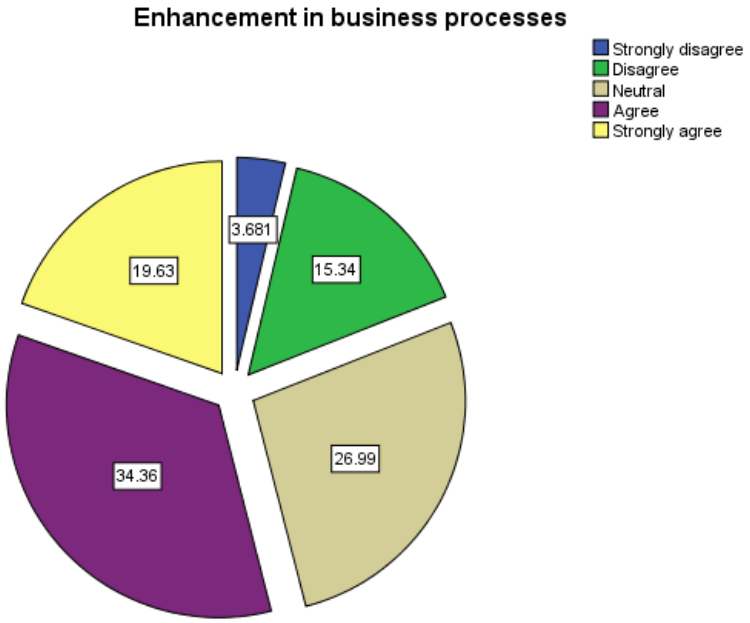


Figure A.65

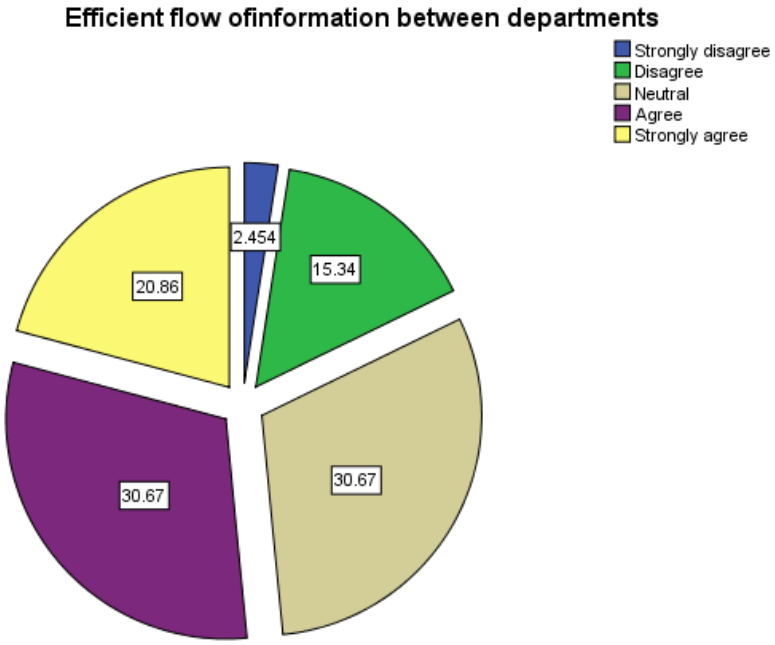


Figure A.66

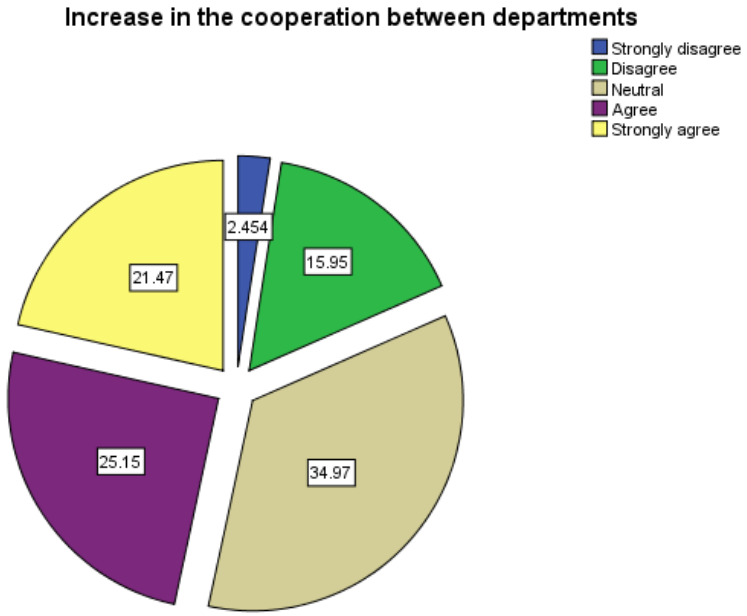


Table A.67
Increase in innovation capabilities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	5	3.1	3.1	3.1
	Disagree	35	21.5	21.5	24.5
	Neutral	51	31.3	31.3	55.8
	Agree	49	30.1	30.1	85.9
	Strongly agree	23	14.1	14.1	100.0
	Total	163	100.0	100.0	

Table A.68
Increase in organisational productivity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	2.5	2.5	2.5
	Disagree	32	19.6	19.6	22.1
	Neutral	46	28.2	28.2	50.3
	Agree	47	28.8	28.8	79.1
	Strongly agree	34	20.9	20.9	100.0
	Total	163	100.0	100.0	

Table A.69
Development of effective training programs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	5.5	5.5	5.5
	Disagree	34	20.9	20.9	26.4
	Neutral	60	36.8	36.8	63.2
	Agree	38	23.3	23.3	86.5
	Strongly agree	22	13.5	13.5	100.0
	Total	163	100.0	100.0	

Table A.70
Increase the organisational capacity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	3.7	3.7	3.7
	Disagree	34	20.9	20.9	24.5
	Neutral	49	30.1	30.1	54.6
	Agree	45	27.6	27.6	82.2
	Strongly agree	29	17.8	17.8	100.0
	Total	163	100.0	100.0	

Figure A.67

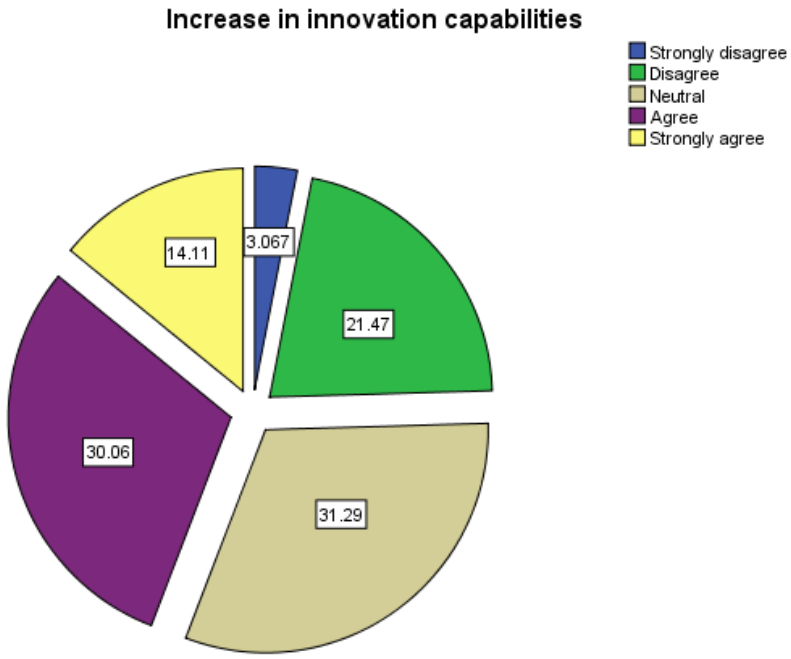


Figure A.68

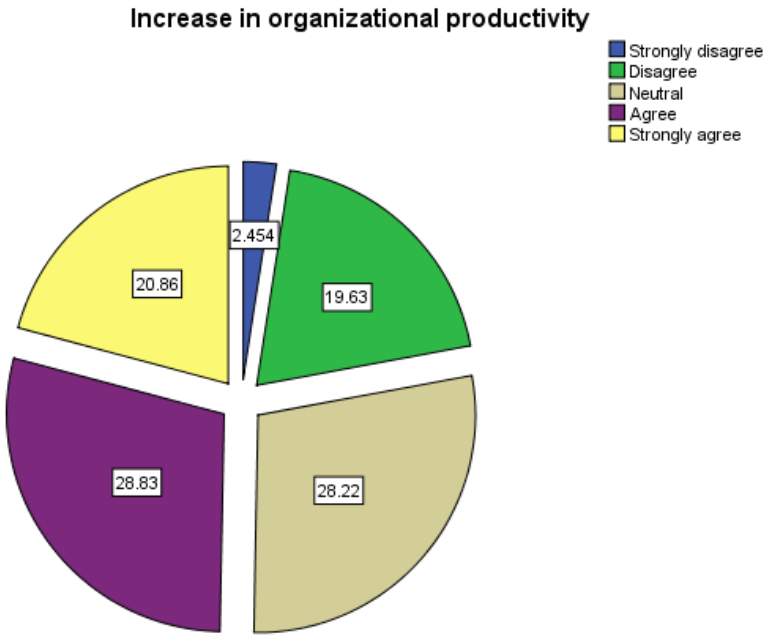


Figure A.69

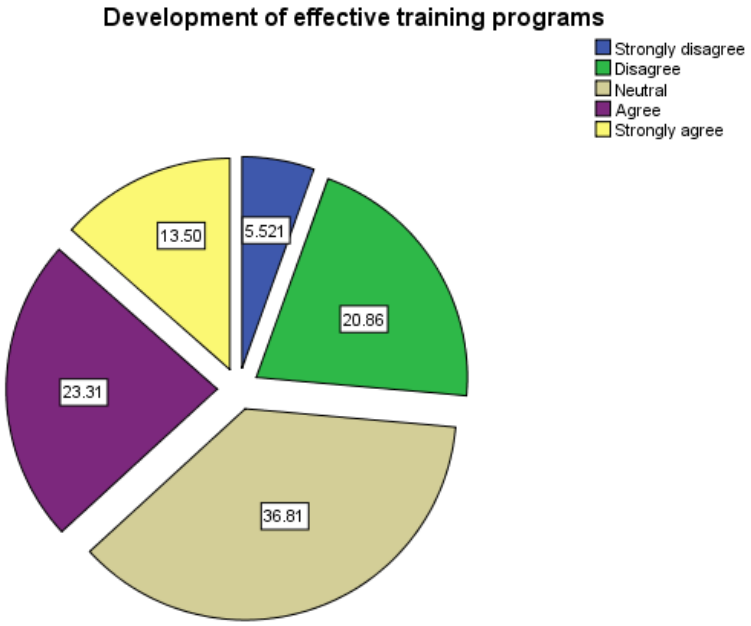
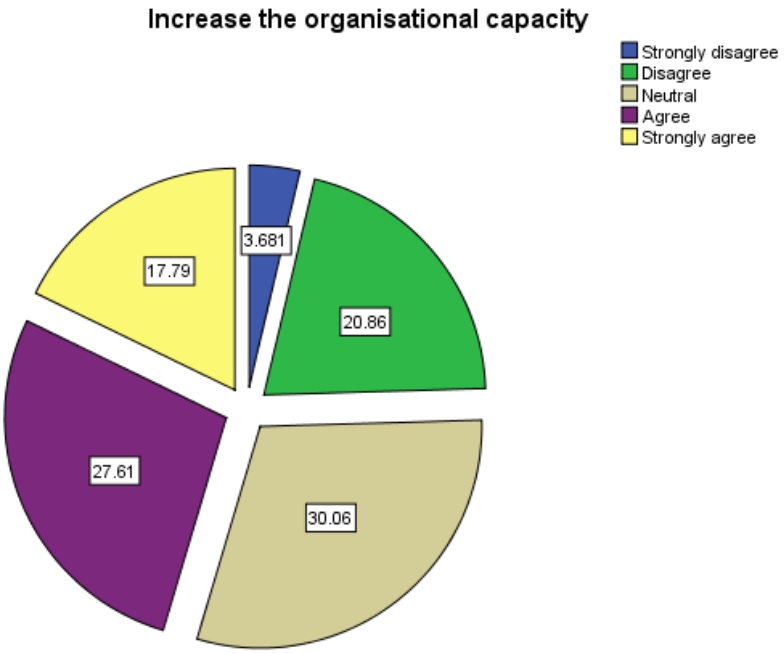


Figure A.70



Normality Test: Demographic Characteristics

Figure A.71

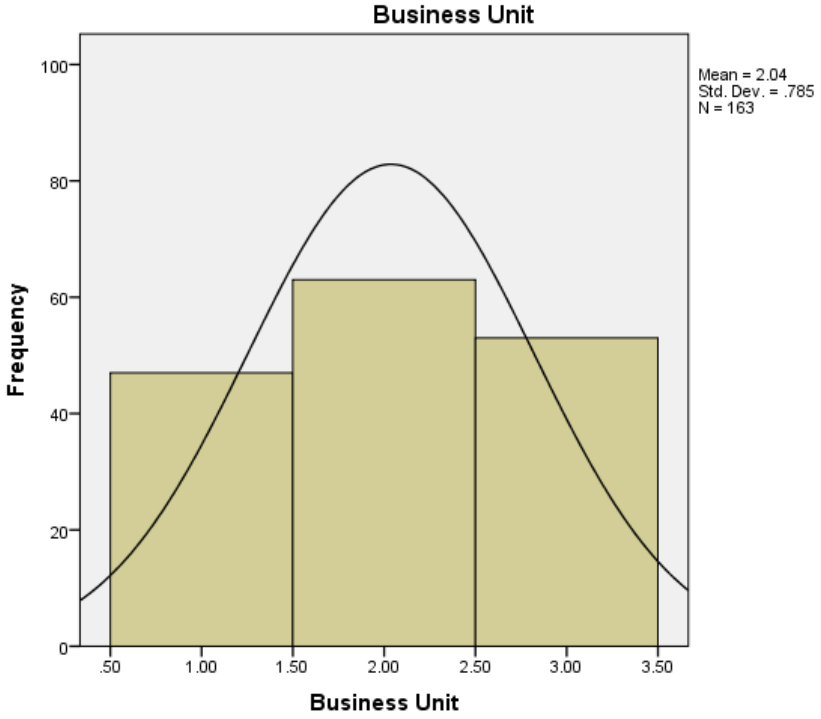

Business Unit
Mean = 2.04
Std. Dev. = .785
N = 163
Frequency
100
80
60
40
20
0
.50
1.00
1.50
2.00
2.50
3.00
3.50
Business Unit

Figure A.72

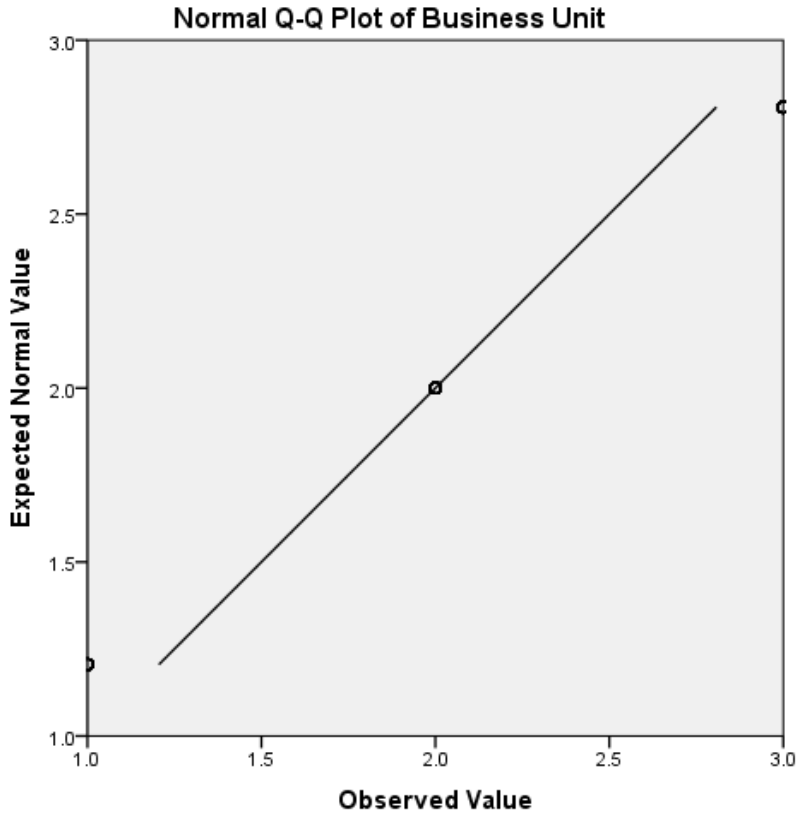


Figure A.73

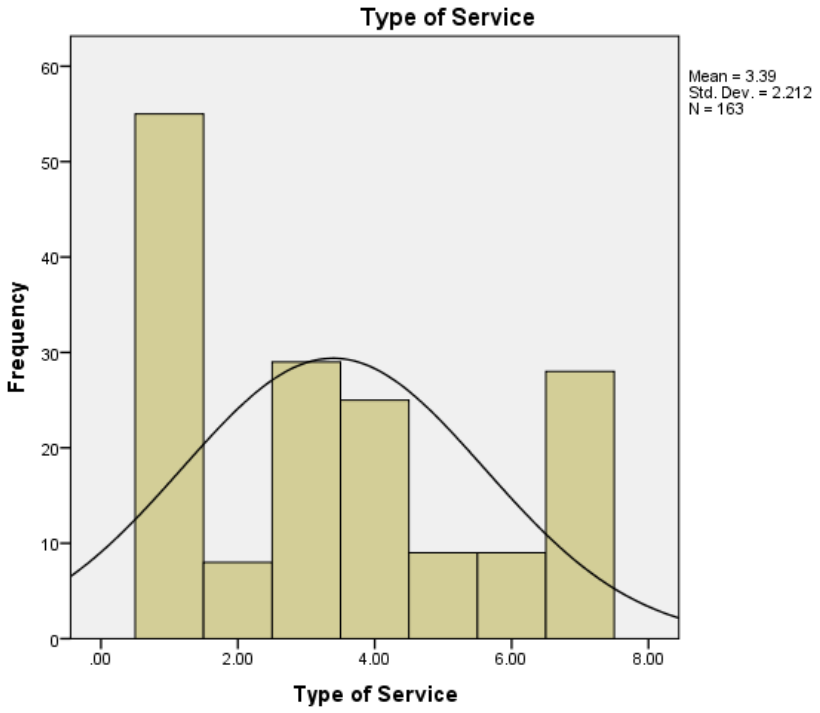
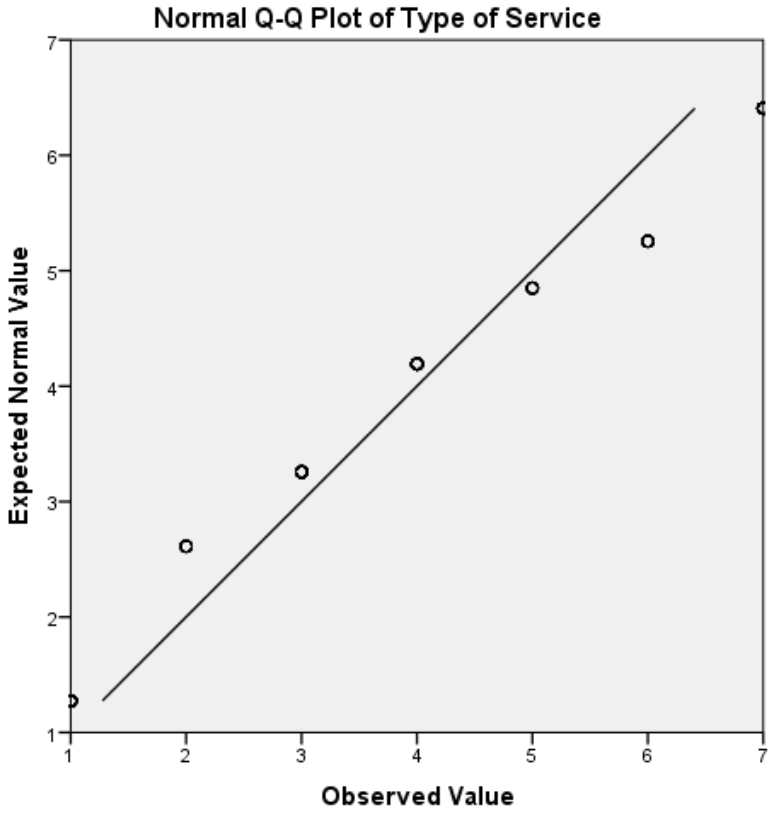


Figure A.74



Strategic Alignment

Figure A.75

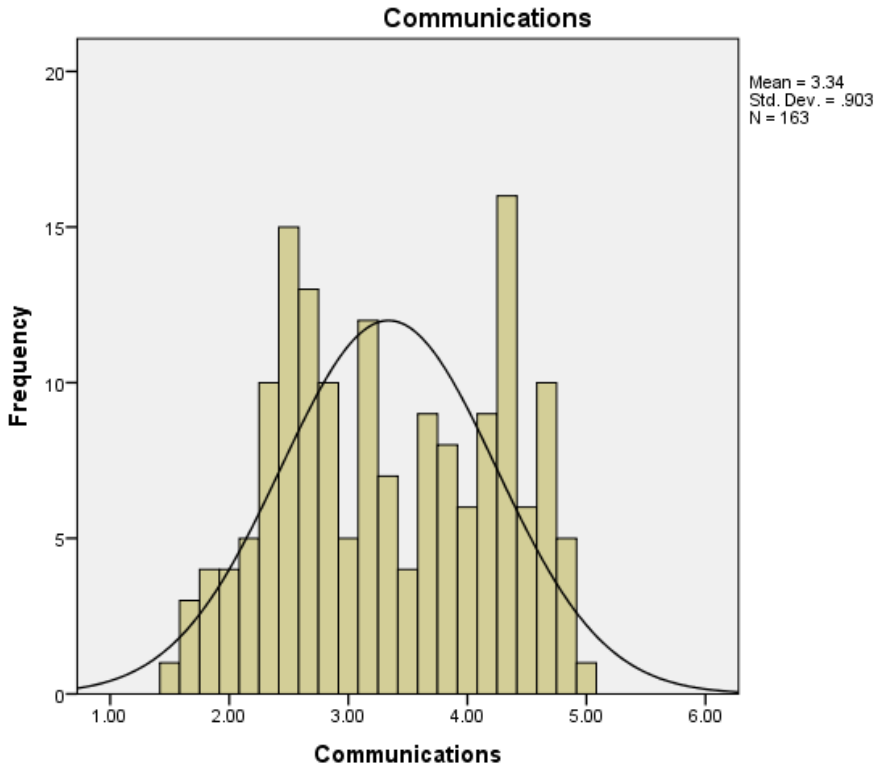


Figure A.76

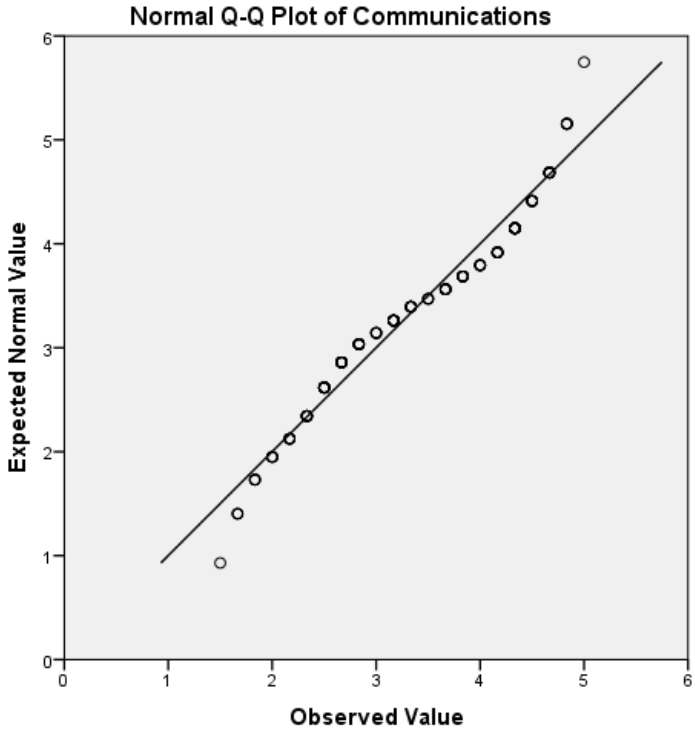


Figure A.77

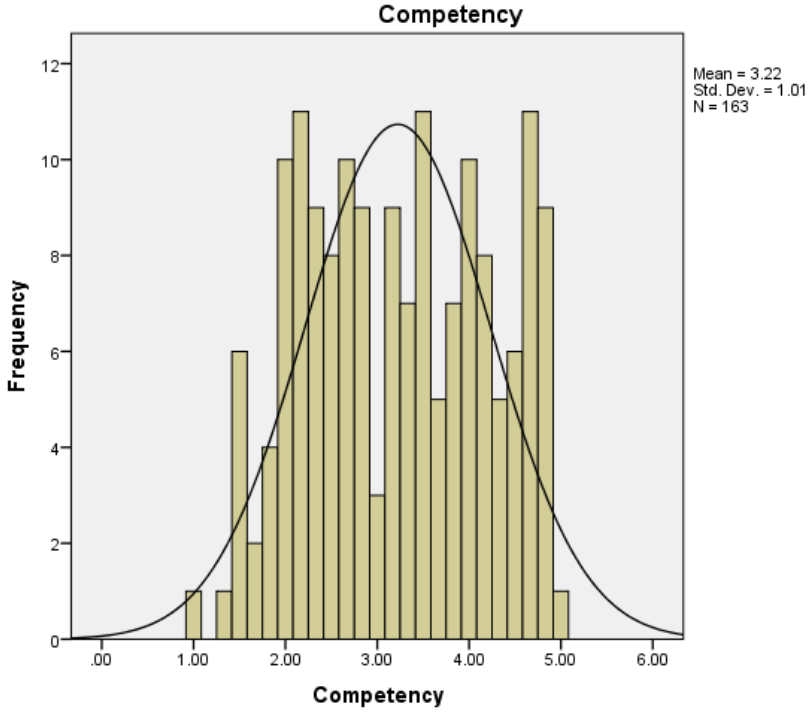


Figure A.78

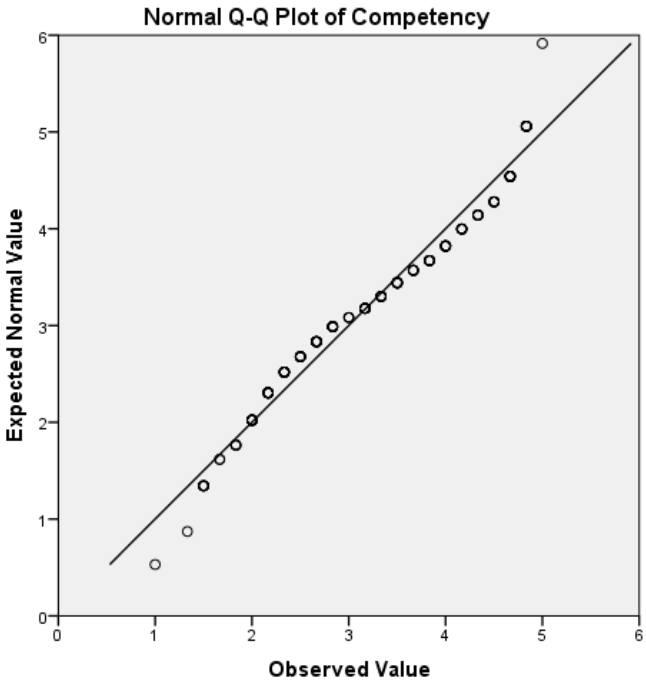


Figure A.79

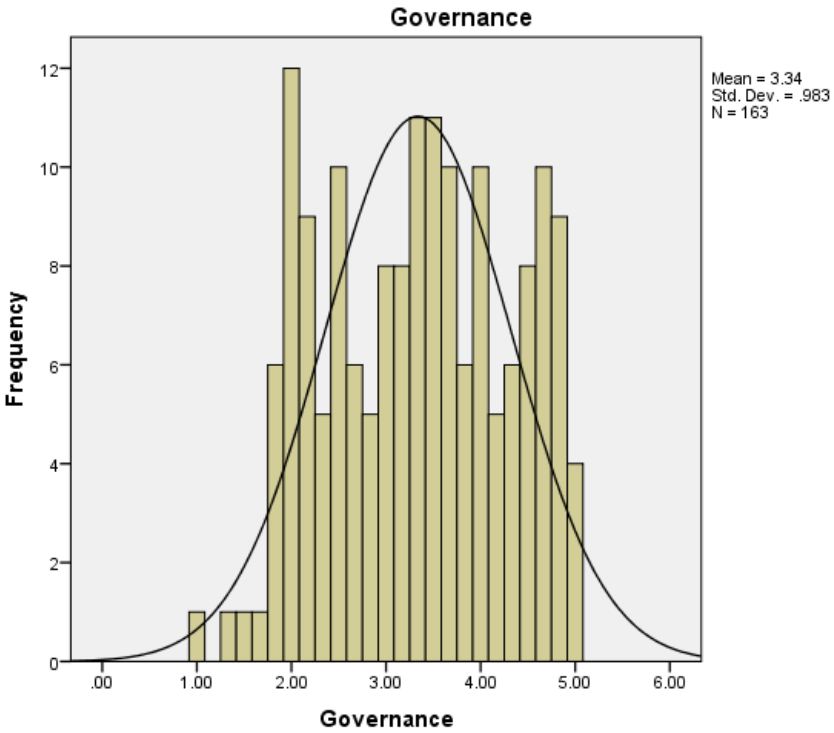


Figure A.80

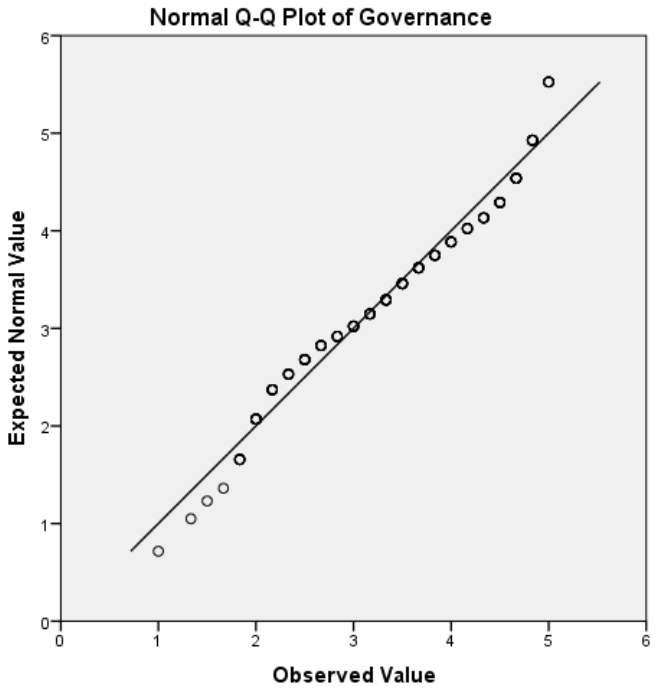


Figure A.81

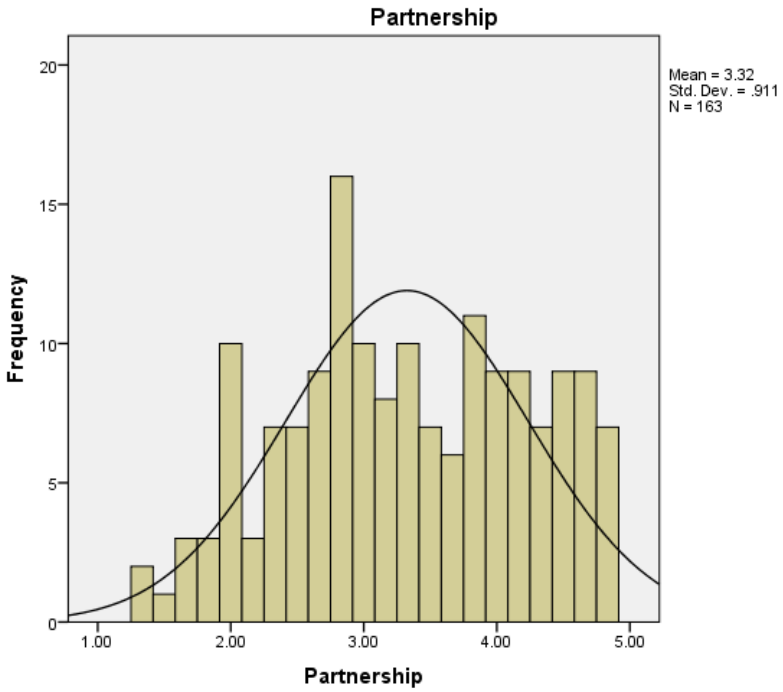


Figure A.82

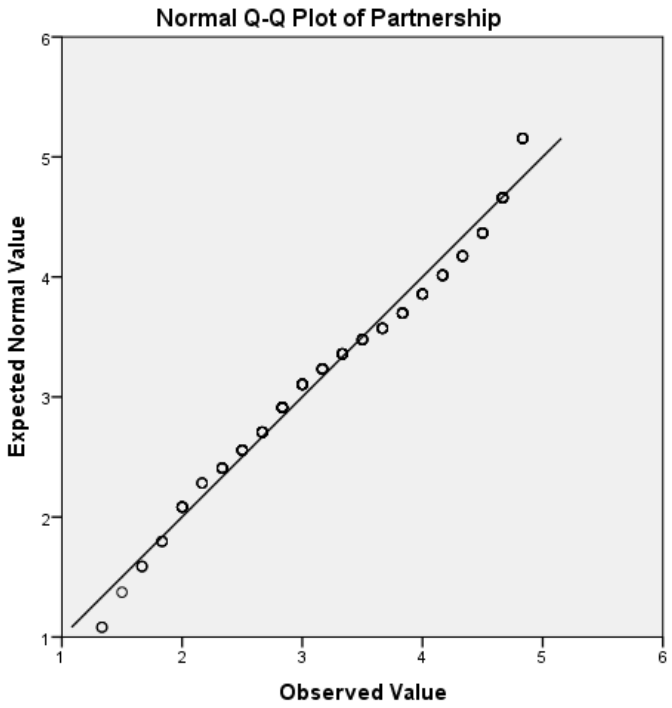


Figure A.83

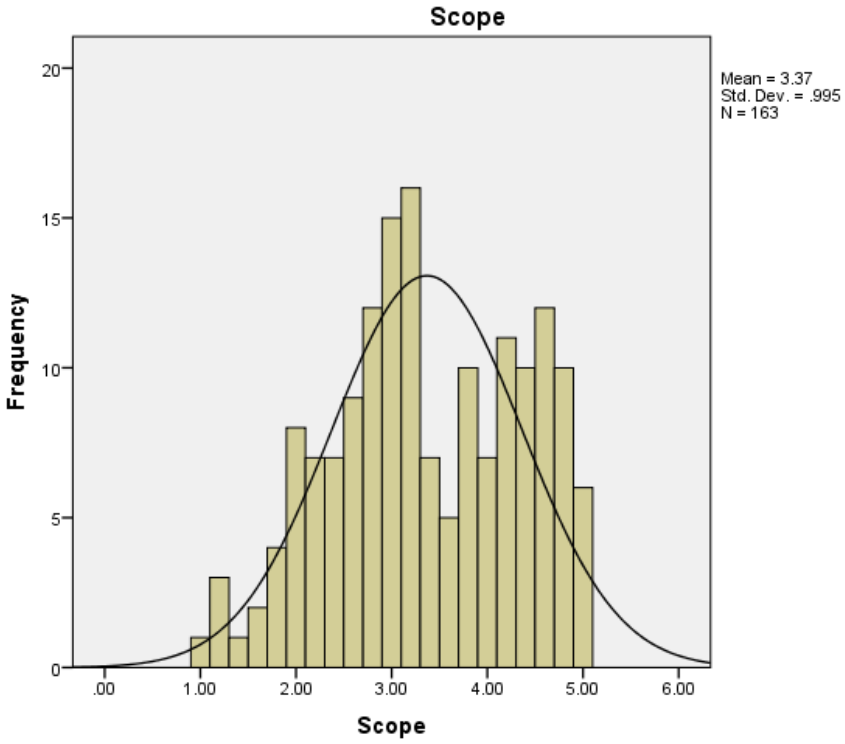


Figure A.84

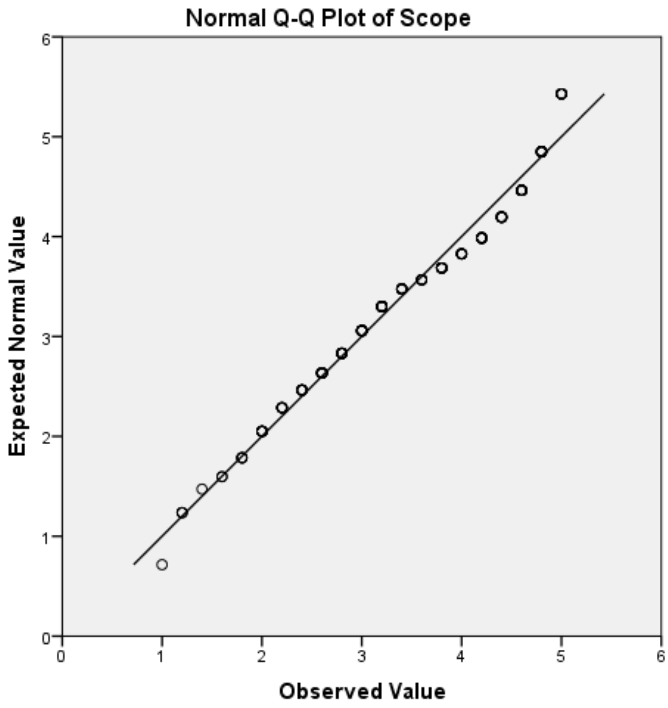


Figure A.85

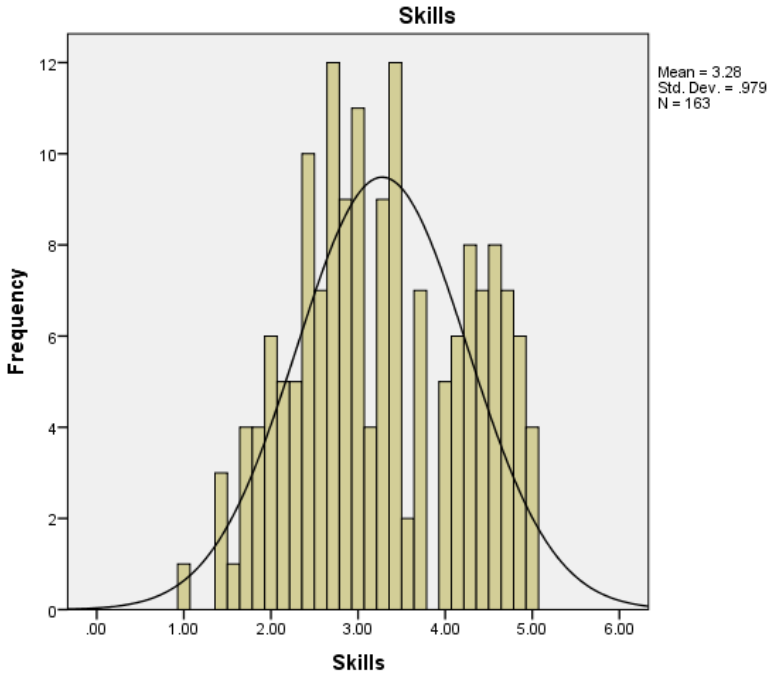
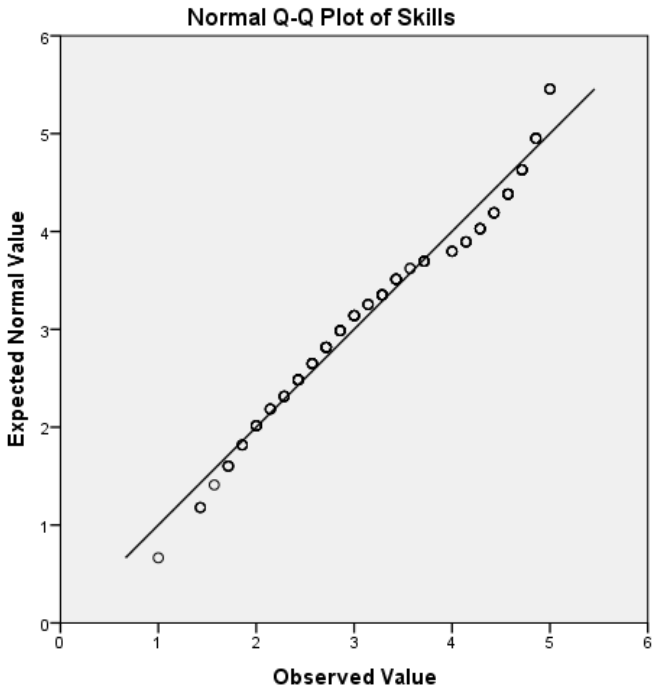


Figure A.86



IT Acceptance

Figure A.87

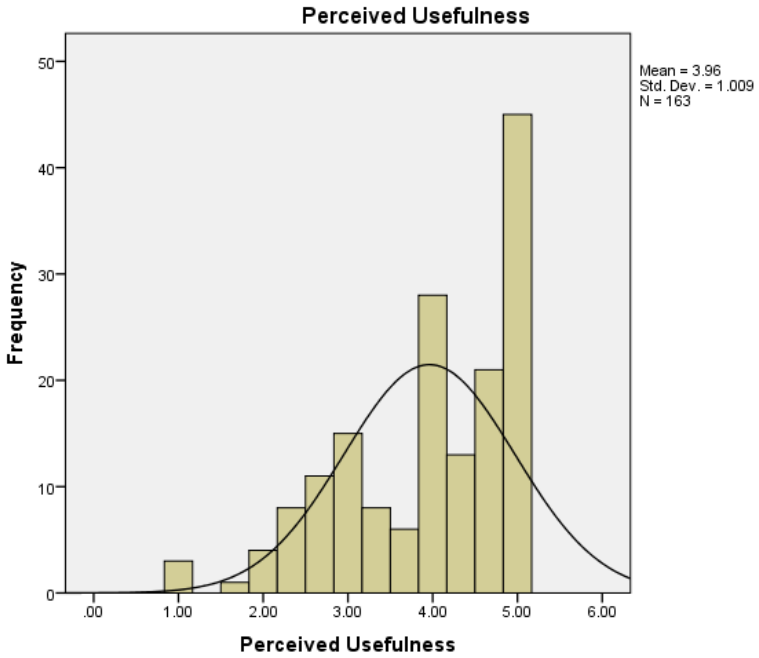


Figure A.88

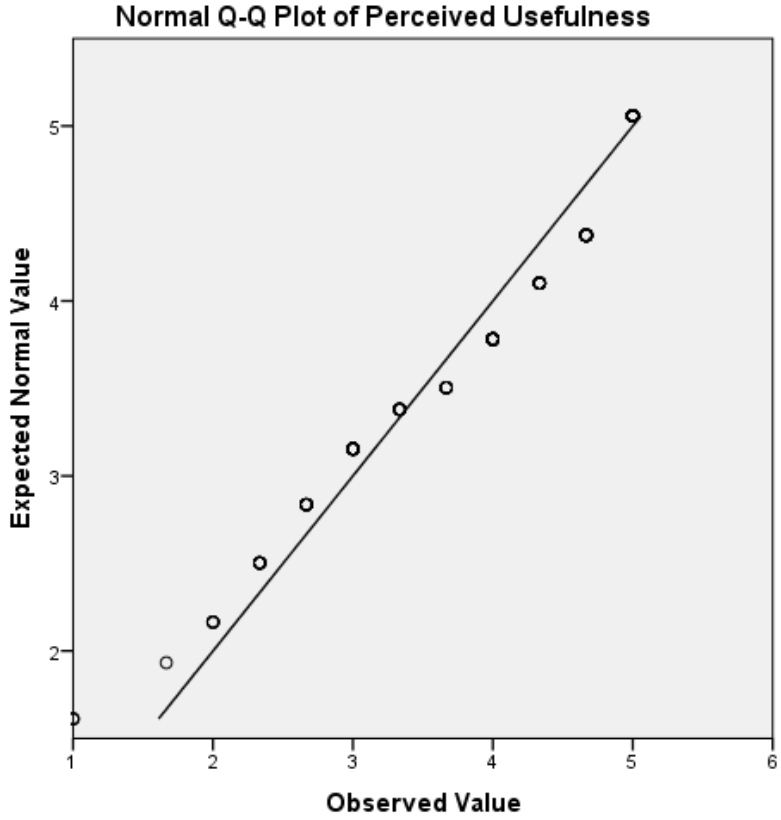


Figure A.89

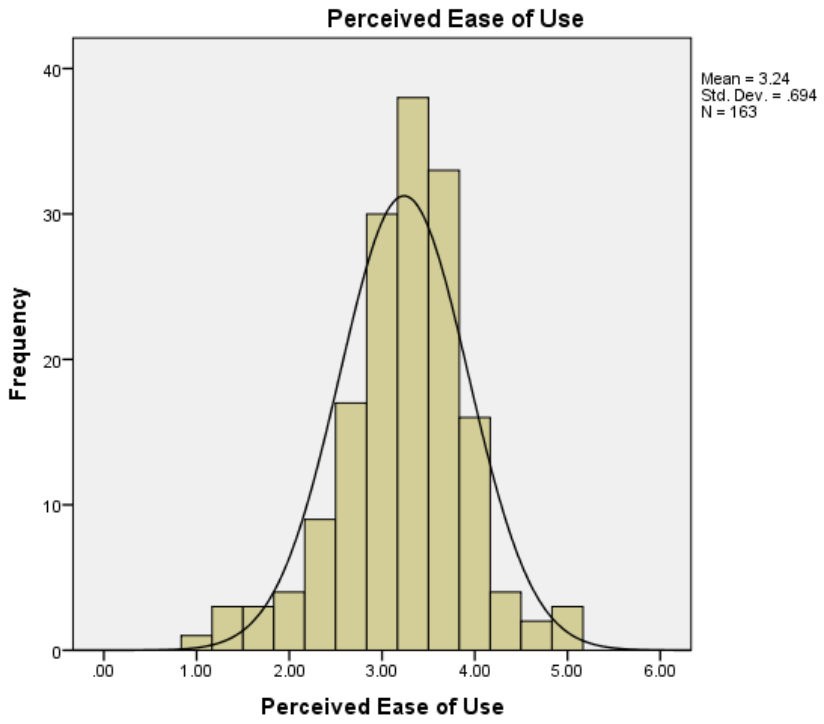
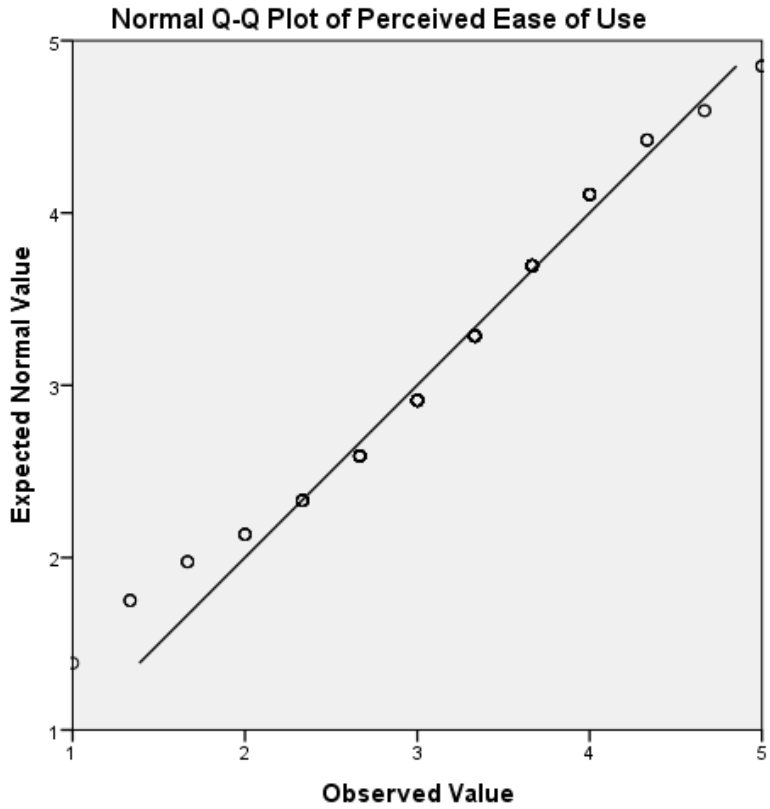


Figure 5.90



Prior IS success

Figure A.91

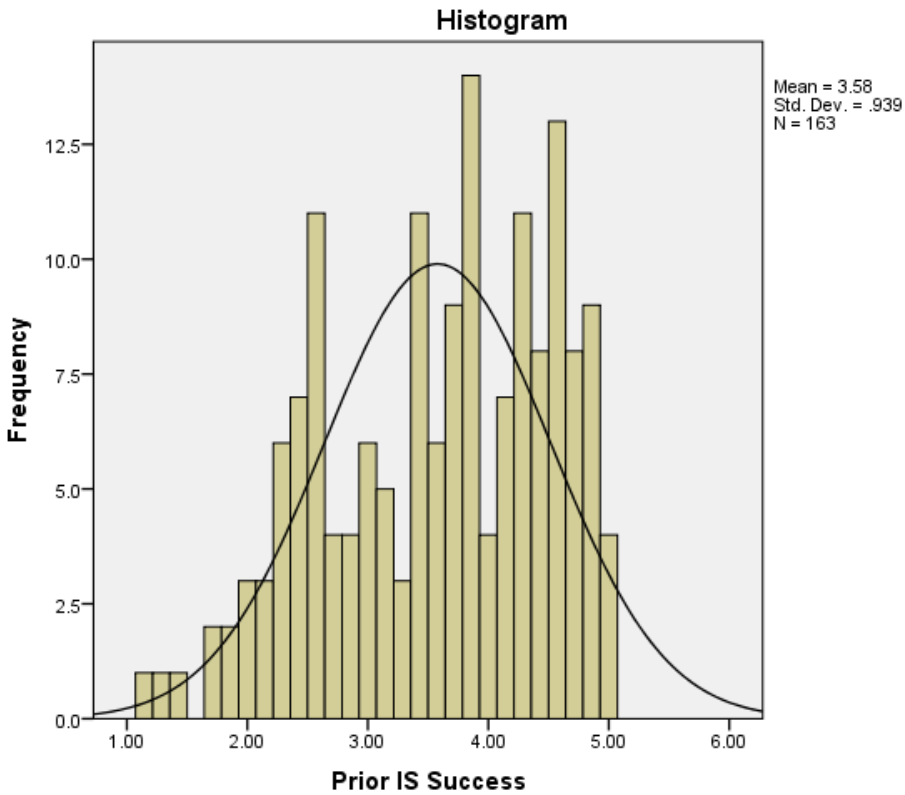
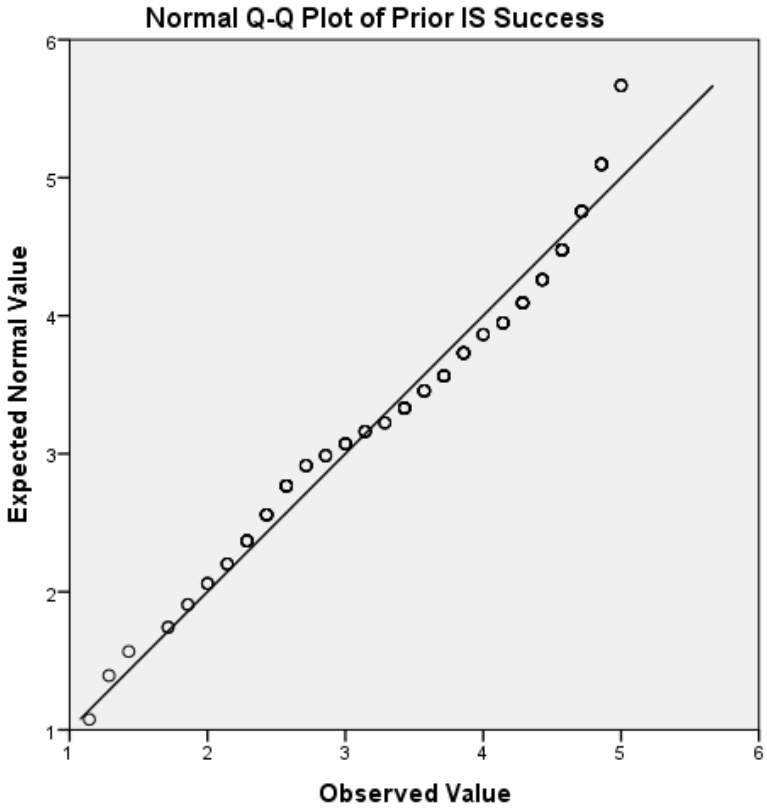


Figure A.92



Organisational Performance

Figure A.93

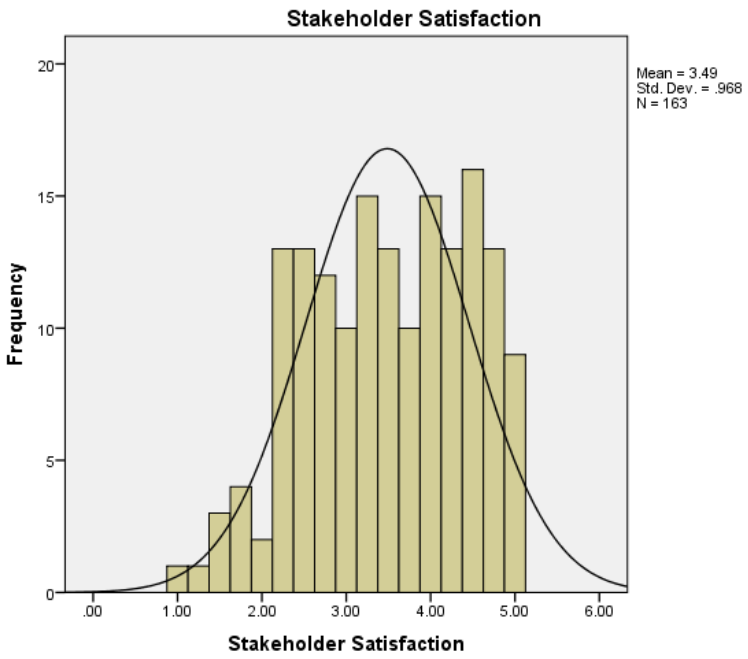


Figure A.94

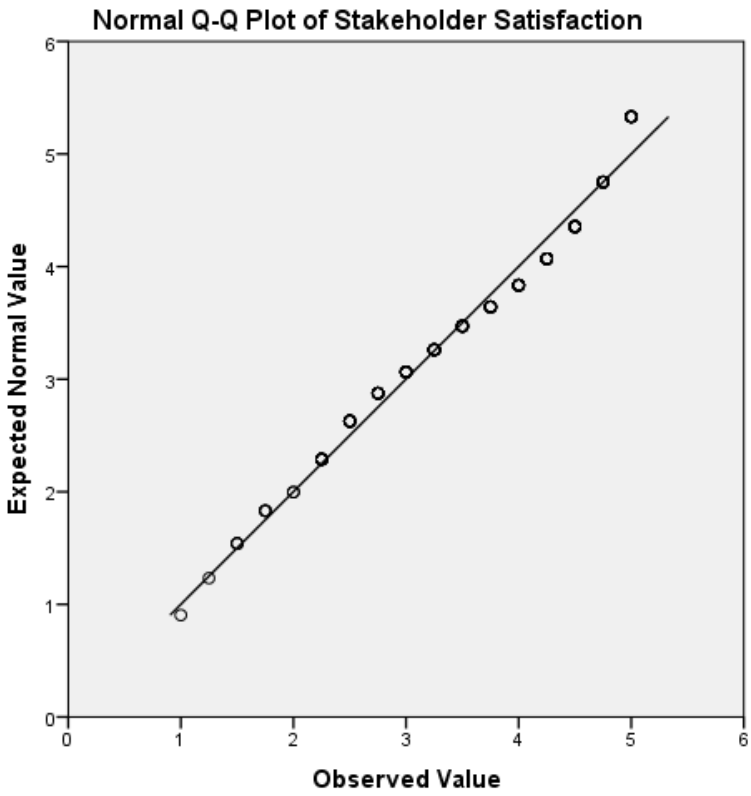


Figure A.95

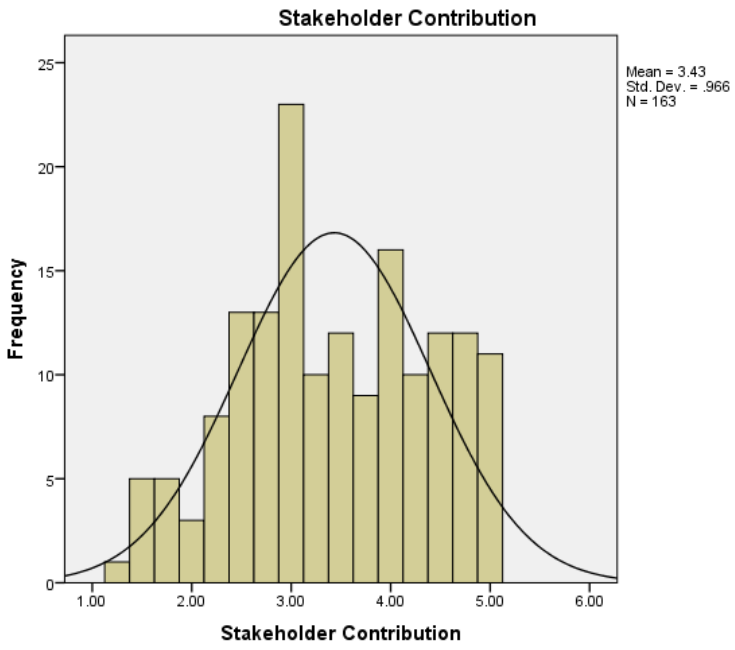

Stakeholder Contribution
Mean = 3.43
Std. Dev. = .966
N = 163
Frequency
25
20
15
10
5
0
1.00
2.00
3.00
4.00
5.00
6.00
Stakeholder Contribution

Figure A.96

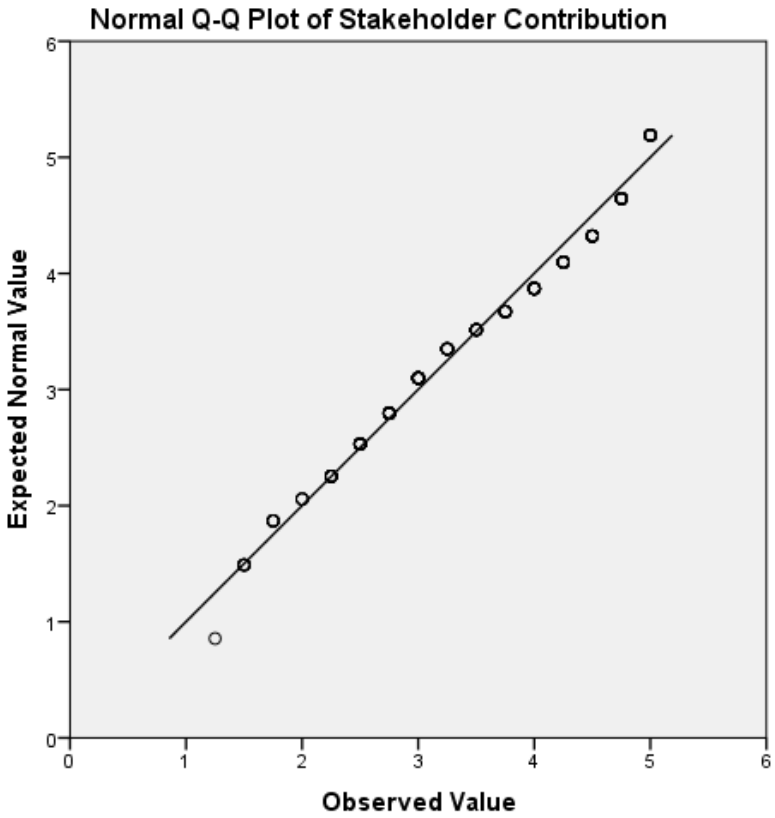

Normal Q-Q Plot of Stakeholder Contribution
Expected Normal Value
Observed Value
0
1
2
3
4
5
6

Figure A.97

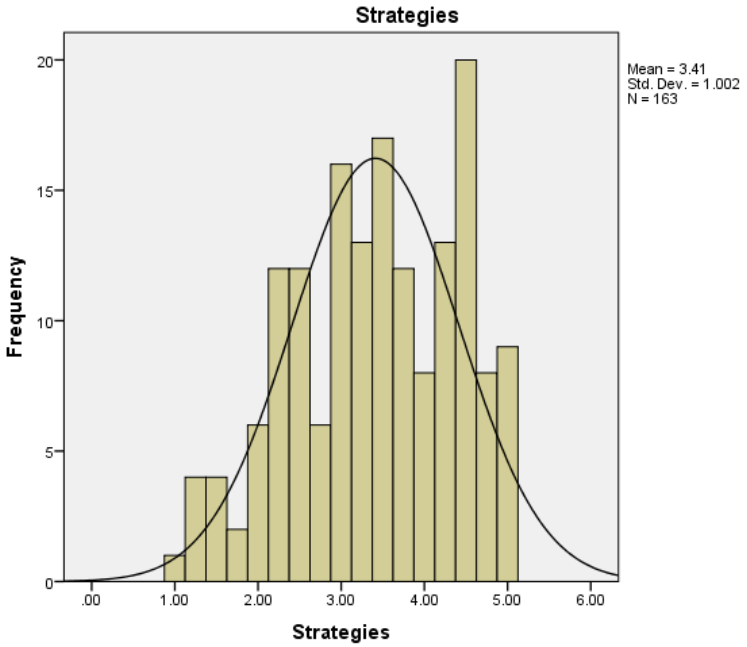


Figure A.98

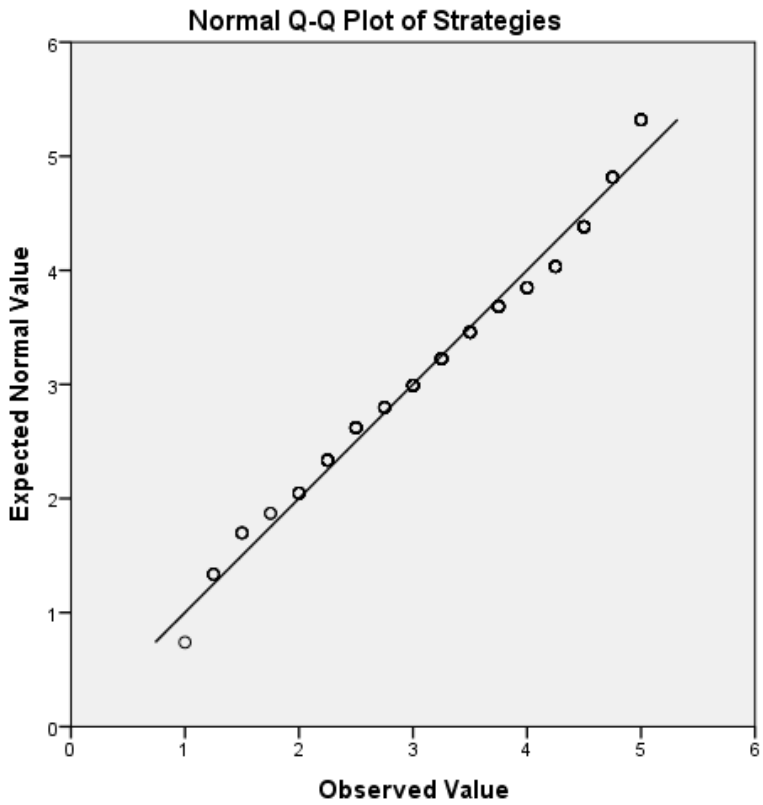


Figure A.99

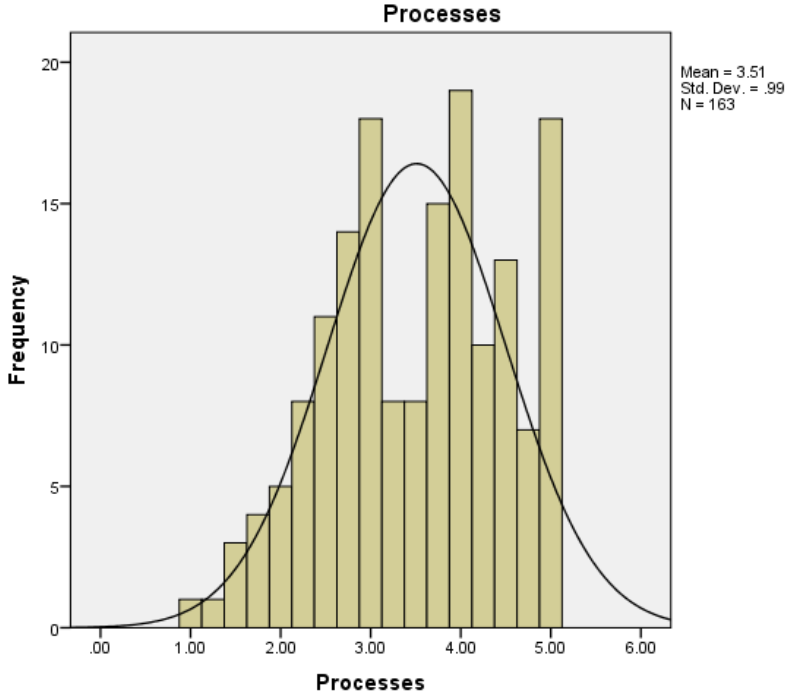

Processes
Mean = 3.51
Std. Dev. = .99
N = 163
Frequency
20
15
10
5
0
.00
1.00
2.00
3.00
4.00
5.00
6.00
Processes

Figure A.100

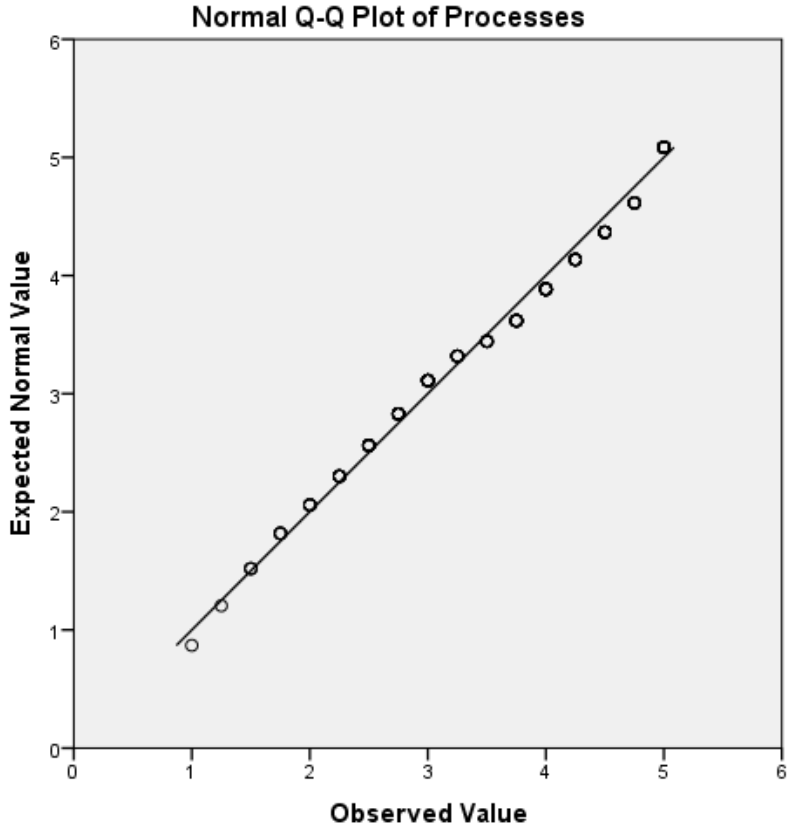

Normal Q-Q Plot of Processes
Expected Normal Value
Observed Value
0
1
2
3
4
5
6

Figure A.101

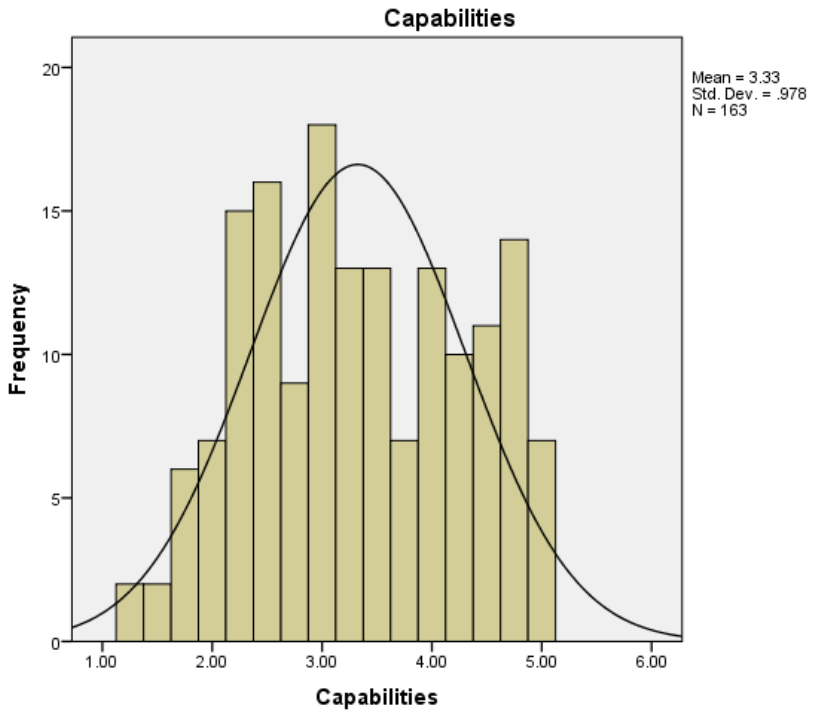
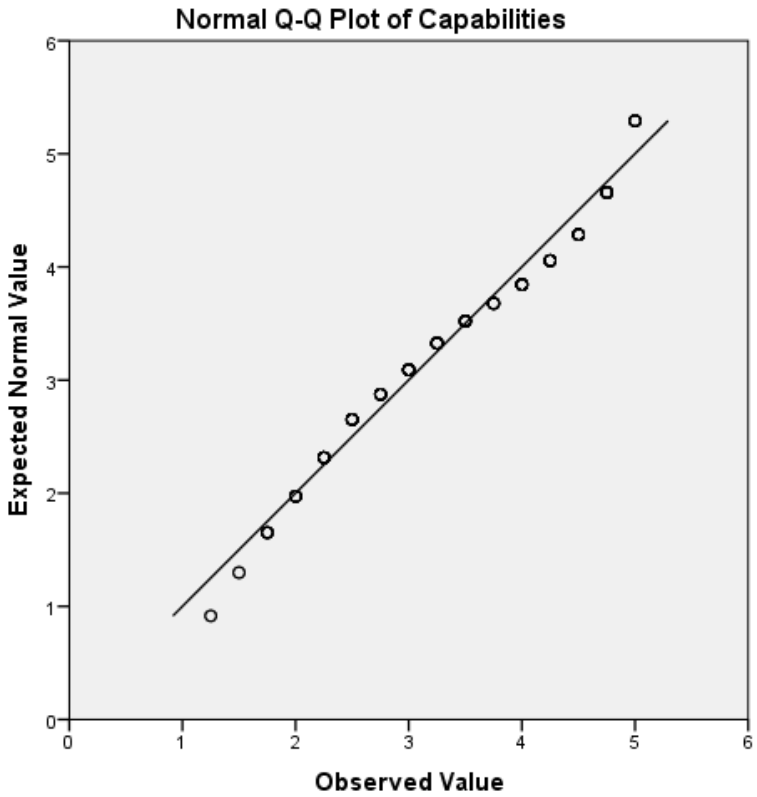


Figure A.102



Correlation
Strategic Alignment: Communications-Competency-Governance-Partnership-Scope-Skills

Table 5.92

Reliability Analysis

Table A.71
Case Processing Summary

		N	%
Cases	Valid	163	100.0
	Excluded[a]	0	.0
	Total	163	100.0

a. Listwise deletion based on all variables in the procedure.

Factor Analysis

Table A.72
Communalities

	Initial	Extraction
Business Unit	1.000	.913
Type of Service	1.000	.929
Communications	1.000	.865
Competency	1.000	.844
Governance	1.000	.894
Partnership	1.000	.870
Scope	1.000	.859
Skills	1.000	.836
Perceived Usefulness	1.000	.652
Perceived Ease of Use	1.000	.488
Prior IS Success	1.000	.818
Stakeholder Satisfaction	1.000	.799
Stakeholder Contribution	1.000	.807
Strategies	1.000	.807
Processes	1.000	.832
Capabilities	1.000	.856

Extraction Method: Principal Component Analysis.

Table A.73
Component Matrix[a]

	Component		
	1	2	3
Business Unit	.012	.790	.538
Type of Service	.019	–.451	.852
Communications	.916	.162	–.014
Competency	.901	.165	.064
Governance	.939	.110	.018
Partnership	.923	.119	–.060
Scope	.926	.035	–.023
Skills	.907	.111	–.022
Perceived Usefulness	.741	–.319	.041
Perceived Ease of Use	.620	–.302	.113
Prior IS Success	.890	–.153	–.053
Stakeholder Satisfaction	.892	–.063	.014
Stakeholder Contribution	.897	.014	–.033
Strategies	.897	–.046	.005
Processes	.912	–.013	–.016
Capabilities	.925	.014	–.016

Extraction Method: Principal Component Analysis.
a. 3 components extracted.

Regression

Prior IS Success—Strategic Alignment

Table A.74
Descriptive Statistics

	Mean	Std. Deviation	N
Strategic Alignment	3.3113	.91056	163
Prior IS Success	3.5784	.93863	163

Table A.75
Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Prior IS Success[b]	.	Enter

a. Dependent Variable: Strategic Alignment
b. All requested variables entered.

Table A.76
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.822[a]	.675	.673	.52072

a. Predictors: (Constant), Prior IS Success

IT Acceptance—Strategic Alignment

Table A.77
Descriptive Statistics

	Mean	Std. Deviation	N
Strategic Alignment	3.3113	.91056	163
IT Acceptance	3.5992	.76391	163

Table A.78
Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	IT Acceptance[b]	.	Enter

a. Dependent Variable: Strategic Alignment
b. All requested variables entered.

Table A.79
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.693[a]	.481	.477	.65830

a. Predictors: (Constant), IT Acceptance

Strategic Alignment—Organisational Performance

Table A.80
Descriptive Statistics

	Mean	Std. Deviation	N
Organisational Performance	3.4331	.92030	163
Strategic Alignment	3.3113	.91056	163

Table A.81
Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Strategic Alignment[b]	.	Enter

a. Dependent Variable: Organisational Performance
b. All requested variables entered.

Table A.82
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.894[a]	.800	.798	.41326

a. Predictors: (Constant), Strategic Alignment

SEM Model Testing

Table A.83

Covariances: (Group number 1—Default model)

	Estimate	S.E.	C.R.	P	Label
Prior_IS_Success <--> IT_Acceptance	.519	.069	7.492	***	

Table A.84

Correlations: (Group number 1—Default model)

	Estimate
Prior_IS_Success <--> IT_Acceptance	.728

Table A.85

Variances: (Group number 1—Default model)

	Estimate	S.E.	C.R.	P	Label
Prior_IS_Success	.876	.097	9.000	***	
IT_Acceptance	.580	.064	9.000	***	
e2	.252	.028	9.000	***	
e1	.169	.019	9.000	***	

Table A.86

Squared Multiple Correlations: (Group number 1—Default model)

	Estimate
Strategic_Alignment	.694
Organisational_Performance	.800